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Case No: TLQ 14 0125

IN THE ROYAL COURTS OF JUSTICE
QUEEN'S BENCH DIVISION

Rolls Building
Fetter Lane
Strand
London

Monday, 15th December 2014

BEFORE:

HIS HONOUR JUDGE NICHOLAS COOKE, Q.C.

BETWEEN:

MR WILLIAM SHORTALL

Claimant/Respondent

- and -

Mid Essex Hospital Services (Nhs) Trust

Defendant/Appellant

Judgement

MR PARTRIDGE (instructed by **Leigh Day Solicitors**) appeared on behalf of the Claimant

MR FOUND (instructed by **Kennedy's Solicitors**) appeared on behalf of the Defendant

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Approved Judgment

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HIS HONOUR JUDGE COOKE:

1. On 22nd September 2008, following the discovery of a carcinoma, William Shortall underwent a Laparoscopic Anterior Resection without a covering ileostomy.

2. There were two operating surgeons, as is normal and uncriticised; Nigel Richardson and Thomas Pearson.

3. It is common ground between the claimant and the Mid Essex Hospital Services (NHS) Trust, who would be responsible for any negligence which might be proved, that the eventual outcome of this surgery was not that which was desired.

4. The anastomosis failed, the consequential carrying out of Hartmann's Procedure was proved to be irreversible.

5. The claimant has been left with a permanent colostomy and other serious adverse sequelae.

6. The alleged negligence is fully particularised in paragraph 35 of the Particulars of Claim.

7. Without detracting from the significance of the detail in that pleading, for present purposes the nature of the negligence alleged and the issues which I have to determine may be summarised as follows.

8. (a) It is maintained that, as part of the initial surgery, a bicycle tyre test should have been undertaken to test the integrity of the anastomosis. Had that been done, the argument runs, a leak would have been discovered and would have been able to be dealt with straightaway either laparoscopically or by a diversion to open surgery; adverse consequences would thereby have been very largely avoided.

9. (b) The defendants meet that allegation by contending as follows.

10. First, that it was not negligent not to undertake a bicycle tyre test as alleged (contending that at the material time a responsible body of surgical opinion would have so-acted).

11. Second, that the failure to carry out a bicycle tyre test was, in any event, irrelevant to what subsequently went wrong; the failure of the anastomosis not being a consequence of its initial lack of integrity (so that a bicycle tyre test would not have identified anything of significance) but rather the product of a failure of the wound to heal, i.e. the join to weld, resulting from microcirculatory ischemic changes compromising healing.

12. The argument proceeds in this way: an anastomotic failure attributable to a defective initial procedure (absent the tell-tale signs of a contained leak -- and the defendants submit there were none) would have manifested itself quickly and unequivocally.

13. Further, the development of the claimant's post-operative condition (coupled with the histopathological findings in relation to the area of the failed anastomosis, reliance upon which is acknowledged to be, to some extent, problematic) is more consistent

with ischemically attributable anastomotic failure than failure attributable to a problem with an original lack of integrity in the anastomosis.

14. (c) The claimant further contends, albeit very much as a subordinate area of criticism, that his post-operative care was itself negligent and that his symptoms were such that he should have been the subject of a CT scan and emergency surgical intervention earlier than he was.

15. The defendants argue that this complaint is *de minimis* or alternatively that the claimant has failed to prove negligence as opposed to reasonable decisions as to priority or unavoidable limited resources as being the cause of delay in this context.

16. Neither operating surgeon claims any real relevant specific recollection of the operation. The contents of the operative note are therefore important. It is set out in paragraph 4 of the Particulars of Claim and concludes: 'Marginal artery tested okay. Anastomosis: end to end stapled anastomosis EEA 28 good, donuts, no tension, no twist'.

