SÃO PAULO MEDICAL JOURNAL

CASE REPORT

Francisco de Salles Collet e Silva; Lucilia Heloisa Simardi.

Segmented colon ischemia associated with thromboangiitis obliterans

Dr. Arthur Ribeiro de Saboya, Emergency City Hospital, São Paulo, SP

UNITERMS: Colo, Colectomy, Tromboangiitis Obliterans, Buerger's diseases.

INTRODUCTION

Thromboangiitis obliterans is an unusual vascular disease, initially described by BUERGER in 1908 (2). This disorder is characterized by segmented thrombosis, acute and chronic inflammation of the intermediate and small arteries and veins, mainly in the lower limbs and less frequent in the upper limbs. BUERGER in 1924 reported that vascular lesions of the thromboangiitis obliterans can also affect mesenteric vessels (3).

At a symposium about thromboangiitis obliterans in 1970, there was no mention of mesenteric vessel involvement nor clinical findings suggestive of intestinal ischemia (7). DEITCH and SIKKEMA in 1981 (4) reviewed the literature and found only seven cases of intestinal ischemia caused by thromboangiitis obliterans. After this review, only two new cases were reported (5,6).

A new case of thromboangiitis obliterans involving mesenteric vessels is reported and discussed herein.

CASE REPORT

A 34-year-old male was admitted to the emergency room of the Arthur Ribeiro de Saboya Hospital because of an eight-hour-long history of intense pain in the lower abdomen and arrest of elimination of gases and feces. He referred to chronic use of phenophthalein-based laxatives. Two years earlier, both lower limbs had been amputated below the thigh because of a diagnosis of thromboangiitis obliterans. He had been a smoker until two years earlier. The examination showed arterial pressure of 120 by 80 mmHg, heart rate of 80 beats/minute and temperature of 38°C. The abdomen was tense, with an absence of abdominal sounds and with localized tenderness in the hypogastrium and lower right abdominal quadrant. A rectal examination did not show any bulging of the sac nor any pain. Laboratory examinations showed: hemoglobin of 15.2 mg/dl, hematocrit of 47%, leukocyte count of 30,700 cel/mm3 with 6% band neutrophils, glucose of 75 mg/dl, BUN of 58 mg/dl, and creatinine of 1.0 mg/dl. The diagnosis of an acute abdomen warranted surgery. A midline laparotomy found a 14-cm-long segment of necrotic sigmoid. Necrosis involved all layers of the sigmoid without perforation and with a 50-ml purulent collection in the Douglas sac. Removal of the rectum and sigmoidectomy was performed according to Hartman's technique. Post-operative follow-up was unremarkable and the subject was released with a colostomy.

The pathology study revealed segmentation of the large intestine (sigmoid) 28 cm in length, with an external diameter varying 4 to 7 centimeters, with an irregular surface and opaque brownish-yellow in color. The mucous in the middle section, measuring about 14 cm in length, showed partial smothering of the creases, with a dark brown color. The wall in this section varied in thickness, reaching as low as 0.1 cm. Microscopic examination showed a mucous necrosis, segmented mural necrosis and a fibrin-leukocytic peritonitis. In the subserous, besides the vascular ectasia, small and medium-sized vessels were occluded with newly formed thrombi (figure 1) and other vessels had partially organized older thrombi (figure 2). The walls of these vessels displayed an inflammatory infiltration with a predominance of neutrophils in variable intensity.

***Address for correspondence**: Dr. Francisco de Salles Collet e Silva*
Rua Pamplona, 444, Apt. 52 – CEP 01407-000
São Paulo – SP – Brasil

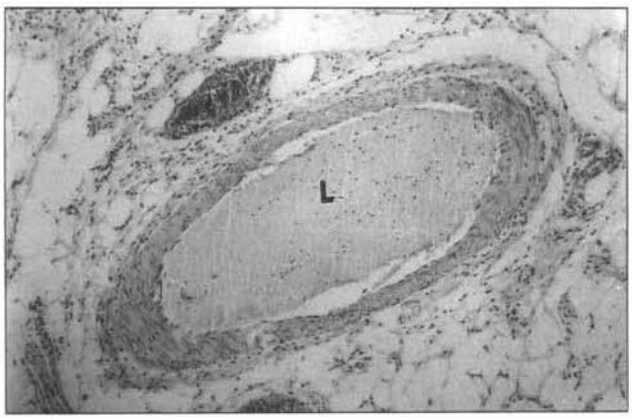

Figure 1 – The light (L) is occluded by a recent thrombi, with the beginning of leukocyte aggregates (microabscess). There is an infiltration of leukocytes on the vascular wall. (H.E. medium increase).

