Pericarditis & Necrotising fascitis: Unusual Complications following a laparoscopic appendectomy; A Case Report

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Abstract

This case report is about a 35 year old female who came with a classic picture of appendicitis, underwent laparoscopic appendicectomy for the same; immediate post operative period was uneventful and she was discharged. But 1 day after her discharge she returned. The patient had developed abdominal pain+vomiting along with swelling and tightness in the abdominal wall. Investigations revealed necrotising fasciitis and pericarditis. Laparoscopic appendicectomy is considered to be a safe procedure in general. Infact nowadays almost all appendicectomies are laparoscopic appendicectomies because of the advantages associated with laparoscopic surgery. But it can be seen from this case that laparoscopic surgery can also cause morbidity due to complications such as intestinal obstruction, gas collection in abdominal muscles (necrotising fascitis) and a pericarditis.

Introduction

Appendicit is has always been the amongst the most commonly encountered surgical emergencies. Therefore its treatment i.e. Appendicectomy is also amongst the most commonly performed surgical procedures. With recent advances in surgery laparoscopic approach has become more common as compared to open appendicectomy.

Case Report(s)

Complications Of Appendectomy

Open appendectomy had been associated with complications like: Bleeding, Infection and intra abdominal abscesses, Wound infection, Visceral injuries leading to Fecal fistula, Intestinal obstruction, Tubal infertility, Right inguinal hernia. DVT & clotstolung and other anaesthetic complications. These complications are much rarer with laparoscopic surgeries but laparoscopic surgery may also be associated with some complications(1).

Complications Of Laparoscopic Appendicectomy

They include Subtotal/Incomplete appendicectomy, Missed diagnosis, Removal of a normal appendix, Visceral Injury-such as the small intestine, ureter or bladder leak at that edge of the colon where the appendix gets removed, Haemorrhage, Infection of abdomen, wound or blood, Blood clot to the lungs and other anaesthetic complications. There are some complications that are particularly associated with laparoscopic approach due to the instrumentation used and pneumoperitoneum created during laparoscopy. As a surgeon traverses the abdomen wall for laparoscopic access there is increased risk of: Skin infection, Subcutaneous emphysema, Hemorrhage, Gas embolism and Port site hernias(2).

Complications Discussed In This Case Report

This case report is about a 35 year old female who came with a classic picture of appendicitis, underwent laparoscopic appendicectomy for the same; immediate postoperative period was uneventful and she was discharged. But one day after her discharge she turned with complications & had to stay for quite a long time in the hospital. The patient developed post op abdominal pain + vomiting along with swelling and tightness in the abdominal wall. Post op abdominal pain & vomiting can be due to Intestinal obstruction ileus Thes well in gand pain in abdomen wall can occur due to Subcut aneousemphysema or Necro tising fascitis. Subcutaneous emphysema is a known complication of laparoscopic surgery while necrotising fascitis has been a known complication of open appendicectomy. The complication of Subcutaneous emphysema can occur in laparoscopy as insertion of surgical instruments can cause subcutaneous tissue layer injury. During peritoneal CO2 insufflation there can occur leakage of CO2 into these subcutaneous layers. This can extend as subcutaneous emphysema to parts of body beyond the surgical field which may lead to hypercarbia & respiratory acidos is related to CO2 absorption. If not corrected, this in turn can cause hemo dynamic changes, such as cardiac depression and arrhythmias. However, the subcutaneous
emphysema presents with a feel of crepitus on palpation.

Necrotising fascitis is on the other hand is a fast-spreading infection. It affects the fascia and spreads continuously if not controlled rapidly & causes secondary necrosis of the skin. It is usually associated with open surgery and gangrenous appendicitis. Hardly 2 or 3 cases have been previously described in association with laparoscopic appendicectomy so far(3) and this cases eemed to be one addition to this very rare complication of laparoscopic surgery.

