REVIEW ARTICLE

SUPERIOR GLUTEAL ARTERY PSEUDOANEURYSM: TWO CASES REPORT AND REVIEW OF THE LITERATURE

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Abstract

Introduction: *Gluteal pseudoaneurysms are extremely rare and respond to pelvic trauma, penetrating wounds, inflammation or infection in the gluteal region.*

Clinical cases: *Two men, 73 and 82 years respectively, who presented gluteal pseudoanerysm after drainage of perianal abscess the first one and after trauma the second one. In both cases the diagnosis was made by imaging tests (doppler ultrasound that was completed with computed tomographic angiography). The first one was successfully treated by ultrasound-guided injection of thrombin at the pseudoaneurysm sac. However, secondary treatment with thrombin injection and coil embolization was performed due to pseudoaneurysm reperfusion. The second one was successfully treated by embolization with hydrocoils through contralateral percutaneous femoral access as well as thrombin injection by direct ultrasound-guided puncture.*

Discussion: *The incidence, presentation and surgical strategy are discussed. Current literature is also reviewed.*

Conclusion: *Ultrasound scan is the first diagnostic test, computed tomographic angiography can give more topographic information. We found selective percutaneous embolization to be the treatment of choice. Open surgical treatment should be reserved for selected cases.*

INTRODUCTION

Pseudoaneurysms located in the superior and inferior gluteal artery are uncommon, and occur mainly due to pelvic trauma or penetrating injuries.[1]

We present two cases of gluteal artery pseudoaneurysm successfully treated in our Department. A literature review and incidence, etiology and therapeutic strategy of this rare disease discussion is also reported.

CASES REPORT

The first case is a 73-year-old man, diagnosed with chronic obstructive pulmonary disease. Perianal abscess surgery was performed in 2009.

He presented a history of necrotizing myositis secondary to perianal abscess which required surgical drainage in 2009. During the follow up, incidental finding in a computerized tomographic (CT) scan of left superior gluteal artery pseudoaneurysm (figure 1).

At physical examination the patient presented a non-pulsatile mass with a murmur in the left external gluteal region. In CT scan, mass compatible with pseudoaneurysm of the superior gluteal artery was described. He was admitted in our Department and ultrasound-guided thrombin injection was performed.

Two months later, the follow up CT scan showed partial thrombosis of the pseudoaneurysm. With these findings, the patient was admitted again to perform secondary embolization with thrombin injection and coils (figure 2). Patient was discharged 24 hours after procedure without clinical complications. Duplex ultrasound follow up was performed demonstrating no residual

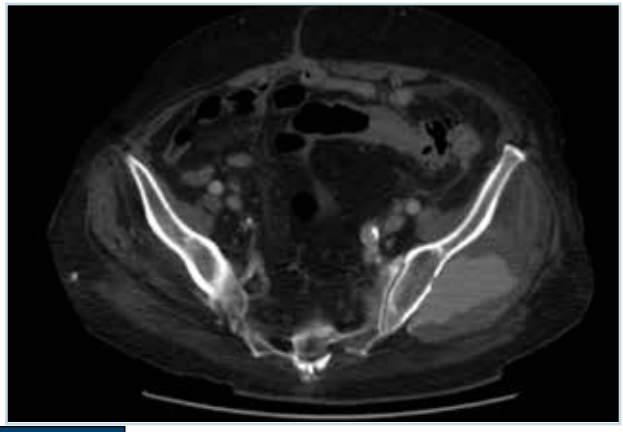

Figure 1 *Computed tomographic scan showing left superior gluteal artery pseudoaneurysm (axial slices).*

flow or patency of pseudoaneurysm.

The second case is an 82-year-old male patient with post-trauma cava filter in 1996. He presented with a rapidly growing mass in the gluteal region. A Duplex ultrasound exam and CT scan showed vascular mass that seems to communicate with the superior gluteal artery (figure 3). Incidental finding of abdominal aortic aneurysm (4.5 cm). Due to these findings, the patient was submitted to embolization of the superior gluteal pseudoaneurysm with embolization material (AZUR helical hydrocoil 15 * 30/12 * 20 / * 10 * 20). This procedure was performed through contralateral percutaneous femoral access. Also, thrombin injection by direct ultrasound guided pseudoaneurysm puncture was performed (figure 4). The control duplex ultrasound examination was satisfactory, without residual flow in the pseudoaneurysm and with no complications at puncture sites. He was discharged 48 hours after procedure. One month later, the control duplex ultrasound was performed showing complete occlusion of the right gluteal pseudoaneurysm.

