ABDOMINAL WALL NECROTISING FASCIITIS FOLLOWING LAPAROSCOPIC APPENDICECTOMY: CASE REPORT WITH REVIEW

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ABSTRACT

Necrotising fasciitis is a fast spreading infection which affects the deep fascia along with secondary necrosis of the skin and subcutaneous tissues. This can occur in both laparoscopic as well as in open appendicectomy for gangrenous appendicitis but uncommon after catarrhal appendicitis. It can occur in some gynecological surgeries also. We report a case of necrotising fasciitis of right flank of anterior abdominal wall following laparoscopic appendicectomy.

KEYWORDS: Necrotising fasciitis, Laparoscopy, Appendectomy.

INTRODUCTION

Necrotising fasciitis (NF) is a progressively fast spreading soft tissue infection. Intra-abdominal sepsis can secondarily spreads into the abdominal wall and thus results in NF. Local tissue hypoxia further enhances the chances of NF. It can occur following open appendicectomy[1] as well as laparoscopic appendicectomy including other laparoscopic procedures like cholecystectomy, laparoscopic adhesiolysis, colonecstomy and various laparoscopic gynaecological operations. However, necrotising fasciitis following laparoscopic appendicectomy has been reported in few cases. One case with fatal outcome and another well managed case of port-site necrotising fasciitis following laparoscopic appendicectomy have been reported so far.[2,3] As per English, our is 3rd case of anterior abdominal wall necrotising fasciitis following laparoscopic appendicectomy which was managed well.

CASE REPORT

A 45-year-old man presented with typical symptoms and signs of acute appendicitis. There was no history of diabetes and hypertension. He underwent a laparoscopic appendicectomy on the day of admission with a 3-port technique: umbilical port for optical trocar and specimen removal, a suprapubic port and right upper quadrant port. At the time of surgery, the appendix was found to be inflamed, but was not perforated or gangrenous and there was no free fluid or pus within the peritoneal cavity. The peritoneal cavity was not irrigated. The appendix was retrieved via the umbilical port without any bag. After 48 hrs patient developed fever with oedema and redness of anterior abdominal wall over right flank (Fig-1).

He was transferred to the intensive care unit and broad-spectrum antibiotics (Tazobactum, amikamycin and metronidazole) were administered. An urgent bed-side ultrasound scan of the abdomen was performed. It revealed sub cutaneous oedema of anterior abdominal wall (Fig-2) but did not reveal any gross intraperitoneal pathology, air or fluid. An abdominal contrast CT scan was performed showing a normal peritoneal cavity but subcutaneous gas and oedema (Fig. 3). Patient improved with therapy. Histopathology confirmed the initial diagnosis of acute appendicitis. Blood cultures taken at the onset of clinical sepsis grew no specific bacteria.

FIGURE LEGENDS

Fig-1 Oedema and redness of anterior abdominal wall over right flank.
Fig-2 US shows sub cutaneous oedema of anterior abdominal wall.

Fig-3 CT scan shows pockets of air within the skin and subcutaneous tissue. This appearance is consistent with necrotising fasciitis.

DISCUSSION

The term necrotizing fasciitis is an acute surgical condition and was first used by Wilson in 1952. It is a progressive and rapidly spreading infection of skin and subcutaneous tissue of anterior abdominal wall. Possible sources of the infection are: (i) direct spread to the abdominal wall from inflamed appendix itself; (ii) from removing the appendix through the laparoscopic port incision site; or (iii) from exogenous pathogens invading the wound postoperatively. Non-traumatic haematogenous spread of toxin-producing bacteria from a distant site of infection has also been described. NF is more common in Diabetic and immunocompromised patients. In about 20% cases, the exact cause of bacteria resulting in necrotising fasciitis is not known. Mortality rate of Necrotising fasciitis is about 29–76%.[4]

Port infection is more frequent than generalized abdominal wall necrotizing fasciitis. Even port infection with mycobacterium chelonel (atypical mycobacterium) following laparoscopic appendicectomy has been reported in literature.[5]

Our patient was a non-diabetic, non immunocompromised and suffered with non complicated acute appendicitis. Still he developed the NF of anterior abdominal wall. Specimen bags are commonly used in the retrieval of gallbladders and appendices as the use of a retrieval bag can reduce the incidence of infection. But in this case retrieval bag was not used.

Necrotising fasciitis was first noticed in the right iliac fossa[6] as in our case where also right flank was affected. It had spread across the abdomen but did not involve the peri-umbilical skin or fascia. This makes specimen retrieval an unlikely source of infection.

Systemic prophylactic antibiotics during emergency appendicectomy have successfully reduced the incidence of postoperative septic complications in non-perforated appendicitis.[7] Ideally all patients undergoing surgery for non-perforated appendix should also receive one dose of antibiotic prophylaxis, whether laparoscopic or open.[7,8]

Prophylactic antibiotics were used in our patient.

It may be questioned whether the laparoscopic approach led to this patient getting necrotising fasciitis. Laparoscopic appendicectomy in acute appendicitis has been shown to be as safe as open appendicectomy in a prospective randomized trial. Some studies have found that laparoscopic appendicectomy is associated with fewer wound infections than the open procedure.[9,10]

Due to high level of clinical suspicion in this case, the diagnosis of necrotising fasciitis was made quickly due to disproportionate pyrexia, tachycardia, pain with the palpable crepitus. Patient was managed promptly with multi-disciplinary approach. We remain uncertain as to the source of the infection in the present case; the possible scenario is postoperative wound contamination with highly virulent organisms leading to a fast and deadly necrotising fasciitis.

CONCLUSION

Rarely Necrotising fasciitis can occur following laparoscopic surgery. It is a serious condition and requires quick management as outcome can be fatal. A high index of suspicion is essential for early detection and prompt management to save the patient.
REFERENCES