Case Presentation

A 35 year old lady presented with 1 day history of sudden on set abdominal pain that radiated from upper abdomen to right iliac fossa. It was sharp and continuous. There were no aggravating and relieving factors. Pain was associated with an episode of vomiting. There was no fever, no loose stools,constipation and urinary symptoms. The vomiting was intermittent first, but still紧 in a left paraumblical region. Swelling abdomen was soft, non distended with tenderness in the right iliac fossa+, reboundtenderness+, rovsings+guarding+. The diagnosis of acute appendicitis was made clinically. Investigations showed a slightly raised WCC[12.7X 10^9/l with high neutrophil count 10.6x10^9/L. The CRP was 37. Urine showed flecks of blood and pus and leukocytes++. The patient was kept NBM, I/V Fluids started and laparoscopic appendectomy was done. No immediate complications. No immediate post op complications. No immediate post op complications. However just one day later she returned with severe abdominal pain; Intermittent first, continuous later involving the left lower quadrant of the abdomen. abdomen was not distended, soft tender along the portsites as expected but one of the port sites(left paraumblical)was reddish and seemed inflamed. She seemed generally unwell and was admitted.She was kept nil by mouth. NG tube was put in. I/V fluid(n.saline8hrly) was started, I/V antibiotics (augment in i/v 1.2g 8hr.ly and metronidazole 500mg 8hrly)were also started as the initial query was for apelvicabcess. The investigation reports showed a very high CRP but the pelvic fluid was not infected. At the same time the X-Ray of the abdomen revealed dilated small bowel & hercondition was thought to be due to post operative ileus. But she developed increased tightness in the skin of her lower left abdomen & Oedematous swelling extending from her left loin to her left groin. The genitalia also swelled up. However no crepitus could be felt. The patient continued to have pain in abdomen & She became too ill to eat or drink anything by mouth (But she was mobile enough to go to the bathroom and did not need to be catheterised). Soa CT scan of abdomen was requested. The CT scan revealed Small bowel obstruction up to terminal ileum and acollapsed colon.There was a small amount of ascitis. There was a very small amount of intraperitoneal gas. With in the left abdomen wall gas and fluid was found which was suspected to be phlegm caused by gas forming organism Therefore the patient was monitored carefully for necrotising fascitis. The blood investigations were repeated The WCC was 4 now against the initial value of7.9, Hb was 10 although it had been 14 earlier. All other counts showed lower than the irprevious values. These were attributed to haemodilution. Therefore I/V fluids were restricted. Same I/v antibiotics continued for a week. Analgesics included paracetemol 1g ivBD, Tramadol orally TDS, morphine as and when required basis. Omprezole was also given daily, cyclizine and metocloper amide were used to prevent vomiting. Low molecular weight Heparin was administered subcutaneously daily once.

The patient opened her bowels 2 days later. Orals were started first fluids then light solids. By the end of the week she was passings tools in small amounts, could eat light diet only but did not have normal appetites till. The abdominal pain still persisted & analgesia was needed to keep the patient comfortable all time. The tightness of skin started decreasing slowly after days of conservative management. In view of her continued abdomen pain an ECG was requested although she had no heart disease in the past and no history of any other medical illness. The medical registrar called onto review the ECG found it to be abnormal But since the patient was not having any palpitations, no syncopal attacks, no chestpain, blood pressure 116/90, pulse 86,SaO 294% and T 36.5 it was advised to repeat the ECG nextday.

Next day ECG was repeated and ST changes were found in leads V4-V6(saddle shape) which the medical registrar said indicated previous pericarditis. An echo was booked. The patient remain edon light diet for a week. Now her abdomen was much softer but still tight in a left para umblical region. Swelling subsided totally. But she suffered from bilious vomiting & was still passing stools in small amounts A gas trograff in follow through was done and the report showed that the dye did not to reach the distal bowel but was present in the small bowel only. The patient also suffered from intermittent vomiting in the second week. She passed wind. But still passed stool in small amounts. These indicated the third complication i.e intestinal obstruction/pseudo obstruction. Conservative management continued. A repeat AXR...
after 2 weeks was normal and patient was discharged to come back for an echo later as she was eager to go. She still needed analgesics four times a day for abdominal pain!!

Other Facts

She was not on any medications ever and had NKDA. She was a non smoker and used to drink alcohol once in months at some functions not otherwise. She had travelled to Spain 1 week before the episode of appendicitis. She didn’t take anything unusual there and was healthy during her stay. By occupation she was a police officer. Her grandfather was diabetic and had ischemic heart disease. Her parents did not have any significant medical history.

Discussion and Conclusion

Laparoscopic appendectomy is considered to be a safe procedure in general. In fact nowadays almost all appendicectomies are laparoscopic appendicectomies because of the advantages associated with laparoscopic surgery. But it can be seen from this case that laparoscopic surgery can also cause morbidity due to complications such as intestinal obstruction, gas collection in abdominal muscles (necrotising fascitis) and a pericarditis!! Usually gas collection can occur following any laparoscopy but it usually resolves in a day or two. In this case it continued for weeks despite the patient being mobile and we continued antibiotics for 10 days. It remained unclear as to why it took so long for it to get absorbed. There was never any crepitus in this case which makes subcutaneous emphysema unlikely. Also the initial redness of a port site and a gangrenous appendicitis favours the diagnosis of necrotising fascitis. The need for echo further complicated the scenario. It is note worthy to point out that pneumopericardium is an extremely rare possible complication of laparoscopic surgery. The exact mechanism is not understood but embryologically the peritoneum communicates with the pericardium. May be the pneumoperitoneum created during laparoscopic access causes a pneumopericardium by a transmission of high pressure that irritates the pericardium and causes pericarditis which resolves with time. In this case the ECG showed resolving pericarditis in a woman who had no previous heart problems and nothing else was there that could be considered as a cause of pericarditis. The patient went home on analgesics (4 times a day still needed) after a fortnight to come for echo later. The fact is that an echo can be normal in cases of active pericarditis also. So we concluded that ECG can be confirmatory evidence of a previous pericarditis that follows as a complication of laparoscopic surgery[3][4]

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