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An Unusual Presentation of a Complicated Appendicitis "A Diagnostic Dilemma" and Role of Minimal Access Surgery

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ABSTRACT

Acute Appendicitis takes a classical clinical course of migratory periumbilical pain to the right iliac fossa. However, when the usual presentation takes a different course, it is difficult to face a diagnostic dilemma. A 17-year-old male patient presented with an acute abdomen from a dubious cause. There was a history of migratory periumbilical pain, radiating to the right upper quadrant. Maximal tenderness was found on the right upper quadrant. Pneumoperitoneum was shown on the Chest x-ray. After initial resuscitation, diagnostic laparoscopy was performed. Ascending retrocecal appendix was identified and tip of the appendix was ruptured on the right hypochondrium. Appendectomy performed followed by an antibiotic course. Post-operative period was complicated by abdominal collections for which relook laparoscopy performed, and pus was suctioned. Patient recovered well. Histology confirmed suppurative appendicitis. Laparoscopy is safe and feasible as diagnostic and therapeutic options in the acute abdomen when faced with a diagnostic dilemma.

Keywords: Appendicitis, Acute abdomen, Laparoscopy, Minimal Access Surgery.

INTRODUCTION

Acute Appendicitis (AA) is the commonest cause of acute abdomen necessitating surgical intervention [1]. AA is the most treated condition in acute care surgery with a lifetime risk incidence occurs between 7% and 9 % depending on the gender [2]. At our institution, appendectomy is the most frequently performed surgical procedure based on the hospital records [3] and the trend is similar across other institutions locally and internationally [4]. Normally, it takes a classical clinical course of migratory periumbilical pain to the right iliac fossa with other associated signs and symptoms [5]. However, when the usual presentation takes a different course, one faces a difficult situation with a diagnostic dilemma.

It is very rare to have a perforated appendix as a cause of pneumoperitoneum [6]. Pneumoperitoneum often indicates perforation on the intra-abdominal hollow viscus.

The aim of this case report is to offer insight into the diagnostic challenges that are encountered and how we navigated the management. Furthermore, to determine the safety and practicability of using minimal access surgery in acute abdomen from a dubious cause.

CASE PRESENTATION

A 17-year-old male patient with no comorbidities, presented to Accident & Emergency department with a 2-week history of migratory periumbilical pain, radiating to the right upper quadrant which was generalized over the entire abdomen and experienced one episode of bilious vomitus with loss of appetite and fever. Non steroid anti-inflammatory drug (NSAID) was taken before presenting to the Emergency department. On physical examination the patient was ill looking with vitals of Blood Pressure of 117/76, Pulse 88, Saturation of oxygen 97% and Temperature 37.8. There was no abdominal distention and maximal point of tenderness elicited on the right upper quadrant. Pneumoperitoneum was shown on the Chest x-ray. There were raised White cell counts (WCC) of 13.5 per microliter, and C-reactive protein (CRP) of 189 mg/L from blood investigation. Urea was 18 µmol/L and creatinine 113 µmol/L with normal electrolytes. Perforated peptic ulcer and complicated acute appendicitis were considered differential diagnoses at that moment. CT scan was deferred owing to the renal impairment. After initial resuscitation and Intravenous empirical antibiotics, diagnostic laparoscopy was performed. On laparoscopy, pus was found in all four quadrants (Figure 1) which were suctioned (2000ml). The retrocecal appendix was identified and the appendix ascended toward the right upper quadrant (Figure 2) and the tip of appendix was ruptured on the on the right hypochondrium (Figure 3).

