MENTORS IN ORTHOPEDICS

CHRONIC OSTEOMYELITIS OF THE SMALL TROCHANTER : POSTEROLATERAL SURGICAL APPROACH TO THE SMALL TROCHANTER

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SUMMARY

Background: Chronic osteomyelitis localized to the lesser trochanter of the femur is an infrequent clinical entity with limited documentation regarding optimal surgical access. Standard approaches to this anatomical region are typically described for oncological resections rather than the management of infectious processes and associated fistulous tracts.

Objective: This report describes the clinical presentation, diagnostic workup, and surgical management of chronic osteomyelitis of the lesser trochanter using a modified posterior-lateral surgical approach.

Key Points: A 40-year-old female presented with chronic pain and persistent fistulae on the lateral thigh. Radiographic and fistulographic imaging confirmed chronic osteomyelitis of the right lesser trochanter. A modified Gibson approach was utilized, involving a 12-cm incision distal to the greater trochanter. The dissection proceeded between the tensor fasciae latae and the gluteus maximus, extending along the superior border of the quadratus femoris to reach the lesser trochanter. Intraoperative findings revealed complete detachment of the iliopsoas tendon and necrotic bone. Surgical intervention consisted of lesser trochanter resection and thorough necroectomy. This approach avoids major neurovascular bundles and large muscle groups, though it requires precise identification of the quadratus femoris to protect the adjacent sciatic nerve.

Conclusion: The modified posterior-lateral approach provides effective, atraumatic exposure of the lesser trochanter for the treatment of chronic osteomyelitis. This technique facilitates complete debridement and resection while minimizing soft tissue disruption, resulting in primary wound healing and resolution of clinical symptoms.

KEYWORDS

Osteomyelitis; Femur; Orthopedic Procedures; Debridement; Chronic Disease

CASE PRESENTATION

Patient D., 40 years old, woman, was admitted to the reconstructive surgery department of the Azerbaijan Research Institute of Traumatology and Orthopedics on 01/18/2010 (Medical record No. 61) with complaints of pain in the anterior-internal surface of the upper third of the right femur, and presence of fistulas on the lateral surface of the middle third of the thigh.

HISTORY OF PRESENT ILLNESS

According to the patient, in April 2008, pain appeared in the area of the anterior-internal surface of the right thigh. The onset of the disease was not associated with anything specific. She was treated conservatively at a local hospital. Gradually, the pain increased, and swelling appeared on the lateral surface of the middle third of the thigh. On September 15, at a local hospital, the surgeon performed two skin incisions. The patient reports that about 200 ml of purulent fluid was expelled. Since then, one of the fistulas has not healed. Discharge is scant.

CLINICAL EXAMINATION

The patient walks with a limited load on the leg, with a semi-flexed body position, and limps. During walking, tenderness is noted in the groin area.

The patient was examined clinically and radiologically. Fistulography was performed (Figure 1).

