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CASE SERIES

CASE SERIES ON MDCT ANGIOGRAPHIC FEATURES OF SUPERIOR MESENTERIC ARTERY SYNDROME

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ABSTRACT

Superior mesenteric artery syndrome is a condition of relatively less incidence where is narrowing of aortomesenteric distance and reduction of aortomesenteric angle. In this case series, we evaluate MDCT findings of cases of this syndrome. The findings of the study are in concordance with results obtained from other authors on this matter.

INTRODUCTION

Superior mesenteric artery syndrome (SMAS) is also known as cast syndrome, Wilke's syndrome and arterio- mesenteric duodenal compression syndrome.[1] Originally it was described by Rokitansky.[2] It is estimated that as gastrointestinal barium series, incidence rate of this condition lies in between 0.01% to 0.33%.[3] In this condition, there is compression of the third part of duodenum between the SMA and aorta with proximal dilatation of the gut. Diagnosis of the condition was done using gastrointestinal barium studies and conventional angiography techniques earlier.[4] However, Multidetector computed tomography (MDCT) gives a good idea of the duodenal compression as well as the acute angulation between the Superior mesenteric artery and abdominal aorta. In this article, we describe findings of SMA syndrome in 4 cases medically.

CASE SERIES

Case 1: A 11 year old male patient came to medicine OPD with complains upper abdominal vague pain, more pronounced after lying down, along with occasional nausea and vomiting. No similar family history or history of prior abdominal surgery was obtained. Routine laboratory investigations did not reveal any significant findings. Ultrasonography of abdomen revealed no obvious abnormality. Patient was advised to do CT scan of abdomen. CT scan of abdomen demonstrated an aortomesenteric angle of 18.5° and aortomesenteric distance of 4.4 mm.

Case 2: A 16-year-old female patient came to medicine OPD with complains of postprandial upper abdominal vague pain along with occasional nausea and vomiting. No similar family history or history of prior abdominal surgery was obtained. Routine laboratory investigations did not reveal any significant findings. Ultrasonography of the abdomen revealed no obvious abnormality. Patient was advised to do a CT scan of abdomen. CT scan of abdomen demonstrated an aortomesenteric angle of 11.3° and aortomesenteric distance of 4.8 mm.

Case 3: A 18-year-old male patient came to medicine OPD with complains of vomiting, mostly after consumption of food along with weight loss. No similar family history or history of prior abdominal surgery was obtained. Routine laboratory investigations did not reveal any significant findings. Ultrasonography of abdomen revealed mild bowel loop edema. Patient underwent CT of scan of abdomen. CT scan of abdomen revealed an aortomesenteric angle of 13.7° and

aortomesenteric distance of 4.6 mm.

Case 4: A 26 year old female patient came to medicine OPD with complains of early satiety along with weight loss. No similar family history or history of prior abdominal surgery was obtained. Routine laboratory investigations showed mild anaemia (Hb = 9.5 g%). Ultrasonography of abdomen revealed no obvious abnormality. Patient underwent CT of scan of abdomen. CT scan of abdomen revealed an aortomesenteric angle of 10.1° and aortomesenteric distance of 4.3 mm.

DISCUSSION

The exact pathogenesis of SMAS is not certain.[5] Predisposing conditions which cause development of SMAS include conditions where the mesenteric fat is depleted resulting in acute angulation of the 2 major vessels of the abdomen. Conditions like burn, post operative states, dietary malabsorption, spinal trauma are to name a few.[6] Other conditions include extrinsic compression from mass lesion, low origin of SMA etc.[7] Patients with SMAS have symptoms which include epigastric pain, abdominal fullness, vomiting, postprandial pain etc. MDCT is a modern valuable tool for evaluation of abdominal vascular trees. For normal patients, aortomesenteric angle is 28- 56° and aortomesenteric distance is 10-34 mm.[7,8] In all 4 cases of our study group, aortomesenteric angle was below 19° and aortomesenteric aortomesenteric distance was less than 4.8 mm, which is similar to data published by other authors.[8,9] A cut off of 8 mm had 100% sensitivity and specificity for diagnosis of SMAS as stated by B Unal et al.[9] MDCT has the advantage of detecting nutcracker effect on renal vein along with other abdominal conditions like portal venous gas etc which cannot be done using conventional fluoroscopic imaging and hypotonic duodenography.

CONCLUSION

MDCT angiography is a modern technique which can detect SMAS easily and readily. The depiction of compression of the duodenum along with a narrow aortomesenteric angle and reduced aortomesenteric distance, make MDCT angiography a good diagnostic modality.

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