

Double Surgical Approach For Extrapelvic Pseudoaneurysm Of Inferior Gluteal Artery

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Citation

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Abstract

The case report presents a large inferior gluteal pseudoaneurysm with long medical history and classic symptoms, developed in relation to a stab wound into the right buttock. The diagnostic imaging studies are based on arteriography, from far the best imaging exploration which can be done for the aneurysmal pathology. In the era of endovascular treatment this case report proves that a good alternative to percutaneous embolisation is the classical surgical operation. The most simple and sure method to treat a large extrapelvic false aneurism fed by a dilated inferior gluteal artery is the two step surgical excision. First, the ligation of the feeding artery was performed by extraperitoneal surgical approach of the corresponding hypogastric branch. Secondly, the resection of the aneurysm by direct approach into the deepness of the gluteal region. The advantages of this technique are: minimal blood loss, no pelvic ischemia and rapid healing.

INTRODUCTION

The gluteal arteries is a rarely involved by aneurysmal pathology. We are presenting the case of a patient with a large inferior gluteal pseudoaneurysm, developed extrapelvicly by dissecting the gluteal muscles mass. This pseudoaneurysm results from a stab wound. The pseudoaneurysm was successfully treated in two surgical sequences. The case report is presented with a review of literature.

CASE REPORT

A 49 years old man, unemployed and homeless, was admitted in a general surgery unit with a right buttock pain radiating down to posterior thigh and buttock enlargement. The patient relate a history of stab wound in the right gluteal region, eight years before. The wound was conservatory treated at that time in a regional hospital. Progressively, the right buttock becomes larger and three years after the trauma, the patient complains of pain and partial function laesa. He has neglected the symptoms for more five years, but in time the patient couldn't hide the buttock tumor and he decided to ask for a medical examination.

At the admission the physical examination revealed a tender pulsatile mass in the right gluteal region centered by a prominence with necrotic skin and fluctuency (Fig 1).

Figure 1

Figure 1: Clinical aspect of the inferior gluteal artery pseudoaneurysm.

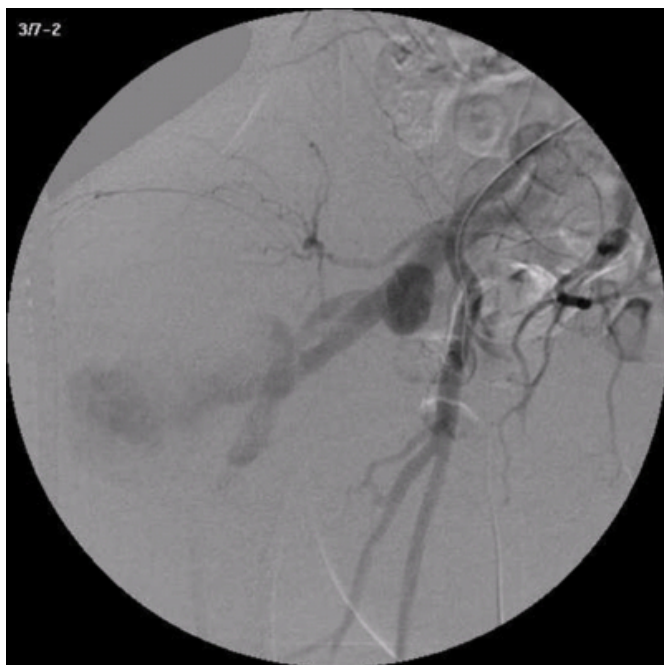


The auscultation revealed a mild associated overlying bruit. From clinical point of view the clinical aspect highly suggested an aneurism. The laboratory evaluation shows subnormal hematologic and biochemical values

(hemoglobine 12,7 g/dl, hematocrite 38 %) . The first imaging study was doppler ultrasound. This revealed an arteriovenous pseudoaneurysm, most probably emerged from inferior gluteal artery which dilacerates the small, middle and great gluteal muscle to the superficial fascia. The aneurismal cavity is filled by cloths partially repermeabilised with intense arterial signal at pulsed doppler. Deepely into the buttock some large veins were observed. The patient was submitted to aortoiliac arteriography: this has showed the vascular anatomy of the right gluteal region. It was clearly visible the large aneurismal pouch (14/12 cm of diameter) developed in extrapelvic location, feeded by inferior gluteal artery after the emergency from pelvic cavity (Fig 2).

Figure 2

Figure 2: Aortoiliac arteriography reveals a large inferior gluteal artery extrapelvic pseudoaneurysm.

