

SUPERIOR MESENTERIC ARTERY SYNDROME: A CASE-BASED RADIOLOGIC REVIEW

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INTRODUCTION

- Superior mesenteric artery syndrome (SMAS) is a rare cause of proximal intestinal obstruction resulting from compression of the third part of the duodenum between the superior mesenteric artery (SMA) and the abdominal aorta.
- Owing to its nonspecific symptoms, diagnosis is often delayed.
- This case-based review aims to illustrate the characteristic CT findings of SMAS, summarize the radiologic diagnostic criteria, discuss common predisposing factors and differential diagnoses.

METHODS

- 21-year-old previously healthy girl
- two-month history of postprandial epigastric pain, recurrent bilious vomiting, abdominal distension, early satiety, and progressive weight loss.
- Contrast-enhanced CT of the abdomen and an upper gastrointestinal contrast study were reviewed.
- Imaging findings were correlated with the patient's clinical presentation, treatment course, follow-up imaging, and relevant literature.

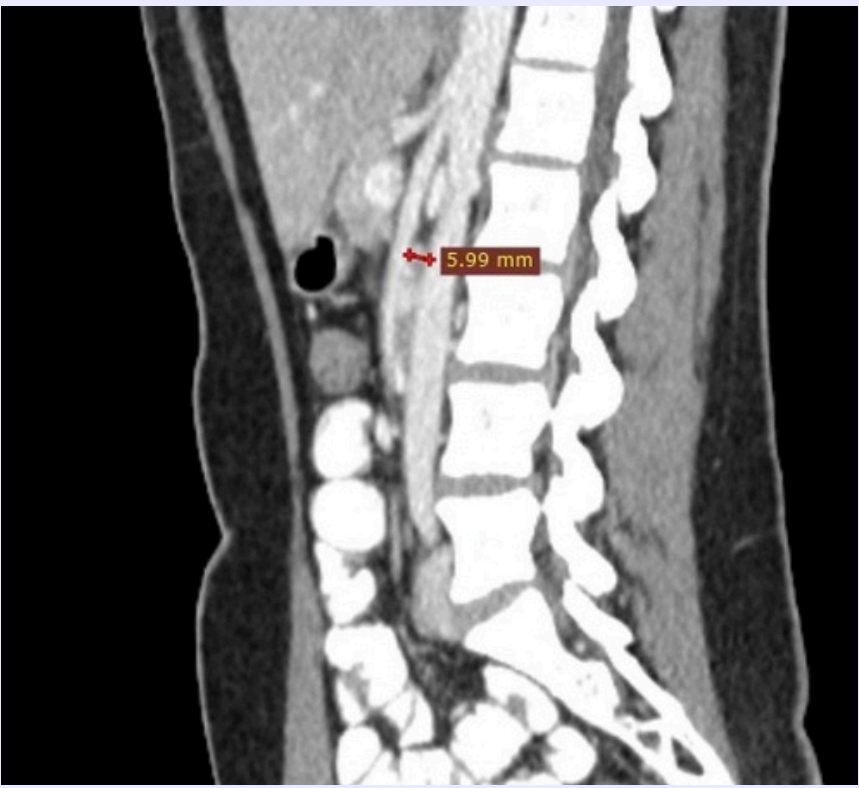


Fig 1: Sagittal image of CT scan with oral and IV contrast indicating the aortomeseteric distance

