OUTER HOUSE, COURT OF SESSION

[2020] CSOH 24

A495/15

OPINION OF LADY WISE

In the cause

DEREK HAMILTON

Pursuer

against

LANARKSHIRE HEALTH BOARD

Defender

Pursuer: Haldane QC, Cleland; Digby Brown LLP
Defender: G Mitchell QC, P Stuart; NHS Scotland Central Legal Office

28 February 2020

Introduction

[1] On 26 January 2013 the pursuer accidentally swallowed his dental plate while at home and was admitted to Wishaw General Hospital (now known as University Hospital, Wishaw). Following a procedure to remove the dental plate through the oesophagus on 27 January 2013 he became very ill. He was found to have a perforation of his oesophagus and suffered a number of consequential life-threatening complications, spending a total of 45 days in hospital.

[2] The pursuer alleges that the injuries he suffered were caused by negligence on the part of Mr Martin Downey ("Mr Downey") a consultant general surgeon with a

sub-specialism in colorectal work in the employment of the defender Lanarkshire Health Board. The action came before me for proof on the issues of negligence and causation. Shortly prior to the commencement of the diet the parties reached agreement on the issue of quantification of damages and recorded that agreement in a joint minute number 37 of process. The central contention of the pursuer is that Mr Downey ought not to have persisted with the removal of the dental plate via Mr Hamilton's oesophagus using an endoscope and instead should have converted to a laparotomy to remove it. Had he done so, it is said that the injuries suffered by the pursuer would have been avoided. These contentions require consideration both of whether the evidence established clear failures on the part of Mr Downey which satisfy the legal requirements for negligence, and of whether the pursuer has proved on balance, that the perforation to the pursuer's oesophagus occurred during the course of the second endoscopic procedure. The defender's position is that Mr Downey acted with appropriate skill and care and that the evidence on the timing of Mr Hamilton's deterioration did not establish the necessary causal link.

Evidence led at proof

[3] In addition to the evidence of the pursuer himself, evidence was led in the pursuer's case from the following witnesses:

(1) Mr Martin Downey, the consultant general surgeon who carried out the procedure on 27 January 2013 and whose actions are alleged to be negligent.

(2) Miss Linda MacDonald, an experienced staff grade general surgeon working primarily in upper gastrointestinal (GI) surgery, who attended on the pursuer alone while on call on 26 January 2013 and who was designated to assist Mr Downey on 27 January.

(3) Mr Hakim Ben Younes, consultant general surgeon and chief of medical services at University Hospital, Wishaw, who described himself as a general surgeon with an upper GI interest. He had no responsibility for the pursuer's case but had been consulted informally by telephone given his extensive expertise in upper GI work.

(4) Mr Geoffrey Pye, a general surgeon with a sub-speciality in colorectal work with experience of upper GI endoscopies. Mr Pye gave expert evidence on negligence and causation.

(5) Dr David Swann, a consultant in anaesthesia and now involved in critical care work in a cardiothoracic unit in Edinburgh. He gave evidence of his experience of managing oesophageal perforations and gave expert evidence about the timing of Mr Hamilton's deterioration and interpreted some of the relevant test results.

(6) Mr Simon Galloway, a consultant general surgeon with significant expertise in upper GI surgery. He works in the University Hospital of South Manchester. He gave expert evidence in support of the pursuer's allegations of negligence and causation.

(7) Mr Andrew De Beaux, a consultant general surgeon at Edinburgh Royal Infirmary with significant upper GI experience and expertise. He has a particular specialism in abdominal wall and bariatric surgery and was previously an oesophageal cancer surgeon. He gave expert evidence in the defender's case on negligence and on causation.

(8) Mr Ronald Coggins, a consultant general surgeon and clinical director of surgery and anaesthetics at Raigmore Hospital, Inverness. Mr Coggins is primarily an upper GI surgeon but with several sub-specialties including bariatric surgery and

management of the oesophagus. He gave expert evidence on negligence and to a limited extent on causation.

Some undisputed facts

[4] A number of material facts were led in evidence but undisputed and these may assist as the backdrop to the more contentious issues. As already indicated, Mr Hamilton attended hospital on the morning of 26 January 2013 having accidentally swallowed his own dental plate whilst playing with his grandson. After being seen in the accident and emergency department he was admitted to ward 18 of the hospital for assessment and possible removal of the plate. He signed a consent form for "OGD +/- proceed" by a registrar, Mr Amin and underwent an endoscopy under sedation. An upper GI endoscopy is known as an "OGD" and a colonoscopy, using an endoscope inserted through the rectum, would largely be undertaken by surgeons with a sub-speciality in colorectal work.

[5] At that point the pursuer was under the care of Miss MacDonald, a staff grade surgeon who conducted the endoscopy. During the surgical procedure on 26 January Miss MacDonald attempted to remove the plate where it had lodged at the oesophago-gastric ("OG") junction. Despite using different pieces of equipment she was unable to do so and the pursuer was becoming agitated. She decided to deliver the plate safely into the stomach to allow her to reassess the situation.

[6] At the material time in 2013 Miss MacDonald tended to work closely with Mr Ben Younes, both surgeons performing mostly upper gastrointestinal work. She sought advice on management of the pursuer's case by way of a phone call to Mr Ben Younes during the evening of 26 January 2013. It was on the following morning, 27 January, that Mr Downey became involved in the pursuer's care. As the consultant general surgeon on

call and in charge of certain wards that weekend, Mr Downey conducted a ward round, with Miss MacDonald and Mr Amin assisting, and reviewed Mr Hamilton's case. The decision was taken to attempt a second endoscopy to remove the dental plate this time under general anaesthetic. The pursuer consented to "OGD +/- laparotomy" and signed the appropriate form.

[7] The second endoscopy took place on 27 January 2013 initially by Miss MacDonald alone. Having put the scope down, she considered that she would be unable to remove the plate safely and called for Mr Downey as the consultant in charge to attend theatre. Mr Downey made an attempt to remove the plate from the stomach using a Roth net and was initially unable to do so. Miss MacDonald left theatre to telephone Mr Ben Younes who was at home and not on call. While she was out of the room speaking to Mr Ben Younes Mr Downey made a further attempt to remove the dental place endoscopically and using the Roth net. He managed to encircle the plate with the net, although not fully, and extracted the plate through the oesophagus with that device. When Miss MacDonald returned to theatre she and Mr Downey re-passed the endoscope down through the oesophagus and noticed a mucosal tear just above the OG junction. A stent was inserted to cover the damaged area. Dr Sim the anaesthetist was present throughout the surgery although he has now left the hospital and could not be traced.

[8] The pursuer's medical condition subsequently deteriorated dramatically. This included him requiring to be admitted to the hospital critical care unit. A number of further tests were undertaken, including repeat CT scanning, which showed, amongst other things, that the pursuer had developed mediastinal emphysema, a right pneumothorax and a left pleural effusion, which required the insertion of chest drains to drain the effusion. He developed respiratory failure and reduced renal function. He had associated increasing

sepsis and pyrexia. He required multiple visits to theatre which included the insertion of a feeding jeujonostomy, the washing out of his chest cavity, the insertion of a tracheostomy and a thoracotomy to drain his left chest infection. Gradually, the pursuer's condition began to improve, resulting in him being well enough to be discharged home on 13 March 2013.

[9] Mr Hamilton was monitored appropriately while in hospital. Blood test results, including their date and time were tabulated by Dr Swann in his report as set out below. This table reflects the readings for white blood count (WBC), C-reactive protein (CRP) and amylase (the enzyme used to digest starchy foods) at the relevant times.

Date & Time	Notes	WBC (normal 4-11)	CRP (normal 0-6)	Amylase (normal 0-100)
26/01/13 12:00	**On admission**	6.6	<6	58
26/01/13 20:00	**1st endoscopy**			
27/01/13 08:12		8	15	57
27/01/13 10:00	**2nd endoscopy**			
27/01/13 15:00		20.4	24	
28/01/13 04:00		12.7	186	151
28/01/13 10:25	**ICU admission**	15.7	337	184
28/01/13 21:35		6	307	112

(1) Witnesses to fact

[10] The pursuer gave brief evidence but had no real recollection of what had occurred after being admitted to hospital. He did not speak to contentious matters and was not cross-examined.

Assessment of the evidence on contentious matters

Mr Martin Downey

[11] Mr Downey is 50 years old and has been a consultant general surgeon with a sub-speciality interest in colorectal surgery at University Hospital, Wishaw ("the hospital") since April 2005. Routinely his work will involve both planned and unscheduled care. The planned care operations in his routine lists include operations on the bowel, small bowel and rectum. In 2013 most of his operations took the form of open surgery. One of the operations he carried out as frequently as weekly or twice weekly in 2013 was a laparotomy, namely an open operation on the abdomen. He performed laparotomies both on his weekly list but also sometimes as part of unscheduled care, when, for example, patients presented with acute obstructions or perforations of the abdomen. Mr Downey said that he had considerable experience of endoscopy. An endoscope is effectively a miniature camera on a type of wire which is used to view inside the body. His experience is primarily in viewing the bowel or the stomach by inserting the endoscope either in the colon or through the oesophagus. As part of his unplanned care duties patients would come to the hospital with an upper GI bleed and would have to be investigated for anaemia, which can cause an ulcer. In 2013 at the material time there were eight consultant general surgeons at the hospital in Wishaw. Four had a sub-speciality in upper GI work and four in colorectal work including Mr Downey himself. Miss MacDonald was a speciality doctor attached to the upper GI team but was not, in Mr Downey's view, really a specialist. Mr Downey was taken through some of the entries relating to the early stages of Mr Hamilton's treatment at the hospital. He had no criticism to make of the decisions taken on 26 January by Mr Amin and Miss MacDonald. He agreed that based on Mr Hamilton's symptoms on presentation the assessment had been made that the foreign body swallowed by him was stuck somewhere in the gut or gullet.

Mr Downey had considerable experience of patients who had swallowed foreign bodies. He said that the most common were batteries, particularly small watch batteries, which can leak and so have to be removed. However some objects can be allowed to pass such as small coins where there would be no risk of perforation. Mr Downey agreed that the purpose of the initial endoscopy carried out by Miss MacDonald was to assess the situation and see if the dental plate was still in the upper GI tract or whether it had passed down into the pylorus at the exit of the stomach.

[12] When Mr Downey first became involved with the pursuer's care on the morning of 27 January Mr Hamilton was already on the list for theatre. He could not recall whether Miss MacDonald had telephoned him the night before but thought that she might have informed him in advance about what she had done in terms of pushing the plate from the bottom end of the gullet to the stomach. He was aware that she had been unable to achieve safe recovery of the dental plate through the oesophagus. Mr Downey spoke to his operation note of 27 January 2013 and explained the use of a Roth net. It has a long wire, almost like a metal lasso, with a snare activated by a tripod grasper which operates the opening and closing of the net which could then be used to capture a foreign body. A sample Roth net was lodged in process (number 7/21), and Mr Downey demonstrated its use. He recollected that Miss MacDonald had started the second endoscopic procedure on 27 January before he arrived in theatre and already had the scope down the oesophagus when he arrived. He confirmed that there was no information at the time that had led him to think that there was already a perforation in Mr Hamilton's oesophagus.

[13] By January 2013 Mr Downey had extensive experience of removing polyps from the bowel. He had far less experience of removing items of any sort through the oesophagus. He thought he had probably removed less than five objects endoscopically through the

oesophagus by 2013 and had never removed a dental plate that way. He accepted that a polyp was very different from a dental plate; polyps could be larger but were softer. On 27 January 2013 Mr Downey had not seen the consent form for the second procedure but he would expect that it would have allowed him to proceed to laparotomy if that was required. When he took over from Miss MacDonald in theatre he had one attempt to remove the dental plate from the stomach unsuccessfully. Miss MacDonald then went off to speak to Mr Ben Younes and Mr Downey made a further assessment of the plate. He had a look at where it was sitting, its size and shape. He said he could see a long axis and a short axis and made an assessment that it was feasible to remove it through the oesophagus down which it had already travelled. He maintained that he would not have persisted with the procedure if he had seen any perforation at that stage. He would have called for Mr Ben Younes to come to the hospital if he had seen such a perforation. Mr Downey had thought it was a good idea for Miss MacDonald to get advice from Mr Ben Younes about whether it was feasible to remove the plate endoscopically.

[14] After he demonstrated how to use the Roth net to enclose the dental plate, Mr Downey accepted that he had not been able to enclose the plate fully in theatre. On the second attempt he had managed to rotate the plate so that it was held in the Roth net, although not fully encircled, and had brought it up to the OG junction. He had waited for a wave of peristalsis (an involuntary movement of the relevant muscles) and then brought the plate up through the oesophagus. He accepted that it was a fair comment that it might have been better for him to wait for Mr Ben Younes' advice. However he was the consultant on call that day and he had removed other difficult things like spectacles endoscopically although not from the oesophagus. He felt that the principles were the same and his skills were transferable. He recollected being aware that Mr Ben Younes had advised the night

before that if the plate could be removed safely through the oesophagus to do so but if not to perform a laparotomy. While he did not wait to hear any further advice, he did not consider it would have made any difference. His handwritten operation note recorded "… teeth now lying at pylorus - Roth net doesn't completely encircle but with gentle coaxing came up gullet with scope". Mr Downey recalled that Miss MacDonald had come back into theatre just as the pipe (endoscope) was coming out. It was after the scope was put back down to inspect the lining of the gullet that he and Miss MacDonald had seen a mucosal tear in the area at 38-39cm. He explained that the oesophagus in a person of average size is about 40cm long, a bit shorter if the person has a hiatus hernia. The tear was seen just above the OG junction which is at the 40cm level. When taken to a typed note of the procedure Mr Downey thought that this had been recorded by him on the system while still in theatre. It stated:

> "OGD+ retrieval of denture. Difficult procedure. Likely tear bottom end of oesophagus. Stent placed. Post-op IV antibiotics chest x-ray".

The witness accepted that the typed note and his handwritten note were not consistent and that the procedure had clearly not been problem free. The stent that Miss MacDonald put in place was like a rolled up wire with a cover. It opens up and performs almost like a dam to shore up the damaged area. Mr Downey himself had no experience of stents but Miss MacDonald did and she was an experienced surgeon.

[15] Mr Downey rejected the contention that as an experienced surgeon he should have concluded that he could not remove the dental plate safely through the oesophagus. While he agreed that he had the skills to perform a laparotomy as an alternative, he said "we are all general surgeons, this was unplanned care and what I did was within that remit." He did not think that any of his colleagues had particular experience of removing dental plates.

Following Mr Hamilton's deterioration there was a lot of reflection in the department because of the poor outcome. Mr Downey maintained however that the dental plate had come back up through the oesophagus quite easily with gentle traction as reflected in at least the handwritten operation note. He disagreed with the proposition that he had failed to recognise that he lacked expertise for the particular procedure of removing the dental plate through the oesophagus. When asked whether he accepted that had he converted to a laparotomy the injury would have been avoided, at first he indicated that it was hard to say. What he and Miss MacDonald had seen was a mucosal break not a full thickness tear. They could not see the pleural cavity and they had hoped and expected that the stent was prophylactic. When pressed however Mr Downey accepted that on the assumption that he had caused the perforation then he had to accept that laparotomy would have avoided the injury under discussion. However there was the risk that if the oesophagus had already been torn on the way down a laparotomy could ultimately lead to greater problems. He hoped he would have seen a tear had there been one before he removed the plate but could not be certain. He was keen to distinguish a mucosal tear or defect from a full thickness perforation.

[16] Mr Downey accepted that he had not recorded considering the pros and cons of proceeding to a laparotomy in his operation note. He had undergone the thought process but it was not committed to writing. He had no suspicion that there was already a perforation when he decided to remove the plate the way he did. However the trauma associated with a laparotomy and the various risks associated with that operation had been factored in. Passages from the closed record were put to Mr Downey to illustrate that there is no averment made that he considered the risks of perforating the oesophagus when deciding whether to remove the plate endoscopically. He responded that balancing risk was

implicit in everything he did and that the procedure had taken a hour and a half. He said he had "absolutely" considered the risk of perforation of the oesophagus.

[17] Passages from a number of published articles were put to the witness. In particular an extract from "Upper Digestive Surgery" (number 6/45 of process) was read out together with an article (number 6/46 of process) detailing an example of an impacted denture in the oesophagus, its detection and therapeutic management. Mr Downey considered this example to be incomparable with Mr Hamilton's case as it involved a larger plate which had torn through the wall of the oesophagus and was embedded there. Every dental plate is different and Mr Hamilton's was a plastic plate without any metal hooks. It did have some pointed edges and that is why it required a degree of expertise to remove it. In response to other publications (numbers 6/47 and 6/42 of process), the second of which dealt with a thoracoscopic removal of a denture from the oesophagus, the witness disagreed that impacted foreign bodies in the oesophagus were common. It was common for foreign bodies to travel down the oesophagus but unusual for them to become impacted. In his experience many foreign bodies are ingested as a result of self-harm. He has seen many patients from a local prison who swallow razor blades and batteries. He commented that all surgery is dangerous and to that extent endoscopic removal of foreign bodies was also dangerous but sometimes necessary. He agreed that if the judgement was that a foreign body could not be removed safely by endoscopy laparotomy would have to take place. Guidelines from the American Society for Gastrointestinal Endoscopy (number 6/52 of process) concerning the management of ingested foreign bodies and food impactions were shown to the witness. He accepted this as credible peer reviewed guidance. He was unwilling to accept the terms of other articles put to him (eg 6/54 and 6/55) as they were not peer reviewed. He would defer to journals such as *The Lancet* or the *British Medical Journal*

where he could be confident that the standard of peer review was high. He agreed that the articles put to him indicated a broad range of very serious consequences of oesophageal perforation including up to 20% mortality. So far as laparotomy was concerned there was always a risk of mortality, albeit lower. He disagreed that the risks of laparotomy were far less than the potential and actual risks associated with oesophageal perforation. The likelihood of adverse consequences was lower with endoscopy. He reiterated that he had found the reorientation of the pursuer's plate to be possible and he had made a judgement that it could be performed safely.