17. This note of course predates any suggestion of negligence. Its reference to the testing of the marginal artery provides a basis for the finding which I make, to the effect that the primary observation designed to safeguard against ischemic failure of the anastomosis had been undertaken. That state of affairs, combined with the other observations recorded in the quotation from the operative note set out above, tends to indicate that (insofar as one can be -- as to which more later) a positive outcome from this procedure was to be anticipated. No one suggests that any more could have been done, save for the undertaking of the bicycle tyre test, to improve the prospects of such a positive outcome, with the possible exception of a more effective visual inspection of the anastomosis.

18. SHOULD A BICYCLE TYRE TEST HAVE BEEN UNDERTAKEN?

19. At the material time neither Mr Richardson or Mr Pearson carried out a bicycle tyre test in circumstances such as this. Unhelpfully in my opinion, neither surgeon gave an express reason for that state of affairs in his witness statement which stood as their evidence-in-chief.

20. Mr Richardson said: "At the time it was not my standard practice to perform a routine bicycle tyre test if the anastomosis looked technically sound and the donuts were both whole and complete. I can see from the operation note that the donuts were 'good' confirming the anastomosis was intact throughout its circumference." (My emphasis)

21. Mr Pearson said: "It is not my standard practice to universally perform a 'bubble(?)' or 'air insufflation' test unless the resected donuts do not look complete or there is a concern that they are not of the full thickness of the bowel." (My emphasis)

22. The inconsistency between the two introductory phrases in the above quotations was not accidental. Put shortly, Mr Richardson now does, Mr Pearson does not.

23. Both surgeons were cross-examined in this area. Mr Pearson took the view that a bicycle tyre test adds very little to what can be noticed by visual observation. He was

aware of Mr Richardson's now increased use of the bicycle tyre test but he did not know when or why he had altered his practice.

24. Mr Richardson said that he now tended to carry out a bicycle tyre test. He identified no technical reason for not doing so. He told me he could not remember why he changed his practice, or when, beyond telling me that it was some years ago, and to some extent linking his change of practice to seeing a demonstration in Manchester.

25. Late on in the evidence in this case the defendant's expert suggested that it would have been impossible to have conducted a meaningful bicycle tyre test in the circumstances of the claimant's operation. That proposition had not been put to the claimant's expert witness, neither Mr Pearson or Mr Richardson asserted as much, and Mr Found, sensibly in my view, elected not to rely upon that argument. The suggestion did not appear in Mr Meleagros's report and I am sorry to say it appeared like an unconvincing afterthought.

26. The point being raised, as it was, diminished to some extent my confidence in Mr Meleagros's evidence.

27. The claimant's expert, Professor Keithley, deals with the failure to carry out a bicycle tyre test in paragraph 5.2 and paragraph 8.1 of his report. He stated in firm terms: "The other and more reliable method of checking that the anastomosis is intact at the completion of its construction is by using the bicycle tyre test..... The bicycle tyre test is the standard procedure in anterior resection and all left-sided colorectal anastomoses... No responsible body of surgeons would fail to perform a bicycle tyre test; failure to perform a bicycle tyre test is illogical given that the test is non-invasive. It immediately establishes whether the stapled anastomosis is intact. If there is a leak found by the test the anastomosis is repaired and retested so as to avoid the complications following primary anastomotic failure... It is not normal practice to rely on two complete donuts and not to perform a bicycle tyre test.....This expert believes that it was substandard not to have tested the anastomosis given that the bicycle tyre test is a simple non-invasive test..."

28. The test not only detects primary anastomotic leakage but also allows immediate repair, thereby preventing subsequent complications from primary anastomotic failure. It is appropriate that I should stress that the "subsequent complications from primary anastomotic failure" are exceptionally serious, involving a high risk of fatality as well as of other life-changing consequences.

29. The context therefore places a significant burden on any responsible surgeon to take any relatively simple precaution capable of reducing that risk.

