Case Report

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Ultrasound guided percutaneous catheter drainage of an appendicular perforation with large intraperitoneal abscess formation: an effective modality of management in selected cases

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ABSTRACT

Appendicular pathology is a very common entity and appendicular perforation can present in various forms ranging from right lower abdominal pain, fever and anorexia to frank peritonitis with endotoxaemic shock. We present a 18 year female with fever, anorexia and a large upper and mid abdominal swelling of 2 weeks duration which after admission was treated with intravenous fluids, antibiotics, analgesics and antiemetics. Her CECT abdomen and pelvis revealed a huge fluid containing cystic lesion with a perforated appendix tip and intraluminal faecolith and calculi. She underwent USG guided 10F pigtail catheter drainage of the walled off peritoneal collection on 3rd day of admission. About 700 ml of serous fluid with minimal flecks was drained within 2 hours and another 860 ml over next 3 days. The pigtail drain was removed on day 7 and she was discharged on day 9, with USG abdomen confirmation of complete disappearance of the abdominal collection. Ultrasound guided percutaneous catheter drainage of the appendicular abscess with IV antibiotics cures the patient in selected case scenario.

Keywords: CECT abdomen, Appendicular perforation, Appendicolith, Periappendiceal collection, Ultrasound or CT guided percutaneous catheter drainage

INTRODUCTION

Acute appendicitis is a common acute abdominal surgical condition with an incidence of about 1 case per 1000 persons per year. The diagnosis of appendicular perforation with or without abscess formation was based clinically on fever, leucocytosis and right lower abdominal pain along with at least one CT finding of focal defect in an enhancing appendiceal wall, periappendiceal abscess or phlegmon, extraluminal appendicolith or air.

CASE REPORT

A 18 year female presented to the Surgery OPD with pain in the right lower abdomen since 15 days, gradual

distension of the upper and mid abdomen for 10 days, 2 bouts of vomiting at onset of pain, mild fever from the beginning, recent onset of anorexia and early satiety since 5 days duration. She had obtained treatment at local hospital and relived temporarily. On examination a soft, cystic, nontender swelling of approximately 15 cm × 15 cm size mostly occupying the epigastrium, umbilical, hypogastrium, right hypochondrium and right lumbar regions, dull to percussion, mildly tender at the right iliac fossa region. She was conscious, oriented, pulse-78/min, BP -112/74 mm/Hg, R/R-18/min and temperature of 99⁰ F. She does not give past history of jaundice, chronic cough, weight loss or contact with known TB sufferer. Blood reports revealed a leucocytosis of 14,200/cumm with neutrophilia of 78%, normal amylase, lipase, electrolytes, urea and creatinine. ECG was normal. She

was managed with nil by mouth, NG tube aspiration, I.V. fluids, Inj. Ceftriaxone and Salbactam, PPI, analgesics and antiemetics. CECT abdomen and pelvis showed a hypodense collection of 142 mm \times 109 mm \times 72 mm size within right side of the abdomen, extending from right iliac fossa and umbilical region to subhepatic and epigrastic region with few loculi and air within the collection. A 10 mm dilated retrocecal appendix with periappendiceal inflammation, 6 mm appendicolith at mid appendix and a 3mm calculi and wall defect at tip of the appendix suggestive of an appendicular perforation with intraperitoneal fluid collection. After 72 hours of treatment repeat TLC became 8700/cumm and patient afebrile. She was planned for USG guided pigtail catheter drainage of the collection. A 10F pigtail catheter on 3rd day of admission, immediately drained about 700ml of serous fluid with minimal flecks within 2 hours and another 860 ml over next 3 days. She was started oral diet on day 4 and medications changed to oral on day 5. The pigtail drain was removed on day 7, as collection reduced to 30 ml with repeat USG abdomen showing near complete disappearance of the abdominal collection. The patient was discharged on day 9 with stable vitals, afebrile, ambulant and tolerating normal diet. Since then she has been reviewed in surgery OPD on 3 occasions in last 1 year and found asymptomatic.



Figure 1: A large upper and central abdominal swelling.



Figure 2: CECT abdomen and pelvis showing the extent of the swelling.



Figure 3: CECT abdomen and pelvis showing the perforated appendix tip.

DISCUSSION

While the uncomplicated acute appendicitis is treated by emergency appendectomy, the management of cases with complications like appendicular perforation with or without periappendiceal abscess formation which comprise about 2-6% of cases, remains unclear due to lack of consensus in this regard. The situation is further complicated by the presence of free appendicolith within the well circumscribed periappendicular abscess. The need for interval appendectomy is not required routinely as recurrence following conservatively treated cases is only about 7%.2 The different approach to the management of appendicular abscess include guided extraperitoneal drainage, USG or CTpercutaneous catheter drainage, Laparoscopic or open abscess drainage along with intravenous broad spectrum cephalosporins in all. Of all these, image guided percutaneous catheter drainage combined intravenous antibiotics proves to be an effective and least invasive method of managing such cases with both clinical and technical success rate of 90% i.e., 37 of 41 patients and 47 of 52 procedures done respectively.³ It is evident that emergency laparotomy done for such cases are met with higher risks of complications like hemorrhage, fistula formation, prolonged ileus, wound infection and adhesions. However different studies reveal a failure rate of approximately 10-25% with this initial nonsurgical percutaneous catheter drainage procedure and associated prolonged hospital stay, multiple follow up USG or CT scans and urgent appendectomy in a few. Factors predicting unfavourable outcome percutaneous catheter drainage procedure are a large poorly defined periappendiceal abscess and presence of extra luminal appendicolith.4

CONCLUSION

Of all the available treatment modalities for acute appendicitis complicated by perforation and periappendiceal abscess formation, USG or CT guided

percutaneous catheter drainage is a proven safe and effective procedure with a success rate of approximately 90%. However the CT findings of a large, poorly defined periappendiceal abscess and presence of extra luminal appendicolith limits the efficacy of percutaneous drainage.

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