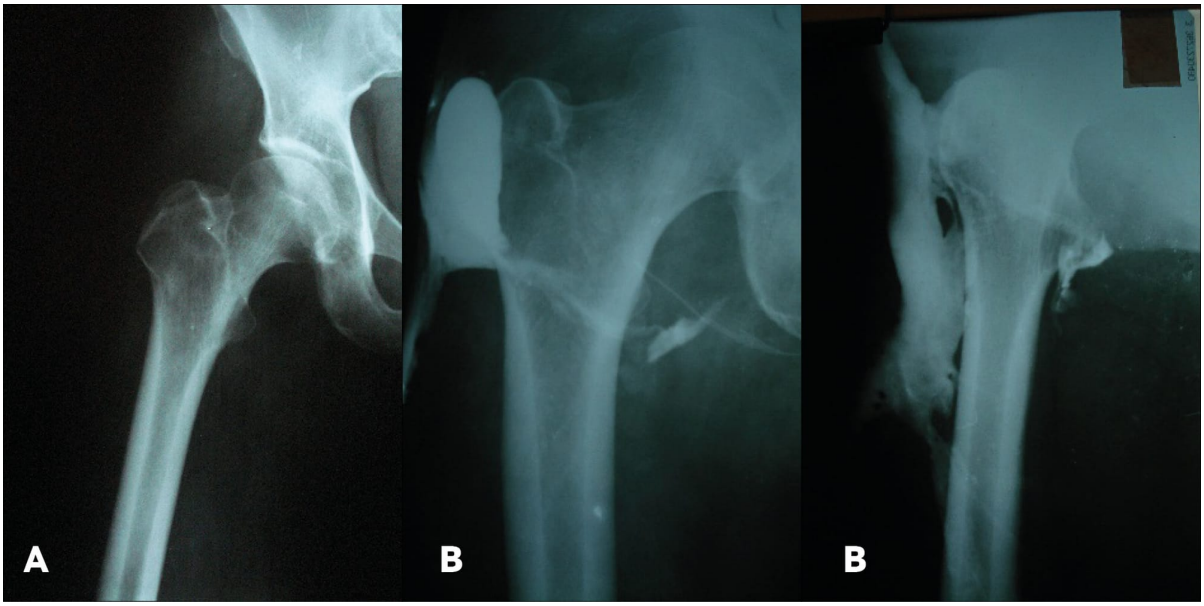

Figure 1 : X-ray images of patient D. A — upon admission, B — fistulograms.

The diagnosis was established as: chronic osteomyelitis of the lesser trochanter of the right femur. A surgery was performed — resection of the right femur's lesser trochanter, necroectomy.

SURGICAL PROCEDURE

The surgical approach was as follows: After tightly filling the fistulous tract with a solution of green dye and hydrogen peroxide along the posterolateral surface of the lower third of the right femur just below the greater trochanter, a skin incision approximately 12 cm in length was made (Figure 2 A).

The subcutaneous fat tissue was separated and the fascia lata of the thigh was exposed. A cavity stained with green dye was found in the area of the lateral surface of the thigh. The fistulous tract extended between the m. tensor fasciae latae and the tendinous part of the m. gluteus maximus to the posterior surface of the femur. A fascial incision was made at the junction of the gluteus maximus and the fascia lata, transitioning into the iliotibial tract directed toward the posterior surface of the femur (Figure 2 B). The limb was rotated inward. During wound revision, a fistulous tract was found, extending along the upper edge of the m. quadratus femoris to the lesser trochanter. The m. quadratus femoris was bluntly separated from its attachment to the femur, and the lesser trochanter was exposed in the wound (Figure 3).

