

## Hematoma of the Iliac Area after Arthroplasty of the Hip Joint

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### Abstract

The case of the formation of an iliac hematoma against the background of hip replacement is presented. The main symptom was pain in the iliac region. An opening and drainage of the hematoma of the right iliac region was performed, the continuing serous hemorrhagic discharge caused angiography with selective catheterization of the parietal branches of the internal iliac artery, followed by embolization of the branches of the superior gluteal artery on the right.

**Keywords:** Superior Gluteal Artery; Arthroplasty; Complication

The complexity of the surgical anatomy of the pelvic arteries determines the features of surgical tactics and the treatment of injuries and diseases of this area. And the range of consequences of surgical activity up to fatal outcomes is large [1]. To stop bleeding from damaged gluteal arteries, it is necessary to take into account the presence of intra-pelvic anastomoses of the upper and lower gluteal arteries, as well as the features of collateral arterial blood supply to the pelvis [2]. According to literature data, the superior gluteal artery is a direct continuation of the posterior trunk of the internal iliac artery. In addition, there is a large variability in the structure and location of the branches of the superior gluteal artery, the frequent occurrence of its loose branching type, confirmed by a numerous of studies [3].

In a study conducted by A. Zaritsky, *et al.* [4], it was found that the upper deep branch of the superior gluteal artery with a diameter of  $18.25 \pm 1.25$  mm, rounding the upper edge of the sciatic notch, walked along the iliac wing at a considerable distance, being fixed to the periosteum of the ilium in the fascial case formed by the parietal leaf of the pelvic fascia, and gave 3 - 5 muscle branches with a diameter of  $1.55 \pm 0.35$  mm to the middle gluteus and piriformis muscles. In addition, 2 - 3 subperiosteal branches with a diameter of  $1.6 \pm 0.2$  mm were formed from it. These branches penetrated into the periosteum of the ilium at the lower edge of the large sciatic notch, passing in the fascial case formed by the periosteum. These branches abundantly anastomosed among themselves, as well as with anastomotic vessels of the deep branches of the lower gluteal artery, and disintegrated into numerous branches, gradually decreasing in diameter. From the upper deep branch of the superior gluteal artery, 2 - 3 anastomotic branches were also formed directly with the deep branch of the lower gluteal artery with a diameter of  $1.5 \pm 0.2$  mm.

Most often, trauma to the superior gluteal artery and its branches is manifested in the form of extensive hematomas and pseudoaneurysms. The deep location and proximity to the bone wall of the large sciatic notch makes revision and ligation of the superior gluteal artery ineffective, therefore, the classic way to stop blood flow in the superior gluteal artery is one or two-sided ligation of the internal iliac arteries [5].

We present our experience in treating a patient with damage to the branches of the superior gluteal artery on the background of hip joint arthroplasty.

A 46-year-old female patient was admitted to the traumatology department of the Grodno Emergency hospital with complaints of pain in the right iliac region. From the anamnesis it is known that two months earlier, the patient underwent total hip arthroplasty with the Altimed prosthesis (Altimed, Republic Belarus). The postoperative period was uneventful; over time, pain in the right iliac region began to disturb. On admission, an ultrasound of the right inguinal region was performed: a fluid formation of 27 x 7 mm was determined. An opening and drainage of the hematoma of the right iliac region was performed. In the postoperative period, hemorrhagic discharge was preserved. After a month, hematoma was opened and drained again. However, in the postoperative period, serous hemorrhagic discharge continued. A fluid formation in the right iliac region was diagnosed by ultrasound. Therefore, angiography was performed with selective catheterization of the parietal branches of the internal iliac artery. After that, embolization of the branches of the superior gluteal artery on the right was performed. The postoperative period was uneventful, the wound healed by primary and secondary intention. The wound was sutured with nodal adaptive sutures, removed after 2 weeks. The patient walks on her own with a cane.

Thus, surgeons should always be ready for the development of such a complication after performing hip replacement surgery. The emergence in the iliac region of volumetric formation after surgery is one of the markers of vascular complications.

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