[18] Mr Downey agreed that overall the decision making process had involved the patient going into surgery twice and several attempts at removal. However he said that the most important thing was how the plate felt against the man's gullet. He remembered "to this day" that he had achieved favourable traction and it came out easily. After the second endoscopy was over and the stent in place Mr Downey had been to see the pursuer on the ward but he was in distress and was moved to the High Dependency Unit (HDU). The following day, Monday 28 January, Mr Ben Younes kindly offered to take over the pursuer's care.

[19] Correspondence was put to Mr Downey, entered into between the hospital on his behalf and the pursuer. One letter dated 3 June 2013 from Mr Downey stated:

> "I weighed up the options of performing a laparotomy there and then but I felt it was worth one further attempt to remove the dentures through the oesophagus … was able to grasp … plate was removed after some initial hold-up at the lower end of the oesophagus."

When pressed about the expression "initial hold-up" Mr Downey stated that he and his colleagues are encouraged to use plain English in communicating with patients and it referred to him waiting for the wave of peristalsis to pass. Mr Downey also disagreed that

there was a difference between Miss MacDonald's description of where the plate had lodged the previous day, namely at the OG junction and the place where they saw a tear, namely at 38-39cm. There was only one area of the pursuer's gullet that was injured and that was just above the OG junction. The particular measurement was important for placing the stent, which is about 10cm in size with an expanding mechanism. The aim was to pinpoint the middle of the tear at 38-39cm.

[20] A further letter to the pursuer of 20 August 2014 was put to Mr Downey in which he had stated that the edges of the dental plate were blunt and in which he had described it as a partial plate, which could be contained within the size of the Roth net. It was suggested that such a description was inconsistent with his evidence and the demonstration he had given in court showing that the edges of the plate had not been enclosed in the Roth net. The witness agreed that the letter was misleading in that respect and that his position was as stated in evidence. When asked for his view on Mr De Beaux's opinion that he was wrong to think that he had caused the oesophageal perforation, Mr Downey commented that he felt responsible at the time. It was based on an assumption in retrospect because once he and Miss MacDonald suspected that there was a perforation and deployed the stent he assumed that he had caused the tear.

[21] Under cross-examination the witness was asked again about his experience. He said that he regarded colonoscopy as more technically challenging than upper GI endoscopy. That said he performed a large number of planned, diagnostic upper GI procedures. In 2012-2013 he was undertaking about 6-12 of those per month in planned care with emergency work on top. The techniques for colonoscopy and upper GI endoscopy were similar although the colon is thinner and so less forgiving. It was not uncommon for him to have to carry out tasks in the upper GI tract as well as the colon and rectum just as

Mr Ben Younes might find himself doing general work in the bowel when he was on call. In Mr Downey's current post of clinical director for surgery and orthopaedics he is responsible for the smooth running of the unit including patient safety and so he has slightly reduced his list work.

[22] On his assessment of the plate which he first saw in the stomach on a screen, Mr Downey described it as having a long axis with the two teeth positioned on the short axis. It was the teeth that were stuck on the side. The edges appeared rounded and not sharp. He had no reason to think they would cut. He had a good view and the scope was more manoeuvrable in the stomach than it would have been for Miss MacDonald in the lower GI tract the day before. The Roth net had been the best choice of tool to facilitate removal of the plate. The net was for control and not protection; it was simply a grasping device. On the condition of the oesophagus, while it looked a bit bruised at the start of the procedure, it was not lacking in pliability and the scope passed easily. When the oesophagus is tight it would be almost impossible to retrieve anything back up through it and a laparotomy would be required. In Mr Hamilton's case, the oesophagus was not a hostile environment. When faced with a problem in theatre a surgeon has to rely on his or her previous experience. The dental plate was unique and so he used his experience to judge what he could perform safely at the time. It was not a question of weighing up the percentage risk of each complication, rather it was an assessment "in the blink of an eye" carried out by all surgeons on a daily basis. He had spent time debating with Miss MacDonald about the two main courses of action, namely removing endoscopically or by laparotomy. He had the risk of puncturing the oesophagus very much in mind. He had experience of seeing people with a perforated oesophagus. He referred in particular to Boerhaave syndrome which is a spontaneous perforation of the oesophagus resulting from

pressure caused by, for example vomiting after excess alcohol or food. The consequences of such perforation were well known and everything was considered when he was in theatre.

[23] At the time he had determined that the probability of the oesophagus perforating was low. He had assessed the size, shape and edges of the plate. He was not happy with the way he had grasped the plate the first time round but on the second attempt he had managed to grasp it better. The fact that it had come down the oesophagus already and that Miss MacDonald had managed to dislodge it fairly easily the night before were all factors, together with the pliable condition of the oesophagus. He disputed that he had in any way been cavalier in his approach. He was taken through the risks of laparotomy including mortality and morbidity. The opening of the abdominal wall, which then has to be repaired and closed, carries a risk of infection and long-term wound problems including a risk of leak from the site. There can also be long-term sequelae like hernia and adhesions. Admittedly, most complications arise in patients who already have problems, such as with the heart or with clotting. The size and weight of the patient always make a difference. Mr Hamilton was tall and reasonably heavy at 96 kilos. The increased thickness of the abdominal wall would have made the recovery from laparotomy slower with more wound pain and risk of complications. Mr Downey accepted that the risk of mortality from a laparotomy was low at about 3%.

[24] The witness agreed that having reflected on the circumstances and discussed matters with colleagues there had been some doubt about when the perforation had occurred, albeit that he continued to feel responsible. On reflection, he and his colleagues had acknowledged that if the tear had been there already and they had performed a laparotomy, which would then involve a double insult to the body, Mr Hamilton may not have survived. No surgeon would want to perforate the gullet but if it did occur they knew at the time they

could put a stent in and manage the situation. Miss MacDonald was very much part of the risk assessment and decision making process including the installation of the stent. The fact that he had relied on her stenting ability at the time should not imply that he was not concerned about the risk of perforation as something he wanted to avoid. Mr Downey had been very surprised when the stent did not work because although there was always a chance of an imperfect seal the patient was very well fasted on the morning of 27 January and there was no reason for him to become so ill. It had been a very disappointing outcome.

[25] At the material time Miss MacDonald appeared to have reservations about both of the possible options available to them. A fair bit of thought was given to the issue during what had been a not insignificant period in theatre from about 10.05am to 11.27am although the stent installation took place at about 11.15. During a period of just over an hour, Miss MacDonald put the scope down, then the discussion about laparotomy or not took place and then Miss MacDonald went off to speak to Mr Ben Younes. The process of grasping and removing the plate when Miss MacDonald was away took about 5 to 10 minutes including waiting for the wave of peristalsis to pass. The witness reiterated that he did not wait for Mr Ben Younes' advice as he did not expect him to come up with something different than he had the day before. He used the time while Miss MacDonald was away to re-orientate the plate and attempt to bring it up safely himself. As the consultant surgeon in theatre his judgement was that the situation could be managed. He would have stopped if he had met a firm obstruction on the way up. There was never any question of being able to remove the plate through the oesophagus without it touching the sides. The oesophagus is only 2-3cm in width but is a soft pliant structure and will take a degree of stretch. The patient was under general anaesthetic and so he had some time to turn the plate around 90 degrees so that it came up more easily.

[26] Mr Downey was clear that while he was extremely disappointed with the outcome Mr Hamilton endured and which had been upsetting for the whole team he remained happy with the assessment that he had carried out and the process of removal. While his assumption had been that he had caused the perforation he was aware that there would be expert evidence on that matter and he understood that it might be said that because the plate had stuck at the OG junction for many hours on the first day, pressure necrosis (where there is pressure on the lining of the oesophageal wall which then dies) could have taken place. He had measured Mr Hamilton's oesophagus and it was 40cm in length. The mucosal tear found after the second procedure was in the same area of the OG junction that he had understood the plate had stuck at the day before. The witness did not think it would be normal to note the risk analysis he had carried out by discussion with Miss MacDonald. He remained adamant that he had considered the risks of both laparotomy and of oesophageal perforation when reaching the decision he did in theatre that day.

[27] In re-examination, when asked why he had persisted in making a further attempt to remove the plate when Miss MacDonald was out of the room to call Mr Ben Younes Mr Downey said that she had been within shouting distance of him had he needed her. He agreed that he had taken the final decision to proceed when she was not there as he was the one with responsibility. Had he seen any sign of pressure necrosis he would have recorded it. There was some discussion about whether or not the OG junction was an area of low pressure, with Mr Downey indicating that he regarded the pressure in that area as low compared with, for example, blood pressure. He disagreed that the plate would have been penetrating the wall of the oesophagus and acting as a barb because he did not regard the plate he removed as sharp. Although it had been stuck (not impacted) in the oesophagus for about 11 hours there was no sense in which it was difficult to dislodge. The witness agreed

that if he had felt that he had insufficient experience for the task he would ask someone more experienced. Mr Ben Younes was more experienced in procedures involving endoscopic removal of foreign bodies through the oesophagus.

Miss Linda MacDonald

[28] Miss MacDonald is a 42 year old speciality doctor in general surgery working at University Hospital Wishaw. She explained that as a career grade doctor she was building up experience herself rather than through the FRCS route. She has worked in her current post for 10 years and her speciality is general surgery with a particular emphasis on upper GI work. In 2013 she was attached to the upper GI unit at the hospital. She recalled Mr Hamilton's situation very well because he had remained in hospital for a relatively long-time. After the events of 26 and 27 January 2013 the pursuer had been under the care of Mr Ben Younes with whom Miss MacDonald worked closely.

[29] From the relevant medical records relative to the pursuer's admission to hospital Miss MacDonald confirmed the detail of what she had done on 26 January after the registrar Mr Amin had sent him up to the ward. She recalled looking at the X-ray results which had indicated that the foreign body known to have been swallowed was not visible. She was aware that the plate could be anywhere from the gullet to the stomach and beyond. The initial endoscopy was to see whether it was still in the gullet. She recalled discussing the matter with Mr Downey as the consultant in charge that weekend. It was understood that she would carry out the OGD as she was "next in command" to him. By 2013 Miss MacDonald had carried out close to 1,000 straight forward diagnostic endoscopies. However there was no access to the regular endoscopy unit at the weekend and so everything was done in theatre. The first endoscopy, on 26 January, was purely diagnostic

and not intended to administer any therapy. Tests had been done to see if the patient was clinically unwell and no concerns had been noted. Miss MacDonald was looking to see whether or not the plate had passed down through the oesophagus and whether it had already caused a perforation. She was well aware that any foreign object in the oesophagus carried a risk of perforation, the signs of which would include pain, low oxygen levels, a high temperature and an elevated heart rate. There was no clinical suspicion for perforation at that point. During the first endoscopy Miss MacDonald located the plate just above the lower oesophageal junction (OG junction) where she saw something white that she took to be teeth "looking up at me". She had to weigh up the risk of bringing the plate back up through the gullet and the associated risk of perforation and decided to make an attempt to remove the plate using stent removing forceps. She used those to catch the plate but when she pulled she could feel tissue coming with it. She also tried to use a Roth net and a snare (a circular piece of flexible metal about 20mm in diameter) but was unable to grasp the plate and had no space to work with. She was worried about tearing the oesophagus because of the severe consequences. She knew that if one was noticed early it was normally possible to limit contamination but the risk if the oesophagus perforated causing contamination into the chest cavity was that the consequences could be severe and even fatal.

[30] Miss MacDonald had some previous experience, early in her career, of seeing teeth embedded in the oesophagus. The patient concerned had been particularly unwell and she had been pleased to note that Mr Hamilton's plate did not appear to have embedded. Her concern was the risk of pressure necrosis and although there was no sign of that, she realised that she would not be able to retrieve the plate safely and decided to push it down into the stomach to give time to reassess matters. Her recollection of the plate itself was that it was a type of kidney bean shape with teeth coming up at right angles. When shown the

plate in evidence she noted that it was sharper than she remembered but she had recollected seeing its angles when pushing it down into the stomach. She spent some time looking at the bottom end of the gullet after she pushed the plate down. There was no tear visible although the oesophagus was "bruised and a bit unhappy". Her thought process at the time was that they should attempt under general anaesthetic to try to remove the plate from the stomach. However she knew that there was the potential for the plate to get stuck again in the oesophagus and so she was beginning to think that a laparotomy would be required to fish it out. She wanted to give herself and colleagues as many options as possible. She called Mr Ben Younes because she had worked with him most regularly and was aware that he had been in many tricky situations and would know what to do. When she called him she asked whether there was any other equipment in the hospital such as an overtube to protect the gullet that she could use. Mr Ben Younes said there were no overtubes in the hospital but he was available for advice if she and other colleagues needed it. She recalled him saying "keep an open mind" in relation to having to do surgery and told her to reassess once the team was together.

[31] The following morning on the ward round Miss MacDonald updated Mr Downey. She said she thought it was tricky and that she was going to need help. While Miss MacDonald had taken foreign bodies out through the oesophagus before including dentures once, she was really concerned. She had once removed a ring with a flower on it from the upper GI tract but it was smaller than the plate in question. She looked at the pursuer's observation chart and was content that the risk of general anaesthetic was far outweighed by the risks of leaving the plate in the stomach. Mr Downey suggested a further endoscopy and she agreed to that but replied "I will put the scope down but if there are any problems I will be calling you".

[32] In theatre when she put the scope down Miss MacDonald thought that the oesophagus looked bruised but intact. She looked at the plate again and thought she would be unable to get it out safely through the oesophagus and so she did not attempt that. She specifically recalled thinking "I'm not doing this on my own", so she asked someone to phone Mr Downey. He arrived fairly quickly and she said to him "look at that - look at its shape - I don't think I can bring it up through the gullet. I have thought of other options and have set-up for laparotomy". Miss MacDonald had in mind that Mr Downey had much more experience of laparotomy than her. Mr Downey's response was to say that he would have a look and see if he could get it on its long axis and manipulate it up smoothly. She recalled Mr Downey then trying to manipulate the plate using the Roth net which he knew he could open up as there was space to do so in the stomach. He put the net down and tried the manoeuvre to see if it would work. On the first attempt there was enough circled by the net but there was a risk of catching something on the way up. Miss MacDonald said that she was trying to think two or three steps ahead and was assessing what she would do if there was a perforation on the way up. She recalled that Mr Downey managed to get the plate almost to the stage of the OG junction but it did not want to come because it was longer and fatter than the gullet itself. She was already thinking that there might be damage and so she suggested that she call Mr Ben Younes again to see if he had any ideas. She recalled saying to Mr Downey "I think we are going to end up with a tear in the oesophagus and we may have to deal with this". His response was "I think I can deal with this but fine - phone him".

[33] Miss MacDonald then spoke to Mr Ben Younes on the phone and told him that Mr Downey was managing to manipulate the teeth to get them up the oesophagus but that she was worried what to do if there was a tear. Mr Ben Younes confirmed that if that happened she could put a stent in although they then started to have a discussion about a

possible laparotomy if they could not retrieve the plate safely. During that conversation one of the theatre staff ran through, saying "He's got them out". Miss MacDonald then returned to theatre and had a look with the endoscope. She thought she saw a superficial tear, not full thickness and asked for a stent. She had looked for a tear earlier and seen none. She was confident there was no tear before removal of the plate and it was obvious afterwards.

[34] Miss MacDonald confirmed that the operation note correctly recorded the area of the tear and the place where the stent was deployed. It was not long after Mr Hamilton was taken back to the ward that he was in a lot of pain. While a stent can be uncomfortable it was more than that. To Miss MacDonald he looked like someone with an oesophageal perforation. He showed the classic signs of pain. He was sitting on the bed trying to lean forward. She gave him antibiotics, IV fluids, painkillers and organised a CT scan which subsequently confirmed the tear. She then remained involved in Mr Hamilton's treatment throughout his stay. She agreed that what she and Mr Downey had seen did not appear to be a full thickness tear and that the stent was to protect the oesophagus in the hope that there would not then be a complete perforation. Had the tear been present before the second endoscope the decision making process might have been different.

[35] Under very brief cross-examination Miss MacDonald agreed that when looking at the oesophagus through the endoscope you could not tell what was going on underneath the tissue. There was a spectrum from a completely intact oesophagus on the one hand through to an actual perforation or hole on the other. The main reason she had pushed the plate down into the stomach the previous evening was because of a concern about whether pressure necrosis could develop.