30. I also point out that the bold assertion that "no responsible body of surgeons would fail to perform a bicycle tyre test" coupled with the proposition that it is "standard procedure in anterior resection and all left-sided colorectal anastomoses" was a true hostage to fortune. If unfounded, I would have expected such propositions to have been roundly rebutted by 'survey-type' evidence from the community of those experienced in this area of surgery. That has not happened.

31. The defendants rely upon Mr Meleagros who deals with the failure to carry out the bicycle tyre test in paragraphs 6.19 to 6.22 of his report. In my opinion, those

paragraphs benefit from close reading. Save for a shift of emphasis there is actually little difference between the two experts as to what is the usual practice and the benefit to be gained from carrying out the bicycle tyre test.

32. Mr Meleagros stated: "I agree that this is a test commonly performed as at paragraphs 5.10 and 6.1 in this report. The purpose of this test is to confirm that the anastomosis has been constructed correctly.... If there are any gaps between the staples then air bubbles escape alerting the surgeon to the presence of a defect in the anastomosis which is then repaired with additional sutures. Studies in the literature confirm that such tests can be valuable in confirming that the anastomosis is complete. The risk of the anastomotic leak is reduced when this test is performed and any defects detected are corrected. However, the air insufflation test does not eliminate the risk of anastomotic leak in the post-operative period...."

33. I consider that paragraph 5.10 of Mr Meleagros' report includes a non-sequitur: "There are reports in the literature which show that a normal air insufflation test does not eliminate the risk of anastomotic leak post-operatively, therefore a responsible body of surgeons does not carry out an air insufflation test if the donuts produces by the firing of the stapling device are complete."

34. The premise does not justify the conclusion. The reduction of a very serious risk ought clearly to be prominent in the mind of a responsible surgeon.

35. A similar non-sequitur appears in paragraph 6.21 of Mr Meleagros' report: "If the donuts obtained after construction of the anastomosis are complete, i.e. complete rings consisting of all the layers of the bowel wall, this provides good evidence that the anastomosis is complete throughout its circumference, therefore a responsible body of surgeons relies on the inspection of the donuts to confirm that the anastomosis is technically sound. In these circumstances a responsible body of surgeons does not carry out a bicycle tyre test to further assess the anastomosis."

36. I consider that the availability of 'good evidence' does not excuse a responsible surgeon from taking advantage of the obtaining of potentially better information when it can be obtained easily and risk-free with the effect of enabling the prompt avoidance for very dangerous complications.

37. The reasoning in the quotation reproduced immediately above appears to me to be flawed. In addition to purporting to identify the existence of the relevant 'responsible body of surgeons' not by identification of their existence as a matter of primary fact, coupled with explaining those surgeons' reasoned affiliation to that group, but rather by setting out, as I have stated, flawed reasoning and then, by inference alone, asserting that a responsible body of surgeons subscribes to the same.

38. In paragraph 6.21 of his report, Mr Meleagros then moves on to suggest that support for his argument is available from a, if not the, leading surgical text book of which Professor Keithley, the claimant's expert, is a co-author. The relevant section is to be found at page 1160 thereof.

39. It is, in my view, important to understand that the work concerned is an authoritative, academic text book, not a step-by-step guide -- Archbold and not the Bench Book if, as I hope, that is a useful analogy.

40. The important section thereof is intended to be read as a whole, by a consultant surgeon, for example, seeking guidance. It was not intended to be and should not be treated as a document enabling argument to proceed upon the, if it says you must, you must, basis. Nor should it be construed like a statute. Read in that way, the text book does not in fact support the defendant's case (and Mr Richardson and Mr Pearson did not expressly rely upon this point).