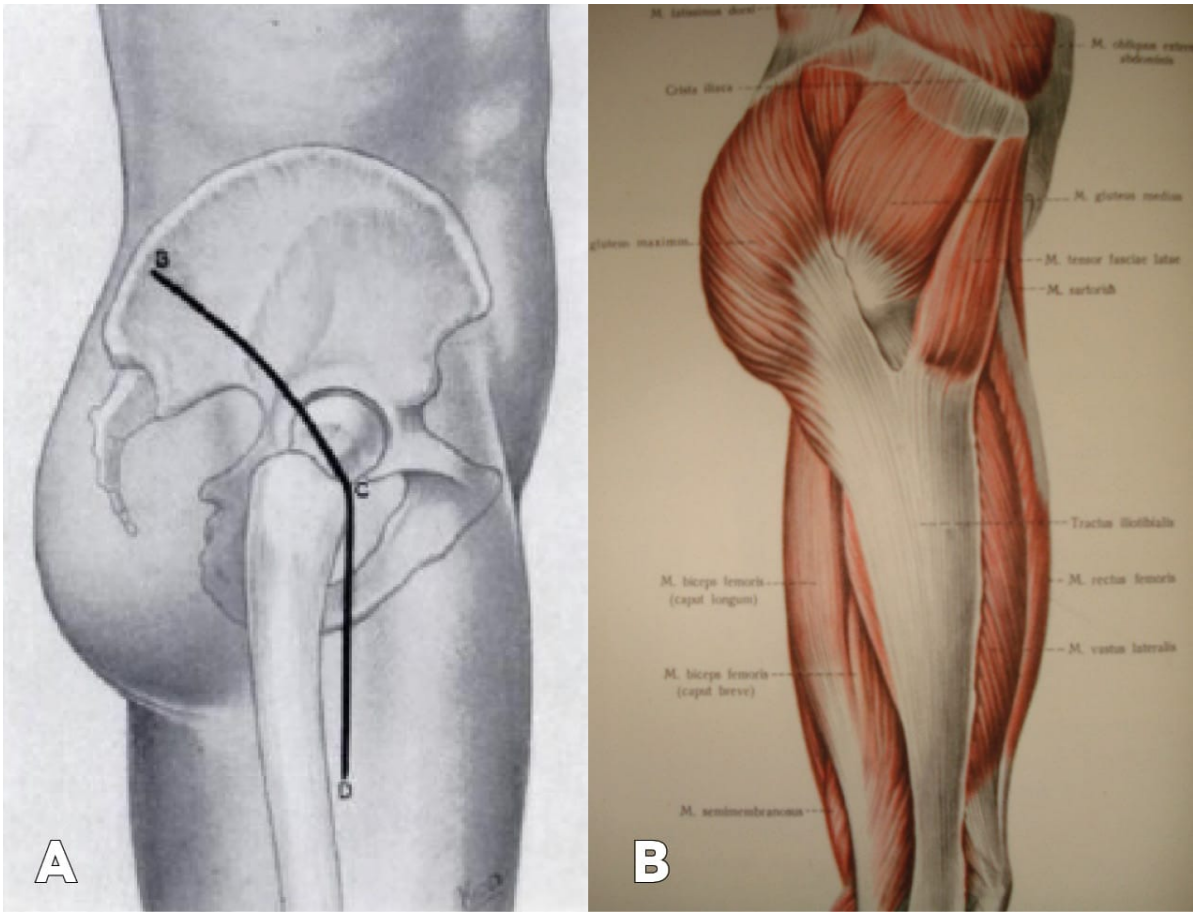

Figure 2 : (A) - Gibson incision (black line). The incision proposed by us - red line. (B) - Fascial incision.

