SPONTANEOUS COLONIC PERFORATION IN AN OLDER CHILD OF UNKNOWN CAUSE; A CASE REPORT

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INTRODUCTION

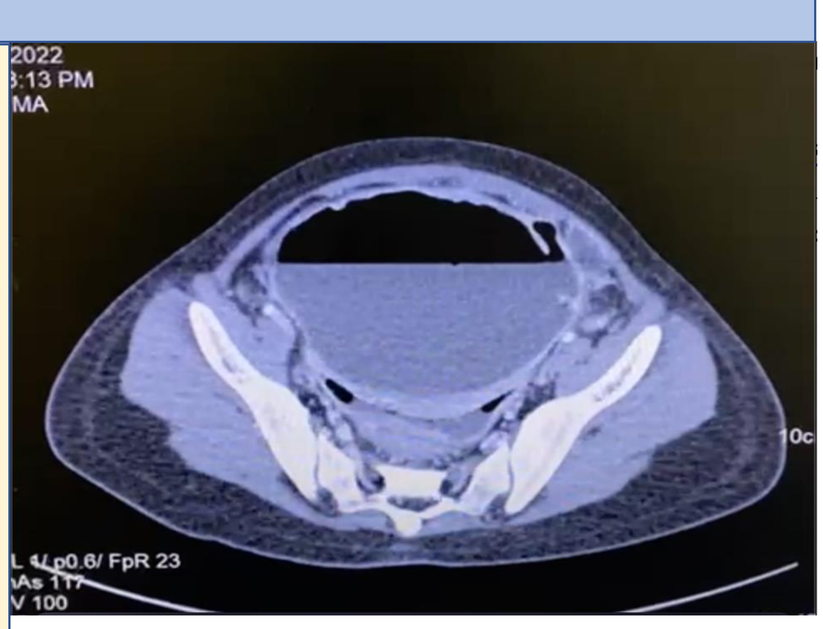
Colonic perforation is usually occurred within neonatal period. It mainly contributed by necrotizing enterocolitis or congenital bowel pathology. It is rare beyond neonatal age is and mainly contributed by blunt injury to abdomen for example foreign body ingestion or iatrogenic perforation during colonoscopy. Non traumatic cause of perforation predominantly related to bacterial infection or in small percentage, viral infection such as cytomegalovirus (CMV) especially in immunocompromised patient. However, about 70% of non-traumatic perforation are unknown in origin. Identifying the aetiology of perforation is vital in determining surgical management and outcome.

CASE SUMMARY

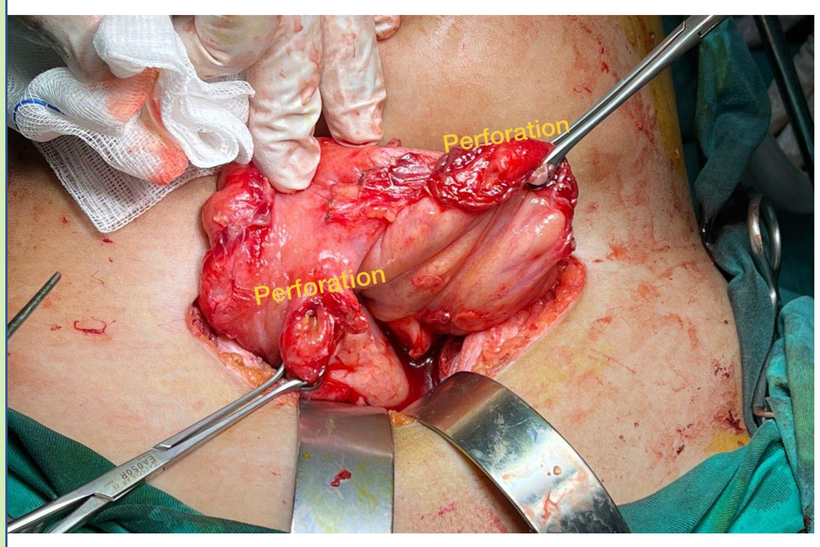
An 11-year-old non-citizen girl, previously well, presented with worsening lower abdominal pain for two weeks. It was associated with fever, abdominal distension, poor oral intake and loss of weight. Clinically, there was mass palpable over lower abdomen extending up till umbilicus. Ultrasonography and computed tomography showed large cystic mass in pelvic region with complex debris and air fluid level.

Emergency laparotomy was performed. There was a huge inflammatory mass densely adhered in pelvic region. It contained pus and forming pseudocyst. Multiple pistols shot perforations noted at sigmoid colon which was repaired and diverting sigmoid colostomy was created proximal to perforation.

Culture and sensitivity did not detect any organism. Stool for multiplex tested for various viruses, bacterias and parasites were negative. CMV IgG was reactive however no CMV inclusion body seen in perforated edge histopathological examination (HPE).



Computed Tomography (CT) scan findings showing huge cystiuc mass from the pelvic region with air fluid level seen within mass Sigmoid colon is disolaced and compressed by the mass possible connection with the colon.



Intraoperative findings showing multiple perforation at sigmoid colon, with huge contained pelvic collection

DISCUSSION

Acute colonic perforation in children is a potentially fatal condition. It is well recognized by clinical symptoms and imaging. Colonic perforation is defined as a loss of continuity of the colonic bowel wall. There are ultimately four main mechanisms that can lead to a perforation of the intestinal tract, which is ischemia, infection, erosion and physical disruption [1]. Colonic perforation commonly occurs in neonates, while in a child aged more than 1 year old, it is very uncommon and usually is related to non-traumatic causes. There are limited papers on its etiology, but mainly it is related to an immunocompromised state or bacterial infection [2].

Identifying the cause of non-traumatic perforation can be difficult. Mainly due to vast diseases that can cause perforation in children. The spectrum of diseases causing non-traumatic colon perforation are inflammatory bowel disease, connective tissue disorder, lymphoma, drug-induced perforations, infective colitis, and sometimes extra-pulmonary tuberculosis [3-4]. Numerous investigators have reported bowel invasion by bacteria such as Salmonella spp, Enterococcus fecalis, Campylobacter spp, Clostridium septicum, and Pseudomonas aeruginosa and among viruses, CMV is the most common. Campylobacter spp is usually associated with high mortality. These organisms' invasion may be complicated with toxic megacolon and have a 1-3% risk of late perforation [4-5].

In our case report, there is no definite cause proven. However, we postulated it is due to the invasion of the CMV with the evidence of reactive IgG, while other investigations were normal. CMV is a double-stranded DNA virus that targets the host's epithelial, endothelial, fibroblast, and smooth muscle cells. CMV can remain dormant in a host; thus host remains asymptomatic and may become symptomatic in an immunocompromised host. This girl is a non-Malaysian citizen comes from a low socioeconomic family, living in a poor housing conditions with no proper hygiene and sewage. This may contribute to CMV infection. CMV also can mimic symptoms of inflammatory bowel disease.

Previous studies in regards to colonic perforation in paediatrics mainly focus on penetrating injuries from firearms, accidents and iatrogenic procedures. Limited studies have been reported on the management of organism-related perforation. The surgical approach is essential in the management of colonic perforation. Depending on the etiology of the disease, the approach can be either a simple repair or a staged repair in which divided colostomy is a must. This is to avoid the risk of recurrent perforation if the cause of initial perforation was not sorted out in the first place.

CONCLUSION

Spontaneous colonic perforation beyond neonatal age is unusual. There are various type of aetiology reported. Identifying cause of perforation is important in determining surgical management.

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