Neonatal Appendicitis with Perforation: A Case Report and Review of Literature

V. Gupta, S. B. Sharma

Department of Neonatal and Pediatric Surgery, SMS Medical College, S. P. Mother & Child Health Institute, Jaipur
Correspondence: Dr. Vipul Gupta, Room no 114, R.D hostel, S M S medical college, Jaipur-302002. E-mail: drvipul75@yahoo.co.in

ABSTRACT

Acute perforated appendicitis is described as a rare clinical entity in 20 days old male neonate presented clinically with features suggestive of peritonitis. Surgical exploration revealed perforated appendix with free fluid in peritoneal cavity. Appendectomy with general supportive measures resulted in a satisfactory recovery. Authors review their experience with this rare entity along with pertinent literature.

KEY WORDS: Acute Appendicitis, Perforated, Neonatal Peritonitis

Acute appendicitis is extremely rare in neonatal age group.\textsuperscript{[1,2,3]} To the best of our knowledge among a handful of such reported cases in English literature, this rare entity has scarcely been discussed in Indian literature till date.\textsuperscript{[1-7]} Moreover subtle clinical presentation usually results in a high morbidity and mortality due to delayed diagnosis and surgical intervention.\textsuperscript{[2,3]} Thus we herein report a similar case with the aim to make physicians aware of such unusual cause of neonatal peritonitis so that undue high morbidity and mortality could be avoided by an early diagnosis and appropriate treatment.

CASE REPORT

A 20 days male neonate presented with complaints of refusal to feed, irritability, two episodes of vomiting and progressive abdominal distension for the last 2 days. The baby was born at term by normal vaginal delivery, had passed meconium with in 24 hours and used to pass stools 3-4 times a day.

On examination the patient appeared toxic, dehydrated, tachypnoeic with pulse rate of 190/min and poor peripheral perfusion. Abdominal examination suggested tender, distended abdomen with shiny, edematous abdominal wall. The examination of chest, cardiovascular and CNS revealed no abnormality.

Laboratory examination suggested Hemoglobin of 11.5 gm\%, Total leucocyte count of 18000/mm\textsuperscript{3} with polymorphs of 78\%, Platelet count 400000/mm\textsuperscript{3}, a normal liver and renal function tests. Plain roentgenogram of abdomen suggested dilated bowel loops with multiple air fluid levels. Ultrasound study of abdomen suggested presence of free fluid with debris in pelvis and right iliac fossa.

The clinical, laboratory, and radiological evaluation suggested presence of intra-abdominal inflammatory pathology and this precipitated surgery after preoperative stabilization. Surgical exploration revealed presence of purulent fluid in pelvis and right iliac fossa with dilated small bowel loops adherent in right side of peritoneal cavity. There was no evidence of any gastrointestinal pathology on thorough exploration but the appendix was inflamed with a small perforation present just near its tip. Appendectomy with post operative supportive therapy resulted in satisfactory recovery. Histopathological examination confirmed diagnosis of acute appendicitis. The patient is on regular follow up for the last 4 months and is doing well.

DISCUSSION

Acute appendicitis as a discrete clinical entity is uncommon among the different neonatal intra-abdominal pathologies. Although acute appendicitis has been reported with an incidence of less than 0.2\% in infancy but
its exact incidence in neonatal period is still unknown.\textsuperscript{[1]} The various factors like persistent funnel shape appendicular configuration, soft liquid diet, recumbent posture and infrequent occurrence of viral induced appendiceal hyperplasia explains the rarity of appendicular involvement by inflammatory process in neonates.\textsuperscript{[1,2,3,4,6]} Still 122 cases of neonatal appendicitis have been reported in English literature till date with an increased incidence in preterm and male neonates.\textsuperscript{[1-10]} But surprisingly this rare entity has been discussed in only 6 cases in Indian literature.\textsuperscript{[1,2,3,4,6]} Moreover a high morbidity of 80% and 90% reported respectively with acute and perforated appendicitis warrants its recognition as a separate clinical entity.\textsuperscript{[1,2,3,4,6]}

Neonatal appendicitis may present as an isolated pathology or it may be secondary to a pathological disease process. Although most of the cases have been reported in association with Hirschsprung’s disease, cystic fibrosis, septicemia, necrotizing enterocolitis etc. but still isolated neonatal appendicitis has been reported in the absence of these secondary causes.\textsuperscript{[1,3,8,10]}

A high incidence of perforation attributed to thin appendicular wall, small omentum insufficient to wall off infection, undistensible cecum, and small capacity of abdominal cavity resulting in early dissemination of infection demands an early diagnosis so as to reduce a mortality of more than 90% reported in these high risk.\textsuperscript{[1,3,6]} As experienced in the present and reported cases the diagnosis of neonatal appendicitis always remains a challenge owing to its non specific clinical features and failure to appreciate tenderness and guarding.\textsuperscript{[3,4]} So a high index of suspicion and awareness is required for prompt diagnosis of such unusual cause of intra abdominal inflammatory pathology in neonatal period. A review of literature suggest that presence of different clinical signs and symptoms including abdominal distension, vomiting, refusal to feed, irritability, temperature instability, leucocytosis etc. especially in presence of radiological signs like abnormal gas pattern, free peritoneal fluid, obliterated psoas shadow, right iliac fossa abscess etc may provide a clue to diagnosis.\textsuperscript{[3,5,7,8,9,10]}

The treatment of neonatal appendicitis is primarily surgical. As experienced in the present and reported cases an early surgical intervention aimed at appendectomy along with peritoneal lavage after preoperative stabilization and with optimal postoperative care results in satisfactory recovery and remains the treatment of choice.\textsuperscript{[14]}

So, we conclude that although rare but acute appendicitis should be considered as a differential diagnosis in neonates presenting with features suggestive of intra-abdominal inflammatory pathology so that an undue high morbidity and mortality could be prevented by an early diagnosis and appropriate management.

REFERENCES