41. The section of the text book with which I am concerned includes: "After the withdrawal of the instrument it is essential to make sure that the anastomosis is complete and that there are no defects. Some suggestion of how satisfactory the anastomosis will be is obtained by examination of the donuts..... If both donuts are intact the surgeon can be reasonably happy that the anastomosis is secure... The anastomosis should be inspected, if possible, for the site of the defect. Unfortunately it is not usually possible in these low anastomoses to obtain a satisfactory view of the whole circumference. One method of testing the integrity of the anastomosis is (the bicycle tyre test)... After the defect has been identified it should be reinforced by seromuscular sutures from above if possible.... After the anastomosis has been reinforced it should be tested again under water. The need for a covering stoma to protect the anastomosis after anterior resection is a contentious issue. There are some who believe that a covering stoma makes no difference to the incidence of leakage and is unnecessary... Others, however, believe that for all anastomoses below the peritoneal reflection, a covering stoma is mandatory. We prefer to take a middle line: if there is doubt as to the integrity of the anastomosis, we construct a covering proximal stoma: if the procedure has progressed smoothly, intra-operative testing shows no leak and in the case of a stapled anastomosis both donuts are intact, a stoma is not constructed."

42. I consider that a fair reading of the whole of the relevant text, written in fact by Professor Keithley's co-author, supports the propositions that inspection of the anastomosis is essential. The identification of good donuts is valuable but not decisive and the carrying out of the bicycle tyre test wherever the anastomosis is made is at least highly desirable.

43. Given the risks associated with anastomotic failure, a reliance upon an examination of the donuts associated only with 'some suggestion' as to how satisfactory the anastomosis might be, and leaving the surgeon only 'reasonably happy' was, in the context of the text book alone, unwise.

44. This is a case in which I have been referred to a wealth of literature. As is conceded on behalf of the claimant, nowhere therein is the carrying out of the bicycle test stated to be mandatory. I would, however, not necessarily expect such literature, largely reporting the results of research, to use such a word.

45. It is, however, necessary for a competent consultant surgeon to keep constantly up to date with literature and certainly not to rely simply upon the practices which they learnt in training.

46. I regard the research paper 'Intra-operative air testing of colorectal anastomoses: a prospective randomised trial' (Beard and others) (1990) British Journal of Surgery, volume 77, page 1095 and following, as being important. Its conclusion includes: "In summary, intra-operative air testing and repair of colorectal anastomoses is a quick

and simple method of permitting the detection and repair of any defects. Its use significantly reduces the incidence of post-operative, clinical and radiological leaks."

47. 24 years after the publication of that paper the abstract of another short paper (Nachiappan and others) 'Intra-operative assessment of colorectal anastomotic integrity - a systematic review' confirmed the value of the bicycle tyre test in the relevant context in these terms: "Post-operative anastomotic complications were significantly lower in patients tested with basic mechanical patency tests compared to those untested."

48. None of the literature to which I was referred either amounted to a powerful critique of the 1990 paper or undermined the conclusion of the 2014 paper. To address all of the papers to which I have been referred in this case in detail would render what must already be a lengthy judgment over-long. I have read all of the material.

49. I notice in passing that obesity raises the risk of an anastomotic leak occurring. It seems to me that therefore the desirability of carrying out the bicycle tyre test in the case of an operation upon an obese patient is increased, although I note of course that the burden of the literature strongly supports routine as opposed to selective bicycle tyre testing.

50. Another paper, Wheeler and Gilbert: 'Controlled intra-operative water testing of left-sided colorectal anastomoses: are ileostomies avoidable?' Annalls of the Royal College of Surgeons of England, 1999, 31 (? - the photocopy is unclear), pages 105 to 108, provided further and significant support for the value of the bicycle tyre test.

51. Yet another paper, Kwon, 'Routine leak testing in colorectal surgery in the Surgical Care and Outcomes Assessment Programme, 2012' starkly reports: "Routine intra-operative leak testing in elective colorectal operations was associated with more than a 75 per cent lower risk of unplanned post-operative intervention and/or death."

52. The same paper reports an unsatisfactory outcome in relation to selective as opposed to routine intra-operative leak testing, that is use of the bicycle tyre test.