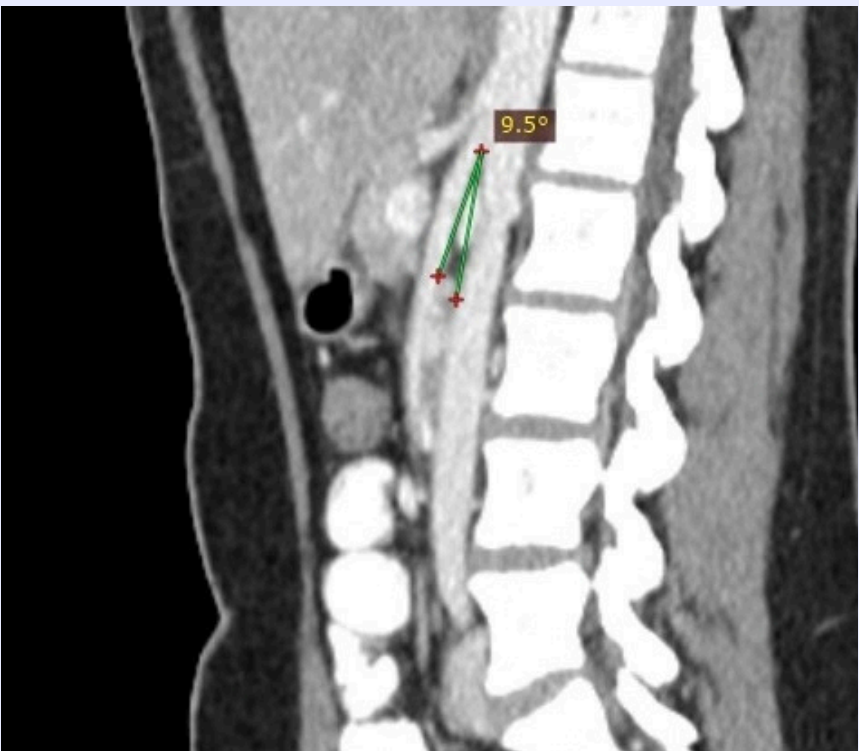


Fig 2: Sagittal image of CT scan with oral and IV contrast indicating the aortomeseteric angle

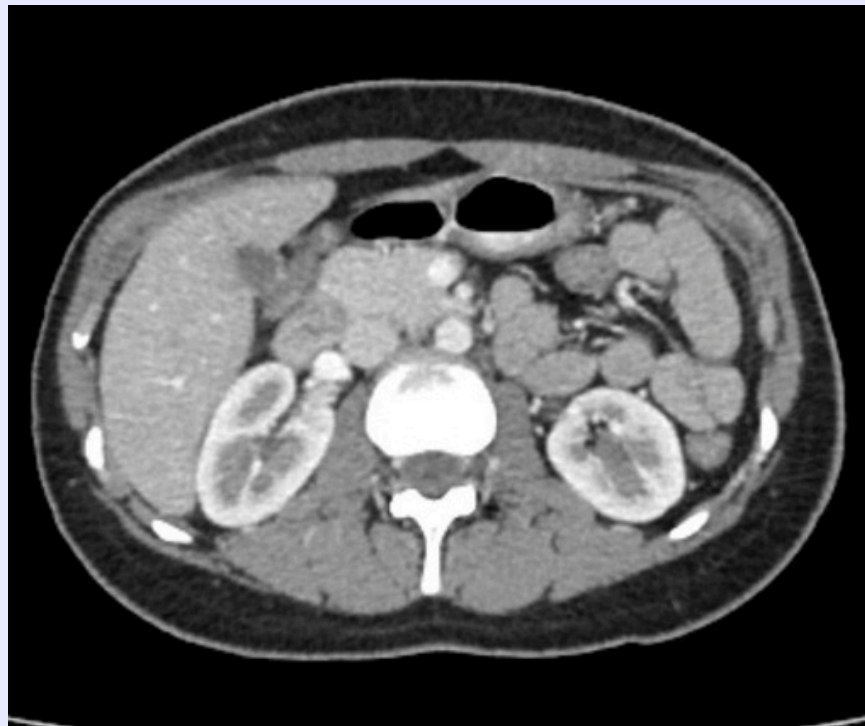


Fig 3: Axial image of CT scan with oral and IV contrast highlighting compression of 3rd part of duodenum.



Fig 4: Axial image of CT scan with oral and IV contrast highlighting proximal gastric distention

RESULTS

- CT demonstrated marked gastric and proximal duodenal dilatation with abrupt compression of the third portion of the duodenum within the narrowed aortomesenteric space.
- The aortomesenteric angle measured 9.5° and the aortomesenteric distance measured 5.99 mm, both below accepted diagnostic thresholds.
- Upper gastrointestinal fluoroscopy confirmed delayed gastric emptying and persistent narrowing of the third part of the duodenum.
- Conservative management comprised of nutritional rehabilitation, nasojejunal feeding, hydration, and postural therapy, ultimately avoiding surgical intervention.

CONCLUSION

- CT is the imaging modality of choice for diagnosing SMAS because it directly demonstrates duodenal compression, while accurately measuring the aortomesenteric angle and distance.
- Familiarity with these characteristic imaging findings allows radiologists to recognize this uncommon but treatable condition promptly, facilitating early conservative management and preventing unnecessary surgery and prolonged morbidity.