Mr Hakim Ben Younes

[36] Mr Ben Younes is a 60 year old consultant surgeon and chief of medical services at University Hospital, Wishaw. In a modest way he described himself as a general surgeon with an upper GI interest. He is an extremely experienced upper GI surgeon and was already working almost exclusively in that area in 2013. His recollection of the pursuer's case stemmed primarily from his management of the patient from after the second endoscopy. Perforations of the oesophagus are not frequent, although given his area of specialisation he can manage up to two to three per year. Some of these will be in situations where there is already a malignant disease or are alcohol abuse induced. They include occasional perforations caused by foreign bodies. Mr Ben Younes agreed with a statement of undisputed fact put to him in relation to Mr Hamilton's deterioration and treatment post 27 January 2013.

[37] Understandably, Mr Ben Younes struggled to remember in detail the specifics of the contact he had about this patient prior to taking on responsibility for him. He had some recollection of a telephone call with Miss MacDonald on either 26 or 27 January when she described Mr Hamilton's situation to him. She told him that someone had swallowed a denture. Mr Ben Younes advised her that if it could be safely removed through the oesophagus that would be in order but if not other alternatives including laparoscopy or laparotomy had to be considered. If the plate could be removed safely through the oesophagus endoscopically that would avoid an operation on the abdomen, but sometimes it was safer to remove surgically. It was all a question of judging different factors on the day including the size and shape of the object and the condition of the patient.

[38] As the lead endoscopist at the hospital since 1998, Mr Ben Younes has vast experience of both diagnostic and therapeutic endoscopy. He deals with a lot of foreign

bodies ingested by patients from the local prison and the state hospital at Carstairs. He has removed batteries, coins, razor blades, a tooth brush and even a teaspoon. He explained that there is a school of thought that if an item went down the oesophagus then it should be able to be brought back up it. However much depended on the shape of the object, the way the surgeon grasps it and how it can be extracted that determines whether removal through the oesophagus by endoscopy is practicable. The difficulties were with objects that were difficult to grasp or had sharp edges. He had experience of using a tripod grasper, forceps and baskets including a Roth net which was a type of basket. It was unnecessary to have the item fully inside the basket or net of the Roth net but so much depended on the individual item. Over many years one gained experience of the feel of things and the force that the oesophagus could withstand, the surgeon would develop a feel for resistance. Standing his own experience, Mr Ben Younes would be comfortable to make a judgement about whether something could be removed through the oesophagus in any particular case.

[39] In 2013 the witness had a close working relationship with Miss MacDonald who he trusted as a very reliable surgeon and would trust her to perform an endoscopic procedure on him personally. From what he recalled of the conversation it took place at the weekend when he was at home. Miss MacDonald had said "we are struggling to get hold of it" under reference to the plate. He told her that they should try to get hold of it but if they could not do so safely they would have to consider surgery. He could not recall how the conversation came to an end although he did recollect that she was in the recovery room and went back to the operating theatre after the call. He thought that the telephone call was on the day when the foreign body was removed, 27 January 2013. He had some recollection that the phone call had ended because Miss MacDonald received word that the item had in fact been removed.

(2) Expert witnesses

Mr Geoffrey Pye

[40] The first expert witness to be called, Mr Pye, is a 66 year old consultant general and colorectal surgeon at the Western General Hospital in Weston-Super-Mare. He has held that post since 1994. His CV (number 6/39 of process) confirms a longstanding interest in surgical aspects of abdominal disease. He has held responsibilities as lead surgeon for colorectal cancer and other cancer services during his current tenure. He first qualified as a surgeon in 1985 (FRCS Edinburgh). Mr Pye has been involved in medico-legal work for 15 years or so. He was still in full-time employment in 2013 although now works part-time. He regarded himself as a direct comparator with Mr Downey as the nature of their work in 2013 was very similar. He had prepared a report (number 36/37 of process) expressing an opinion in relation to Mr Downey's actings on 27 January 2013. He adhered to his conclusions and opinion in evidence.

[41] The witness was asked whether he had been in a situation when in theatre advice was sought from another colleague. Mr Pye confirmed that this was a familiar situation. For example, if he was performing a laparotomy and saw something outwith his expertise like a significant ovarian swelling he would call a gynaecological colleague. He said that he would always wait until that colleague arrived before doing anything else and might even un-scrub so that the advice could be received before any final decision was taken. In summary, Mr Pye's opinion on Mr Downey's actings was that while the decisions to undertake a second OGD once the plate was in the stomach and then to attempt removal once with the Roth net were both reasonable, it was the decision to persevere with endoscopic removal in the face of the plate's awkward shape, the inability to fully net it, the

absence of an overtube and the view of Miss MacDonald that it was unsafe to continue trying that represented such a departure by Mr Downey from standard care that no ordinarily competent surgeon using reasonable skill and care would have made. Mr Pye considered that Mr Downey had underestimated both the likelihood of damaging the oesophagus and the potential consequences of such damage and had failed to balance these appropriately against the risks of a laparotomy. It was known that the lower end of the oesophagus was oedomous and so Mr Downey ought to have been concerned that the plate could not be pulled out through the oesophagus without damage.

[42] In addition to the considerations of risk that someone in Mr Downey's situation should have had in mind, Mr Pye was also of the view that a colorectal surgeon would not be naturally as comfortable in the oesophagus as he would be in the abdomen. That added to the risks involved. The personal experience of the surgeon would also be important and it would be less common for a general surgeon specialising in colorectal work to have much experience in terms of removing foreign bodies from the oesophagus. He accepted that the situation facing Mr Downey had not been an easy one. Had the plate been smaller and more aerodynamic the balance of risk might have been different but the shape of the plate illustrated that it had jagged edges. Mr Pye had measured the plate and found it to be about 28mm across by 32mm in length at the longest part. The average oesophagus has a diameter of about 18 to 20mm. The oesophagus would have to stretch a bit for something of that size to go through, and it was designed for matter to travel down and not up, ie anterograde and not retrograde as it naturally relaxes to let things pass down.

[43] On Miss MacDonald's staff grade status, Mr Pye considered that where someone on that track is relatively senior and with more experience of a sub-specialty than a consultant, it would be appropriate to take her advice into account in making any decisions. Having sat

in on her evidence Mr Pye would have put great store in what she was saying had he been in Mr Downey's situation. She had a very sensible analysis of the situation. The critical point was that once Mr Downey could see that the plate was not going to pass up the oesophagus without damage which could be catastrophic he should have moved straight to laparotomy, an operation in which he had much more experience. A colorectal surgeon would understand that consequences of perforation of the oesophagus were effectively a catastrophe that should be avoided. While laparotomy is not a risk free procedure and much depends on the condition of the patient, his medical history, how well he was on the day of the operation and whether clean and straight forward removal could be achieved, laparotomy carried much lower risks than a perforated oesophagus. Mr Pye gave some evidence about scoring systems that surgeons are now encouraged to use and this was heard subject to competency and relevancy. While there was no mandatory formula a figure of 3% general mortality for laparotomy had been mentioned by Mr Downey and Mr Pye would put it even lower than that. The risk to the patient if the oesophagus was perforated would be much greater and would carry a high mortality risk. There were of course risks other than mortality with both. Laparotomy can cause intra-abdominal adhesions which can lead to small bowel obstruction especially after "mucky" surgery. However in Mr Hamilton's case the procedure would have been "clean contaminated" and the risk of adhesions would be quite low.

[44] On the issue of whether it was a reasonable part of Mr Downey's approach that he had an upper GI surgeon on hand if a stent was required, Mr Pye's view was that having a stent and someone to insert it would be useful if the risk of needing it was low. However to use it as a reason to proceed with endoscopic removal that might damage the oesophagus was not a reasonable course of action. It was clear from the known facts that the dental plate

had become stuck on the way down the oesophagus and when Miss MacDonald had tried to retrieve it the previous evening there had been snagging on the oesophageal mucosa. On that basis alone it was best to desist from a further attempt. No reasonable surgeon would have continued the way that Mr Downey did after the first attempt on the morning of 27 January. The witness was less critical of the decision to proceed without Miss MacDonald in the room as she would have been available in a room next to theatre if the need arose or a decision was taken to proceed to laparotomy. However it would have been important to hear what Mr Ben Younes had to say in relation to the snagging that Mr Downey had found when he first attempted to remove the plate up through the oesophagus. That would have assisted Mr Ben Younes in helping Mr Downey decide whether to desist from a further attempt.

[45] The various medical articles and research papers lodged were put to Mr Pye. On the incidence of hernia three years after mid-line laparotomy (number 7/3 of process) Mr Pye agreed that the rate one year after laparotomy appeared to be between 9 and 20%. However given positive factors in Mr Hamilton's case his risk would have been lower than 9%. Mr Pye was aware of the high mortality rates for oesophageal perforations and a figure of about 20-50% mortality was consistent with his understanding. He drew an analogy between the availability to Mr Downey of a stent and the wearing of a seatbelt. While it was good practice to wear a seatbelt simply doing so could not excuse careless driving. On causation Mr Pye considered that the available information clearly pointed to the oesophageal perforation being as a result of the withdrawal of the plate by Mr Downey. This was because the patient's blood results prior to the second procedure indicated that he was well. His haemoglobin was within the normal range and so was his white blood count (WBC). On the morning of 27 January the WBC had gone up a little but remained within the

normal range. The results after the second endoscopy were significant as the WBC had risen to a very high level (see the table at para [8]). The biochemistry results were also relevant. CRP was showing as normal prior to the second endoscopy. While on the morning of 27 January it had risen to 15, indicating a small amount of inflammation, it was not until the afternoon of 27 January that the CRP rose first to 24 and then to 307. The timing of those results and the evidence about Mr Hamilton experiencing severe pain on the ward were all consistent with the perforation having occurred during the second endoscopy.

[46] Under cross-examination the witness agreed that Mr Downey appeared to have considered various risks attached to laparotomy as opposed to endoscopic removal of the plate and that his judgement appeared to have been that the probability of perforation was low. He agreed also that laparotomy was not a risk free procedure and whether it was the most appropriate thing to do would depend on what the alternatives were. A mortality risk of 3% for laparotomy was lower than the published papers indicated across the board for emergency laparotomies. Those papers would take into account a wide range of circumstances and patients. The outcome would be largely dependent on factors such as the patient's age, any pre-existing morbidity conditions such as diabetes and other general health considerations. The risk in this case would have been much lower because it would have been a "clean contaminated" procedure. The mortality rate for perforation of the oesophagus would also vary according to the patient although Mr Pye did not profess to be an expert on that issue. As a colorectal surgeon he would be aware that the mortality risk of a perforated oesophagus was high but he would not necessarily know the figures. He had no reason to dispute those given in the American guidelines (number 7/35 of process). A paper on the non-operative treatment of 15 benign oesophageal perforations with self-expandable covered metal stents published in 2006 was put to the witness (number 7/20

of process). He disagreed that it followed from the outcome of that study that in the case of Mr Hamilton the mortality rate was less than 7%. The paper referred to fluoroscopic control and tests to check the proper sealing of the stents which had not been done in the present case. He commented that one death in a small number of people did not translate into a general mortality rate of 7%. He considered that it would be better to ask an upper GI surgeon matters of that sort. He was speaking as a general surgeon with a colorectal specialty and as such regarded a perforated oesophagus as much riskier than a semi-planned laparotomy. Under reference to another paper (number 7/15 of process) Mr Pye accepted that it appeared to show that the rapid insertion of stents following oesophageal perforation reduced the risk of mortality. Another paper (number 7/16 of process) dealt with the story of a successful stent being placed in a cancer patient following oesophageal perforation and the better outcomes produced by early stent placement. Mr Pye pointed out that patients who had existing problems might fare worse because of delay. Mr Hamilton was not unwell before the placement of the stent and yet deteriorated quickly. The witness agreed that on the hypothesis that there was already a perforation in Mr Hamilton's oesophagus before the second endoscopy he would have deteriorated when fluid leaked into the chest cavity.

[47] Mr Pye agreed that the body takes time to produce proteins leading to a CRP increase and the CRP rise on the Sunday morning was indicative of some inflammation. However, he would not have been concerned about the patient's presentation that morning and had he seen the results he would simply have noted a modest rise. The patient had been sedated the night before and the bruising at the lower end of the oesophagus would be enough to explain matters. Mr Pye rejected the contention that it was not plausible that Mr Hamilton became so unwell so quickly if the perforation had not occurred until the

second procedure. The evidence all pointed to the contamination occurring at the time of the second endoscopy. Mr Hamilton had been well between the first and second procedures.

[48] Mr Pye considered that it would have been useful to have waited until Mr Ben Younes knew the up-to-date situation including that the plate was not being easily removed and was "catching". While he accepted that it was Miss MacDonald who seemed to want to speak to Mr Ben Younes, he pointed out that the answer that had come back appeared to be that if the plate could not be removed safely they ought to proceed to laparotomy. However he agreed that if Mr Downey had not wanted advice and Miss MacDonald only wanted it in relation to additional items that might be available there was probably no need to have waited. What would have been helpful would have been a discussion between colleagues about why the plate was not coming out easily. It would have been worth waiting for the advice on that. He agreed that Mr Downey's thought process was logical in terms of assessing the risk of perforation and its consequences as against laparotomy. However, while he would not go as far as to suggest that Mr Downey should have performed a laparotomy simply because he was more comfortable doing it, he had no reason to hold back from performing that procedure which he knew he could undertake safely rather than the procedure in which he was less experienced. Miss MacDonald's reservations could be interpreted either as wanting to be guided by Mr Downey or her cautioning him that bringing the plate up through the oesophagus was not the right way to do it. Everything that had happened was reasonable up until the point when Mr Downey should have realised after his first attempt to remove the plate with the Roth net that it would not work. A red light should have been flashing and any competent surgeon would have realised that if it could not come up without snagging that was the

point at which the attempt should be abandoned. There was no magic number in terms of attempts that could be made but the first experience on the Sunday morning should have illustrated that further attempts were pointless in terms of safe removal. Mr Pye did not consider that rotating the plate 90 degrees as Mr Downey said in evidence he had done would have made any significant difference as there was only a 4mm differential between the two axes of the plate. As Mr Downey had been unable to secure the whole plate inside the net the concern was that the edges of the plate would catch the oesophagus and hook into it causing a rip or tear. It was distinguishable from a smooth object which could touch the side of the oesophagus without tearing. In Mr Pye's view any competent surgeon would have had warning bells ringing in relation to the whole procedure. As a colorectal surgeon Mr Downey would have a very good feel for the colon but not for the oesophagus and it would have been difficult for him to know precisely how much traction would damage the oesophagus. It was not that endoscopies in the colon were easier in fact the witness agreed that they might be more difficult, but it was knowledge of the subtle differences of the tissues in the two areas that mattered. When asked about a comment in his report that Mr Downey's statement implied that he did not consider it all that important to avoid a perforation, Mr Pye confirmed that in light of Mr Downey's evidence that he was well aware of the risks and consequences of oesophageal perforation he was prepared to withdraw that statement. However Mr Pye would not have placed as much confidence in a stent as Mr Downey did, although that may have been a result of good results at the hospital in question using stents.

[49] In re-examination Mr Pye confirmed that the colon is wider than the oesophagus but that the difficulty in that area of the body would be with the anal canal. If removing a polyp there was no problem teasing it out once caught in a Roth net and the similarities between

removing a polyp by colonoscopy and a dental plate by endoscopy were superficial only as the procedures were quite different. A colorectal surgeon would very infrequently, if ever, have experience of removing a dental plate through the oesophagus. On the issue of Mr Downey's specialisation Mr Pye agreed that while many surgeons will describe themselves as general surgeons, Mr Downey's particular area of practice was in colorectal surgery, like Mr Pye himself. That was the context in which Mr Downey was making the assessment on 27 January 2013. On the timing of the oesophageal tear Mr Pye agreed that the blood test and biochemistry results were helpful but that it was a holistic process and Mr Hamilton's clinical appearance was also relevant. It remained his position that taking all of the evidence into account the most likely time at which the tear happened was during the second procedure. The situation had been avoidable in the sense that a laparotomy had been the available alternative. At the time Mr Downey made his decision he was not obliged to use any scoring tools he simply had to decide whether there was a significant difference in the risks of the two procedures bringing his own skills and experience to bear. Against all the known information Mr Pye's opinion was that any experienced colorectal surgeon in Mr Downey's position acting with reasonable skill and care would have opted for performance of a laparotomy.

Dr David Swann

[50] Dr David Swann is a 63 year old consultant in anaesthesia and critical care at the Edinburgh Royal Infirmary, where he has been in post for 22 years, and an honorary senior lecturer at the university. His CV (number 6/66 of process) lists a number of recent publications in his area of expertise. He has experience of managing oesophageal perforations, both those caused spontaneously or iatrogenically (ie caused by medics). The

consequences of oesophageal perforation are variable, with some patients remaining reasonably well and treated conservatively with others becoming particularly ill because of gut contents contaminating the chest. In the present case the consequences for Mr Hamilton were severe and life threatening and included some organ failure.

