Advanced osteoarthritis of the hip as reason for extensive asymmetric leg edema: a rare case report and review of the literature

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An enlarged iliopectineal bursa (IB) can cause pressure on iliofemoral veins. Clinical presentation can manifest as asymmetrical lower extremity edema. This case report demonstrates extensive asymmetrical leg edema caused by femoral vein compression based on iliopectineal bursitis (IB-itis) associated with advanced osteoarthritis (OA) of the left hip joint with an outline of relevant current literature.

A female patient presented with left hip pain and edema in the leg. X-ray showed severe OA of the left hip. Computed Tomography (CT) concluded a cystic abnormality at the left iliopsoas muscle associated with the joint consistent with IB-itis, associated with a degenerative left hip joint. Hybrid total hip replacement was performed. At three-month follow-up her left leg showed no longer signs of extensive edema and she walked without the use of walking aids. IB-itis is mostly associated with rheumatoid arthritis (RA). There are no reports which only describe OA as cause of IB-itis. Extensive asymmetrical leg edema can be caused by venous compression of the femoral vein by an IB-itis. If the latter is the consequence of advanced hip OA, a total hip replacement can yield excellent clinical outcomes both functionally and with regard to the edema.

Keywords: Iliopectineal bursitis (IB-itis), osteoarthritis (OA), severe asymmetrical leg edema, case report.

INTRODUCTION

The hip joint is surrounded by multiple bursae; the ischiogluteal bursa, gluteus medius bursa, trochanteric bursa and the largest one of them is the iliopectineal bursa (IB)¹. Like every bursa, the IB can become inflamed. Intra-articular reasons for a iliopectineal bursitis (IB-itis) are synovitis² due to rheumatoid arthritis (RA)³, osteoarthritis (OA)⁴, or avascular necrosis⁵. An overuse of the iliopsoas muscle which leads to irritation of the IB due to the muscle passing over the iliopectineal eminence is an extra-articular cause⁶. Due to the localization of the IB an enlargement might cause direct pressure on nearby structures such as the femoral nerve¹, iliac¹ and femoral veins⁷. This rare entity can clinically be manifested by pain in the groin, a local mass, femoral neuropathy, and/or lower limb edema⁸. Herein we report a case of an elderly patient presenting with left groin pain, redness, and extensive asymmetrical edema of the leg.

CASE DESCRIPTION

A female in her early 80’s presented to the orthopaedic outpatient clinic. Her medical history noted medicine-treated hypertension and type II diabetes mellitus. She complained of progressive left leg edema from the left foot to her left thigh, which decreases with elevation, for the past 3 months. Progressively worsening left groin pain since 18 months, which was aggravated by weight bearing. The patients’ mobility has decreased significantly in recent months due to the severe edema.

Physical examination revealed extensive asymmetrical pitting edema in the left leg from the foot up to the hip, with diffuse redness (Fig. 1). There was no temperature change of the left leg. The dorsalis pedis artery and the tibialis posterior artery were adequately palpable. Flexion and extension of the left hip ranged from 90 to 20 degrees. There was no internal rotation possible. There was an external rotation of 5 degrees with abduction of 5 degrees. Trendelenburg sign, Thomas sign and Drehmann sign were all positive. Neurological examination of the femoral nerve and sciatic nerve showed no abnormalities.
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Thrombophlebitis. A Computed Tomography (CT) of the pelvis and abdomen showed a giant IB with a maximum craniocaudal length of 8 centimeters. The IB showed clear compression on the left venous vascular axis and comminution with the severely osteoarthritic hip joint (Fig. 4-6). The laboratory results were unremarkable.

Shared decision led to total hip replacement, as the advanced OA of the hip joint was thought to be responsible for the IB-itis. While waiting for the hip replacement, an ultrasound-guided aspiration of the IB

Conventional radiography showed advanced OA of the left hip (Fig. 2-3). A duplex ultrasound of the lower- and upper leg was performed which showed no evidence of deep venous thrombosis or

Figure 1. — Clinical photo showing severe edema in the left leg with redness.

