

Segmental Small Bowel Ischemia In A Patient Of Buerger's Disease Of Lower Extremity, A Rare Case Report

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Abstract: In 1908 Buerger described the clinical aspects of thromboangitis obliterans primarily affecting small to medium size arteries and veins and surrounding neural elements, particularly of lower extremities but rarely affect brain [9], heart [10] and abdominal viscera. He mentioned obliterating vasculopathy could involve visceral arteries. [13] Very few cases of involvement of peripheral vessels along with acute intestinal manifestations needing small bowel resection is reported till date. [4,5,7,11,12,14] Abdominal Buerger's disease is mostly ischaemic bowel disease in habitual tobacco consumers. [2,5] Here we report the case of a 53 year old male, habitual smoker, who presented with abdominal discomfort, vomitings, melena and fever. He had history of intermittent claudication since last 2 months and gangrenous right 2nd and 5th toes from 10 days. Physical examination revealed abdominal distention with diffuse abdominal tenderness. Ultrasound and contrast enhanced computed tomography of his abdomen demonstrated an ischemic ileal segment caused by ileal branches of superior mesenteric artery. The ischemic segment was resected and primary ileocolic anastomosis was performed. The diagnosis of segmental small bowel ischemia was confirmed by histopathological study.

Keywords: Ischemic small bowel, Thromboangitis obliterans

I. Introduction

Buerger's disease occurs almost exclusively in habitual tobacco users. The visceral intestinal Buerger's affect both veins and arteries as happens in peripheral vascular disease. [2,6] The Superior mesenteric vessels are most likely to be affected by embolization or thrombosis, with former being the most common. Occlusion at origin of SMA is almost invariably due to thrombosis, where as emboli lodge at the origin of middle colic artery. IMA involvement is usually clinically silent because of a better collateral circulation. Primary thrombosis is associated with atherosclerosis and thromboangitis obliterans. [17] Very few cases of colonic and small gut involvement in Buerger's disease needing resection have been reported.

II. Case Report

A 53 year old male, lorry driver by occupation was admitted to ER for diffuse pain abdomen, abdominal distention and absolute constipation since 5 days. He had 3 episodes of bloody loose stool, 3 episodes of bilious vomiting and fever since 2 days. Pain in calf muscles during walking since last 2 months and blackish discoloration of right 2nd and 5th toes from 10 days. He was regularly smoking more than 20 cigarettes per day for last 20 years and a chronic alcoholic. He had no history of diabetes, hypertension or any cardiac ailment. He was febrile- 101F with regular pulse. On physical examination- abdomen was distended, diffusely tender all over with mild guarding and rigidity. Percussion note was tympanitic all over the abdomen and bowel sounds were absent on auscultation. On examination of right lower limb, 2nd and 5th toe were found to be gangrenous (Fig. 1). Dorsalis pedis, anterior tibial, posterior tibial and popliteal pulses were not felt. Femoral pulse was feeble.



(Fig. 1)

His white blood cell count -22,500, ESR- 85mm/ 1st hour. Lipid profile was normal. Chest x-ray showed normal findings and X-ray erect abdomen showed multiple air fluid levels with dilated small bowel loops. (Fig. 2)



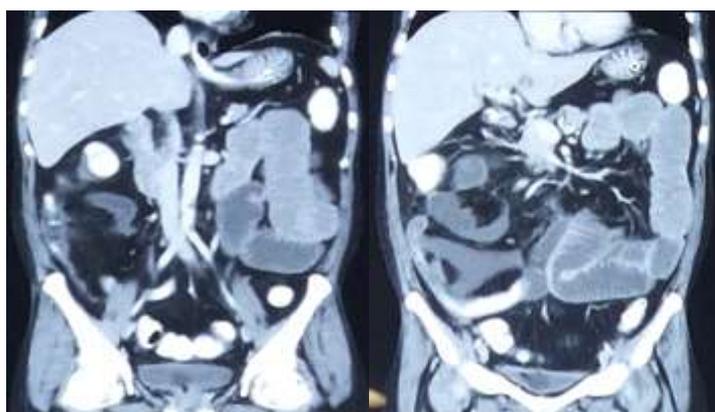
(Fig. 2)

USG abdomen and pelvis revealed minimal interbowel free fluid with dilated small bowel loops in LIF, RIF and hypogastric regions and thickened oedematous bowel wall with sluggish peristalsis seen in bowel loops. Fluid echogenic material seen in small bowel (fecus sign) suggesting small gut obstruction.(Fig. 3)



(Fig. 3)

CECT abdomen revealed subacute thrombosis involving ileal branches of SMA and mid ileal bowel loops show thin wall with adjacent fat stranding and suboptimal wall enhancement. (Fig.4)



(Fig. 4)

His 2D ECHO findings were normal and arterial doppler showed noncalcified focal plaques in distal abdominal aorta and bilateral lower limb arterial system.

Exploratory laparotomy revealed free fluid in peritoneal cavity and ileum was found to be gangrenous throughout its length up to ileocecal junction. (Fig. 5a, 5b)



(Fig.5a, 5b)

Resection of 167 cm of gangrenous part of bowel was done from proximal ileum to ileocecal junction and primary side to side ileo colic anastomosis was performed.



(Fig. 6)

Histopathological study revealed transmural ischaemia with collection of acute inflammatory cells consistent with segmental small bowel ischemia.(Fig. 6)Patient was put on anticoagulant therapy in postoperative period and had recovered from surgery and referred to a vascular center for management of lower limb vessels.

III. Discussion

Any gastrointestinal artery- gastric, colonic, celiac and mesenteric arteries can be affected in intestinal thromboangitis obliterans with a preference for smaller branches, thus compromising small bowel. [15] Though uncommon Buerger's arteritis affecting mesenteric vessels may cause acute or chronic abdominal symptoms. Most patients have acute superior mesenteric artery occlusion, and a large proportion of them develop peritonitis. The extent and severity of ischemia is evaluated by a laparotomy. [3] In case of life threatening episodes bowel resection is performed in emergency, often with poor postoperative outcome. In chronic cases a bypass surgery provides a better outcome. [15] No noticeable changes are found in lipid profile and calcium deposits in vessel walls are typically absent. Peripheral vessel involvement and symptoms like intermittent claudication, rest pain, toe gangrene substantiate the diagnosis. [4] No plasma marker also can establish an accurate early diagnosis. High-resolution CT with rapid reconstructions in different planes can help in early diagnosis. [1]

A selective mesenteric angiography and histopathological evidence of Buerger's disease is essential for a confirmed diagnosis. [4,8] But biopsy study of arteries are rarely done after a bowel resection in vascular intestinal Buerger's. [6] However extent and severity of gut ischemia, where color of the intestines, dilatation and peristaltic motion of the bowels, visible pulsations in the mesenteric arcade arteries, and bleeding from cut surfaces are better assessed at laparotomy. [16] If an established case of TAO of extremities report with gastrointestinal symptoms early diagnosis and management done to prevent gut gangrene. [7]

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