Giant venous aneurysm associated with hypogastric arteriovenous malformation

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Venous aneurysms are extremely rare. They may be congenital or acquired in origin and occasionally related to arteriovenous communications. A 58-year-old man complained of dull left lower quadrant pain and constipation. On physical examination a soft mass was palpated. Ultrasonogram and CT scan revealed a cystic formation in the pelvic cavity. Angiograms disclosed an arteriovenous malformation (AVM) at the pelvic floor draining into a large cavity. The patient was successfully managed by intraoperative selective embolization of the AVM and partial resection of a 10.6 x 8 x 6.7 cm venous aneurysm. The histopathologic studies of the wall confirmed a venous structure. Venous dilatation has been reported in high flow vein grafts, blood access V fistulas and rarely, proximal to traumatic AV fistulas of the lower extremities. The etiology of the present case is probably congenital, being to the best of our knowledge, the first case affecting the hypogastric territory, reported in the English literature. (Ann Vasc Surg, 1986, 1, 143-146).

KEY-WORDS: Venous aneurysm. — Arteriovenous malformation.

Although clinically recognized by Osler [1] early this century, true venous aneurysms are seldom reported. They have been found isolated or associated with arteriovenous communications. Excepting those related to trauma, the etiology remains unknown. Clinical presentation depends on its location and associated complications due to local compression or pulmonary embolization. The present report describes our experience with a giant venous aneurysm of the hypogastric territory associated with a pelvic arteriovenous malformation (AVM).

CASE REPORT

A 58-year-old Caucasian man presented with a 3 months history of dull pain of the left lower quadrant, occasionally colicky in character, radiating to the left lumbar area. Associated complaints included impotence and recent onset of constipation. He denied a history of palpitation, dyspnea or trauma. Sixteen years before he had passed a urinary stone. The physical examination disclosed a soft mass deep in the left lower quadrant. Peripheral pulses were normal and without bruits. On the rectal examination the mass was well defined, painless, slightly pulsatile and a thrill could be felt. An intravenous pyelogram (Fig. 1) showed extrinsic compression of the bladder and displacement of the terminal left ureter without dilatation. The ultrasonogram (Fig. 2a) revealed a cystic mass 10.6 x 6.7 x 8 cm occupying most of the pelvic cavity. A CT scan (Fig. 2b) confirmed the vascular nature of the cyst and its relation to the surrounding structures. An abdominal aortogram (Fig. 3a) showed mild dilatation and tortuosity of the left common iliac and hypogastric arteries. Selective left iliac catheterization (Fig. 3b) demonstrated an AVM at the pelvic floor fed by hypertrophied branches originating distal to the superior gluteal artery. Late films showed filling of an aneurysm enclosed by the arterial vessels. Selective films of the right iliac artery failed to show connections with the AVM. Emptying of the aneurysm could not be traced.

The patient underwent elective laparotomy. The pelvic anatomy was distorted by the tortuous left iliac vessels and the aneurysm which displaced the bladder and compressed the rectum.
The mass was firm and slightly pulsatile. Temporary occlusion of the hypogastric artery was followed by disappearances of pulsatility, allowing compression and partial emptying of the aneurysm. This maneuver permitted a safe opening of the aneurysm and to achieve a quick control of venous back bleeding from two large openings draining into the left iliac vein. No mural thrombus was found. The left hypogastric artery was then ligated. After suture ligation of the arterial and venous openings, the sac was partially resected. The wall of the aneurysm was thick, with venous aspect. The histopathologic study of the specimen revealed intimal thickening and phlebotomlosclerosis (Fig. 4).

Recovery and follow-up for one year has been uneventful. Postoperative angiogram showed absence of residual lesions (Fig. 5).

**DISCUSSION**

The first venous aneurysm was reported by Beau- mont [2] in 1867, following the autopsy of a patient who suffered a traumatic arteriovenous fistula of the femoral artery. However the first clinical report was done by Osler [1] almost fifty years later. Since then, sporadic cases of venous aneurysms affecting the extremities, visceral veins or superior vena cava have been reported [3]. Based on Abbott's suggestion, venous aneurysms are classified into congenital, acquired, isolated or associated with arteriovenous communications [4]. Most isolated venous aneurysms present in young people and involve the superior vena cava. They are usually fusiform and rarely reach more than 5 cm but may be complicated by pulmonary embolism from mural thrombus.

Thompson in 1969 reviewed the literature referring to central venous aneurysms associated to arteriovenous fistulas [5]. However, most of the cases were secondary to longstanding traumatic arteriovenous fistulas of the lower extremities and the venous aneurysm presented in the external iliac vein. In the recent review by Yao [3] only two cases presented in the upper extremity.

The present case, apparently congenital, would be the first case affecting the hypogastric territory. The factors involved in the progressive dilatation of the veins include the flow rate determined by the size and duration of the fistula, the compliance of the
perianeurysmatic tissues and the hydrostatic pressure determined by the anatomical situation of the abnormality. It is interesting that although the fistula may be located in the popliteal area, the dilatation may present in the external iliac vein. Possibly local factors determined by the histologic structure of the vein are also involved. In our case, the aneurysm arose in a vein draining into the common iliac, most likely the hypogastric vein. The increased fibrous tissue and intimal thickening of the aneurysmal wall are secondary to the longstanding increased pressure. In previous cases, the fistula was known
for up to 36 years [3]. Endophlebosclerosis and endo-
phlebohypertrophy have been reported as patho-
logic features in cases of primary venous aneurysms
[6]. Due to the slow growing rate, most of the cases have
evolved asymptotically becoming clinically evi-
dent as a mass or as an autopsy finding. Our case
became evident due to compression of bladder and
rectum. Spontaneous rupture has never been repor-
ted. Systemic complications are possible if the in-
creased flow leads to high cardiac output failure or
the aneurysm harbors thrombus which potentially
could result in pulmonary embolism.

Currently, the treatment of choice of isolated
AVM of the pelvis is intraarterial embolization [7].
The association of a venous aneurysm demands sur-
gical excision, therefore a combined approach
should be the therapy of choice. In the present case,
symptomatic relief was achieved by direct intraope-
rative selective embolization and partial resection,
allowing complete control of the arterial feeding as
well as venous drainage.

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