53. After acknowledging that there are some appropriate criticisms of leak testing, this paper adds: "These criticisms notwithstanding we found that the risk of clinically significant leak and death were 77 per cent lower when leak testing was used routinely."

54. I gain no real assistance from McArdle and Hole, 'Impact of variability among surgeons on post-operative morbidity and mortality and ultimate survival' (1991) British Medical Journal, 1501. Although a 1991 paper, it was concerned with an analysis of a 1974 to 1979 cohort. I do not consider it is very helpful to me dealing as I am with the more modern world of laparoscopic surgery, the potential use of the bicycle tyre test and stapling, although I accept of course that the skill of the surgeon always has a significant contribution to make towards a successful outcome for surgery of this or indeed any type.

55. For the avoidance of doubt, I spell out that of course only papers published before the date of the operation are relevant to a finding of negligence directly, although research findings postdating the operation are important when it comes to evaluating causation.

56. I have regard to the relative specific experience of Professor Keithley and Mr Meleagros and Professor Keithley's lack of care, as I find there to have been, in relation to the preparation of his condition and prognosis report.

57. I regard it as potentially significant that the relevant operating note does not in terms record a positive inspection of the stapling.

58. I find that as at the date of the relevant operation on 22nd September 2008 a reasonably competent colorectal surgeon would have been aware of the benefits of routine intra-operative bicycle tyre testing and would have carried out such a test when operating upon the claimant.

59. I acknowledge that there is a low statistical leak rate associated with this team, but that cannot have provided a reason for omitting a risk-free check.

60. I reject the proposition that at the material time a responsible body of colorectal surgeons would have failed to carry out the bicycle tyre test in circumstances such as these.

61. Kwon's article interestingly at page 305 illustrates the surprising necessity of 'benchmarking and education' in this very area (achieving an increase in the use of what is established as a lifesaving technique from 56 per cent to 90 per cent over a five year period).

62. Be that as it may, the bare fact that there was in 2008 a group or groups of surgeons who, for whatever reason, had failed to adopt by what then had been established to have been an important safeguard against devastating consequences cannot assist the defendants.

63. I cannot regard such a group as a 'responsible body of professional opinion' having regard to the literature to which I have referred and I must find negligence in this area proved.

64. I now turn to deal with causation. It is common ground that the claimant suffered from an anastomotic leak and it is common ground that such a leak can occur without any negligence in relation to the stapling itself and none is alleged here.

65. Such a state of affairs clearly arises in a small percentage of cases, it is for that reason that the bicycle tyre test has a particular value.

66. The literature to which I have been referred, in addition to being relevant to the establishment of negligence, clearly establishes that an anastomotic leak is a potential complication in a higher, although still small, percentage of cases where intra-operative bicycle tyre testing has not been carried out, as here, as opposed to instances where that test had been undertaken.

67. I again note this team's low leakage rate, also relevant background.

68. The evidence capable of assisting me in this area falls into four categories. The x-ray and CT scans, the account and record of the claimant's post-operative progress, the observations at the time of subsequent surgical intervention and the histopathological

report upon the piece of bowel removed from the area of the failed anastomosis. I must and do deal with that material in turn.

69. I was not provided with evidence from a radiologist. Both expert witnesses in endeavouring to assist the court stress that that is not their specialism; their conclusions differ in relation to the x-ray and the CT scan.

70. In relation to the x-ray, Professor Keithley asserted that the 'necklace' of staples which should have been complete and aligned was, instead, disrupted. Mr Meleagros gave evidence to the effect that the appearance of the staples in the x-ray is explicable by a combination of the angle at which the x-ray was taken and the fact that what was being stapled is human tissue.

71. I have examined and re-examined the x-ray, the viewing of which is easier on an illuminated screen than as a printed photocopy. I prefer Professor Keithley's analysis, at least to the extent that the appearance of the x-ray seems consistent with there being some question mark over the integrity of the anastomosis which had been achieved.