DISCUSSION

The incidence of pseudoaneurysms is difficult to calculate, as there are no large series of patients [2]. Pseudoaneurysms of the lower gluteal artery are even much less frequent than those of the upper gluteal artery[1]. Most of these pseudoaneurysms are the result of direct trauma or infection at the artery wall [1,3]. In the absence of trauma, a persistent sciatic artery aneurysm[4] or true gluteal artery aneurysms should be considered. Some cases have been described in Marfan syndrome[5], Ehlers-Danlos disease or in treatment with oral anticoagulants[6].

The most common forms of presentation are insidious or, when they are very large, compartment syndrome with symptoms related to sciatic nerve compression[1]. The rapid diagnosis and treatment are essential to prevent neurological sequelae[3].

The pulsatility of the gluteal pseudoaneurysms is not constant and we must consider the differential diagnosis with soft tissue tumors or buttock abscesses[3].

The color Duplex ultrasound must be considered as the first choice in the initial diagnosis. It is extremely useful, showing the inflow and outflow of blood (yin-yang sign). Other options to confirm the diagnosis are CT angiography and magnetic resonance image (MRI) angiography, these techniques allow a better definition of the topographic location of the pseudoaneurysm. Finally, selective arteriography is also useful combining di-

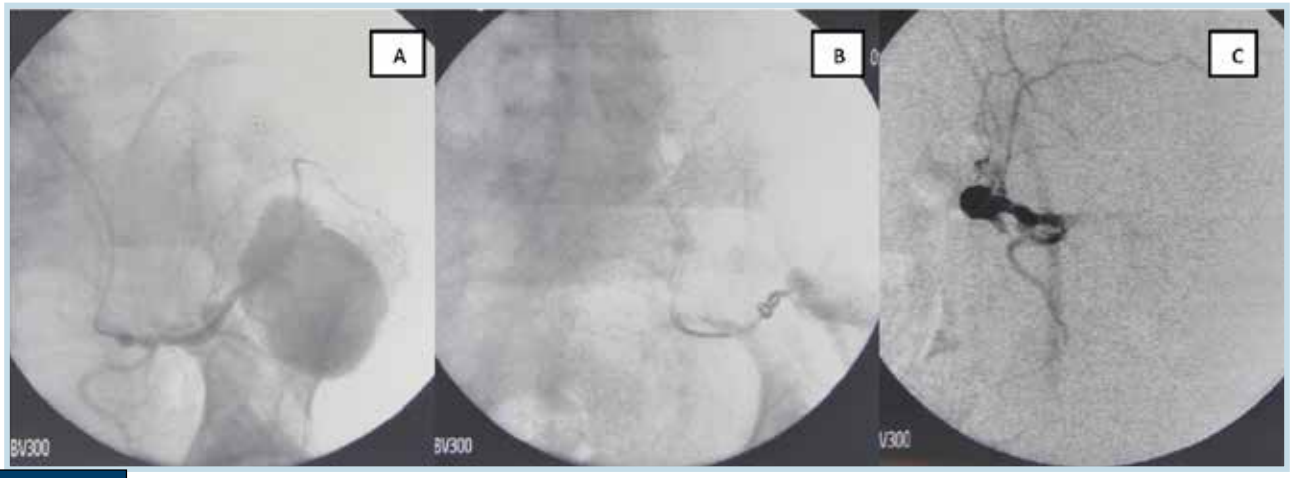

Figure 2 *Embolization was performed. We can see the intial angiography (A), the embolization with coils (B) and the final result after procedure (C).*