[51] Dr Swann had examined a number of blood and biochemistry results to assist the court in determining the timing of the perforation of the oesophagus in the pursuer's case. He was taken to some of the medical records and agreed that these illustrated that on admission the pursuer's clinical signs were normal including his temperature and his heart rate. Although his blood pressure was elevated at 162/103 he was someone being treated for hypertension and that was not of significant concern. His oxygen saturation level was 100%. The operation note from the first endoscopy recorded that the patient had become agitated despite sedation although his oxygen saturation was still within the acceptable parameters. Standing his hypertension the patient's reaction to the anaesthetic was normal. Turning to the critical second endoscopic procedure, Dr Swann noted that the anaesthetic chart was indicative of a well conducted normal general anaesthetic. The systolic blood pressure hovering around 100 was as expected for someone with hypertension. The heart rate increased from 70 to 90 beats and then settled again. There was nothing adverse to note until the presence of the tear (albeit not full thickness) in the oesophagus was noted. The operation note indicated that the treatment was with a stent with a plan for triple antibiotics and a chest X-ray. In short there was clinically nothing untoward at the time the tear was noted. The relevant laboratory results (see para [8]) indicated that all of the values were within the normal range. If the oesophagus has been perforated the amylase reading will become moderately high although not as high as in a patient with acute pancreatitis. Comparing the results of 26 January with those taken on the morning of 27 January (at 09:37)

the amylase reading was unchanged. The CRP had increased to 15 indicating a possible mild inflammatory process. This was consistent with a bruised or swollen oesophagus after the first endoscopy. Then on a specimen received at 15:54 on 27 January the CRP had increased further, consistent with an inflammatory state. There was no amylase reading at that time. On 28 January the samples taken at 10.25 and reported at 11:30 were 337 for CRP and 184 for amylase. The CRP result stood out. It had increased markedly and was indicative of a severe inflammatory process at that stage. Taken with the amylase reading it was consistent with an oesophageal perforation. While there would be a delay between the injury to the oesophagus and the onset of symptoms Dr Swann would have expected the test result abnormalities to occur sooner if the tear had occurred prior to the second endoscopy.

[52] Turning to the WBC, on 26 January this was within the normal range. Prior to the second endoscopy on 27 January the reading was 8 but by the afternoon of 27 January it had risen markedly to 20.4. Subsequently, on 28 January the WBC had reduced due to the surgical management of the tear and antibiotic treatment. The WBC results seemed to follow the CRP and amylase results and were all consistent with the witness's view that the tear occurred during the second endoscopy. While it was always possible that the tear occurred earlier, in Dr Swann's opinion the probability was that it occurred on 27 January. In addition to the test results outlined, the nature of the chest pain being spasmodic, the distress and the oxygenation failure were all consistent with a perforation having just occurred. Dr Swann's experience and his detailed understanding from the literature supported his conclusion.

[53] Under cross-examination Dr Swann agreed that as he was not a surgeon he would defer to expert surgical opinion in relation to the mechanism of the oesophageal perforation and to some extent on timing. However he was expressing a view as a consultant with

experience in analysing the type of results involved. He knows Andrew De Beaux, the defender's expert witness, who he regards as a good surgeon and they had treated various patients together. The defender's position was put to Dr Swann, namely that a small tear or hole in the oesophagus had occurred earlier, probably when the plate was stuck there the previous day and that it was not seen on the first endoscopy. There would be an element of pressure necrosis causing the tissue to die following the initial assault to the oesophagus. In response Dr Swann noted that at the time of the first endoscopy there was no record of pressure necrosis but only some inflammation. He considered that if there had been a hole Mr Hamilton would have suffered discomfort or the onset of pain earlier than he did. Despite fasting there would still be saliva and the amylase results would have looked different. He agreed that it was always possible that underneath the "bruised and unhappy" oesophagus seen by Miss MacDonald there could have been a small hole developing over time but he considered that the clinical signs and the biochemistry and blood test results were most important. The CRP rise from 8 to 15 before the second endoscopy was only slightly above normal and consistent with a mild inflammatory process. There was nothing on the morning of 27 January to indicate that sepsis was occurring. It was always possible that the reading was consistent with something not being "quite right" with the patient but Dr Swann considered it was more consistent with a mild inflammatory state than a developing perforation.

Mr Simon Galloway

[54] Mr Galloway is a consultant general surgeon who has specialised in upper GI work since the 1990s. He qualified as a surgeon in about 1992 and undertook postgraduate training in Liverpool. He is currently a consultant surgeon at the University Hospital of

South Manchester. His impressive CV (number 6/11 of process) details the various appointments he has held. He represents his area of England on the Council for the Association of Upper GI surgeons. Mr Galloway's practice involves specialist surgery for oesophago-gastric disease and general elective and emergency surgery in the upper GI tract. He has published and presented widely in his field. In his daily work he undertakes diagnostic work in the oesophagus and the stomach and performs general surgery as well as taking a weekly endoscopy list. As surgery has become more and more specialised he has stopped doing colonoscopies. Mr Galloway has on-call experience where he will be required to deal with both upper and lower gastro emergencies.

[55] The witness described the oesophagus as a lined muscular tube running from the sphincter at the top down to the OG junction. Peristalsis is the term used to describe the normal propulsion in a synchronatic manner in a normal patient. While it was generally true that an item that has travelled down the oesophagus could come back up that way, it was important to note that when someone swallows there is a wave of relaxation which people experience as feeling something like food travelling down. There would be no such natural wave for a foreign body coming up. The best course with a foreign body in the oesophagus would often be to push it down into the stomach and assess the situation the following day, as happened here. Gastroenterologists have considerable experience of removing foreign bodies through the upper GI tract and will work together with upper GI surgeons. Those specialising in colorectal work may also remove foreign bodies, usually from the stomach. Over the years, Mr Galloway had experience of removing pens, paperclips, razor blades and batteries. During the last 5 years he has been involved in five cases where dentures have been swallowed. The first involved dentures recently swallowed and trapped close to the back of the mouth in the cervical oesophagus and these were

successfully removed by endoscopy. He had advised on the procedure by telephone. The second and third cases had involved dentures in the thoracic oesophagus, which is lower than the cervical oesophagus but well above the area of the OG junction. One of those cases involved an elderly gentleman with dementia whose dentures had been missing for some months. They were impacted in the oesophagus and surgery was required to open the chest and oesophagus to remove them. The other was an 18 year old who swallowed a single denture with a plate and again surgery to the chest and oesophagus was required. The fourth case was rather similar to Mr Hamilton's situation. A plate had become impacted at the lower end of the oesophagus and was pushed down into the stomach. Having assessed the situation on balance it was decided that it was simpler and safer to perform a laparotomy to remove it. This involved a relatively small incision and the patient had been discharged home in about 3 days. The fifth occasion was not his case but one from his department. It was a sad situation of a man with learning disabilities who died as a result of impacted dentures.

[56] On the factors that would militate in favour of laparotomy rather than endoscopic removal through the oesophagus, Mr Galloway commented that the judgement would be partly based on experience and partly on principles of surgery. There were obviously some foreign bodies in the stomach that would pass spontaneously but Mr Hamilton's case involved a 3-4cm plate with irregular pointed edges which clearly could not do so. Assessment had to be made of the merits and risks of endoscopic removal. The health of the patient and his age was a factor. Consideration of other possibilities and relative risks was important. For a set of dentures of the size involved here a laparotomy would involve up to a 10cm cut which is broadly akin to an appendectomy. The stomach has some flexibility and one would start with a 3cm incision and extend as necessary. Mr Galloway agreed that the

technical skills of using an endoscope and a colonoscope were very similar but the items typically removed by each were different. Polyps are usually removed from the colon with a Roth net but they are very soft, like a sea anemone, and do not have the physical properties of a denture plate. The dental plate (number 6/2 of process) had no regular outline with a point on the left lateral side. Miss MacDonald's description of a sharp angle was fair. The plate was very similar to the one in the fourth example of Mr Galloway's experience that had to be removed by laparotomy. The oesophagus is normally about 22-25mm in diameter and often requires stretching for something to be removed through it. Mr Hamilton had a pre-existing hiatus hernia and while that makes it easier to push an item into the stomach it was not significant as to whether it was easier or otherwise to remove the plate through the oesophagus.

[57] It was clear from the notes that Mr Hamilton was fit and well and although hypertensive that was a well-controlled low risk. If Mr Downey had performed a laparotomy that would have been "clean contaminated" surgery in a relatively planned way. The risks for laparotomy were well under 5% for mortality and less than 10% for morbidity. There was no indication of previous surgery in the area that might make it difficult. The mortality rate was higher for emergency surgery, where mortality rate could be as high as 14-15% greater in older patients. Under reference to various publications involving, for example variations in mortality after emergency laparotomy (number 7/27 of process) and surveys of emergency laparotomies (numbers 7/25 and 7/26 of process), Mr Galloway pointed out that these related to emergency surgery generally and not to foreign body removal. They were of limited assistance because the condition with which the patient presented had to be taken into account. It could not be said that the relative risks of endoscopic removal compared with laparotomy were similar. The mortality rate for a

perforated oesophagus was in the region of 30-50% if there was an infection in the chest and pleural cavities. Oesophageal perforation was a far more serious situation generally than the risks associated with a semi-planned laparotomy.

[58] Mr Galloway was familiar with the textbook number 6/45 of process on upper digestive surgery. He agreed with the seriousness of oesophageal perforation emphasised there. Like Mr Downey he regarded number 6/46 of process, the example of an impacted denture in the oesophagus, as less useful than a peer reviewed article such as that from The Lancet or BMJ, although there was very little scientific evidence on the issue and the literature reflected that. Of the other documentary material, Mr Galloway considered that 6/51 was important as it was guidance from the European Society of Gastrointestinal Endoscopy which would carry some weight. That guidance recommends the use of a protective device to avoid damage to the oesophagus during endoscopic extraction of foreign bodies. Also the guidelines issued by the American Society for Gastrointestinal Endoscopy (number 6/52 of process) made clear that ingestion of sharp pointed objects increased the risk of perforation on removal. Sharp pointed objects in the oesophagus are a medical emergency and Mr Galloway was firmly of the view that because of the high complication risk removal through the oesophagus was much riskier than from the stomach. Only if satisfied that it can be removed safely through the oesophagus would one consider endoscopic removal. In his report and in evidence Mr Galloway was of the view that it was appropriate for Miss MacDonald to make the various attempts to grasp or retrieve the plate before pushing it into the stomach in order to consider matters further. It was also appropriate to repeat the endoscopy the following morning. The significance of the oesophagus being "bruised and unhappy" as described by Miss MacDonald was that rather like scraping one's hand, bruising in the gullet will show itself.

[59] In Mr Galloway's opinion no ordinarily competent surgeon exercising ordinary skill and care would have proceeded in the manner that Mr Downey did on 27 January. Following the failed attempts by Miss MacDonald the previous day and at least one further failed attempt on the morning of 27 January he ought not to have recovered the dental plate proximally up through the oesophagus incompletely encircled in a Roth net through an already oedematous lower oesophagus which had previously been the site of impaction of the denture plate for about 11 hours. The usual practice in that particular set of circumstances would have been to perform a laparotomy with gastrostomy and removal of the denture. On whether Mr Downey should have waited for Mr Ben Younes' advice, Mr Galloway commented that as a fairly senior consultant he too is called for advice when he is at home and not on duty. He is always happy to be a sounding board and to offer advice and would expect colleagues to take away what he said and by and large follow it. He had a recent experience when he was on call where a patient presented with a foreign body in the rectum. It was a lightbulb that was bulbous and could break. Mr Galloway sought advice from colorectal colleagues about the particular risks based on their expertise of that area and as those colleagues were on hand they came to help him in theatre. It was common practice to seek advice from colleagues when experiencing something not ordinarily seen on a regular basis. There would have been no risk to the patient had Mr Downey waited for Mr Ben Younes' advice. The normal practice of performing a laparotomy to remove the denture plate following the various attempts at endoscopic removal was departed from by Mr Downey during the second procedure and no ordinarily competent doctor would have so departed. In Mr Downey's situation Mr Galloway might also have undertaken one attempt to remove the plate during the second endoscopy but as soon as it was apparent that it obstructed he would have moved to laparotomy. Because of

the oedema the plate was very much on the edge of the limit of what would ever go up the oesophagus safely in terms of size and against a background of some knowledge of the seriousness of the condition of a perforated oesophagus a general surgeon such as Mr Downey would not have persisted.

[60] On the timing of the perforation Mr Galloway was firmly of the view that the perforation occurred during the removal of the dental plate on 27 January. Miss MacDonald had inspected the oesophagus carefully the previous evening and no perforation had been seen. Had it been perforated at that time this would have led to the sudden onset of severe pain. The description of what Mr Hamilton suffered on 27 January some time after surgery was consistent with the second endoscopy being the time of the perforation. He had been described as "fit and well" according to the anaesthetic record prior to the second endoscopy. He would have been tachycardic and in extreme pain had it perforated the previous day. Mr Galloway was of the view that a patient such as Mr Hamilton could not undergo a surgical procedure under general anaesthetic normally if his oesophagus had already been perforated. Turning to the blood results the key marker was the WBC. The white blood cells fight infection and so the WBC would become elevated shortly after any infection or inflammation. On 26 January the reading was normal and the impaction of the denture at that time had caused no significant upset. The reading on the morning of 27 January at 8.12am was one of a completely normal WBC unlike in the afternoon of that day when it had increased to 20.4. This was greatly outside the normal range indicating that a significant infection was happening after an inflammatory insult. Had the perforation occurred on 26 January one would have expected to see a similarly high WBC result within 2-3 hours. After it was known that there was a tear and antibiotics and fluid had been administered there was an impact on the WBC which was no longer as elevated.

Mr Galloway was of the view that using objective parameters there was nothing to support a theory of there being a tear prior to the second endoscopy. Turning to the CRP, it was completely normal on 26 January and although minimally elevated on the morning of 27 January this was consistent with a minor inflammation only and not indicative of a major infection. In isolation a CRP reading of 15 was not reflective of an oesophageal tear taken with all of the other information. The CRP reading would take about 24-48 hours to rise markedly and that is what occurred in this case. By the morning of 28 January it was 337 which was wholly consistent with perforation the day before. It was natural that the area where the damage was sustained was at the point where the oesophagus narrowed. However the acute onset of pain after the second endoscopy fitted with the damage being caused during that procedure.

[61] The use of stents for oesophageal perforation had evolved in the last 20 years before which the treatment was surgical. A stent is rather like a drain pipe and while the top of it will seal easily the bottom will not do so as readily. A stent is probably better used in the mid-oesophagus rather than at the OG junction and it may be that it was not sealed off completely. The use of the stent was of no evidential value as to the timing of the tear. The swift deterioration of the patient after the second endoscopy did not render it unlikely the tear occurred during that procedure; the opposite was true. Neither Miss MacDonald nor Mr Downey would risk removal of the plate through the oesophagus if there was any suggestion it was already perforated. A better assessment of the state of the oesophagus can be made after something is removed. Mr Hamilton would not have been able to tolerate the second procedure if the perforation was already there.

[62] Under cross-examination Mr Galloway agreed that Mr Downey appeared to have been alive to the condition of the oesophagus at the time of the second endoscopy. He

would know that if it was too tight he would not be able to retrieve anything up it. There was some discussion about the plate's description. Having seen it, Mr Galloway considered it to be at the limit of what can be ingested, and the edges were not blunt. An endoscopy gives very good pictures of much higher quality than those lodged in process. On an account put to him that Mr Downey had reoriented the plate, waited for a wave of peristalsis to pass and found that the plate came easily, Mr Galloway agreed that if established, such action would demonstrate care being taken. However, he doubted that a plate of this size and shape could be orientated so that it was positioned with the narrowest diameter coming up. It was difficult to reconcile Mr Downey's evidence that the plate came out easily with the fact that it caused a perforation. It must have caught on something and therefore could not have come out easily. Miss MacDonald had said that the mucosa was coming up which was understandable as the plate was already longitudinal when she tried to remove it. The witness did not accept that Mr Downey was entitled to make a judgement to remove the plate endoscopically and remained of the view that he should not have proceeded in that manner. While the ability to capture anything in a Roth net requires skill and Mr Downey was certainly proficient in the use of endoscopy his elective practice was in the colon. The plate he was trying to remove had unique characteristics and sharp edges; not just on one side. On the article about the impacted denture (number 6/46 of process), Mr Galloway commented that it looked more extensive than the plate under discussion although there were no measurements. Had Mr Hamilton's plate remained impacted at the OG junction it would still have been proper to perform a second endoscopy to check the position.

[63] On relevant risks, Mr Galloway assessed the mortality risk of laparotomy at less than 5% possibly as low as 2%. The morbidity complications could be as low as 1-2% for a

straightforward procedure but up to 10% where wound infection occurred. There is a crude "P scale" which is used a lot for emergency surgery and gives a rough indication. While for laparotomy using that scale might give an overall morbidity risk of over 20% in reality it would be considerably lower than that. The witness did not accept that the complications for Mr Hamilton would have been worse than for any other patient unless there was already a perforation by the Sunday morning in which case established sepsis would increase the risks of a laparotomy. While questions were put to Mr Galloway on the hypothesis that the oesophagus had already perforated before the second scope and then a laparotomy was performed, he responded that the patient would already be tachycardic with very high blood pressure readings and a perforation caused 16 hours previously would have been evident when the second scope went down. While development of pressure necrosis overnight was always possible, the vascularity of the oesophagus was excellent and so ischemic necrosis in the oesophagus is very rare unlike in the colon. He accepted however that had there been a build-up of pressure leading to the wall of the oesophagus breaking down an hour or so before the second endoscopy the risks of performing a laparotomy would be higher. Against that the risks of mortality from a perforated oesophagus were higher across the board. There is a range and although Mr Hamilton was fasted and the tear was stented and antibiotics administered the leak was not contained and he became very seriously ill. At the time of Mr Downey making his assessment the risk of causing a perforation with fatal consequences was significant.