72. There was also a difference of interpretation with respect to the CT scan. I found this more difficult to resolve. Professor Keithley interprets the CT scan as showing a substantial abscess cavity of some 12 centimetres. Mr Meleagros reports the relevant finding at paragraph 4.20 of his report: "A large 12 centimetre cavity containing air which lies anterior and superior to the anastomotic staples of the upper rectum which is likely to be due to anastomotic breakdown."

73. At paragraph 5.19 of his report, Mr Meleagros commented that the presence of air and the absence of a record of the presence of fluid support the proposition that the anastomotic leak was recent. He goes into detail in this area but did not comment particularly on the size of the cavity.

74. After cross-examination I find myself in the position that I am unable to glean any support for either party's case as to the timing of the leak from the interpretation of the CT scan. Founding findings upon omissions in a radiological report is necessarily problematic.

75. I now deal with the claimant's post-operative history. The analysis and interpretation thereof is difficult but important. The appropriate introduction, I consider, is from the text book to which I have already referred, co-authored by Professor Keithley. That text book of course, in its various editions, pre-dates this dispute and in no sense can be regarded as partisan.

76. Relevantly, it includes: "Anastomotic dehiscence may present in a variety of ways and may begin insidiously. Prodromal signs include abdominal pain, distention and increasing pyrexia and pulse rate. Local peritonitis, defuse peritonitis or a frank faecal fistula may supervene. The patient with local peritonitis often remains surprisingly well but develops increasing pain and tenderness, usually in the vicinity of the wound, and the temperature remains elevated. Associated paralytic ileus is common. At this stage it is sometimes difficult to distinguish a localised leak from a simple wound infection. Often there follows a discharge of puss and later faecal matter, either through the wound, along the drain site or per-rectum, and the patient's general condition may then improve. The patient with generalised peritonitis may

have all the signs and symptoms that are generally attributable to this condition. Severe generalised abdominal pain, defuse tenderness, board-like rigidity and absent bowel sounds although there may be a gradual progression from non-specific clinical features to an obvious picture of dehiscence. This course of events is not always followed, thus a patient may discharge faecal material through the abdominal wall with no evidence of a previous systemic illness or local signs. Similarly, the patient may suddenly collapse with shock and generalised peritonitis after appearing to have progressed well after the operation. Evidence of peritonitis may be lacking in patients who develop gram-negative shock. Sometimes the patient never develops signs of an obvious dehiscence but continues to exhibit non-specific clinical features which cause a gradual deterioration in health. For these reasons, it is essential to consider that dehiscence of the anastomosis may have occurred in any patient who does not progress satisfactorily after colonic resection. The onus on the surgeon, no matter how senior, is to prove that the patient has not suffered this complication. Only by accepting that dehiscence is always a possibility, will the diagnosis be reached swiftly and promptly instituted."

77. I consider that that section of the text book is not only well-written but instructive. No criticism thereof has been raised and it appears to me to be helpful in assessing the evidence in the area with which I am now concerned.

78. Having regard in particular to that description of the way in which post-operative recovery after surgery of this type needs to be assessed, I am forced to the conclusion that Mr Meleagros's report was simplistic, and, so to speak, diagnostically inadequate in this area.

79. He stated: "The claimant's observations remained normal throughout the entire post-operative period which is contrary to what occurs in the event of an anastomotic leak when there is evidence of abnormal observations as follows...."

80. I much prefer Professor Keithley's evidence in this area, supported as it is by the extract from the text book which I have quoted.

81. The concern here for me in deciding whether this was a case of an earlier developing small leak or a later onset failure of the anastomosis attributable to ischemia, involves a consideration of complex and subtle presentation.

82. I reject Mr Meleagros's conclusions as set out in paragraphs 5.14 and 5.15 of his report.

83. In a situation such as this, changes within what are to be regarded in most circumstances as 'normal ranges' are both diagnostically and evidentially significant.

