

DILATAȚIE ANEVRIȘMALĂ DUPĂ FISTULĂ ARTERIO-VENOASĂ RADIO- CEFALICĂ PENTRU DIALIZĂ

ANEURYSMAL DILATATION AFTER RADIO-CEPHALIC ARTERIO-VENOUS FISTULA FOR DIALYSIS

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Abstract:

We report a rare case of aneurysmal dilatation developed at the level of a Brescia-Cimino arterio-venous fistula performed for dialysis. In the particular clinical situation of our patient (significant clinical complaints and a functional renal transplantation) we performed an excision of the fistula with reconstruction of the radial artery by an autologous venous graft interposition, with good postoperative outcome. Although this solution was more technically demanding, it has allowed both a complete excision of the fistula and aneurysmal dilatation and the preservation of the hand blood supply.

Key-words: *arterio-venous fistula, aneurysmal dilatation*

Surgery for vascular access for hemodialysis is a particular part of the modern vascular surgery; the main difficulties are related to the long-time complications [5, 7]. The aneurysmal dilatation is a rare complication which involves both local (discomfort, skin erosion, rupture with hemorrhage) and systemic complications through the alteration of the flux with an inadequate vascular access [1]. We present a patient with a symptomatic aneurysmal dilatation of a radio-cephalic arterio-venous fistula which was solved by excision and reconstruction of the radial artery with a venous graft interposition

Clinical case

We report a 62 years old male patient, diagnosed with chronic renal failure 10 years ago who started chronic dialysis 6 years ago when a Brescia-Cimino radio-cephalic arterio-venous fistula was performed in another unit. A renal transplantation was performed 4 years ago with good postoperative course – adequate diuresis and normalization of renal functional parameters, which made hemodialysis to become unnecessary. The arterio-venous fistula

was left in place considering that it will spontaneously close through thrombosis.

During the last 2 years the patient reported the development of a pulsatile mass at the level of the arterio-venous fistula. The mass was initially asymptomatic, but during the last 3 months it presented a significant increase in dimensions and became painfully, with a functional impairment of the hand (limitation of the flexion/extension movements). At local examination we detected a 5-6 cm diameter mass, presenting pulsations and the thrill characteristic for an arterio-venous fistula (figure 1).



Figure 1. Preoperative aspect

Considering the local discomfort and the fact that after renal transplantation there was no need for a special venous access we decided to remove the aneurysmal dilatation and abolish the arterio-venous fistula.

The surgical procedure started with the dissection of the aneurysmal dilatation (venous wall), of the cephalic vein and of the radial artery above and below the fistula. After the

ligation of the proximal end of the vein and clamping of the radial artery we performed a complete excision of the aneurysm, including the arterial wall at the level of the arterio-venous anastomosis. The clamping of the arterial artery above the fistula required a separate 2 cm incision on the trajectory of the vessel (figure 2).



Figure 2. Dissection of the aneurysm, cephalic vein and the radial artery above and below the arterio-venous fistula

Due to the distance between the two arterial stumps, an interposition of a venous graft was required (figure 3).



Figure 3. Radial artery reconstruction – venous graft interposition

The procedure was performed using a brachial plexus block and it took 110 minutes.

The postoperative course was favorable, the patient being discharged after 2 days with antiaggregant treatment. The late follow-up performed at 2 years after the procedure showed an adequate flux in the radial artery, while the patient was symptom-free.

Discussions

The aneurysmal and pseudoaneurysmal dilatations are rare complications of the arterio-

venous fistulas performed for vascular access for hemodialysis. The indication for surgery is based on the degree of local discomfort, the risk for bleeding/rupture and the change of the flux [1]. The treatment is not standardized, with a general preference for vascular reconstruction with preservation of a functional arterio-venous fistula [2, 4] and the use of autologous materials [6].

In our case, the fistula became obviously unnecessary after the renal transplantation. The significant aneurysmal dilatation with local pain and functional impairment has required surgical excision. After the en-bloque removal of the dilated venous segment and the arterio-venous anastomosis, a tension free suture between the two arterial stumps was not possible, so that the interpositioning of a venous graft was necessary. Although the procedure performed by us was more technically demanding compared to simple arterial ligation and excision (2 anastomoses on small caliber vessels) we preferred the reconstruction of the radial artery in order to maintain a complete blood supply of the hand with a reduction of the risks for further complications [3].

The case is interesting due to its rarity and particular evolution – local pain and functional impairment through a pseudoaneurysmal

dilatation of an arterio-venous fistula which became useless after the performance of a renal transplantation.

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