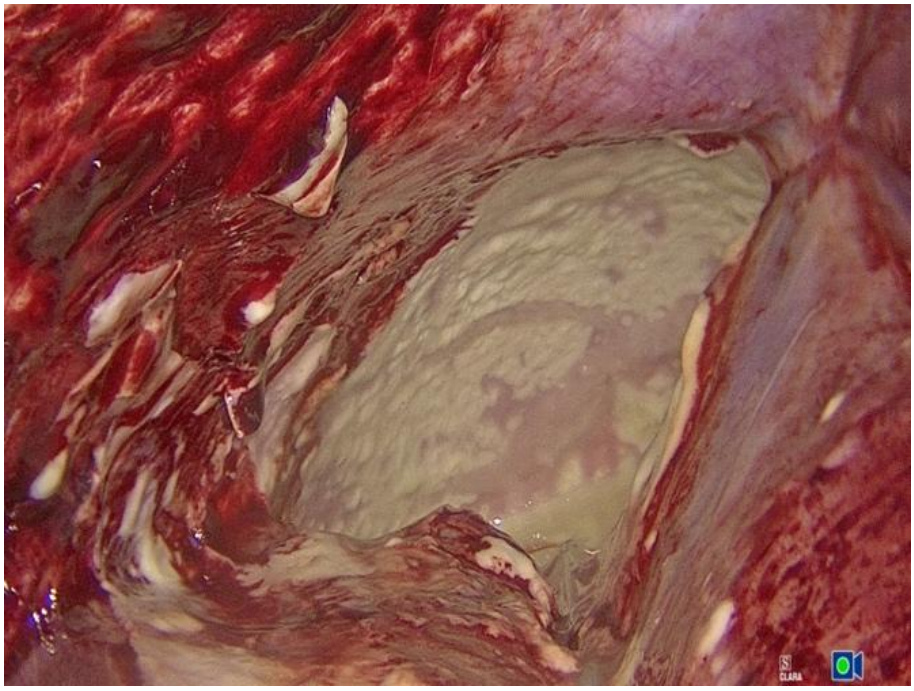

Figure 1: Intraabdominal Pus.

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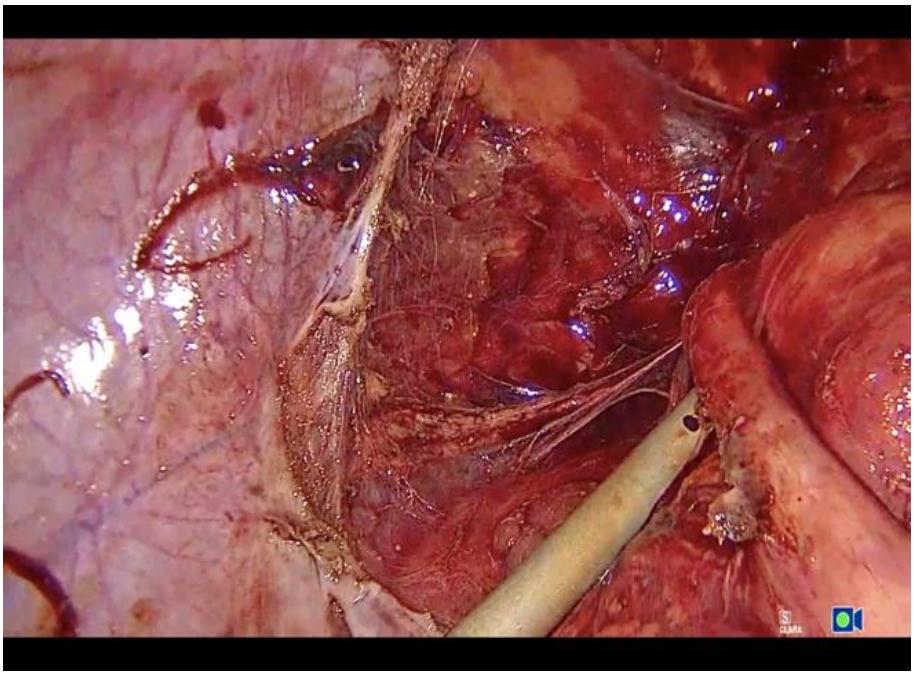