[64] Mr Galloway accepted that in his report he had interpreted the use of multiple implements by Miss MacDonald as separate attempts. The multiple attempts included the first attempt by Mr Downey on 27 January. It was fair to interpret that as a failed attempt because he had been unable to encircle the Roth net and bring it up safely and had to replace

it in the stomach. While the Roth net does offer some protection that would have made no difference because complete encircling would have increased the size of the item that had to be removed. What always mattered was the size and shape of the plate and the sharpness of its edges. Mr Galloway had seen photographs of the plate 2 or 3 years ago when he provided a provisional report but did not finalise his view until better photographs and measurements of the plate were provided. In the preparation of his first report he had the operation note and his knowledge of the oesophagus and was able to take an educated guess about its width but the photographs were necessary to affirm that view. He was challenged on having given an opinion based on an educated guess before seeing even photographs. Mr Galloway responded that it was not common for the foreign body to be kept or given back to the patient and he would often have to give a view without seeing it. In this particular case having asked the question about whether the plate was still available he was able to reaffirm his initial assessment when he later saw it.

[65] Mr Galloway maintained that there was no evidence of the perforation until after the second endoscopy. The patient's clinical course, his blood test and biochemistry results were all consistent with no earlier perforation. The signs were not suggestive of a small tear or perforation corroding the wall of the oesophagus over a period. It was perfectly explicable that despite treatment by antibiotics and the attempt at stenting the patient deteriorated. Although he was fasted the bugs in the mouth go down with the stent and Mr Hamilton's rapid deterioration after the second endoscopy fitted with what he had seen in practice. On the paper involving a study of 15 patients treated with stents for benign oesophageal perforations (number 7/20 of process), the witness considered it to be of limited scientific assistance given the small study. It could not be said that Mr Hamilton ought not to have deteriorated because the stent was in place minutes after the surgeon saw the tear. If

a stent is sitting in the hiatus hernia fluid will continue to leak around it. The perforation had probably not been adequately sealed by the stent. The small rise in CRP on the Sunday morning was not important and was a mild inflammatory response. There would have been some pressure caused when peristalsis waves had unsuccessfully tried to push the plate spontaneously into the stomach on 26 January. Mr Galloway disagreed that the oesophagus has only an adequate blood supply. It is close to a major vessel and takes its blood supply from that. He disagreed also that the scope itself will cause the sphincter to relax. The instrument is 10mm in diameter and would not stimulate a vigorous peristaltic response.

[66] In re-examination Mr Galloway explained that as medicine was not an exact science all of the signs and results had to be assessed before reaching a conclusion on timing. He rejected any notion that he had been cavalier in his approach when producing his initial draft opinion and it was he who had asked for retrieval of the plate if that was possible. Final conclusions were reflective and had been reached over a period of time. He described a laparotomy as the sort of procedure through which he would take a surgical trainee because it involves a simple suture and opening of the abdominal wall, something all surgeons are capable of. It was having less knowledge of the oesophagus that threw up problems for Mr Downey, not any lack of expertise with an endoscope. When asked whether Mr Downey had been entitled to have the level of confidence he had in relation to whether he could remove the plate safely, Mr Galloway expressed the view that, as Mr Ben Younes had already said to Miss MacDonald that they might have to proceed with a laparotomy and he was a very experienced upper GI surgeon more consideration should have been given to that. The witness remained firmly of the view that any ordinarily competent surgeon would in the circumstances have performed a laparotomy with the likely outcome of Mr Hamilton having to spend 2-3 days in hospital.

Andrew Charles De Beaux

[67] Mr De Beaux is a 54 year old consultant general and upper GI surgeon at Edinburgh Royal Infirmary. His practice includes bariatric (weight loss) surgery and his surgical interests include laparoscopic surgery for gallstones and the surgical repair of abdominal wall hernias. He undertakes private work at the Spire Murrayfield Hospital, Edinburgh involving planned but not emergency surgery. He was an oesophageal cancer surgeon and has always performed on call duties in general surgery. His bariatric surgery interest began in 2007 and as it developed he stopped performing oesophageal surgery although he remains on the on call rota for that area. He knows Mr Galloway and regarded their experience as similar although unlike Mr Galloway, who has continued in oesophageal gastric surgery, Mr De Beaux has diversified.

[68] Mr De Beaux had experience of removing foreign bodies from the oesophagus in the past. However it was primarily gastroenterologists who now remove these. They are physicians and if they are unable to remove a foreign body safely they call on a surgeon who removes either endoscopically or surgically. The witness had experience of pens and a Warhammer model having been swallowed by patients and a small number who swallowed spoons, forks, knives and screwdrivers. The removal of these types of foreign bodies from the oesophagus is relatively unusual and would not amount to more than half a dozen or so per year. Mr De Beaux has never removed a dental plate as he considered such plates were not the sort of thing that someone would swallow. Having prepared a report (number 7/6 of process) Mr De Beaux confirmed that his understanding of the factual situation was contained in the fourth section of that report, his opinion on alleged negligence was contained in section 5. In essence, it was Mr De Beaux's opinion that removal of the denture

in a Roth net as undertaken by Mr Downey would be an acceptable standard of care and would not satisfy the legal tests for negligence. He expressed a further view that Mr Downey had taken as much care as possible to minimise trauma by orientating the denture plate longitudinally to facilitate its extraction endoscopically. In Mr De Beaux's view the description given by Mr Downey made sense. The plate was always going to touch the sides of the oesophagus but orientating it so that the narrower part was brought up first pulling the Roth net back as close as possible to the endoscope would allow smoother retrieval. The witness had brought a physical prop (a toilet roll tube) which he used to explain how the oesophagus reacts. As a muscular tube the oesophagus can contract and expand albeit within limits. He gave the example of food being chewed into a ball and sent to the back of the throat, the ball travels down the oesophagus and the rest happens as a reflux. It is the wave of peristalsis that drives the food and if unsuccessful initially a secondary wave of peristalsis tries to send the food down. Using the toilet roll tube Mr De Beaux demonstrated that the oesophagus can behave like an ellipse. Accordingly a dental plate of 28x32mm in size was able to travel all the way down the oesophagus. The lumen (interior space) of the oesophagus is 2-3mm only in diameter when it is not swallowing, so it was difficult to talk about the size of the oesophagus as it depended on what was being done with it or to it. The effect of a wave of peristalsis passing was to allow a practitioner to do what needs to be done. It is useful while putting a scope down.

[69] Mr De Beaux spoke to the section of his report (5(iii)) that dealt with the risks of laparotomy. His view was that on the facts stated Mr Downey's decision to attempt a further endoscopic removal of the plate was not taken lightly. It was a reasoned decision by an experienced surgeon. A laparotomy was a painful operation with, according to Mr De Beaux, a 5-7 day hospital stay. There was a 10% risk of a wound infection that may

have prolonged that stay or required nursing attention after discharge. There was a risk of a leak from the repair of the gastrostomy (the opening made in the stomach wall) which may have required further surgery and/or a prolonged hospital admission. There was also a 1% risk of deep venous thrombosis in the leg. Such a clot can detach and travel through the heart to the lungs (a pulmonary embolism). There was a 20% risk of developing an incisional hernia after laparotomy and the majority of those require further surgery to repair which is itself a major operation. There was also the risk of adhesion formation, in other words fibrous connections forming between loops of bowel handled during the operation. There was also a 20% risk of requiring hospitalisation for small bowel obstruction. Overall, in Mr De Beaux's opinion Mr Downey was cognisant of these complications and weighed up the risks of endoscopy versus laparotomy including taking advice from another senior colleague which resulted in an acceptable decision to attempt a further endoscopic extraction of the denture. He confirmed that the account of what Miss MacDonald was told by Mr Ben Younes did not change his view.

[70] Mr De Beaux considered Mr Downey to be somebody with relatively high expertise in endoscopy "at both ends of the body". The witness had also used Roth nets and confirmed that trapping something, releasing it and managing to capture it again as Mr Downey did in this case was impressive given the edges to the plate and implied a high degree of endoscopic skill. A surgeon with a colorectal interest would still have to spend at least a year doing upper GI work. If it was said that Mr Downey did not have the skills Mr De Beaux would disagree with that because he had successfully retrieved the plate from the oesophagus. Clearly he would have more experience of removing foreign bodies from the rectum. He did not think anyone outside of paediatric surgery would have more than the odd experience of removing foreign bodies of this type endoscopically. Colorectal

surgeons are usually very good with the end of an endoscope because in a country like Scotland with lots of colorectal cancer there is ample experience of this.

[71] Had Mr De Beaux been presented with the particular dental plate in question he would have followed similar steps to Mr Downey. He would be constantly thinking about whether he could retrieve it successfully, whether he should do so and if not what to do next. These are decisions made by surgeons all the time. Mr Downey realised that the orientation was not right and so he reoriented. This was the hardest manoeuvre and once he managed to pass it into the oesophagus it was likely to come out. A dental plate was no different to any other irregularly shaped object and the surgeon has to make an assessment on the item concerned. The denture had impacted at the narrowest part of the gullet the previous day below the high pressure point of the OG sphincter. On the account given by Mr Downey Mr De Beaux considered that the plate was extracted with the appropriate degree of force. It was always necessary to use some force in a situation of that sort. He agreed that the most important thing will have been how the plate felt to Mr Downey at the time. His assessment and decision to continue with a further attempt at retrieval was that of an ordinarily competent surgeon acting with skill and care. He had to decide whether the consequences of perforation were more serious than the consequences of a laparotomy. In Mr De Beaux's view the mortality rate for a perforated oesophagus was no higher than that for a laparotomy. Even if one in five endoscopic removals resulted in a perforation that was 20% and a mortality rate of 20% would be 20% of the 20% resulting in perforations which would leave a mortality rate of 4% in 100 people. The risk to Mr Hamilton of what ultimately occurred was therefore low. While the thought process about balancing risks is undertaken very quickly by surgeons his mind will be worrying away even while operating, weighing up the pros and cons of the next decision. Mr Hamilton was quite a large

gentleman and access to the stomach at open surgery would not have been that easy. Although the morbidity or complication rates for laparotomy still would not be particularly high it would not have been a straightforward operation. On a hypothesis that there was already a perforation in the oesophagus that would of course have increased the risk if the decision was to proceed with a laparotomy.

[72] On whether Mr Downey should have waited for Miss MacDonald to return from her call to Mr Ben Younes before proceeding, Mr De Beaux considered that it depended whether he was "stuck". If he was having problems he should have waited but if he had a plan which he was exercising with appropriate caution it was acceptable to continue. The Roth net remained the best extraction method available for such a plate. On whether Mr Downey placed too much reliance on Miss MacDonald's stenting experience, Mr De Beaux considered that it was reasonable for him to have placed reliance on that. Although Miss MacDonald was a junior colleague it was normal to rely on the experience of a junior and surgeons rely on their professional relationships with colleagues as a matter of course. That said as the consultant it was for Mr Downey to decide what to do and junior colleagues will always defer to the senior person.

[73] On causation, dealt with at section 5(iv) of Mr De Beaux's report, the witness confirmed that his opinion was that the oesophageal injury had occurred prior to the denture extraction by Mr Downey. Section 6 of his report gave detailed comments on the likely timing of the perforation. The first point was that Miss MacDonald had commented that the gullet was bruised and oedematous. This would make visualisation of any perforation difficult. In Mr De Beaux's view during the period of time when the teeth of the plate were impacted on the oesophageal wall, pressure damage is likely to have occurred. The damage would be akin to the skin necrosis seen when a person lies against an object

whilst relaxed under anaesthesia. He considered it possible that the denture applied a direct penetrating injury over the time it was there as it had relatively sharp corners. This would make removal of the denture from the site at the OG junction impossible which was consistent with Miss MacDonald's evidence. Further, Mr De Beaux considered that there would have been little in the way of a detailed look at the oesophagus after the plate was pushed down into the stomach. More importantly the time of the developing deteriorating clinical observations did not fit well with the injury having been sustained at the endoscopy on 27 January. The witness disagreed with the statement made by Mr Downey in his letter after the events implying that the full thickness perforation occurred at the time of the second endoscopy. The pain from an oesophageal perforation comes from the development of infection in the mediastinum, the area where the oesophagus runs in the chest. This infection is called mediastinitis. It takes a number of hours to develop to the point that it causes severe pain, 6-12 hours typically. He considered that the more likely cause of Mr Hamilton's pain shortly after the endoscopy was from the oesophageal stent. When a stent is deployed it springs open and exerts a degree of force against the oesophagus.

[74] Mr De Beaux gave evidence over the course of more than a day. After the first lunch adjournment during his evidence he offered that he had looked on the internet for publications on the possible relevance of Mr Hamilton having a hiatus hernia and its effect on the lower OG sphincter. I sustained an objection to him giving any evidence resulting from such unsolicited investigations during the course of his evidence. From his own knowledge and experience he was not aware of any real evidence that the pressure in the relevant area was reduced in patients who had a hiatus hernia. The point in relation to pressure necrosis was that the region of the lower oesophageal sphincter was an area of high pressure within the oesophagus which relaxes on swallowing to allow the passage of food

and contracts again following the swallow. This high pressure area would contract down on the denture and would exert pressure effects on the wall of the oesophagus resulting in ischaemia (poor blood supply) and likely infarction of a small area of the oesophageal wall. Mr Downey had noted that the plate was more difficult to extract through the area of the OG junction. In Mr De Beaux's opinion that may have been as a result of swelling from the trauma of the plate being impacted in that region for some time the day before and was consistent with the likely coexistent oesophageal perforation already present. It is possible that Miss MacDonald saw nothing on the way up or down in terms of a tear. Often a surgeon cannot see the perforation even when it has already been ascertained that there was one there. Ultimately all the surgeon saw was a 2-3cm large tear but they did not see a hole of any size. Because the lining of the oesophagus was oedematous you would not see the hole because mucosa would be covering it.

[75] Mr De Beaux noted that the increase in Mr Hamilton's breathing rate was noticed as early as 1.30pm on the ward and he was given oxygen therapy. It was as early as 1.40pm that the patient appeared to be distressed due to pain. By 2.45pm administration of morphine had commenced, a decision taken to transfer the patient to the HDU and his next of kin informed. By 5.00pm that day he had to be given 92% of the oxygen required to breathe. In other words to maintain the normal oxygen saturation level of 97% and the patient was being given 98% oxygen. It meant the gas exchange across his lungs was not going well his body was switching to an inflammatory response within 2 hours of the second procedure. Normally the body takes about 6-12 hours to switch on such an inflammatory response. While it was always possible this was a response to something that had happened 2 hours earlier it was much more likely the timing of the perforation was earlier, otherwise this was a particularly unusual immune response. In Mr De Beaux's

experience it would be extremely unusual for a patient to deteriorate as quickly as Mr Hamilton did following an iatrogenic perforation.

[76] The witness relied on the paper at 7/20 of process to support a contention that only the minority of patients with oesophageal perforation suffer pain and that often because of late treatment of it. If stenting happens quickly the outcome is very good. Mr Downey was wrong to conclude that he had caused the perforation. The pain suffered by Mr Hamilton was probably caused by the stent. As far as the blood tests were concerned Mr De Beaux accepted that in general terms the CRP and WBC would rise quickly but it was not a fixed concept. There were always exceptions. The fact that the WBC was normal before the second scope was accepted by Mr De Beaux as being strong evidence but not the extremely strong evidence articulated by Mr Galloway. The CRP will lag behind the WBC result and the significant reading in this case was that the CRP was going up while the WBC was still normal. You cannot make a judgment on a single test. Something that is high but within the normal range is not normal. It was the trend that was important. It was the anomaly of the CRP rising before the WBC that was significant. While a CRP reading of 15 was not very high one could not conclude that there was then only minimal inflammation because a single reading does not inform whether it is on the rise or has already risen and then is falling. The trend of 24 hours helps to understand the results.

[77] It was accepted that Mr Hamilton was clinically well until the Sunday afternoon but Mr De Beaux reiterated that if Mr Galloway was wrong that perforation necessarily causes pain then the clinical findings were not inconsistent with the perforation already having occurred. The witness considered that the amylase readings were of no prognostic benefit. Overall, Mr De Beaux was of the view that the oesophageal perforation probably occurred before the second endoscopy.

[78] Under cross-examination Mr De Beaux agreed that colorectal surgery was not his area of interest although he had undertaken quite a bit of emergency colorectal work. He agreed that he had never removed a dental plate from the oesophagus but that he would not defer to someone with direct experience of Mr Hamilton's situation if it was a single instance. The decision was one of judgement and, in Mr Galloway's fourth example, one did not know whether it could have been removed endoscopically even though a decision had been taken to proceed to laparotomy. The balance of risk assessment was also slightly different in a district hospital such as the one in which Mr Downey worked. Mr De Beaux considered that the experience of removing one object from the oesophagus gives a surgeon the skill to remove another type. If a denture had particular features not uncommon with other foreign bodies he had removed it might be different but the approach was always to assess an object, determine whether it could safely come back up the oesophagus and to look at orientation because it could only be brought up the same way that it went down. If there was evidence that the denture had travelled down the oesophagus in a different orientation to that in which it was brought up he would defer to that.