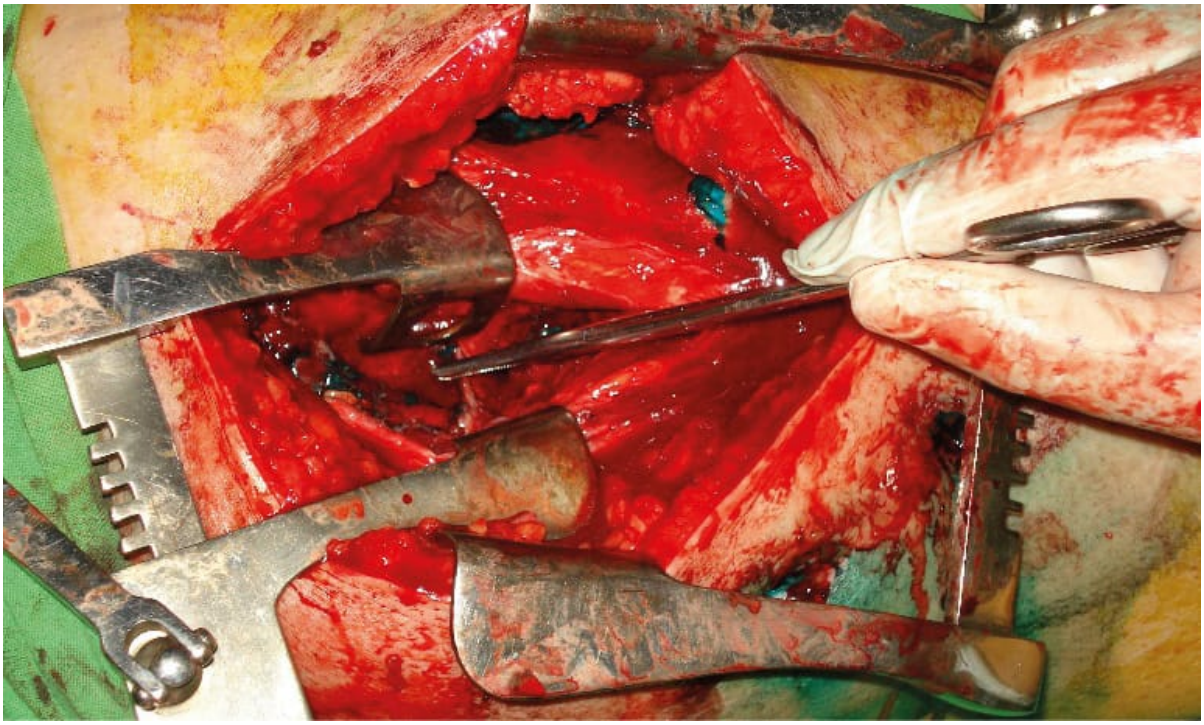

Figure 3 : View of the surgical wound — the lesser trochanter is indicated with forceps. Necrotic tissues, stained green, are visible.

During revision, it was noted that the m. iliopsoas was completely separated from the lesser trochanter. The lesser trochanter lacked periosteum and felt rough to the touch. Surrounding it was a cavity filled with necrotic tissue stained with green dye. A resection of the lesser trochanter was performed. The specimen showed green dye penetrating inside the lesser trochanter (Figure 4).

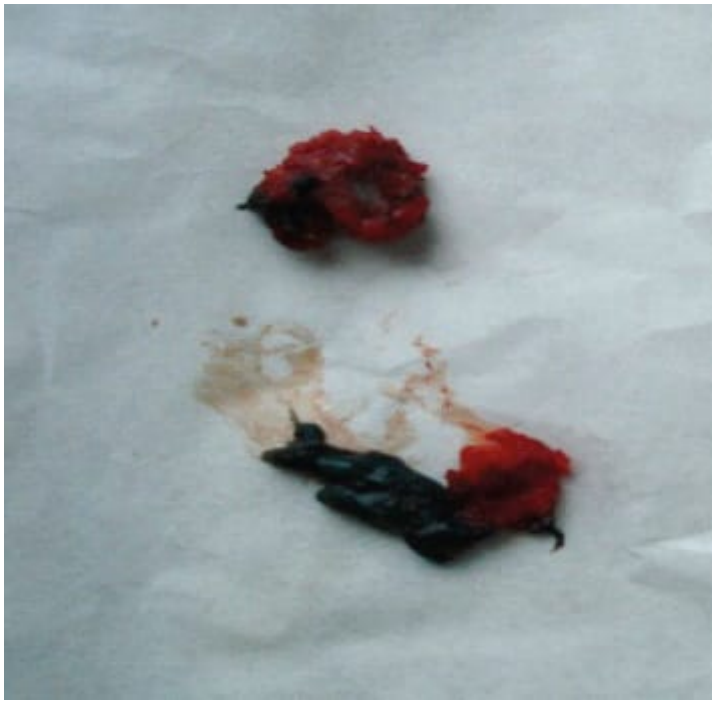

Figure 4 : Specimen — resected lesser trochanter.

Necroectomy was carried out. The wound was drained with a tube. Sutures were placed on the fascia, subcutaneous tissue, and skin. The wound healed primarily (Figure 5).

Figure 5 : View of the surgical wound during treatment.

The patient began walking without pain. Discharged on 02/03/2010.