Figure 2: Ascending retrocecal appendix

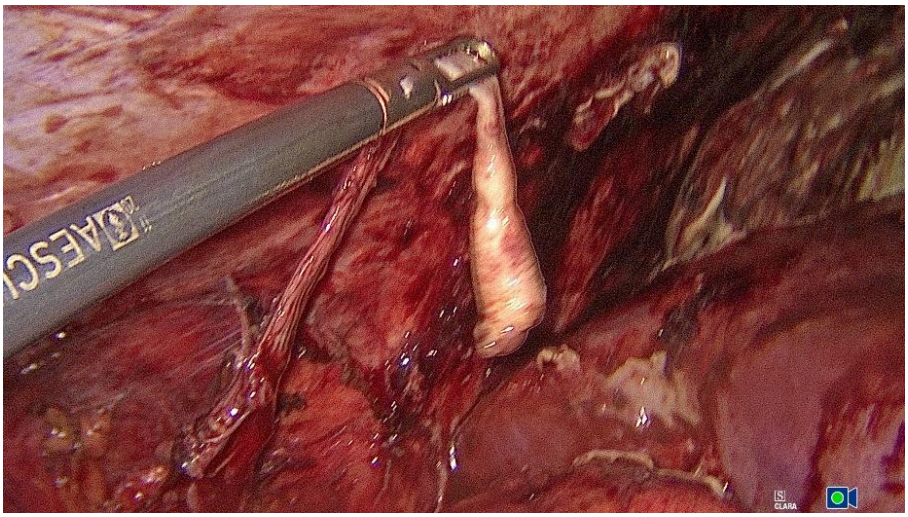

Figure 3: Tip of rupture Appendix in right hypochondrium

Appendectomy was performed and peritoneal cavity was washed out with normal saline and an intraperitoneal drain was left in-situ. Post operative period was complicated by abdominal collections for which relook laparoscopy performed. An additional 700ml of pus was suctioned mainly off the right subphrenic space and thereafter thorough peritoneal lavage was performed followed by a week of antibiotic course. Microscopy culture & sensitivity showed; Escherichia Coli, sensitivity to Amoxicillin-clavulanic acid. The patient was subsequently discharged from the surgical unit with a review date. Upon review after two weeks the patient recovered well with no further complications. Histology confirmed suppurative appendicitis.

DISCUSSION

Pneumoperitoneum occurs mostly due to a perforated peptic ulcer; however, it is important not to miss complicated appendicitis as a cause of pneumoperitoneum. [6] Historically patients

with pneumoperitoneum were offered an open surgical approach, a laparotomy with an upper midline incision to repair a perforated peptic ulcer.

Ultrasonography (U/S) and Computed tomography (CT) scan form an integral part in aiding the diagnosis and ruling out alternate diagnosis particularly when a patient has a dubious presentation. [5] We deferred imaging of U/S and CT scan in this patient due to fear of ongoing sepsis which might further delay the operation, and the aim was to have source control of infection. Moreover, the surgical team was aware that U/S and CT scan findings would not have altered the surgical management of this patient. After basic blood investigation, a plain erect chest and abdominal radiography were done. The patient was offered minimal access surgery (MAS) as it is in line with the current evidence, showing better post intervention outcomes, including a reduction in length of hospital stay, reduced surgical site infection, and overall postoperative morbidity [7].

It is the opinion of the authors that the inherent advantage with minimal access surgery is, a surgeon can visualize the entire abdomen and according to Koto et al. there is a systematic way of exploring the abdomen with laparoscopy [8]. In the case of an alternate diagnosis the surgeon does not have to extend an incision and risk of subjecting the patient to surgical site infection with additional hospital costs. Diagnostic dilemma results from the variation of the anatomical position of the appendix [9,10] and therefore it is the opinion of the authors that an intimate knowledge of the various positions of the appendix is crucial to any surgeon. There are various positions of the appendix that has been described, and they are as follows with their percentage in frequency of occurrences (retrocecal 43.5%, subcecal 24.4%, post-ileal 14.3%, pelvic 9.3%, paracecal 5.8%, pre-ileal 2.4% and other positions 0,27%).[11]

Appendicitis occurring in atypical anatomical positions can pose a diagnostic challenge [12] resulting in a missed or delayed diagnosis, as that happened in this case. The constant position of the appendix is only its origin where the three-tenia coalescence [10]. However, differential diagnoses of an ascending retrocecal appendicitis often tied to the structures in the right flank and hypochondrium which includes ureteric coli, pyelonephritis, diverticulitis, acute gastroenteritis and irritable bowel syndrome to mention few [12] leading to more diagnostic confusion. After an extensive review of literature, we cannot deny the advantages of MAS in the current surgical management of atypical presentation of appendicitis or acute abdomen. We recommend Laparoscopy when in doubt and faced with a diagnostic problem.

CONCLUSION

Minimal access surgery is safe and feasible in diagnostic and therapeutic options in the acute abdomen when faced with a diagnostic dilemma.

Conflict of Interest

None declared

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