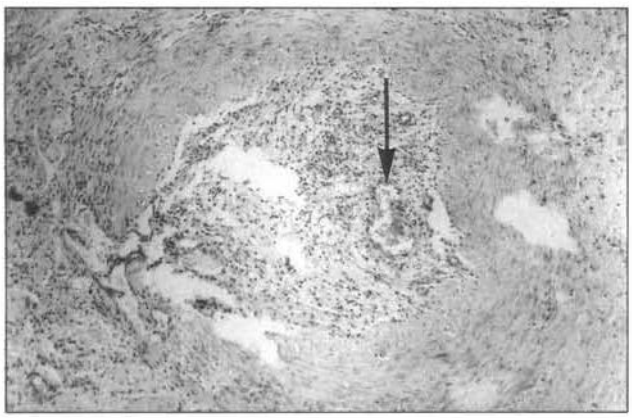

Figure 2 – Artery with occlusive thrombosis in organization exhibiting newly formed light (arrow), containing red cells (H.E. medium increase).

DISCUSSION

Thromboangiitis obliterans is an arthritis that affects young patients, between the third and fourth decade of life (7). Related to etiopathogenesis, there is a consistent relationship between smoking and this disorder. Among the possibilities in this association, still not proven, is endothelial toxicity directly caused by smoking, increased endothelial sensitivity, blood vessel constriction resulting from disordered catecholamine metabolism, as well as hypercoagualibility, leading to thrombosis. The genetic predisposition is raised by a higher prevalence of antigens HLA-9 and HLA-B5 in these patients (1). It is believed that certain susceptible genotypes are hypersensitive to tobacco products, producing a cell-mediated hypersensitive response against collagen type I and II, leading to vascular damage (1-5).

The digestive manifestations attributed to this disorder occur after the appearance of the vascular lesions in the lower limbs (5-6). There characteristics were observed in the case reported herein.

DEITCH and SIKKEMA in 1981 (4) showed that the most frequent digestive symptomatology was chronic or intermittent abdominal pain, associated with loss of weight. Only two of the seven cases reported by DEITCH and SIKKEMA manifested acute abdominal symptoms. Abdominal symptomatology of this disorder resembles angina, in which an already existent arterial lesion with insufficient collateral circulation could bring about, in the presence of an increase in blood viscosity or hypoflux, the emergence of ischemia that could cause necrosis of an intestinal segment. By stopping smoking, the illness goes into remission (7). In the case reported herein, the patient developed acute abdominal symptoms even after a cessation of smoking. This fact demonstrates that arterial lesions already installed don't reverse. These vessel changes behave as predisposing factors for the development of acute and severe ischemic complications as described here.

Of the five cases reviewed elsewhere, the lesions affected the small intestine, and, in four cases, the colon was affected. This shows that the intestinal arterial lesions have a tendency not to occur in localized fashion; such as the case reported by ROSEN et al showing central nervous system involvement, some years after the intestine showed vascular lesions (4,5,6).

The surgical procedure, in the reported cases, was the removal of the diseased segment followed by an anastomosis, while in acute cases, a second review of the surgical procedure was performed 24 hours later (4,5). In the case presented here, surgical removal and colostomy were chosen, leaving intestinal reconstruction for another time.

One of the acute complications of thromboangiitis obliterans when it affects mesenteric vessels is intestinal ischemia leading to dramatic clinical pictures with higher mortality rates (40%) (4). Those patients with this arteriopathy should be examined for digestive symptoms suggestive of ischemia and periodically be shown ways to avoid an increase in blood viscosity and hyperflux.

REFERENCES

1. BECKER, C. G. – Immunologic aspects of vessel injury and thrombosis. The new dimension of Wargamin Prophylaxis. **New York, Plenum Press**. 131-140, 1987.
2. BUERGER, L. – Thromboangiitis obliterans. A story of the vascular lesions leading to presenile spontaneous gangrene.

Am J Med Sc. 136: 567-580, 1908.
3. BUERGER, L. – The circulatory disturbances of the extremities including gangrene, vasomotor and trophic disorders. **Philadelphia, W.B. Sanders.** 1924.
4. DEITCH, E. A. & SIKKEMA, W. W. – Intestinal Manifestation of Buerger's disease: case report and literature review. **Am Surg, 47:** 326-328, 1981.
5. ROSEN, N.; SIMMER, I. & NOBEL, B. – Intestinal Buerger's disease. **Arch Pathos Lab Med, 109:** 962-3, 1985.
6. SAITOH, O.; TEI, H.; MATSUMOTO, H.; HAYASHI, K.; ORINO, S.; HIRATA, I.; OHSHIBA, S.; TAKEDA, Y.; FUJIWARA, A. & OKAJIMA, K. – (A case of ischemic lesion in the large intestine associated with Buerger's disease). **Nippon Shokakibyo Gakkai Zasshi, 85:** 738-742, 1988.
7. VINK, M. (ed.) – Symposium on Buerger's disease. **J Cardiovascular Serg, 14:** 1-51, 1970.

RESUMO

A necrose isquêmica do colo associada à tromboangeíte obliterante é rara e grave, com uma mortalidade elevada. A tromboangeíte obliterante ocorre em pacientes jovens e as manifestações digestivas, raras nesta moléstia, ocorrem posteriormente aos acometimentos dos membros. Relata-se caso de um paciente com necrose segmentar isquêmica de colo com tromboangeite obliterante.