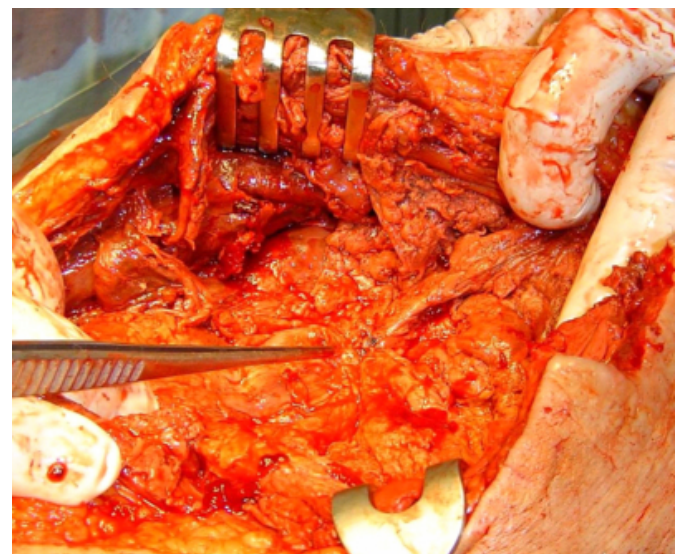


The surgical treatment was designed in two sessions: firstly we decided a ligation of inferior gluteal artery at the origin from internal iliac artery and secondarily the resection of the aneurysmal pouch. The ligation of right inferior gluteal artery was realised by dissecting the homolateral hypogastric artery through a “J” shaped right iliac incision followed by extraperitoneal dissection of right iliac vessels. The right internal iliac artery was founded double sized comparing to external trunk. The dissection of the branches of right hypogastric artery allowed identification of inferior gluteal artery, emerged separately from internal iliac artery. The inferior gluteal artery has also a large diameter, about 5 mm. The inferior gluteal artery was carefully ligated and divided.

The followings were favorable: three days after surgery, the buttock was half decreased of size. The doppler ultrasound evaluation revealed lowed blood flow and decreased pressure into the aneurismal pouch. Seven days after we have performed the resection of the aneurismal pouch. A vertical incision was performed on the midline of the right buttock, with excision of the necrotic skin, which corresponds to the scar of the stab wound. The aneurysmal sac was opened and cloths removed. During the emptying of the aneurismal sac the continuous suction was necessary to evacuate the blood until the visualisation of the arterial fistula into the deepnes of the gluteal muscles. The arterial flow was furnished by colaterals of the aneurismal pouch, well developed during eight years of evolution. The aneurysmal pouch has a thin and irregular fibrotic wall. The suture of the arterial fistula and emerging veins was realised separately with Prolene 3.0. The hemostasis was checked and completed by ligation of some muscle branches (Fig 3).

Figure 3

Figure 3: Suture of the muscular collaterals after the ablation of the false aneurysm



The aneurismal pouch was drained with two Redon tubes. The muscle dilaceration has required some resorbable sutures in order to do away with the remnant cavity of the psudoaneurysm. The followings were simple; the drainage tube was suppressed in 2nd postoperative day. The cultures of the chlots removed from the cavity of the false aneurism were negative. The patient was free of neurological complications. At the twelvth postoperative day the patient went home. He was followed by general practitioner and four weeks later the scar was completely healed with restitutio ad integrum.

DISCUSSION

The gluteal artery pseudoaneurysm is rarely reported in the literature (1). In our general surgical unit this is the single case for the last fifteen years.

The symptoms and signs are specific: pains, pulsatile buttock mass with local bruit have suggested the diagnosis. No signs of neurological deficiency, due to sciatic nerve compression, were observed (2, 3). The etiology of the pseudoaneurysm was a stab wound with injury of the inferior gluteal artery as rarely mentioned into the literature (4, 5). A mycotic infection (6) was theoretically possible but not confirmed. The atherosclerotic etiology (7) was less probably in a young man. The gluteal abscess was easy to exclude from differential diagnostic despite the fluctuency of the buttock mass and signs of inflammation (congestion and skin edema), centered by necrotic skin.

Arteriography was the most sensitive and specific investigation of the false aneurysm (8). Because of large diameter of the gluteal artery, the therapeutic coil embolisation or other interventional radiology procedures as percutaneous balloon catheter occlusion (9) after the diagnostic phase, was considered not feasible.

The standard surgical treatment of gluteal artery pseudoaneurysms suggested in the literature (10) consists of binding of the trunk of gluteal artery (using transperitoneal or extraperitoneal approach) and secondarily, pseudoaneurysmal resection and of collateral vessels ligation by gluteal approach. In this patient, the inferior gluteal artery has had a rare anatomical situation originating separately from internal iliac artery (pudendal artery, inferior gluteal artery and superior gluteal artery arises separately from internal iliac artery) according to the type 3 of Bergman classification (11).

At the resection of the false aneurysm there was a low hemorrhage risk because of decreased blood flow after the binding of the main feeding artery. Endoaneurysmal suture of the inferior gluteal artery was followed by suture of all muscular arterial collaterals. Total volume of blood loosed was 900 ml including 700 ml average of curdled blood from the aneurismal pouch.

An alternative to this technique could be the temporary clamping of the internal iliac artery and transgluteal ligation of the nutrient vessels.

The microcatheter embolization of the nutrient vessels using

standard invasive radiologic approaches via femoral artery as alternative method in the treatment of gluteal artery pseudoaneurysms (12, 13) was not feasible because the large size of inferior feeding artery.

CONCLUSION

The diagnosis of a false gluteal aneurism is relatively simple face to a pulsatile buttock mass and underlying bruit. The conventional or digitalized angiography gives details about the aneurysm feeding artery and vascular anatomic variations of the region. A large aneurysm may not benefit from endovascular coil embolisation. The two session surgical treatment, firstly the ligation of the main nutrient artery and secondarily the resection of the aneurismal pouch, is the safest way to do away with a large arterial false aneurysm.

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