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A Rare Case of Adult Necrotizing Enterocolitis

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ABSTRACT
Necrotising enterocolitis is one of the rare case of acute abdomen and holds one of the highest mortality rates in the gastroenterology. Both its pathogenesis and aetiology remain multifactorial. As adult NEC is a rare and fatal in most of the cases, it is very important to diagnose and manage it timely and is a challenging task to all surgeons. Here we report a case of NEC in a young male whom diagnosed with intestinal obstruction and he underwent exploratory laparotomy and resection anastomosis of necrotic and gangrenous bowel and made a healthy recovery. Adult NEC may mimic intestinal obstruction clinically and radiologically and successful management depends on prompt diagnosis, resuscitation and surgical intervention

Keywords: Necrotizing enterocolitis, intestinal obstruction, exploratory laparotomy.

INTRODUCTION

Necrotising enterocolitis is a rare case of acute abdomen in adults and carries one of the highest mortality rates in gastroenterology. Both pathogenesis and aetiology are multifactorial in adult patients, proving timely diagnosis and management a challenge. NEC usually affects children and only few cases have been described in adults. Histologically it is characterized by diffuse ulceration and necrosis, gas cyst formation of small bowel and colon and often complicated by perforation, gangrene and sepsis. Similar clinical presentations are seen with occlusive mesenteric ischemia, mesenteric venous thrombosis and neutropenic enterocolitis related to cardiovascular disease, thrombophilia and chemotherapy respectively. However, Necrotising enterocolitis differs through its association with non-commensal anaerobic bacteria overgrowth in bowel wall.

Case History: A 38 years old a male presented with abdominal pain of 5 days duration, constipation and vomiting multiple episodes. His past medical history was significant for emergency appendicectomy 3 years back. At the time of admission his pulse was 130 bpm, BP 86/50 mm hg and Respiratory rate 36/min with cold extremity. On examination , the abdomen was distended with minimal generalized tenderness. Haematological investigations were normal except for WBC count was 14600/cu mm and biochemical investigations showed a serum albumin of 1.8 gm%. A plain abdominal X ray showed multiple air-fluid level , suggesting intestinal obstruction more likely due to adhesion from his previous surgery. Emergency exploratory laparotomy revealed full thickness necrosis of part of jejunum, terminal ileum, part of ascending colon and gross purulent peritonitis. A localized resection with primary anastomosis was undertaken. HPE showed , ulcerated mucosa covered with acute inflammatory exudate composed of predominantly neutrophils, congested submucosal blood vessel with extensive

areas of haemorrhage with suppurative necrosis surrounded by palisading histocytes.

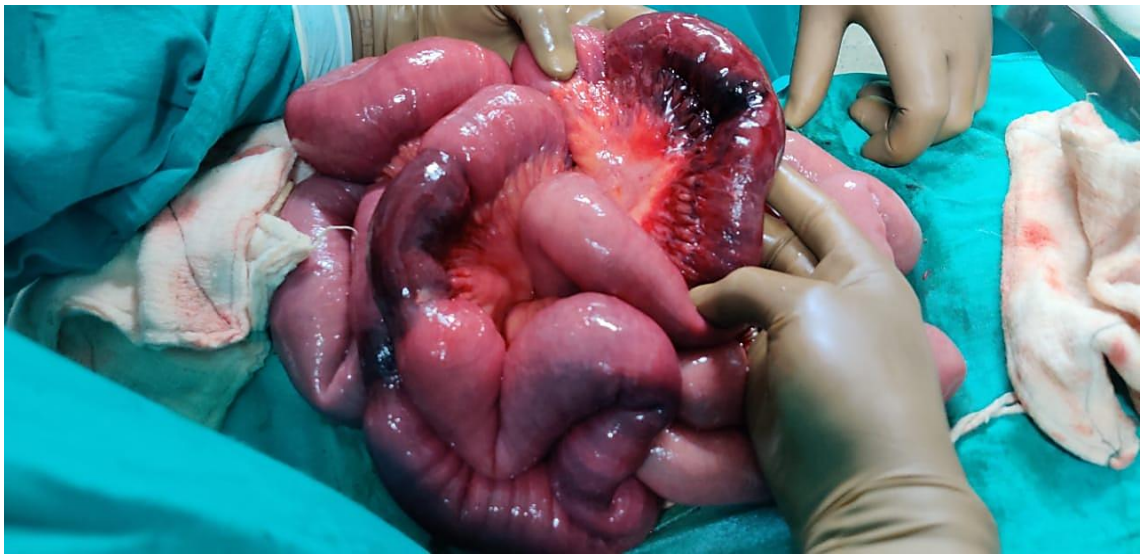

Fig 1: Intraoperative picture showing necrosis and gangrene of small bowel and caecum.