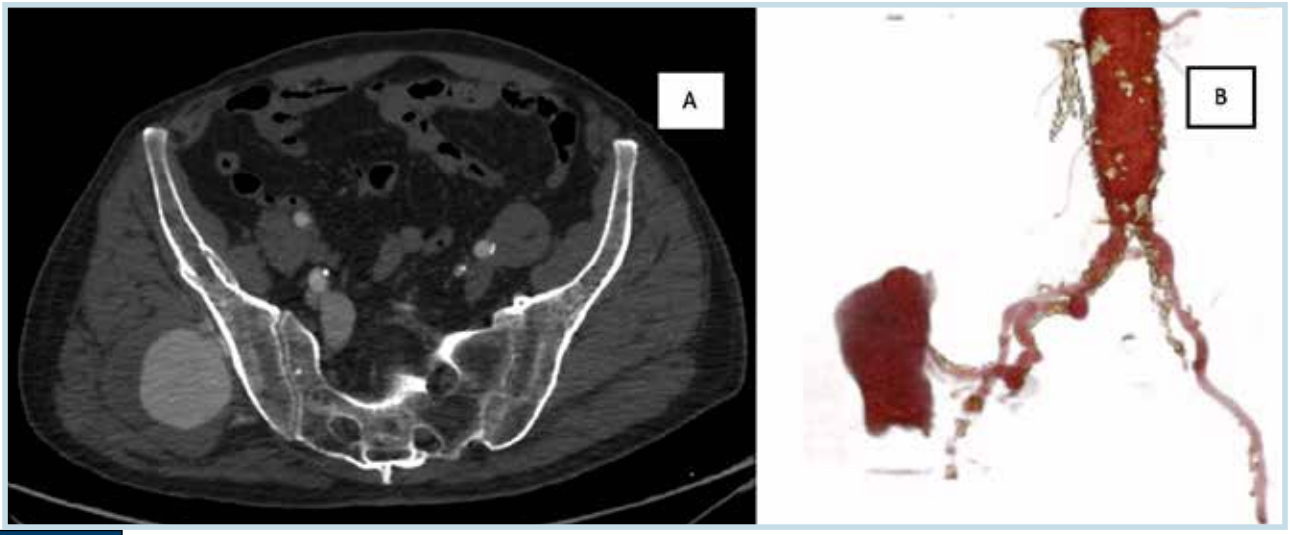

Figure 3 *Computed tomographic scan showing right superior gluteal artery pseudoaneurysm: axial slices (a) and 3D reconstruction (b).*

agnostic and therapeutic approach at the same time [1,3].

Currently, the best treatment of gluteal pseudoaneurysms is selective percutaneous embolization. Surgical treatment should be considered only in those cases which the pseudoaneurysms are in an accessibility location or when it is necessary to drain the hematoma secondary to the aneurysm, also when the aneurysm embolization has not been successful.

CONCLUSIONS

Gluteal pseudoaneurysm is a rare pathology but it should be suspected when any mass into this region is found. Color Duplex ultrasound is the first-choice diagnostic test, CT angiography and MRI angiography are the diagnostic options that allow to exactly define the topographic location of the pseudoaneurysm. The treatment of choice is selective percutaneous embolization. Open surgical treatment remains as the alternative treatment option for some selected cases.

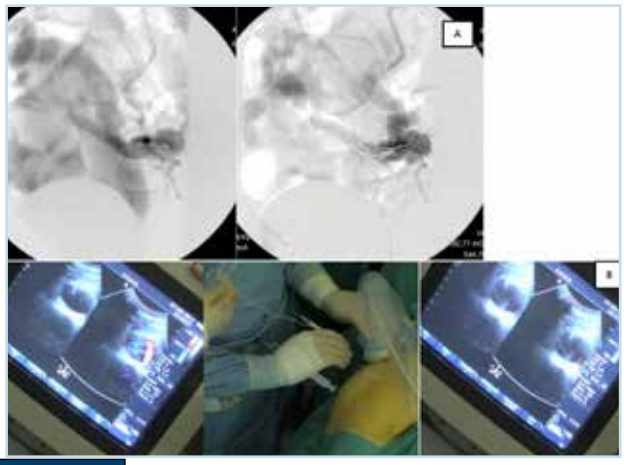

Figure 4 *Embolization with coils (A) and thrombin injection (B) was performed.*

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