[79] The witness agreed that the oesophagus was not a static tube and removing a foreign body through it would always be against the natural flow and without the benefit of peristalsis. He accepted that Miss MacDonald had given a graphic description of the teeth pointing up at her which would suggest that the plate travelled down the oesophagus differently than he had assumed although that might make it easier to remove. He agreed that the plate had not come up easily when Miss MacDonald attempted to do so with various instruments and so the right thing had been to push it down to the stomach. There was a spike on the side of the plate which will have been causing the problem if the teeth were facing upwards in an unprotected situation. If Miss MacDonald had said that she

retroflexed the scope after the procedure and saw no damage Mr De Beaux considered that she could not be right. She may have just meant that she angulated the tip. The point was that even in patients with a known perforation occasionally surgeons would see no damage. He thought it important to know whether the case in which Miss MacDonald had been involved with an impacted denture was during training or whether she had carried out a procedure herself.

[80] On the issue of seeking Mr Ben Younes' opinion and the circumstances of it (which had not been known fully to Mr De Beaux when he provided his report) the witness considered that it did not alter his opinion. On any view Mr Ben Younes had not said that the surgeons should always proceed to laparotomy in those circumstances as it was a question of judgment. Notwithstanding Mr Ben Younes' greater experience it was for Mr Downey to decide. Safety in this context was a relative term. There were risks with either intervention. It was not unusual in the witness's experience for a conversation seeking the advice of a colleague to be started but not finished. It was very difficult over the telephone to tell people what to do. Mr De Beaux would have concerns if Mr Downey had just tried to pull harder at the same orientation after Miss MacDonald left theatre. It was the orientation of the plate that mattered. While a degree of pulling or force would of course be required that would always be the case. He accepted it was good practice to wait for the outcome of a telephone call to a colleague if the question was about whether to undertake a particular procedure but not if it was simply to ask about other devices that could be used. He stated that any comment in his report that assumed that the plate was fully contained within the Roth net made no difference to his overall opinion.

[81] The key part that concerned Mr De Beaux was not the single spike on the plate but the fact that it had travelled down the oesophagus with that spike meant that on a

hypothesis that the spike had caused no damage on the way down it should be able to be retrieved safely through the same route. The important thing was that the oesophagus is pliable and able to move, swell and increase the size of the lumen. The hard thing really was getting a hold of the plate and because it was plastic it was difficult to get firm purchase. Once the plate was grasped and caught in the net the rest of the procedure was fairly straightforward. It was always foreseeable that the dental plate in question might cause a tear but that was part of the balance of risk.

[82] Mr De Beaux did not accept that Mr Downey had failed to give sufficient weight to factors such as Miss MacDonald's expressed and clear concerns, the desirability of waiting for advice from a more senior consultant and the different skills involved in removing a dental plate from the oesophagus as opposed to a polyp from the colon. He considered that Mr Downey's ability to engage the plate, reorientate it and trap it in the net was impressive and indicated a high degree of experience. Colonoscopy is a very difficult procedure and trainee surgeons are expected to perform endoscopy before they attempt colonoscopy. Sometimes Mr De Beaux has watched gastroenterologists removing dentures with metal on them which he considers will never come out of the oesophagus safely and they do. He agreed however that it would be proper to give weight to the views of a colleague who was technically junior but more experienced in a particular procedure. While he could see that a point would come where the only reasonable course was to convert to laparotomy he considered that the first attempt on the Sunday morning would not bring them to that point. So long as all that was anticipated was touching the sides of the oesophagus on the way up as distinct from force against the oesophagus from the plate it was acceptable. There was no evidence that the plate had damaged the oesophagus as it travelled down.

[83] It was accepted as key that Mr Hamilton was fasted and so as close as one could get to elective surgery. The risks of mortality for laparotomy were very low assuming no underlying unknown health problems. Hypertension on its own was a low risk. However laparotomy was not minor surgery, it was reasonably significant. The closer an incision is to the rib cage the more likely there will be complications including post-operative infection. The stomach lies high in the abdomen and even in a fit person a mid-line incision is riskier. One should not confuse the complexity or otherwise of the surgery and the assault to the patient. A laparotomy was relatively straightforward surgery but it was the risks to the patient that mattered. He doubted that a 10cm opening would have been sufficient.

[84] Mr De Beaux sought to defend his position that laparotomy carried a 20% risk of small bowel obstruction. He said that these figures come from research done by a Harold Ellis. He had produced a paper citing a 20% risk although subsequent papers claimed that was too high. Nonetheless Mr De Beaux used the 20% figure as part of his own standard consent process in discussion with patients about laparotomy. His view was challenged under reference to papers such as number 7/4 of process which involved a study of 446,331 abdominal operations finding an overall incidence of small bowel obstruction at about 4.6% or 5.4% for abdominal wall surgery. The witness responded by indicating that open surgery to the stomach where there is no malignancy is rare although he agreed with the general conclusion in the paper that adhesion related morbidity comprises a significant burden on healthcare resources even if it did suggest a lower than 20% overall incidence of small bowel obstruction. On the American ASGE guidelines (number 6/52 of process) dealing with the removal of sharp pointed objects it was put to the witness that the risk of complications of endoscopic removal could be as high as 35%. The witness had not read the paper but felt the 35% risk was related to it being left in the stomach. He disagreed that the

relative risks of endoscopy versus laparotomy were that endoscopic removal was riskier. A perforation of the oesophagus stented at the time was different from a perforation not recognised and stented. While Mr De Beaux accepted that Mr Hamilton had become very ill and spent 45 days in hospital, he considered that the oesophagus had not been perforated at the time of the second procedure, so did not consider that particularly relevant. While the risk of perforation was of course a live consideration for Mr Downey a judgement call had to be taken on the relative risks and benefits. If he caused the perforation then he made the wrong decision on that but one could not employ hindsight. In asking himself what he would have done in Mr Downey's situation the witness considered he would still have had a further attempt to retrieve the plate endoscopically. Miss MacDonald was a senior trainee and Mr Downey was an experienced consultant. Despite Miss MacDonald's reservations and her failed attempts and the sharp nature of at least one point of the plate, the decision was still an acceptable one.

[85] On the timing of the perforation Mr De Beaux accepted that he was inviting the court to draw an inference on this. His position was that Mr Hamilton would require to be quite special or different to respond the way he did within 2 hours of a perforation if it had happened at the time of the second procedure. His response was different to those known to have an iatrogenic perforation with a stent being put in place immediately. As far as Mr Downey's correspondence was concerned Mr De Beaux thought it commendable that some months later he was blaming himself because of concern for the patient but that may have coloured his view on whether he did cause the tear. While Miss MacDonald had said there was nothing necrotic and no hole or tear, Mr De Beaux maintained that there had been a barb type event prior to the second procedure. Even if less than 1% of the oesophagus had a perforation, swelling would close up over the mucosa and damage might not be seen.

Oedema would cover the hole and the damage might not be seen. Although the operation note had a description of the tear as being at 38-39cm, Mr De Beaux considered that was no more than a marker as to where the tear was rather than its size. While the tear may well have happened at the time of the second endoscopy it was still reasonable to conclude alternatively that on balance the spike of the plate had already perforated the oesophagus.

[86] While acknowledging the views of the other experts and the evidence of the clinical condition of Mr Hamilton before the second endoscopy, Mr De Beaux reiterated that it is incorrect to assume that the signs and symptoms of a perforated oesophagus occur immediately after it happens. The picture was of a denture that had been embedded in the oesophagus for 11 hours before the first endoscopy. The embedding of the spike will have been aggravated (without imputing any fault to that) by Miss MacDonald's attempts to remove the plate. The injury to the oesophagus would be a continuing one resulting ultimately in cell and tissue death. So the start of the damage was within the first 11 hours before the first endoscopy when the tissues will have compressed and died. It was a process not an event. Although it had to be accepted that Mr Hamilton was clinically well 12 hours after the first endoscopy, the witness's own reference to 6-12 hours for the development of symptoms allowed for others outwith that range. A period of 32 hours from the plate being swallowed until the first clinical sign of a perforated oesophagus was within the time frame of the type of process he had described. So far as the test results were concerned, rising WBC and CRP gave you no idea of where the plateau was and so you could not be definitive about the cause of those results. In Mr De Beaux's view the results indicated the start of mediastinitis from prior to the second endoscopy. They were more compatible with that than with purely localised inflammation. The two most important factors were the sudden onset of symptoms and the failure of the stent to be effective. On a hypothesis that the stent

did not completely occlude the tear the position remained that there were signs of acute lung injury within 2 hours of the procedure. He disagreed that on his theory one would have expected to see the 28 January results on 27 January. The CRP would start to rise within 12-24 hours and peak at perhaps 48 hours. He considered that something was driving that as the results did not fit with the damage at the time of the second endoscopy. Although it would take up to 24 hours for a reaction in the CRP level the peak (to 337 in this case) might be after that.

[87] When it was put to Mr De Beaux that Miss MacDonald's description of Mr Hamilton's being distressed with laboured breathing on the ward, typical of what she had seen in oesophageal perforation with pain in the shoulders at the back and being bent over in pain had militated against it being caused by the stent, Mr De Beaux responded that it did not make sense that the pain then settled easily thereafter. While morphine would make a difference many patients are still in pain after that if suffering from mediastinitis. Mr De Beaux adhered to the terms of his report and disagreed with Mr Pye and Mr Galloway and Dr Swann.

[88] In re-examination it was suggested to Mr De Beaux that he had seen the plate in question at consultation. He could not remember but when 6/2 was shown to him he thought perhaps he had although it was smaller than he remembered.

Mr Ronald Coggins

[89] Ronald Paul Coggins is a 52 year old consultant general surgeon at Raigmore Hospital in Inverness. His CV (number 7/22 of process) confirmed his qualifications. He has been a Fellow of the Royal College of Surgeons (Edinburgh) since 1995. His particular areas of sub-specialisation include surgery on the liver, bladder and kidney and also management

of the oesophagus. He is currently the clinical director of surgery and anaesthetics at Raigmore. While he is principally an upper GI surgeon he has to take responsibility more generally when on call. He has removed about 15 foreign bodies from the upper GI tract in the last 5 years or so. These have included a process of removal from the stomach up through the oesophagus but it is more common for foreign bodies to be removed from the rectum. Mr Coggins had been present for the evidence of Mr Downey, Mr Ben Younes, Miss MacDonald and Mr Hamilton and had previously produced a report number 7/1 of process. In his report at page 8 he had set out a section on options for the management of a swallowed foreign body. He had managed a considerable number of swallowed coins over the course of his work but those were items that he often left to pass naturally. Turning to endoscopic removal through the oesophagus he had removed pens, toothbrushes, crayons, cigarette lighters, knives, forks, spoons and on one occasion a partial denture. He was familiar with the American guidelines number 6/52 of process and agreed that in about 80% of cases no intervention was required and that of the other cases more were removed endoscopically than by surgical intervention. Anything greater than 2.5cm in size was less likely to pass through the pylorus. Further, if sharp objects are left to pass spontaneously about 35% of them will cause complications further down in the body than the oesophagus. As no two objects or patients were the same the process for any swallowed foreign body would be to assess its size, shape, characteristics and reach a considered opinion on how it could best be removed. There was no doubt that the dental plate in question was an irregular object with a short axis and a long axis. When the plate was shown to Mr Coggins he described it as being longer than it was wide.

[90] Mr Coggins agreed that as a general rule something that had travelled down the oesophagus in a particular orientation could probably be removed that way if you could

reconstruct that orientation. Mr Hamilton appeared to have a healthy pliable oesophagus although bruising and swelling at the bottom end of the gullet had been identified. It was clear also that Mr Downey had known that perforation of the oesophagus was a possibility with significant consequences but he had assessed the likelihood of perforation as low. On the relative risk of laparotomy there was always the small risk of mortality but more importantly the morbidity risks associated with laparotomy had been considered by Mr Downey to be significant compared with endoscopic removal. So far as the size of the incision that would be required for laparotomy if the patient was slim, an incision as small as 5-6cm could be made but with a larger patient such as Mr Hamilton who was tall and weighed just under 100 kilos a small incision would not have been feasible. Mr Coggins thought it would be something in the order of 20cm plus 3-4cm in the stomach itself to visualise its contents.

[91] The witness was taken in detail to the opinion sections of his report. In summary, it was his opinion that both the first and second endoscopic procedures were conducted appropriately, that Mr Downey had not deviated from normal practice because his previous experience had led him to the view that the denture could be retrieved endoscopically and his practice on the day was based on that experience. It was important that the swallowed denture was lying in a favourable position in the stomach on the morning of 27 January as compared with the night before. Had there been undue resistance when pulling the denture through the oesophago-gastric junction, as Miss MacDonald had experienced, it would have been appropriate to abandon the procedure and consider other options. However as Mr Downey said he had no such difficultly it was appropriate for him to have proceeded to remove the denture through the oesophagus. In relation to the other options, it appeared that Mr Downey had, as would be expected of a competent surgeon, taken the various risks

of different procedures into account. In Mr Coggins' report he had understood that the teeth had been exposed outside the net but he confirmed that the evidence to the contrary made no difference because the most important thing was the orientation of the plate onto the long axis before removal. It had been appropriate for Mr Downey to have halted the procedure until a wave of peristalsis opened up because that would allow him to know the correct time to apply tension and so be able to retrieve the plate using minimal force. It was difficult to put into words what degree of traction was required to remove a plate that way. A surgeon knows what he or she can and cannot do and learns over a number of years how healthy tissue can withstand force. It was to some extent subjective, the feel for when tissue is relaxing as opposed to not getting anywhere. Mr Coggins was of the view that to some extent the skills of colonoscopy and gastroscopy were transferrable. Both concerned the extent to which tissue can be stretched without causing harm. In his experience it was common place for colorectal surgeons to perform upper GI gastroscopies. Colonoscopy is a more difficult procedure.

[92] The witness's own experience of removing a dental plate was in about 2018 after he had been instructed as an expert in this case. The plate had two teeth and was of similar size to Mr Hamilton's. There was metal involved although it was not sharp. Mr Coggins had proceeded with an endoscopy and the plate was being held up at the OG junction. He pushed it into the stomach for easier manipulation. He then managed to remove the plate with a net like the Roth net seen in court. It had been an emergency admission and he had seen the patient within hours of his arrival at hospital. Once it was grasped he was able to decide whether he could overcome such pressure as there was and remove it with reasonable but not excessive force. It was not possible to remove the plate without touching the sides of the oesophagus. While people do swallow things larger than 2cm in diameter,

in its resting state the oesophagus is almost closed. Everything came down to experience and judgement. Mr Coggins was satisfied that Mr Downey's assessment of the situation was that of an ordinarily competent general surgeon as was the decision he made to attempt retrieval through the oesophagus.

[93] Mr Hamilton's risk of morbidity had a laparotomy been performed was not insignificant. Morbidity covers a wide range of scenarios, some are trivial and some have long-term impacts on a patient's quality of life. Mortality rates where there is a perforated oesophagus are high, although the witness's understanding was that these reduce in certain circumstances such as where stenting is employed, the patient is fasted, is started on antibiotics and there is a clean environment. He said that the last thing that any surgeon wanted to see was a perforated oesophagus, especially a surgeon who was not an upper GI specialist. Every general surgeon knows that a perforated oesophagus is an emergency. There was no doubt that laparotomy was the "easy way out" in Mr Hamilton's case. However when balancing the various risks the question had to be asked whether it was reasonable to perform a laparotomy if the object could be retrieved safely through a less invasive route. There is to some extent a special awareness of the particular risks of a perforated oesophagus. In fact it was a standard question for trainee surgeons who all learn that it has an unpleasant and complex outcome. Laparotomy should not be undertaken lightly either. Although it was the easy way out he did not mean to imply that there was a very low level of risk involved in that surgical procedure. In Mr Coggins' opinion there was no reason to believe that Mr Downey could predict that retrieval of the denture would result in perforation or that efforts to retrieve it would adversely affect outcome. Nothing in the narrative about Miss MacDonald seeking Mr Ben Younes' advice during the course of the process affected his opinion. In all the circumstances it was appropriate for Mr Downey to

have pursued an endoscopic retrieval because he could not reasonably predict that retrieval of the denture along its longitudinal axis would result in perforation. In his report Mr Coggins was of the view that it was not possible to state confidently when Mr Hamilton's perforation occurred and he did not offer a firm view on causation.

[94] Under cross-examination Mr Coggins confirmed that had Miss MacDonald been his trainee he might suggest that she could have delivered the plate to the stomach at an earlier stage. On the size of the tear noticed by the surgeons on 27 January Mr Coggins did not agree that the reference to 38-39cm in the operation note indicated the size of the tear but rather where in the line of the oesophagus it was present. So far as his own experience was concerned Mr Coggins dealt with swallowed foreign bodies not because they were particularly channelled to him as an upper GI surgeon but mostly when he happened to be the surgeon on call. The witness accepted that having had the benefit of holding the actual dental plate (number 6/2 of process) in his hand he could agree with descriptions such as uneven, sharp or spiculated and that "part of it cut like a knife". On the view obtained by Mr Downey endoscopically he would have been able to see both the size and the shape of the plate. It appeared that at the time of the removal Mr Downey considered that the edges were blunt although in evidence with the plate in his hand he did appear to feel its sharpness. It was certainly too sharp to have been left to pass through the bowel. Only if a judgement was made that it could be removed safely endoscopically was that the correct procedure.

