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## **A Rare Case of a Mesenteric Cyst in East Africa:**

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**Introduction:** The pre-operative, intra-operative, and post-operative anesthetic plan is usually based upon a known condition of a patient, supplemented with additional studies as indicated. The disease process for which the surgery is to be performed, as well as any co-morbid conditions, is generally well established, allowing the anesthetic technique to be tailored to the individual patient, and possible complications to be anticipated. While there are certainly emergency cases where there is insufficient time for a thorough pre-operative assessment, certain elective cases can also challenge the anesthesiologist in a similar manner. In the case presented, not only was the primary condition unknown, but also the effects upon other organ systems could not be fully evaluated because of limited laboratory and radiological resources in the East African hospital where the surgery was scheduled.

**Case Report:** A 6-year-old 20 kg boy with a two-month history of increasing abdominal girth and abdominal discomfort was scheduled for exploratory laparotomy. The child was admitted the week before with increasing dyspnea, especially when supine, as well as tachypnea and fever. On examination, he had a massively distended abdomen with shifting dullness. Since the differential diagnosis at that time included tuberculosis peritonitis, lymphoma, and echinococcal infection of the liver, the child was treated with metronidazole, streptomycin, rifampin and aldactone. Our evaluation the day of surgery revealed a cachectic, pale, non-jaundiced child with decreased breath sounds at the left base, a systolic ejection murmur, and a tense, distended abdomen. His vital signs were RR 50, HR 138, BP 100/50, with laboratory values indicating a hemoglobin of 7.5 and electrolytes within normal limits. The hospital is unable to perform liver function tests or coagulation studies. Type-specific and cross-matched whole blood was ordered from the blood bank; no other blood products are available at the hospital. The child was pre-oxygenated on his side, as his dyspnea was exacerbated by the supine position. After the application of EKG, BP, and pulse oximetry monitors, rapid sequence induction with cricoid pressure was performed using thiopental, succinylcholine, and IV lidocaine. Proper tube position was confirmed by auscultating breath sounds on the right and visualizing the endotracheal cuff pass the vocal cords, as there is no end-tidal CO<sub>2</sub> monitoring and left sided breath sounds were absent. As the surgery proceeded, a large, multiloculated cyst filled with hemorrhagic fluid was identified. The previously stable vital signs deteriorated upon rupturing of the cyst, with the lowest MAP reading 20 mm Hg. Circulation was supported with ephedrine, while giving additional crystalloid and whole blood. By the conclusion of the surgery, the large cystic mass was removed, the child no longer required vasopressor medications, breath sounds returned on the left side, and the child was extubated shortly after arriving in the surgical intensive care unit. The child continued to do well clinically, and was transferred out of the ICU on post-operative day three with stable vital signs. Pathological evaluation revealed the mass to be a benign mesenteric cyst originating from the mesentery of the transverse colon.

**Conclusion:** Mesenteric cysts are rare, benign, intra-abdominal tumors, with less than 1000 reported in the literature[1]. Almost a third have been described in young children under the age of 10 years[2]. Because of their insidious onset, they are difficult to diagnose. Typically, mesenteric cysts cause only non-specific abdominal fullness and distension, occasionally accompanied by nausea and vomiting[1]. The treatment of choice is surgical excision, with negligible recurrence or sequelae when completely excised[2]. Most mesenteric cysts are not recognized until either they rupture, or they have become large enough to cause secondary complications. Rupture of a mesenteric cyst is uncommon, but generally follows either minor abdominal trauma or occurs spontaneously secondary to infection. The literature describes cyst rupture as a surgical emergency, as the cyst fluid will cause peritonitis and an acute abdomen[3]. Although anaphylactic shock has been described following rupture of hydatid cysts[4], this is unlikely to follow mesenteric cysts, as the latter are devoid of parasites. Secondary symptoms from the cysts are due to their large size and compression of

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nearby structures. Intestinal obstruction and urinary retention are common clinical features, as is dyspnea from increased intra-abdominal pressure, as in our case. Unlike hydatid cysts, mesenteric cysts do not cause ascites, as the liver itself is unaffected. The above case illustrates the importance of thorough preoperative evaluation and intraoperative vigilance in order to ensure patient safety. Certainly, a standard pre-operative evaluation in the developed world would have included additional information, such as liver function tests and coagulation studies, in addition to computed tomography to delineate the anatomy of the lesion and its involvement of abdominal viscera. However, in developing nations, these data are not always attainable, and the clinical judgment assumes a larger role. For example, our suspicion for significant liver impairment was low, based upon clinical features: the child was not jaundiced, had no pedal or flank edema despite the hugely distended abdomen, and had no bleeding from intravenous or phlebotomy sites. Intraoperatively, all anesthetics require vigilance. Here, unexpected severe hypotension from cyst rupture was promptly treated, precluding adverse sequelae. Consequently, our child had a good clinical outcome for exploratory laparotomy for a tumor of unknown etiology, were the pre-operative differential diagnosis included causes as diverse as bacterial infection, malignancy, and parasite-induced liver failure.

#### References:

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