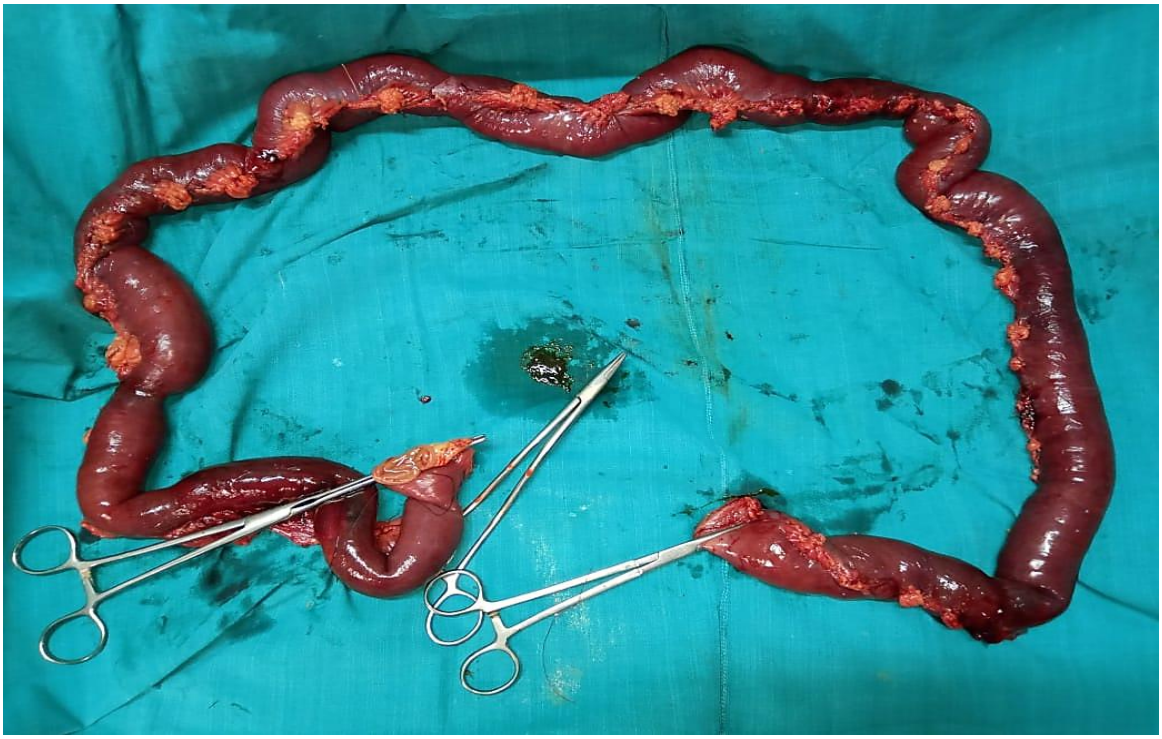

Fig 2: Specimen of dissected bowel segment showing necrotic and gangrenous ileum and caecum.

Discussion: The cause of adult NEC is multifactorial . Infectious agents, inflammatory mediator and circulatory disturbances have all been implicated in the aetiology and pathogenesis of NEC. The common organisms implicated are bacteria like E.coli, Enterobactor, Pseudomonus, Clostridia, virus like Corona virus, Rota virus and Enterovirus. Circulatory disturbances like reduced mesenteric blood flow leads to ischemia which causes hypoxic cell damage and release of inflammatory mediators and free radicals and loss of bowel`s cellular integrity. This mechanism is similar to bowel necrosis occurring in non occlusive mesenteric ischemia (NOMI)[1,2,3]. The primary etiology of adult NEC is different from neonatal NEC. In children due to poor development of defense systems, an initial infective insult seems to

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be the cause of intestinal necrosis[4]. Histological examination is characterized by pathological features such as an intestinal necrosis beginning in the mucosa with extensive areas of haemorrhage. Management is both Medical and Surgical. Medical management attempts to producing local vasodilatation whenever possible and surgical resection of the affected intestinal segment. The common findings of adult NEC at laparotomy include dilated and thickened loops of bowel with segments of necrosis often separated by segments of normal bowel i.e skip lesion, these are usually absent in non occlusive mesenteric ischemia (NOMI)[5,6]. Angiography is an useful technique to diagnose NOMI prior to occurrence of bowel infraction.

Conclusion: Necrotizing enterocolitis is an acute disease that primarily affects premature neonates of low birth weight, and has a very high morbidity and mortality. It is strongly felt that there is possible correlation between vascular and infective mechanisms involved in pathogenesis of bowel necrosis in adult necrotizing enterocolitis. The clinical findings, laboratory investigations, histopathological features and radiological evidences might be nonspecific in advanced disease. A high index of suspicion is necessary in making a diagnosis.

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