International Journal of Early Childhood Special Education (INT-JECSE)
DOI:10.9756/INTJECSE/V14I5.1005 ISSN: 1308-5581 Vol 14, Issue 05 2022

A Case Report on Duodenal Obstruction with Superior Mesenteric Artery Syndrome

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Abstract:
The lack of specificity of the symptoms, as well as the broad number of potential diagnoses,sparked a debate about the syndrome's existence. However, developments in this technology such as computed tomography (CT) scan and magnetic resonance imaging(MRI),have greatly aided in the clear visibility of the aorta-SMA angle and thereby improved the diagnosis rate. A 15 year child visited with the complaint of generalized weakness,vomiting, abdominal pain since 3 days, abdominal distension since 3 days. Ultra sonography reveals duodenal obstruction andCECT reveals abnormal dilatation of stomach and proximal duodenum secondary to compression by superior mesenteric artery andaorta, superior mesenteric artery syndrome,mild ascites,bilateral pleural effusion(left>right).Treatment was given to patient. After treatment the child show improvement her vomiting has been reduced.

Keywords: spinal muscular atrophy, computed tomography, duodenal obstruction, superior mesenteric artery.

Introduction:
As thethird, or transverse,part of the duodenum is compressed between the aorta and the superior mesenteric artery in superior mesenteric artery syndrome, which is an uncommon but well-known clinical condition.[1] Complete or partial duodenal obstruction develops as a result of this. It can be chronic intermittent, or acute.[2]Von Rokitansky proposed that obstruction of the third section of the duodenum as a result of Aortomesenteric compressionwas the origin of superior mesenteric arterysyndrome, which he first documented in 1861.[3]Superior mesenteric artery syndrome affects9.1-0.3% of people, according to certain research. Thediagnosis of superior mesenteric artery syndrome is supported by approximately 0.013-0=78% of barium upper GI tests. Despite the fact that there are roughly 4000cases reported in English language literature, may people have questioned their existence [4]. According to some researchers, superior artery syndrome is over diagnosed because it is misdiagnosed as other causes of megaduodenum. Despite this cast syndrome (also known as scoliosis surgery,anorexia,and trauma) is a well-known consequence of these procedures.[5] It frequently presents a diagnostic conundrum, with exclusionary diagnosis being the norm. Conservative treatment for SMA syndrome frequently fails, and laparoscopic duodenojejunostomy has been shown to be a safe and effective alternative.[6]

Case Presentation:
A female child of 15 years brought by her parentsto outpatient department with the chief complaints of generalized weakness, vomiting, abdominal pain since 3 days, abdominal distension since 3 days. Physician performed systematic head to toe examination, the child is lean and thin and looks dull and inactive. She is weak and not co-operative. As she had a complaint of vomiting and abdominal pain. Physician advised ultrasonography which reveals the duodenal obstruction. Patient was diagnosed with duodenal obstruction with superior mesenteric arteryhence admitted to pediatric ward for further management.Primary treatment was given to patient. It was found effective as the patient does not develop complications till then.
Blood investigations Hb10%,Total RBC Count-3.4millions/cumm,HCT 30.1:%,Total WBC Count-8500/cumm, Monocytes- 3%, Granulocytes85-%, Lymphocytes 10 %,AST(SGOT)-44lU/L.Peripheral smear reveals that the RBCs-Normocytic Normochromic Platelets-Adequate on smear. No haemoparasite seen.
Abnormal dilatation of stomach and proximal duodenum secondary to compression by superior mesenteric artery and aorta, superior mesenteric artery syndrome, mildascites, bilateral pleural effusion(left>right).

Therapeutic Intervention:
Inj Potassium Chloride 6 ml with MVI 6 hourly, InjMetrogyl 300mg 8 hourly, Injection Amikacin 250mg 12 hourly, Inj Pantoprazole 30mg OD,InjCeftriaxon 1.5 gm 12 hourly.
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Discussion:

While the proper prevalence of the condition is unknown, it is though to be between 0.1 and 0.3 percent of the population.SMA syndrome is more common in teenagers and young adults between the age of 10 and 39,however it can strike anyone at any age.[7-15] With a 3:2 ratio, females are more likely to develop it than males. There has been no mention of an ethnic tendency, but there have been familial examples. Postprandial stomach pin, earlysatiety,and intermittent emesis are all common symptoms[8].All of the individuals in this study had at least one of the symptoms listed above.Eating and reclining supine are two frequent ways to exacerbate symptoms.[16-21] The angle between the SMA and the spine is further reduced in recumbency,which exacerbates symptoms[10].All of the individuals in this study had at least one of the symptoms listed above.Eating and reclining supine are two frequent ways to exacerbate symptoms.[22-27]

The aorto-mesenteric angle and distance are normally 25°-60° and 10 to 28 mm, respectively. In SMAS, both parameters are lowered to 6° to 15° and 2 to 8 mm, respectively. Other causes include an abnormally high, fixed position of the Treitz ligament, an unusually low origin of the SMA, a short Treitz ligament, and a decrease in the aorto-mesenteric angle, which causes peritoneal adhesions to compress the 3rd part of the duodenum, and loss of retroperitoneal fat, which normally acts as a cushion around the SMA.[12] Weight loss and vomiting were the most common symptoms, depending on the reason and severity of the duodenal compression. The symptoms are said to be eased by lying prone/left lateral decubitus in the literature, however there was no alleviation.[28] Clinical symptoms and radiologic evidence of blockage from Barium tests and CT scans are used to diagnose SMAS. In our situation, extrinsic compression of the third part of the duodenum with insignificant mesenteric lymph nodes resulted in compression of the third portion of the duodenum.[29-32]

Conclusion:

Chronic duodenal blockage is caused by superior mesenteric artery syndrome, which is a rare condition.The diagnosis is clinical, and the obstruction of the duodenum is proven by contrast tests.It is critical to diagnose the child at an early stage in order to avoid consequences.Nonoperative management should be part of the initial therapy plan.If this method fails,surgical intervention may be necessary.My patient improved dramatically after receiving treatment, and the treatment was continued until my last day of care.Laparoscopic enteric bypass is preferable to traditional open procedures because to its shorter hospital stay, low morbidity, and high success rate.Patients with SMA syndrome should choose laparoscopic intestinal bypass as a main therapy option.

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