[95] It had been reasonable for the patient's consent on 27 January to include laparotomy because that must have been within reasonable contemplation at the time. Having seen the correspondence from Mr Downey some time after the incident, Mr Coggins accepted that on the face of it that correspondence was misleading, particularly the reference to the plate

being blunt and fully encircled in the Roth net. However that did not affect the witness's conclusions which were based on Mr Downey having orientated the plate to its longitudinal axis. While there was only a 4mm difference between the axes, Mr Downey's evidence about the way he grasped the plate fortified Mr Coggins' view that the reorientation was important. While it appeared that Mr Downey appeared not to have any experience of removing a dental plate he had offered examples of other items he had removed including irregularly shaped objects, although he had not been asked whether he had removed an object of similar characteristics to the dental plate. While Mr Downey had noted that the plate had caught at the lower end of the oesophagus on the first attempt and had not come out easily at that time the reorientation then allowed the plate to be removed without difficulty. Mr Coggins disagreed that there was an inference of force having been used. There could be no expectation of removing an object of that sort without some degree of resistance. The lower end of the oesophagus is a high pressure area, but the issue was whether Mr Downey had encountered "undue" resistance rather than any at all. The issue of what amounts to reasonable force is very subjective and depends on a person's experience. Mr Coggins accepted, however, that the reference in Mr Downey's letter to there having been "an initial holdup" could be interpreted as there having been some resistance prior to the final manoeuvre. Mr Coggins indicated that it was not exclusively his experience that a period after the endoscope is put down the oesophagus that peristalsis diminishes although he accepted that sometimes that occurred with general anaesthetic.

[96] Mr Coggins considered it important that it was only on the Sunday morning that there was an opportunity to look at the plate in a different way. While acknowledging Miss MacDonald's experience as an upper GI surgeon, she had not in fact removed more than five foreign bodies from the oesophagus itself. He agreed that any reasonable surgeon

would not discount Miss MacDonald's reservations but his understanding was that Mr Downey had not so discounted them. It was accepted that safety was certainly at the forefront of Miss MacDonald's mind, that she was concerned that the plate could not be brought up safely and it was she who suggested phoning Mr Ben Younes. Speaking to a colleague and taking advice in the situation such as the one in question was not mandatory. Although one might wait to hear what the colleague had said, as it happened, while Miss MacDonald was speaking to Mr Ben Younes Mr Downey had manipulated the plate and removed it. Had Mr Ben Younes been told that Mr Downey had reoriented the plate such that he thought it would come up safely, it seems likely that the advice would have been to go ahead. A common scenario in Mr Coggins' own work was that when colleagues are removing a gallbladder they ask for a second pair of eyes on the procedure but by the time he attends theatre they have gone ahead. Assessment of the situation can change such that previous advice holds good or is no longer required. The witness accepted that, beyond the skill of manipulation required to grasp an item into a net, the removal of polyps by colonoscopy was an inappropriate parallel with endoscopic removal of a dental plate.

[97] The witness accepted that there would have been no point in Miss MacDonald talking to Mr Ben Younes about a stent unless there was a concern that there might be a perforation. Mr Downey's consideration of Miss MacDonald having experience in stenting would also have been on that basis. On the risks of laparotomy the literature indicated that the risk of adhesions and small bowel obstruction was about 4.6%. The consequences of oesophageal perforation were significant and if that was a likely outcome of a procedure then the risks were very much greater. The textbook on upper digestive surgery was put to the witness and in particular the mortality risk from instrumental perforation of the oesophagus. The important thing was that if the diagnosis was delayed the risk of mortality

increased. The risks of morbidity for oesophageal perforation were greater than laparotomy although it was a spectrum and the risks range from relatively low to very significant. It could not be said in this case that perforation was inevitable.

[98] A decision maker weighing up the risks might still proceed to remove the plate endoscopically because the risk of perforation was not inevitable. If perforation of the oesophagus was inevitable there would be no doubt that laparotomy was the only option. However, having listened to the evidence Mr Coggins considered that Mr Downey was entitled to form a view that there was no such inevitability. He agreed that the question of undue resistance was subjective to the extent that one surgeon might use the word "coaxing" while another would regard the same resistance as force.

[99] Mr Coggins found it difficult to determine when the injury to Mr Hamilton occurred. He considered that it was not a binary situation and that perforations can develop over a period of time. On the test results and Dr Swann's table he agreed that the WBC increase would normally be quicker than the rise in CRP. However the rise in CRP is more predictable than a rise in WBC because they do not necessarily follow the same trajectory. Having reviewed all the material the reason the witness was less assertive on the issue of causation was because of his understanding of the state of the oesophagus during the second endoscopic procedure. He could not be certain one way or the other whether there was already a perforation in development. He acknowledged Mr De Beaux's proposition to that effect and said he would not rule it out. Ultimately he did not disagree that perforation occurring on 27 January was the more likely scenario, but he could not say whether that was the final element or the actual cause.

[100] In re-examination Mr Coggins confirmed that he had referred to the "final element" on causation because it did seem that there had been a process with a number of factors

contributing to the end result. He reiterated that these situations were seldom binary and it often takes 24-36 hours for a perforation to present itself. There was literature on delayed presentation. On mortality rates and under reference to number 6/50 of process Mr Coggins agreed that for specific upper GI procedures the perforation by iatrogenic perforation rate was 2-3% with a mortality rate of 1%. The mortality rate is different where patients are prepared and fasted. He did not intend to imply that 2-3% was not a significant risk but not all oesophageal perforations carry the higher mortality rate of 14% that had been suggested. In essence it could not be treated as a numerical risk but one should not confuse the risk of mortality where a perforation is known to have occurred with the risk of perforation occurring. Assuming that perforation is inevitable does not provide the whole picture.

Assessment of the evidence

(i) Credibility and reliability

[101] This is a case in which credibility and reliability of the key witnesses to fact is important because the defender's expert witnesses necessarily predicated their opinions on the basis that Mr Downey's evidence would be accepted as both credible and reliable. Senior counsel for the pursuer enumerated no fewer than 33 separate points that were said to cast serious doubt on Mr Downey's credibility and reliability. Many of these alleged prevarication, failing properly to answer questions or giving answers that were inaccurate or contradicted by other witness evidence. Some of the points seemed to me to be either relatively unimportant or easily explained by an honest failure of recollection. There were, however, some points of importance that I consider to be justified. For example, I accept that Mr Downey's evidence on how many foreign bodies he had removed through the oesophagus was unsatisfactory. At first he said it was difficult to recall and then he said that

the easiest parallel was removing polyps from the bowel, something that Mr Coggins agreed was not a particularly appropriate analogy. Eventually Mr Downey answered that he had probably removed less than five items from the oesophagus and there was no exploration of his previous experience that might have informed his decision making in Mr Hamilton's case. The evidence that he had removed spectacles was vague. My own note indicates that he did not volunteer having removed these from the oesophagus, only that it was something a patient had swallowed that he had removed. In any event there was no detail of what had been done and exactly how they had been removed. More importantly, Mr Downey presented as somewhat arrogant on the issue of his experience. He appeared to think that no one in the department was more experienced in endoscopic procedures than him, despite the acknowledgement that Mr Ben Younes was the most experienced general surgeon in the hospital. There were occasions when Mr Downey responded to questions from senior counsel for the pursuer in a slightly sarcastic manner. Early in his evidence when asked to explain one or two terms in his operation note he emitted a "rapid fire" answer using a number of complex medical terms that he would know would not be easily understood by the court.

[102] A separate aspect of Mr Downey's evidence that was unsatisfactory was in relation to the issue of stenting. He claimed that the placing of the stent was a prophylactic measure only but that was contradicted by Miss MacDonald's evidence about thinking ahead and realising that a perforated oesophagus was a considerable risk and wanting to seek advice on that. He was at times a little condescending of his colleague's approach, particularly of her desire to seek Mr Ben Younes' advice.

[103] I have made some allowances for the difficult situation in which Mr Downey found himself, being called, as is practice in these cases, effectively as a hostile witness in the

pursuer's case. My impression was that Mr Downey was unsure whether to be defensive of the decisions he took or to berate himself for the act of damaging the patient's oesophagus something for which he continued to feel responsible. I have concluded that he understated in evidence the difficulty of removing the plate in the way he did. In particular in relation to the act of bringing the plate past the OG junction after what he described in correspondence later as an initial holdup, I was not convinced by his explanation that he had used those words to mean waiting for a wave of peristalsis to pass because he was using terminology that the patient would understand. While a holdup can mean either resistance or merely delay, his own operation note describing the procedure as being difficult tended to support the former interpretation. On any view his correspondence after the event was, on his own admission, misleading.

[104] For all these reasons I have reached the view that, while Mr Downey might have convinced himself that events on 27 January proceeded in a certain way, his evidence is unreliable in relation to the central issues. Accordingly, I have drawn inferences and reached conclusions from other evidence that was either uncontentious or which I have preferred.

Linda MacDonald

[105] Miss MacDonald was an impressive witness whose manner throughout her evidence was of someone doing her very best to recollect exactly what had happened and to answer honestly in an unpartisan way. She was an experienced surgeon in 2013 and one in whom Mr Ben Younes had such trust that he said he would allow her to perform an endoscopy on him personally. His assessment of her skills, which I have no reason to doubt, was in marked contrast to Mr Downey's slightly condescending regard for her. Importantly,

Miss MacDonald's evidence was effectively unchallenged. One or two questions of clarification were put to her in cross-examination but these were not of a particularly challenging nature. Against the background both of my own favourable impression of her and the absence of challenge, I have no hesitation in accepting Miss MacDonald's evidence in its entirety. She had important evidence to give in relation to the articulation of her concerns at the time, particularly in relation to the risk of perforation during the procedure on 27 January. Her unchallenged evidence in relation to how Mr Hamilton presented on the ward later on 27 January is also important.

Mr Hakim Ben Younes

[106] Mr Ben Younes gave brief evidence in relation to his role in the hospital in 2013 and what he could recollect of Miss MacDonald's telephone call to him. He was clearly struggling to recall the specific details of the telephone call in question. He gave some general evidence about the experience of upper GI surgeons and I have no hesitation in accepting him as a wholly credible witness.

The expert witnesses

[107] So far as the credibility and reliability of the experts is concerned, I have no hesitation in accepting and relying on the evidence of Mr Pye and Mr Galloway. While Mr De Beaux's expertise as a surgeon is not in doubt, I have reservations about his evidence, which was given in a particularly ebullient and challenging manner. I was concerned about his decision to conduct research over the lunch adjournment during the course of his evidence. I was also struck that he was, at times, determined to defend every aspect of his opinion without conceding even minor points where it would have been reasonable to do

so. I have accordingly rejected certain aspects of his opinion as inconsistent with the body of reasonable opinion I have accepted, for example in relation to causation. Mr Coggins, in contrast, gave evidence in a calm and measured and independent manner. I have relied on certain aspects of his evidence. However, as will become apparent, this is a case in which the facts upon which the expert witnesses relied are just as important to the final determination as the opinion evidence. Dr Swann impressed me as a wholly credible and reliable witness on the interpretation of the patient's test results. Insofar as there are other specific issues with any expert's reliability, I will address those individually in assessing the evidence on disputed issues to which I now turn.

(ii) Disputed issues

[108] The first issue on which there was difference in view between the witnesses related to the dental plate itself and whether it was sharp. Mr Downey's evidence was inconsistent on this as on occasions he appeared to accept it was sharp while at times referred to it as angular but fairly blunt. The dimensions of the plate were effectively agreed during the evidence as being 28mm by 32mm. I consider that Mr Downey's reliance on his having reoriented the plate on its longitudinal axis, supported by Mr De Beaux, was overstated. Quite apart from the dimensions, the plate was not at all regular in shape and so the small difference in measurement looking at it longitudinally rather than horizontally failed to take into account the irregular edges. Miss MacDonald commented that the plate was sharper than she remembered and the expert witnesses did not disagree with the description of it as sharp, spiculated and with the ability to cut. I conclude that Mr Downey underestimated the danger that the plate presented to the oesophagus on endoscopic removal. Mr Downey, Mr De Beaux and Mr Coggins all relied on the plate having two axes and the reorientation of

it prior to the actual removal. The physical plate having been produced and spoken to in evidence, I prefer the evidence of Miss MacDonald that the plate was longer and fatter than the tissue it had to get past, its shape being a bit like a kidney bean with protruding teeth. The difference between the two axes of no more than 4mm, might have been significant had the plate been perfectly rectangular, but was largely irrelevant standing its irregular shape and uneven sharp edges. Further, I consider the attempted criticism of Mr Galloway for having formed an initial opinion in this case without having seen the plate to be without merit. It was Mr Galloway who suggested that the plate might still be available and its recovery served to bolster his initial view. Mr De Beaux and Mr Coggins had only an uncertain memory of the plate being shown to each of them at consultation.

[109] The next issue of fact that was contentious related to the condition of the oesophagus on 27 January. On this the defender's position was inconsistent. When addressing the question of breach of duty, the defender's witnesses sought to rely on part of Miss MacDonald's evidence to the effect that the oesophagus was "bruised but intact" on the relevant date. Later, when Mr De Beaux advanced his theory on causation, a different part of Miss MacDonald's evidence was relied on, particularly when she had remarked that she knew (on 27 January) that the area at the OG junction was already weakened, "like a pound of mince". So far as its significance for breach of duty is concerned, I conclude that during the second endoscopy, the patient's oesophagus was bruised, and although intact was vulnerable at the OG junction. This meant that particular care had to be taken in assessing whether this object with uneven and sharp edges, could ever be removed safely via that route.

[110] This leads to the next critical issue in dispute namely the extent to which Mr Downey properly assessed the relative risks of laparotomy and endoscopic removal of the plate

during the second endoscopic procedure. There was a considerable body of evidence about this both from the witnesses to fact and from the experts. I have recorded aspects of the medical literature that were put to witnesses, although none of that provided real clarity on the relative risks, enumerated by percentages, of the two procedures. The reason for that is obvious. The risk of oesophageal perforation will vary from patient to patient and situation to situation as will the relative risks of proceeding with a laparotomy. Ultimately, there was a measure of agreement between experts that the risks of a laparotomy in the hands of an experienced surgeon such as Mr Downey were extremely low for mortality and very low for morbidity if the patient was, like Mr Hamilton, otherwise fit and well. While both Mr Downey and Mr De Beaux sought to emphasise that laparotomy itself was major surgery that came with risks and complications, I prefer the more measured evidence of Mr Pye, Mr Galloway and Mr Coggins on this issue. On this as on a number of other matters I found Mr De Beaux to be out of kilter with the other experts. For example, he claimed that the risk of small bowel obstruction following laparotomy was about 20%, when the medical literature pointed to a far lower figure. He was unhelpfully reluctant to concede on such points.

[111] The relative risks that had to be assessed by Mr Downey were between the risk of continuing with endoscopic removal of the plate and the risks of converting to laparotomy. What Mr Downey required to do was assess the risk to the patient in his care, with the history of previous attempts to remove the plate and the knowledge of the condition of the oesophagus, as opposed to making a general assessment of the risks of oesophageal perforation and its consequences. While Mr Coggins was in my view correct to point out that perforation of the oesophagus was not absolutely inevitable if the decision was taken to continue with endoscopic removal, it was because the known consequences of perforating

the oesophagus were so grave that any ordinarily competent surgeon acting with reasonable skill and care would take steps to avoid a material risk of there being such an outcome. In light of the findings I have made about the features of the dental plate and the vulnerability of the oesophagus at the OG junction, I conclude that the risk of perforation of Mr Hamilton's oesophagus if endoscopic removal was attempted was so significant that it should have been assumed to be the almost inevitable outcome. That was Miss MacDonald's assumption at the time and one that turned out to be wholly accurate. The undisputed evidence that the plate was caught at the OG junction during Mr Downey's first attempt at removal reinforces that conclusion. I was impressed by and accept the evidence of Mr Geoffrey Pye on this issue. Although scoring systems and percentages would now be encouraged, a general surgeon such as Mr Downey or Mr Pye with a sub-speciality in colorectal work who found themselves requiring to assess the risks of removing a dental plate endoscopically would bear in mind that a laparotomy in a clean-contaminated environment on a semi-planned basis carried a very low risk of general mortality. I accept the evidence that such a surgeon would take into account that the risk to the patient if the oesophagus was perforated would be much greater and carry a high mortality risk. On relative morbidity risks such a surgeon would know that laparotomy would carry a risk of adhesions but in the circumstances in which Mr Hamilton presented, fasted, healthy and under general anaesthetic already, the risk would be very low. General surgeons with considerable experience in performing laparotomies, such as Mr Pye and Mr Downey could be confident that a laparotomy was well within their expertise and something they could carry out with confidence. Mr Galloway spoke of it being an operation most trainee surgeons could perform. In contrast, in weighing up the relative risks, a general surgeon, without an upper GI sub-specialty, in the situation Mr Downey

found himself would at least know that the consequences of a perforated oesophagus were far greater and that he did not have the skills to be equally confident that the dental plate could be removed endoscopically without causing damage.

