

Superior mesenteric artery syndrome and anaesthesia

A Hussain

Citation

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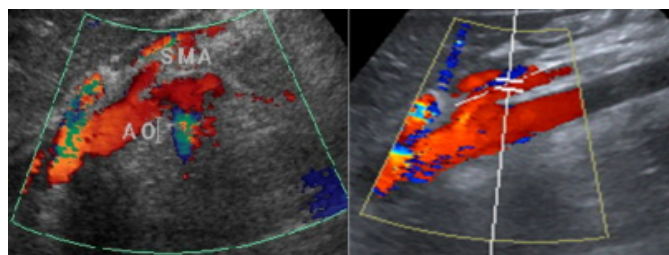
Abstract

Sir,

A 21-years old female patient weighing 48 kilograms and height of 148 centimeters was admitted to our hospital with repeated attacks of intermittent epigastric pain and vomiting over the last 18 months. A detailed clinical history, physical examination and full panel of investigations including barium meal series, abdominal ultrasonography (shown in figure 1),

Figure 1

Figure 1: Abdominal ultrasonography (Doppler). Superior mesenteric artery / aortic angle was found to be 23.8 degree.



CT scan with oral and intravenous contrast and CT angio lead to the diagnosis of superior mesenteric syndrome. She underwent elective Robotic side to side duodenojejunostomy under general anaesthesia. The perioperative anaesthetic course was quite uneventful.

Superior mesenteric artery (SMA) syndrome is an uncommon but well recognized clinical entity characterized by compression of the third, or transverse, portion of the duodenum against the aorta by the SMA, resulting in chronic, intermittent, or acute complete or partial duodenal obstruction. SMA syndrome was first described in 1861 by Von Rokitansky. The SMA usually forms an angle of approximately 45° (range, $38-56^{\circ}$) with the abdominal aorta, and the third part of the duodenum crosses caudal to the origin of the SMA, coursing between the SMA and aorta. Any factor that sharply narrows the aortomesenteric angle to

approximately $6-25^{\circ}$ can cause entrapment and compression of the third part of the duodenum as it passes between the SMA and aorta, resulting in SMA syndrome. In addition, the aortomesenteric distance in SMA syndrome is decreased to 2-8 mm (normal is 10-20 mm). Alternatively, other causes implicated in SMA syndrome include high insertion of the duodenum at the ligament of Treitz, a low origin of the SMA, and compression of the duodenum due to peritoneal adhesions. In the past, deaths due to progressive dehydration, hypokalemia, and oliguria have been reported; most of these occurred in patients in whom the diagnosis was delayed or missed [1].

We could find, to the best of our knowledge, only one case report in anaesthesia literature. A 14-year-old male patient was admitted to the hospital for an emergency appendectomy under general anaesthesia. In the process of inducing general anaesthesia, massive pulmonary aspiration of gastric contents and bile juice occurred by accident. After surgery, he was transferred to another hospital due to severe ARDS. The gastroduodenoscopy, observations, CT, and clinical symptoms, were indicative of SMAS. Surgery was considered because medical conservative treatment of SMAS was ineffective. SMAS was confirmed on the surgical fields [2].

Anaesthetic concerns should focus on the preoperative preparations of the patient. Fluids, electrolytes, acid base disturbances should be corrected and prophylaxis against aspiration of gastric contents adequately provided.

References

1. Avinash Shetty and Ivor D Hill. Superior Mesenteric Artery Syndrome. Retrieved from <http://www.emedicine.com>. Article Last Updated: Jul 16, 2006.
2. Yong Hun Jung and Gill Hoi Koo. Aspiration of pneumonia during induction of general anaesthesia in Superior Mesenteric Artery Syndrome patient. Korean J Anesthesiol 2006; 51: 512-5.

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