84. Against that background I have examined and re-examined both the claimant's account of his post-operative condition as embodied in his evidence and his 'letter of claim' and the nursing physiotherapy and other notes.

85. I regard the claimant's analysis of when 'the join in my bowel burst' as uninformed ex post facto rationalisation.

86. Obviously I can see why the defendant relies upon that statement but I do not consider it is material upon which a careful factfinder, as I must be, should place significant reliance. The claimant's understanding of what had happened to him also appears to have been influenced by what Mr Pearson had told him, obviously in good faith but without the benefit of the fuller picture which I now have.

87. The claimant was, and I hope he will forgive me for so-saying, an unsophisticated witness simply trying to do his best to tell the truth in most distressing circumstances.

88. I note that in his witness statement he dealt with his post-operative condition in a single sentence: "I was really ill and did not seem to be getting better so the doctors took me down for a scan."

89. 'Did not seem to be getting better' is a general lay description which bears comparison with the extract from the text book concerned with evaluation of post-operative recovery which I set out at length.

90. Both Professor Keithley and Mr Meleagros had pored over the collection of post-operative notes which include a few errors and which are sometimes difficult to read. I am wholly conscious of the points which are made on both sides in relation thereto with respect to CRP, temperature, pain relief, white cell count, platelets, abdominal appearance, trends and measurements. I bear in mind the remarks attributed to the claimant about his progression.

91. The position is complex and not entirely clear. As I have already stressed on more than one occasion, I obtain assistance from the extract from the text book to which I have referred: "May begin insidiously." "Prodromal signs include abdominal pain, distention and increasing pyrexia and pulse rate." "Associated paralytic ileus is common." "Difficult to distinguish a localised leak from a simple wound infection." And so on.

92. I have come to the conclusion, on the balance of probabilities, that the picture disclosed by the claimant's evidence and the notes is consistent with the early development of a small leak from the anastomosis. That evidence is not, in my opinion, adequately explained by the suggestion of a coincident chest infection and/or a coincident wound infection. The picture is, to some extent, inconsistent with a late breakdown of the anastomosis caused by ischemic changes.

93. There is a record of that which was found when the emergency operation (laparotomy washout and end colostomy for anastomotic failure) was carried out. It records: "Minimal contamination and confined to pelvis, circa 24 hours or less."

94. Minimal is of course a subjective description. There is no photographic material.

95. The assessment of a problem as having been manifest for less than 24 hours must, I believe, have been a difficult one. That finding is inconsistent with the conclusion I have reached with respect to the claimant's evidence and the notes, although of course the progressive development from a small leak would leave signs which would inevitably be difficult to interpret.

96. I am, I regret, unable to rule out 'wishful thinking' in relation to the conclusion as to the time of the leak reached upon the basis of the observations at the emergency surgery. Any longer period for a leak would necessarily and obviously have involved the beginnings of an acknowledgement of potential fault in relation to not having acted earlier if nothing else.

97. I have to remind myself that it was Mr Pearson who carried out the necessary emergency operation and it is Mr Pearson who still does not carry out the bicycle tyre test as a routine procedure.

98. I do not base my findings upon this aspect but there is at least a faint indication of a difficulty in acknowledging responsibility on the part of Mr Pearson.

99. In any event, I reject this piece of evidence as providing a safe basis for declining to find that there was at least a small leak detectable intra-operatively by the bicycle tyre test.

100. I record that at the emergency operation Mr Pearson was assisted by 'T. Garaja', a staff grade surgeon who did not countersign the operative note (not that I would necessarily have expected him to have done so) and from whom I have not heard (it is of course unlikely that he would have retained any recollection).

101. I do not attach any significance to the fact that it was Mr Pearson who signed the operative note dated 22nd September 2008, although it was he who was named as the assistant and Mr Richardson as the surgeon, although I do note that state of affairs in terms of note-keeping.

