CASE REPORT

Inferior gluteal artery pseudoaneurysm mimicking gluteal abscess

Vikas Singh · Hemant Sharma · Lalit Maini

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Abstract We report a case of pseudoaneurysm of inferior gluteal artery initially diagnosed as gluteal abscess. Pseudoaneurysms of inferior gluteal artery are rare. High degree of clinical suspicion is required in a patient presenting with a post-traumatic swelling in the gluteal region. These aneurysms may present with very different clinical pictures. They can be diagnosed by Doppler ultrasound, computed tomography or magnetic resonance imaging. Mainstay of the diagnosis is by angiography and the preferred management with good clinical results is with angiographic embolisation.

Keywords Gluteal region · Penetrating wounds · Abscess · Inferior gluteal artery · Pseudoaneurysm

V. Singh
Senior Resident
Maulana Azad Medical College and associated Lok Nayak and GB Pant Hospital,
New Delhi, India.

H. Sharma
Specialist Orthopaedics Surgeon
Aruna Asaf Ali Govt. Hospital,
5, Rajpur Road,
New Delhi, India.

L. Maini (✉)
Associate Professor Orthopaedics
Department of Orthopaedics
Maulana Azad Medical College and associated Lok Nayak and GB Pant Hospital,
New Delhi, India.
Ph: +91 / 11 / 22710605
E-mail: lalit_maini@rediffmail.com

Introduction

“Wherever pus develops in the human body, drain it as early as possible,” is an age old dictum. But, one has to be aware of dangerous swellings, presenting as a seemingly benign abscess amenable to routine incision and drainage.

Gluteal artery aneurysms represent less than 1% of all aneurysms [1]. The aneurysms of superior gluteal artery are more common than inferior gluteal artery [2, 3]. The aneurysms of the inferior gluteal artery predominantly occur due to blunt or penetrating trauma [4]. Only 16 case reports of inferior gluteal artery aneurysm with varied presentations in last three decades adequately emphasize the rarity of this entity. We report a case of pseudo-aneurysm of inferior gluteal artery following a penetrating wound in the gluteal region, presenting as a gluteal abscess. The purpose of this article is to emphasize careful clinical evaluation of post-traumatic swellings in gluteal region or any other part of body despite their outwardly benign nature.

Case report

A 30-year-old male presented to us with the complaints of insidious onset, gradually progressing, and painful swelling in the right buttock region, accompanied with fever since a fortnight. Patient revealed that he had sustained penetrating trauma to the same site about one and half month back. The wound was managed with debridement and primary wound closure.

Clinical examination of the mass revealed a solitary, warm, firm, tender, non-pulsatile swelling 8 x 6 cm at the site of previous injury on the left buttock. The distal neurovascular status of the lower extremity was intact.

With a preliminary diagnosis of gluteal abscess in mind we prepared the case for incision and drainage under anaesthesia. Pre-operatively, the swelling was subjected to

Fig. 1 MRI scan: red arrow showing a swelling near the inferior gluteal artery

Fig. 2 Angiographic scan: black arrow showing the pre-embolization status of the aneurysm

Fig. 3 Angiographic scan: black arrow showing the post-embolization status of the aneurysm which has almost receded

routine aspiration with a wide bore needle, which surprisingly revealed blood. This prompted us to further evaluate the swelling with aneurysm of the gluteal artery in mind in view of previous history of trauma. Color Doppler ultrasound and MRI scan (Fig. 1) were performed which confirmed our provisional diagnosis of gluteal artery aneurysm. An angiography was performed (Fig. 2) which confirmed the swelling as a pseudo-aneurysm of the inferior gluteal artery.

The pseudo-aneurysm was immediately managed by coil-embolisation during angiography (Fig. 3). Patient gradually improved with decrease in pain, reduction in the size of the swelling and has remained symptom free at the time of his most recent follow-up, about one and a half year after the treatment.

Discussion

An aneurysm is a localized dilated sac filled with blood which is in direct communication with the lumen of an artery. The weakness in the vessel wall can be congenital or acquired secondary to trauma, degeneration and infection. They can be of two types: true – actual arterial wall dilatation, wherein the swelling consists of all the three layers of an artery (tunica adventitia, media and intima); false (pseudo) – condensed communicating peri-arterial fibrous tissue arising after traumatic disruption of the arterial wall and consists only of a fibrous wall that surrounds the hematoma. Inferior Gluteal artery pseudoaneurysms develop after a blunt or penetrating trauma – stab, gunshot, needle biopsy, intramuscular injections and other surgeries in gluteal region [4, 5, 6]. Infection and anticoagulant therapy are other causes [7].

Gluteal artery (branches of internal iliac system) aneurysms are a rare entity [1]. The majority of these are pseudoaneurysms. The superior gluteal artery (large terminal branch of posterior trunk of internal iliac artery) is more commonly involved than the inferior gluteal artery (large terminal branch of anterior trunk of internal iliac artery) [2, 3, 8]. A gluteal artery pseudoaneurysm presents as an insidious onset, gradually progressive, post-traumatic swelling in the gluteal region, arising within a few weeks or months or years after the primary insult [1, 2, 9]. The swelling may show signs of inflammation, may or may not be pulsatile and thus may very well mimic a gluteal abscess or might be erroneously diagnosed as sarcomata, lipomata, or hernia [8, 9, 10]. It might also present as compressive neuropathy of the sciatic nerve [3, 9]. In its extrapelvic course inferior gluteal artery is mostly localized medially to nerve. In a significant number of cases the artery or one of its branch may perforate the nerve [11]. One rare differential diagnosis of gluteal mass is persistent sciatic artery [4].

The mainstay of the diagnosis of a gluteal artery aneurysm is by angiography. A routine aortic flush angiogram

may show normal aorto-iliac anatomy but a selective angiography of internal iliac artery or of the feeding vessel demonstrates the aneurysm [4]. If undiagnosed and thus remaining untreated, these pseudoaneurysms may rupture, leading to catastrophic life-threatening hemorrhage.

Treatment is achieved by open surgery or minimally invasive techniques, such as embolization during angiography [1, 3, 4, 7, 12, 13]. Transluminal coil embolisation by ultrasound guided direct puncture has also been suggested for inferior gluteal artery aneurysm [13]. Thrombin injection is also a useful method in pseudoaneurysms with narrow neck [14]. There are two techniques of injecting thrombin into the pseudoaneurysm. Transarterial injection involves transarterial selective catheterization of the pseudoaneurysm, before the injection of thrombin into it via a catheter. Thrombin can also be injected into the pseudoaneurysm by percutaneously placed needle under ultrasound guidance. A transarterially positioned occlusion balloon can be inflated in the neck of pseudoaneurysm. This balloon prevents spillage of thrombin or thrombus into the native vessel [14]. Surgery is by combined abdominal (retroperitoneal) and gluteal approach. Internal iliac artery is identified and ligated, by extraperitoneal approach while posterior approach is used for evacuation of contents, pseudocapsule resection and ligation of nutrient vessels. Angiographic localization of the site and its transcatheter embolization has several distinct advantages over the surgical therapy: first, the retroperitoneum is not opened; secondly, release of the tamponade effect of the hematoma is avoided; and thirdly, the risk of infection is significantly reduced [12].

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