[112] Mr Downey claimed in evidence that he had weighed up the relative risks and exercised a judgement that the risk of penetrating the wall of the oesophagus was low enough to proceed. It is clear that such discussions that took place between Mr Downey and Miss MacDonald were before Miss MacDonald went to speak to Mr Ben Younes by telephone. On his own account, when Mr Downey was left alone his time was used to have another look at the plate and rotate it so that he could hold it sufficiently in the Roth net to bring it up to the OG junction. There was no suggestion that while he was waiting for a wave of peristalsis to pass he was continuing to assess whether or not the procedure was less risky than a laparotomy. It was clear from Miss MacDonald's evidence (see paragraph 32) that she had already set-up for laparotomy when she called Mr Downey. As his response was to say that he would have a look and see if he could get it on its long axis and manipulate it up smoothly, I conclude that the time Miss MacDonald was speaking to Mr Ben Younes was used by Mr Downey to attempt to remove the plate rather than to make a further assessment.

[113] It is in this context that the issue arises of whether Mr Downey should have waited for Miss MacDonald to return with any relevant advice from Mr Ben Younes. Of course as an experienced surgeon Mr Downey was aware that Mr Ben Younes could give no more than general advice having not seen the size, shape and location of the plate himself. The fact that he chose not to wait for Miss MacDonald's return reinforces my conclusion that he was beyond the stage of discussion and deliberation about relative risks when she left theatre. He had decided to have another attempt to remove the plate using the Roth net and

his undisputed skills with the practical manoeuvre. In doing so, he displayed an over confidence in his own abilities that was not merited when working in the oesophagus, as opposed to the colon or rectum, where he could have felt confident that his experience would allow him to resolve the situation. A related issue is whether he should have paid more attention to Miss MacDonald's stated reservations about continuing with endoscopic removal. As I have found, her reservations were perfectly proper and reasonable in the circumstances. I was not impressed by Mr De Beaux's dismissive attitude to Miss MacDonald, describing her as a "senior trainee" and contending that her lower position had to be taken into account in assessing whether Mr Downey should have heeded her concerns. His actions in removing the plate in the absence of an experienced colleague who had stated in terms that she did not consider safe removal possible were precipitate and although his failure to wait was not ultimately highlighted by Mr Pye and Mr Galloway as a separate breach of duty, it forms an important part of the context. Had he waited for Miss MacDonald's return a comprehensive assessment of the relative risks and a decision whether to proceed to laparotomy could have been completed. Mr Downey seemed to think that it was sufficient that Miss MacDonald was on hand to put a stent in place if necessary. That too reinforces that his assessment of risk and consideration of the obvious alternative procedure was insufficient.

[114] The significance or otherwise of Mr Downey's particular skill and experience as a general surgeon undertaking primarily colorectal work was also contentious. The position advanced for the pursuer is that there was insufficient evidence of Mr Downey's removal of foreign bodies through the oesophagus to establish that he had the requisite skills and experience to do so. As Mr Downey had removed less than five items through the oesophagus by 2013, he could not be said to be particularly experienced in that exercise. His

references to items he may have removed that way previously were not explored and I have already indicated that my note suggests that the spectacles he removed were not through the oesophagus. No detail was given as to what similar experiences (ie endoscopic removal of bodies through the oesophagus) he did have. The importance of this deficiency in the evidence is that, as Mr Galloway put it, the ultimate judgement about laparotomy or endoscopic removal would be based partly on experience and partly on principles of surgery. Mr Coggins also relied heavily on a surgeon's experience in that the decision on the day had to be based on that experience. There was ample evidence of Mr Downey's knowledge of principles of general surgery and of considerable skill in colonoscopy but scant information at best about his experience of any situation similar to that with which he was faced on 27 January 2013. Accordingly, the experience aspect of the judgement call was not established and I find that Mr Downey was not sufficiently skilled in the procedure to go ahead as he did and take the significant risk of perforating the oesophagus. In this context, the significance or otherwise of the plate not being fully enclosed in the Roth net is relevant. None of the relevant expert witnesses regarded the Roth net as providing particular protection for the plate in the sense that none regarded it as necessary for the plate to be fully covered by the net. The problem was that Mr Downey, whose considerable experience was in catching soft polyps in a Roth net during colonoscopy, placed insufficient, if any, emphasis, on the increased risk of the pointed edges of the plate that were necessarily outwith the net, tearing the oesophagus as it went up. Finally, I reject the contention that the reorientation of the plate altered the procedure from one that was inherently unsafe in the circumstances to one that was acceptable. Despite such reorientation, the edges of the plate still caught the oesophagus at the OG junction.

[115] I accept Mr Pye's evidence that the combination of factors, including the events of 26 January as explained to Mr Downey, the circumstances of his own failed attempt to remove the plate from the stomach, the bruised and oedematous oesophagus and the inability to remove the plate without pulling at the oesophagus, should have raised too many flashing warning lights such that the obvious and significant risk of the catastrophe of oesophageal perforation should have been avoided by performing a laparotomy.

[116] On the issue of resistance, I have already indicated that Mr Downey's own words in his letter of June 2013 of there having been an "initial hold-up" must be considered together with his operation note describing the procedure as difficult. The expert witnesses were all agreed that some force would require to be applied to get the plate past the OG junction. Mr Coggins was clear that the difference was between resistance and undue resistance, but there was no evidence supportive of any suggestion that the plate moved freely up through the oesophagus. The snagging was at the OG junction. Mr Downey and Mr Coggins conceded that the plate would require to touch the wall of the oesophagus as it came up, something that I consider material standing Miss MacDonald's unchallenged evidence about how the oesophagus looked at that time. I reject the contention that this sharp, angular plate could have been pulled through the narrow, bruised junction without considerable force or traction being applied. Mr Coggins' view about the distinction between resistance and undue resistance was perfectly reasonable but was wholly dependent on an acceptance of Mr Downey's position that he met no undue resistance on the second occasion that he attempted removal. For the reasons given, I do not accept Mr Downey's account and find that the process of removal was difficult, consistent with the operation note and that the second attempt at removal had been met with undue resistance such that halting the procedure was the only reasonable course.

[117] I conclude that on the occasion in question Mr Downey significantly underestimated the risk of perforating Mr Hamilton's oesophagus with the sharp edges of the plate. While he made a general assessment of the relative risks of laparotomy and endoscopic removal I do not accept that such an assessment was complete nor that any risk assessment took place immediately before he made the further attempt at removal while Miss MacDonald was absent from theatre. Further, the most reasonable and relatively straightforward and safer course that was available, namely to proceed to laparotomy, was one to which Mr Downey failed to convert. It was a course described by Mr Coggins as the "easy option". It would have been easy because it was within Mr Downey's weekly experience over a number of years and wholly within his skill set. To that I add and accept Mr Galloway's evidence of accepted practice that endoscopic removal of a pointed object from the oesophagus should never be attempted unless satisfied that it can be done safely. As he put it, because of the oedema the plate was very much on the edge of the limit of what would ever go up the oesophagus safely in terms of size and so the known risks of perforation should have been avoided. In all the circumstances, in proceeding to remove the plate endoscopically and failing to proceed to laparotomy Mr Downey departed from usual and normal practice as explained by Mr Pye and Mr Galloway and acted in a manner that no ordinarily competent general surgeon with colorectal speciality exercising ordinary skill and care would have done.

[118] It was contended on behalf of the defender that there was no usual and normal practice in the circumstances of this case and that the decision for Mr Downey had been to choose from a range of options using his judgement. For the reasons given, I reject the suggestion that there was more than one reasonable course for Mr Downey to take at the time he made the second attempt at endoscopic removal. He could not reasonably be

satisfied that he could remove the plate safely and in doing so departed from the rule or practice enunciated by Mr Galloway.

Causation

[119] Mr Downey's evidence was that he thought he was responsible for the perforation to Mr Hamilton's oesophagus, albeit that he disputed any breach of duty of care. Mr Pye, Mr Galloway and Dr Swann all considered it more likely than not that the perforation had occurred during the second endoscopy. Mr Coggins was reluctant to reach a definitive conclusion on this. He acknowledged Mr De Beaux's theory of there being a process rather than a binary event and that the damage caused during the second endoscopy could have simply been the final element in that process. However Mr Coggins very fairly acknowledged that a number of factors, including the pursuer's clinical symptoms and the blood and biochemistry results, tended to point the other way. It was only Mr De Beaux who offered the view that the perforation had been caused earlier than the second endoscopy. On this aspect of the case Mr De Beaux appeared to rely on Miss MacDonald's evidence that the oesophagus was oedematous because a perforation could be hidden in those circumstances Leaving aside the already noted inconsistency between the assertions put to each of the pursuer's witnesses that the oesophagus was healthy and pliable when considering the breach of duty of care issue, it seems to me that the concurrence of testimony of Pye, Galloway and Swann to the effect that the clinical signs and blood and biochemistry test results all support a conclusion that on balance the perforation (exhibited initially as a tear) occurred during the second endoscopy should be preferred to Mr De Beaux's speculative theory.

[120] Dr Swann's table of the test results was accepted and spoken to by all other witnesses. Those results were indicative, according to Mr Galloway in particular, of a mild inflammation on the morning of 27 January consistent with the patient having the bruised oesophagus from the events of the previous day. As the WBC and amylase results were within normal limits until 3.00pm on 27 January with the CRP rising dramatically in the early hours of 28 January and during the course of that day Mr De Beaux's view that the modest rise in CRP was significant was unsupported by any other evidence consistent with an opinion that the perforation occurred prior to the second endoscopy. Mr De Beaux conceded in cross-examination that the WBC had been normal until some hours after the second endoscopy. He had initially expressed the view that the WBC would rise within 3-6 hours of a perforation, and although he sought to retract from that later, his initial position was consistent with the majority view. On the clinical signs, Miss MacDonald gave fairly graphic evidence about how someone looked when they were suffering severe pain as a result of a perforated oesophagus. She had seen it before and she knew that the pain was not from the stenting. For Mr De Beaux's theory to hold good the pursuer would require to behave in a particularly unusual way in that his test results would have to belie the underlying damage that Mr De Beaux considered had already developed by 27 January. Further, for Mr De Beaux to be accepted on causation, Mr Downey himself would have to be wrong in his view both at the time of the incident and subsequently having reflected that he had caused the perforation. As I found Mr Downey to be unwilling to make concessions even where appropriate, I am in little doubt that had he felt able to challenge the evidence that his actings had caused the tear or hole he would have done so. Further, later in his evidence Mr De Beaux expanded his theory to indicate that the perforation might not have occurred at the time of the first endoscopy but that damage to the gullet had developed over

time. He considered that there could have been a very small hole following the first endoscopy that became covered with mucosa, and then enlarged. However this would likely have resulted in mediastinitis starting by the morning of 27 January before the second endoscopy. I consider that to be unlikely, standing all of the unchallenged evidence about the pursuer being clinically well 12 hours after the first endoscopy. I accept Mr Galloway's evidence that Mr Hamilton would not have been well enough to undergo a surgical procedure under general anaesthetic normally had his oesophagus already been perforated. Further, Mr De Beaux's theory was in direct contradiction to the unchallenged evidence of Miss MacDonald that she had examined the oesophagus twice and had found it to be intact.

[121] In conclusion, I accept the expert opinion, particularly the convincing testimony of Mr Galloway, supported by Dr Swann and Mr Pye, that the combination of the timing of the onset of pain, the test results and all of the clinical observations, including the first sighting of a tear to the oesophagus all lead to a conclusion that the oesophageal perforation was caused by Mr Downey during the second endoscopy. It was at the conclusion of that procedure that both Mr Downey and Miss MacDonald noticed a tear and employed a stent in an attempt to cover it. In the unfortunate circumstances of this case the stenting procedure was unsuccessful.

Application of the law to the facts

[122] The test for breach of duty in medical negligence cases remains that articulated by Lord President Clyde in *Hunter* v *Hanley* 1955 S C 200 as *"… whether he has been proved to be guilty of such failure as no doctor of ordinary skill would be guilty of if acting with ordinary care*". Where a departure from normal practice is alleged, the pursuer requires to prove three matters; first, that there was a usual and normal practice, secondly that the medical

professional concerned did not adopt that practice and thirdly that the course adopted was one that no such professional of ordinary skill would have taken if he had been acting with ordinary care. Evidence of what other similar professionals would have done is of central importance. As Lord Hodge noted in *Honisz* v *Lothian Health Board* 2008 SC 235 (at paragraph 39), where the defender has led evidence from other responsible professionals who state they would have acted as the impugned doctor or surgeon did, the court is unlikely to find that there has been negligence unless the relevant evidence of those responsible professionals does not stand up to analysis. A situation where that relatively rare conclusion can occur would include, for example, where there is a lacuna in professional practice and the doctor in question knowingly took an easily avoidable risk which elementary teaching had instructed him to avoid - per Lord Hodge in *Honisz*, referring to the decision of Sachs LJ in *Hucks* v *Cole* 1993 4 Med L R 393.

[123] A feature of the present case that also requires analysis is the nature of the specialty, or sub-specialty, in which the professional concerned worked at the material time. As McNair J put it in *Bolam* v *Friern Hospital Management Committee* [1957] 1 W L R 582, at 586:

> "The test is the standard of the ordinary skilled man exercising and professing to have that special skill. If a surgeon fails to measure up to that standard in **any** respect ('clinical judgment' or otherwise), he has been negligent …"

In *Sidaway* v *Bethlehem Royal Hospital Governors* [1985] A C 871, Lord Bridge confirmed that the *Bolam* test:

> "… clearly requires a different degree of skill from a specialist in his own special field than from the general practitioner. In the field of nero-surgery it would be necessary to substitute for Lord President Clyde's phrase 'no doctor of ordinary skill' the phrase 'no neuro-surgeon of ordinary skill.'"

[124] As I have already found, only Mr Pye, one of the pursuer's experts, was a direct comparator with Mr Downey. He too was at the material time a general surgeon with a

sub-specialisation in colorectal work, attending to upper GI emergencies when on call. While the other expert witnesses were able to speak to best practice in terms of removing foreign bodies from the oesophagus and on causation, I accept the submission made on behalf of the pursuer that only Mr Pye could speak as someone with the same type of expertise as Mr Downey. While all of the other surgeons, Galloway, De Beaux and Coggins, described themselves as general surgeons with greater or lesser special interest and experience in Upper GI work, only Mr Pye was at the material time, like Mr Downey, routinely involved in colorectal surgery. Mr Pye's evidence that he was a direct comparator of Mr Downey was not challenged. On the question of breach of duty in this case, the particular knowledge and expertise of Mr Downey is significant because he had as one of two possible options a procedure (laparotomy) in which he was skilled and which he performed weekly as against removal of a sharp foreign body through the oesophagus, something he had done on less than five occasions in his whole career and involving an area of the body with which he was indisputably less familiar. I have already relied on Mr Coggins' telling remark that he regarded laparotomy as the "easy way out" for Mr Downey. When faced with a similar situation of a swallowed dental plate, Mr Coggins had been able to judge, correctly, that he could remove it safely from the oesophagus endoscopically, because he is principally an Upper GI surgeon with considerable experience of management of the oesophagus. Mr Downey was in a different situation as he did not have the same level of skill and experience in Upper GI work. He should have had the flashing red lights that Mr Pye described and have converted to the familiar and less risky procedure. Only Mr Pye could put himself in the shoes of the general surgeon with a sub-specialism in colorectal work but called upon while on call to resolve the problem of a swallowed dental plate now sitting in the stomach.

[125] Accordingly, this is not a case in which the task is solely to determine whether the body of expert opinion on which the defender relies is reasonable or responsible. In any event, I consider that the opinions expressed by the defender's experts cannot be relied on for three reasons. First, they proceeded upon acceptance of the most favourable interpretation Mr Downey's own evidence, secondly because they could not "stand in the shoes" of Mr Downey and so provide the necessary direct comparator evidence that the law requires and thirdly because I have rejected some of Mr De Beaux's views on normal practice, the relative risks of oesophageal perforation and laparotomy and on breach of duty generally. Mr Coggins came closer to being such a comparator than Mr De Beaux, but he too was principally an Upper GI surgeon. He has considerable experience of removing foreign bodies through the oesophagus and so it was unsurprising that when faced recently with a similar situation he had the experience and associated confidence to know when he could remove a dental plate safely through the oesophagus.

[126] I have placed particular reliance in my assessment of the facts on the evidence of Mr Pye as the sole direct comparator to Mr Downey. Further, I have found that Mr Downey took an easily avoidable risk, namely of perforating the oesophagus, that all general surgeons know is a catastrophe to be avoided. Having rejected Mr De Beaux's opinion on causation, I have found that, but for the taking of that easily avoidable risk, the patient's oesophagus would have remained intact as it was the act of removing the plate that caused the perforation. The pursuer has therefore established both breach of duty and causation. I emphasise that my conclusions in this case are restricted to an isolated occasion on which Mr Downey breached his duty of care to a patient. There was evidence that in his daily work in colorectal surgery he operates as a highly skilled and effective professional and it was clear that he regretted very much the poor outcome that resulted in Mr Hamilton's case.

Disposal

[127] In light of the decision I have reached I will sustain the pursuer's first and second pleas in law. Damages are agreed in the sum of £195,000 but there will be interest accruing. I will have the case put out By Order to be addressed on the sum to be included in the final interlocutor and to hear parties on the issue of expenses, which I reserve meantime.