102. The final piece of evidence in this area is the histopathology report upon the sample provided after the emergency operation. It includes 'sections show segments of large intestine with patchy ulceration and granulation tissue formation. There is marked sub-mucosal oedema with inflammatory exudate covering the serosal surface and extending to the pericolic fat. The pattern of the ulceration is more in keeping with ischemia. No atypia or malignancy seen."

103. It is not wholly clear that this was a histopathological investigation into the likely cause of the anastomotic failure (the heading reading 'Anastomosis? Cause', but the report also concerning itself with malignancy). For present purposes I shall assume however that it was so-focussed.

104. I have not heard from the author and there is no detail upon which the experts could comment. The use of the phrase 'more in keeping' indicates a view taken on balance. Insofar as this report is relied upon (and Mr Found, realistically in my view, did not seek to place particular reliance upon it), as providing support for the proposition that this was a case of late developing ischemic origin anastomotic failure, is a proposition which is inconsistent with the clinical post-operative presentation, upon the basis of my findings in that context.

105. I do not consider that the histopathological report provides a safe basis for a conclusion that this is more likely to have been a case of late developing ischemic origin anastomotic failure than a failure associated with something which was likely to have been detectable upon intra-operative bicycle tyre testing.

106. So to find would involve the setting aside of my conclusions in relation to the x-ray and the post-operative presentation, both, in my view, more reliable evidential areas.

107. I also of course bear in mind the principal course of ischemic changes in the relevant area can be ruled out because of the checking of the integrity of the primary blood flow when the surgery which took place on 22nd September 2008 was undertaken.

108. Although the possibility of microcirculatory compromise exists, having regard to the literature, I find it a less than likely cause for what happened here, although I cannot rule it out altogether.

109. I therefore find that the most likely cause of the anastomotic failure which is agreed to have occurred was a non-negligent stapling defect which occurred during the operation which was carried out on 22nd September 2008.

110. I find on the balance of probabilities that that defect and its associated leak would have been discoverable had a bicycle tyre test been carried out intra-operatively.

111. I also find, again on the balance of probabilities, that the defect would have been able to have been repaired on that occasion, most likely, I believe, after a conversation from laparoscopic to open procedure.

112. The serious consequences which flowed from the failure, which I have just identified, could and should have been avoided.

113. I am also asked to make a finding in relation to post-operative care. I find that there was negligence in that area as well, applying the conventional test which has not been in dispute and which I have applied throughout.

114. The background is significant and dictates that I can deal with this aspect fairly shortly. I have already found that it was negligent not to carry out a bicycle tyre test but it would follow in relation to post-operative care that if it was known to a responsible surgeon in charge of a patient's care that a bicycle tyre test had not been carried out, the risk of post-operative anastomotic failure was elevated. That would and should have clearly focussed attention upon the importance of assessing subtle post-operative changes.

115. Post-operative care needed to acknowledge the insidious and subtle clinical presentation of an anastomotic leak and it does not appear here to have done so sufficiently. I have already stressed the need for attention to be paid to clinical signs within normal ranges in such a context.

116. Doing the best I can, I consider that a CT scan should have been undertaken and intervention initiated by post-operative day 4, that is 26th September.

117. Given my finding that although a conversion to open surgery would have been likely to have been necessary, had the bicycle tyre test have been undertaken there would have been no anastomotic leak. This finding in relation to post-operative care is however of no particular significance.

118. In summary, I find negligence and causation to have been proved in relation to the failure to carry out the bicycle tyre test.

119. I find that the standard of post-operative care was negligent to the extent that I have just indicated.

120. Had there been no negligence there would have been no anastomotic leak and the consequences thereof would have been avoided.

121. That I believe deals with the findings that I need to make at this stage but I do wish to pay particular tribute to Mr Found's skill in advancing the defendant's case. He has certainly made it difficult for me to decide this matter as was his duty. Although, at the end of the day, I am against him, I wish to record that he argued his case with particular care and skill.
