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CASE REPORT

Superior mesenteric artery syndrome secondary to brucellosis – A case report

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Abstract Superior mesenteric artery (SMA) syndrome is a rare condition characterized by duodenal obstruction due to extrinsic compression by SMA. Any condition which results in rapid, significant weight loss can cause SMA syndrome. Brucellosis is a common cause of pyrexia of unknown origin which can result in loss of appetite and weight loss. Brucellosis resulting in SMA syndrome has not been described in literature. We present a case of SMA syndrome resulting from weight loss due to brucellosis along with a brief review of relevant literature

Keywords Superior mesenteric artery · Weight loss · Aortomesenteric angle · Aortomesenteric distance

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Case report

An 18-year-old student presented with complaints of fever, pain abdomen, vomiting, loss of appetite and loss of weight. Patient had low grade, intermittent fever associated with chills since past 2 months. Since a week he was suffering from a dull aching upper abdominal pain associated with occasional vomiting. Pain would aggravate with food intake and get relieved with vomiting. There was associated loss of appetite with weight loss of about 8–10 kg over past 2 months.

On examination, there was generalized lymphadenopathy with palpable cervical, axillary and inguinal lymph nodes. Abdominal examination did not reveal any palpable mass or organomegaly. Respiratory, cardiovascular and neurological examinations were normal. Patient was investigated for the cause of fever. Hematological investigations including blood counts and peripheral blood smear were normal. Biochemical investigations including liver and renal function tests were also normal. Blood culture and bone marrow culture were unyielding for any growth. Serological tests for typhoid, paratyphoid leptospirosis, dengue fever and human immuno deficiency virus were negative. However patient tested positive for brucellosis with a titer of 1320. Accordingly, patient was treated with doxycycline and rifampicin. An upper gastro intestinal endoscopy revealed narrowing of third part of the duodenum due to extrinsic compression. A CT scan of abdomen was done (Figs. 1 and 2). The scan revealed grossly dilated stomach and duodenum up to the third part with the duodenum compressed between SMA and aorta. Para aortic lymphadenopathy was another significant finding in the CT scan. Patient was conservatively managed for 2 weeks with nasogastric decompression and total parenteral nutrition. As there

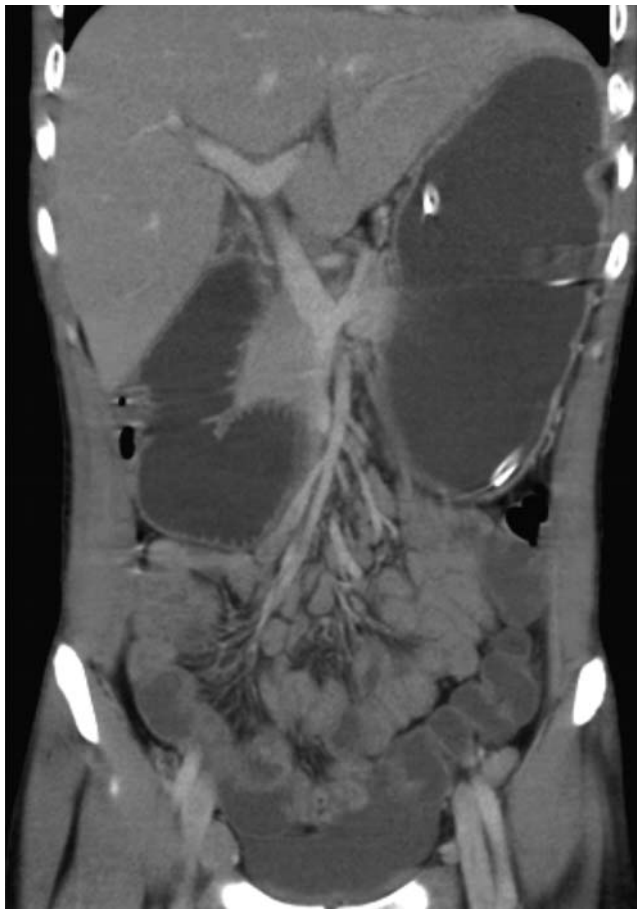

Fig. 1 Sagittal cut of CT scan showing dilated 1st and 2nd part of duodenum and SMA

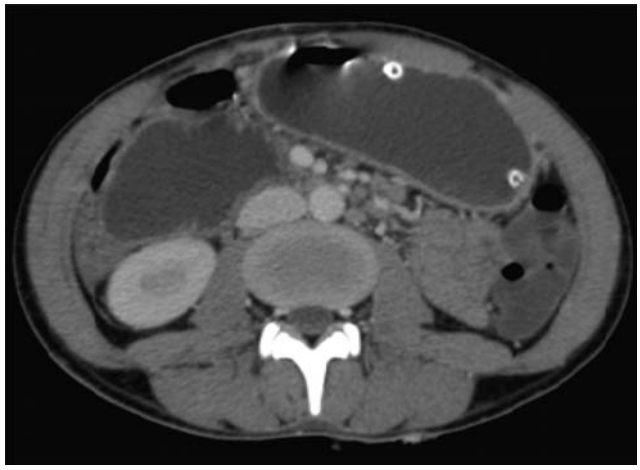

Fig. 2 CT showing extrinsic compression of duodenum by SMA

was no symptomatic improvement, patient was taken up for surgery. Per operative findings concurred with CT findings. Duodenojejunostomy was performed to palliate SMA syndrome. Biopsy of the enlarged lymph nodes revealed reactive changes. Patient tolerated the surgical procedure well and improved symptomatically to get discharged on the 10th postoperative day.

Discussion

SMS syndrome was first described by Professor Carl Von Rokitansky in 1842 [1]. This condition has been described by numerous names such as cast syndrome, Wilkie's syndrome and aorto mesenteric artery compression. Essentially all the fore mentioned entities describe a condition characterized by, obstruction of the third part of the duodenum secondary to narrowed aortomesenteric angle and reduced aortomesenteric distance. Aorto-mesenteric angle is the angle formed between SMA and aorta. The mean aortomesenteric angle ranges between 38° to 50° and the mean aortomesenteric distance is 10–28 cm [2, 3]. An important factor maintaining this angle is the fat pad which wraps the SMA. Any condition which results in significant weight loss over a short duration of time results in loss this fat pad around SMA, narrowing of the aortomesenteric angle and subsequent vascular compression of the duodenum resulting in obstruction. In our patient SMA syndrome was precipitated by weight loss resulting from brucellosis

Conventional barium studies, CT scan/angiography, MR angiography and Color Doppler imaging have all been described to diagnose SMA syndrome. Diagnosis of SMA syndrome by any of these imaging studies requires demonstration of narrowed aortomesenteric angle and distance [4] associated with proximal gastroduodenal dilatation.

Initial treatment of SMA syndrome is non-operative and involves gastric decompression by nasogastric aspiration, correction of fluid and electrolyte imbalances and nutritional support by total parenteral nutrition [3]. Surgery is required in symptomatic patients who have failed conservative management. The surgical options available [3] include gastrojejunostomy duodenojejunostomy and Strong's operation which involves division of ligament of Treitz with mobilization of transverse and ascending duodenum. This displaces the duodenum to overcome the obstruction. Laparoscopic division of Treitz ligament [5] and laparoscopic duodenojejunostomy [6] are alternatives to conventional surgery which have the obvious advantage of less morbidity, shorter hospital stay and early return to normal activity.

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