Figure 2. — Preoperative AP pelvic x-ray.

Figure 3. — Preoperative axial left hip x-ray.

Figure 4. — Coronal view of CT abdomen with collection in the psoas muscle.
was performed to relieve the pressure on the vascular axis, which resulted in temporary slight decrease in pain and edema. Hip replacement was performed using the posterolateral approach, without full dissection of the cyst. During surgery, subcutaneous edema and
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portion of the iliopsoas muscle, anterior to the hip joint capsule and lateral to the common femoral vessels. The normal dimensions of the IB are 5-6 cm in length and 3 cm in width. Usually, it is in a collapsed state, but it can be distended by overproduction of synovial fluid caused by a variety of conditions. In our patient the bursa was dimensioned 8 cm in length and 4 cm in width. In 15% of patients the IB is communicating with the hip joint.

Intra-articular causes for IB-itis can be divided in different pathologies. Synovitis and bursitis are interrelated pathological conditions characterized by inflammation affecting distinct anatomical structures within the body, particularly in and around joints. Synovitis pertains to the inflammatory response localized within the synovial membrane, an attenuated membranous lining enveloping the articular cavity. Therefore, synovitis manifests as an intra-articular inflammation. In contrast, bursitis entails the inflammation of bursae, which are diminutive, synovial fluid-filled sacs strategically positioned in proximity to joints, serving the crucial function of mitigating friction between tendons, ligaments, and osseous structures.

IB-itis is most frequently associated with RA, being a known cause of synovitis. OA is one of the most common diseases in the elderly and is based on degeneration of the joint. However, although possibly being quite frequent, we found no publications on hip OA being the sole cause of IB-itis. IB-itis can also occur following hip replacement. García et al. described a case with internal coxa saltans after total hip arthroplasty and its relationship to the development of IB-itis. Lin et al. described a case of a patient who after eight years of hemiarthroplasty developed IB-itis which was assumably due to polyethylene debris.

In our case the main complaint was extensive asymmetrical leg edema. This is in accordance with Savarese et al. who reported on iliofemoral vein compression due to IB-itis resulting in lower extremity edema. IB-itis might also cause other problems. The reports of Iwata et al., Mori et al., and Tatsumura et al. also demonstrated that neuropathy of the femoral nerve can occur in the presence of IB-itis resulting in sensory impairment in the affected leg.

IB-itis without leg edema can be seen in patients with developmental dysplasia of the hip, inguinal pain with or without additional inguinal swelling, abdominal pain, after previous operations in the groin area (femoral artery exploration, open biopsies), after trauma and without underlying joint disease.

Symptomatic IB-itis is an uncommon pathological condition. The IB is the largest bursa around the hip joint. It is located beneath the musculotendinous distended veins were seen and with the arthrotomy of the hip lots of synovial fluid was seen with a connection from the hip joint to the cyst. Both the surgical procedure and the postoperative rehab passed uneventfully (Fig. 7-8). Histological analysis of cyst material and cyst wall showed chronic inflammation without any signs of malignancy.

The patient was seen in the outpatient clinic at six weeks follow-up. The wound healed without complications. The left leg showed a remarkable decrease of size and the redness disappeared. The decrease of edema further improved at three months follow-up (Fig. 9) and at six months follow-up (Fig. 10). At latest follow-up, the patient has no complaints of pain, she walks without a walking aid and is very satisfied about the progress.

DISCUSSION

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IB-itis presents without any complaints or clinical symptoms in most cases. However, giant cysts may cause pain, swelling and eventually compression on the surrounding neurovascular structures. Mostly, symptomatic (giant) IB-itis is a manifestation of end-stage intra-articular pathology of the hip joint. It is important to be aware of this clinical condition and its manifestations. As outlined in this case report, treating
the cause of the synovitis can also be the solution to the symptoms caused by IB cyst compression.

CONCLUSION

Extensive asymmetrical leg edema can be caused by venous compression of the femoral vein by an IB-itis. If the latter is the consequence of advanced hip OA, a total hip replacement can yield excellent clinical outcomes both functionally and with regard to the edema.

REFERENCES