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Superior mesenteric artery syndrome: A surgical dilemma

Superior mesenteric artery syndrome (SMAS) is an uncommon clinical entity which is difficult to diagnose and treat effectively. In current surgical practice, a duodenojejunostomy (DJ) is the surgical option of choice. However, it does not result in symptom resolution in all patients. A sub-set of patients, particularly those who have long standing symptoms, have persistent vomiting despite surgical intervention. The resulting problems are twofold: one is persistent vomiting and the other being

maintenance of nutritional needs. From our modest experience in managing five of these patients we believe that the addition of a tube gastrostomy (TG) and feeding jejunostomy (FJJ) are valuable adjuncts in the management of SMAS patients with long standing symptoms in developing countries with financial constraints.

Case Report

Five patients with a diagnosis of SMA Syndrome underwent surgical intervention between 2010 and 2014 in our surgical unit. All patients had a DJ done along with a TG and FJJ except the first patient (who had two procedures). Stomal dysfunction persisted for 4-10 months after initial surgery in our series. In all our patients, the addition of a TG provided a gastric vent for decompressing the stomach and duodenum; the FJJ provided an access for enteral nutrition until the symptoms abated.

The first patient in our series initially underwent a DJ. However vomiting persisted for few weeks and his nutritional management was challenging as he could not afford total parenteral nutrition. He underwent a second operation wherein a TG and a FJJ were inserted. We were able to manage both his symptoms and maintain his nutrition in a cost effective manner until complete resolution of symptoms were achieved after 7 months.

Discussion

DJ is the 'gold standard' procedure of choice in SMAS, but there is sparse data on long term outcome, persistence of symptoms, its management and lastly alternative operations for SMAS. Aslam et al¹ have reported persistence of vomiting for 15 months after DJ in their case but no management options have been discussed. Shukla et al² also report a similar experience but the further management is not clear. Yilnen et al. have reported a 7-year follow-up study of 16 patients treated with duodenojejunostomy and found that outcome was regarded as excellent by 3 patients, good by 6, satisfactory by 5, and poor by 2 patients.³ Other operative techniques for SMAS reported include anterior transposition of the duodenum,⁴ transposition of the SMA to the infra renal

aorta⁵ and duodenal circular drainage. Yang et al⁶ reported their experience with 42 cases of SMAS. Five patients in the series had a DJ initially that failed and patients had persistent vomiting. They recommend the duodenal circular drainage which is a complex procedure and interestingly has not been reported elsewhere in medical literature so far.⁶ These procedures need specialised units with expertise which is not always available in a developing country like India and elsewhere. From the above discussion it is evident that DJ does not always result in complete symptom resolution in SMAS. The possible causes for persistent symptoms include ongoing atony, an underlying motility disorder and abnormal peristaltic pattern of duodenum. It is reported that in the duodenum there exist both direct and reversed peristalsis. Normally the direct peristalsis is greater than reversed peristalsis; however in long standing cases with SMAS, the reversed peristalsis is much greater than the direct peristalsis and despite the presence of a duodenojejunostomy, it is likely to lead on to persistent vomiting. Some of the options reported in the management of persistent vomiting are long term prokinetics, use of a gastric pacemaker, conversion to a roux-en-y DJ7 and gastric volume reduction surgery. However there are no large volume studies advocating its routine use. Given the rarity of SMAS, multiple operations described and variable results reported in medical literature, the authors believe that the most important aspects of surgical management of SMAS are patient satisfaction, symptom resolution, and maintenance of nutrition. In patients with persistent symptoms following DJ, there is very little literature published pertaining to their management. The options described are either experimental or involve complex surgical procedures performed in dedicated specialised units. These are not universally available due to lack of access, resource and financial constraints. We strongly believe that a simple addition of a TG and an FJJ at the time of the initial DJ in patients with SMAS (especially with long standing symptoms) has the advantages of a cost effective way of meeting the nutritional requirements and also in draining the gastric and duodenal contents in patients with on-going atony or reverse peristalsis until complete resolution is achieved.

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