DISCUSSION

In the literature available to us, we found surgical approaches to the lesser trochanter used in tumors in this area. The approach was performed from the anterior-medial surface (1971) [1]. R.E. Zhitnitsky (1976) [2] described the Gibson approach for surgical treatment of tumors in the region of the lesser trochanter and the posteroinferior surface of the femoral neck. In this approach, access to the lesser trochanter is through the distal part of the Gibson approach. The A. Gibson surgical approach is a modification of Kocher's approach, published by him in 1950 [3]. The skin incision for this approach begins at the posterior superior iliac spine and the anterior angle of the greater trochanter. The author then describes the now well-known sequential approach to the hip joint, without mentioning anything about the lesser trochanter. This approach to the hip joint was also described by V.D. Chaklin in 1964 [4]. Amr S. (1998) described a modification of the A. Gibson approach, but this modification also related to access to the hip joint [5].

In the sectional anatomy atlas by Torsten B. Moeller (2000), a cross-section at the level of the lesser trochanter is shown (Figure 6).

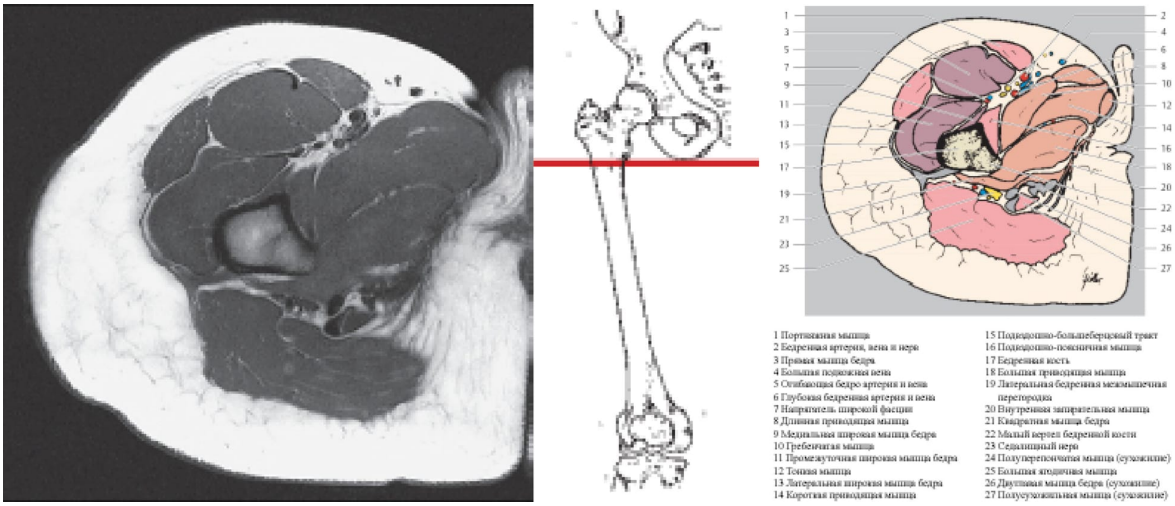

Figure 6 : Computed tomography slice at the level of the lesser trochanter and its diagram (arrows indicate the approach to the lesser trochanter).

The approach we used is indicated by arrows and passes, bypassing the main muscle groups of the thigh and neurovascular bundles. Particular caution is required when separating the m. quadratus femoris from the femur, as the sciatic nerve runs immediately behind it.

Thus, this case is of interest from two perspectives. On one side, it involves chronic osteomyelitis of the lesser trochanter — a rarely encountered localization. The etiology of the disease is unclear. Possibly, a sudden abduction of the thigh led to detachment from the attachment site of the m. iliopsoas, followed by self-infection of the hematoma and subsequent development of osteomyelitis of the lesser trochanter. The fistulous tract extended from the lesser trochanter along the posterior-lateral surface of the femur and exited into the subcutaneous space between the m. tensor fasciae latae and m. gluteus maximus. Interestingly, the pus did not spread under the m. gluteus maximus or under the m. tensor fasciae latae, as described by V.F. Voyno-Yasenetsky (2000) [7]. Presumably, this is why the incisions made along the patient's residence achieved their purpose.

On the other hand, this is a surgical approach to the lesser trochanter that can be considered a modification of the A. Gibson approach and allowed for atraumatic resection of the lesser trochanter and debridement of this area.

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