Giant ganglionic cyst of the hip as a rare cause of sciatica

Case report

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Although ganglionic cysts located at the hip joint are described infrequently, those found in this region are usually small, deep-seated, and asymptomatic. Occasionally, however, a large ganglionic cyst of the hip area is observed that becomes symptomatic following compression of adjacent neurovascular bundles. In this report, the authors describe a 51-year-old man with symptoms of sciatica caused by a giant ganglionic cyst of the posterior hip joint. Because of its intermuscular location, the cyst was not palpable, and was probably misdiagnosed previously as a herniated disc of the lumbar spine. After resection of the cyst, the patient’s symptoms resolved completely. This case highlights the importance of a detailed clinical examination for patients with multiple degenerative joint diseases. (DOI: 10.3171/2010.12.SPINE10498)

KEY WORDS • giant ganglionic cyst • hip • sciatica

Ganglionic cysts are defined as cystic lesions arising close to any joint or tendon sheath. In decreasing order of frequency, the most common locations of ganglionic cysts are the dorsum of the wrist, tendon sheaths of the hands and feet, and areas surrounding the ankle and knee joints.5,13 Although the exact origin is unclear, a ganglionic cyst may represent a developmental synovial remnant or a consequence of a diverticular outpouching of the joint capsule, of posttraumatic connective tissue degeneration, or of excessive use of joints.2,9 The hip joint is a relatively rare location for development of ganglionic cysts, and those that have been found in this region are usually small, deep seated, and nonpalpable.2,6 Ganglionic cysts in this area are usually juxtaarticular and associated with vague symptoms of joint derangement. Unless a large ganglionic cyst becomes palpable or produces symptoms of neurovascular compromise, a clear diagnosis based on clinical information is difficult.

Most giant ganglionic cysts described in the literature extend anteriorly to the hip joint and present as a femoral hernia or as symptoms caused by compression of femoral neurovascular bundles.1,7,10 We report an unusual case of a 51-year-old man with a large ganglionic cyst of the hip that extended posteriorly, causing sciatic nerve compression that mimicked lumbar disc herniation without a palpable mass in the buttock region. To our knowledge, this case represents the first of its kind to be reported.

Case Report

History. This 51-year-old man presented to the clinic with a 3-month history of increasing left buttock pain radiating downward to the posterior thigh and knee and the lateral aspect of the lower leg and sole, which worsened with standing or climbing stairs. It was partially relieved by sitting and bed rest, and nonsteroidal analgesics were not effective. He became wheelchair bound 1 month later due to severe left buttock pain and paresthesia of the lateral calf and sole. His medical history was noncontributory.

Examination. On physical examination, the left buttock was tender, with rebound tenderness over the lower lumbar and sacroiliac regions. No palpable mass was identified. There was no sensory change or motor weak-
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...ness detected over the bilateral lower extremities. Marked pain in the left hip was elicited on extension, with equivocal symptoms after hip rotations. The hip range of motion was mildly limited. Nerve conductive velocity studies revealed mild prolonged F-wave latency in peroneal nerves bilaterally, worse on the left side. The circulation in the left lower limb was normal. The straight-leg-raising test was negative.

**Laboratory and Neuroimaging Studies.** Results of laboratory tests, which included complete blood count, renal function tests, serum electrolytes, blood glucose, uric acid, and C-reactive protein, were all normal. Radiographs of the lumbar spine revealed degenerative changes of the lower lumbar spine, with disc space narrowing at L5/S1. The pelvic radiograph showed mild narrowing of the left hip joint. Although clinically the patient presented with symptoms of sciatica, it was not a typical presentation of lumbar disc herniation. Therefore, MR imaging of pelvis was therefore performed, which disclosed a multilocular cystic lesion that was 5.2 × 3.5 × 4.8 cm in size. The lesion had both high-intensity T2-weighted and low-intensity T1-weighted signals, and arose from the posterior aspect of the left greater trochanter. The cystic lesion, which extended along the intermuscular interval between the quadratus femoris and gluteus maximus, displaced the sciatic nerve (Fig. 1). Features seen on the MR imaging studies were compatible with a ganglionic or bursal cyst.

**Operation.** Surgical exploration was performed with the patient in the lateral decubitus position. Using a Moore posterior approach, through splitting of the gluteus maximus, a multilocular, thin-walled cyst measuring 5 × 3.5 × 4.5 cm was identified. The cyst adhered to the posterior surface of the hip joint, but no communication with the hip joint was visualized. After thorough dissection of the cyst, it was found to overlie the sciatic nerve directly (Fig. 2). The lesion was fully removed. Histopathological examination revealed a cyst with a fibrous wall, filled with mucinous fluid and lacking a lining epithelium (Fig. 3), consistent with the features of a ganglionic cyst.

**Postoperative Course.** Postoperatively, the patient was pain free and able to resume normal ambulatory function on the following day. The left leg paresthesia was fully resolved at 1 month postsurgery. At his last visit, 15 months after surgery, the patient continued to be symptom free. He returned to full physical activity with no limitations. The final MR imaging study clearly revealed that the giant ganglionic cyst had been excised (Fig. 4). The recurrence of cyst cannot be completely ruled out, and longer follow-up is mandatory.

**Discussion**

Ganglionic cysts are uniloculated or septated structures lacking a synovial lining. The capsule of a ganglionic cyst is composed of collagen fibers and lined by fibrocytes. In most instances, these cysts are located in the vicinity of the knee or wrist joints. Differential diagnosis of a cystic structure found close to the joint includes synovial cyst or...
bursal cyst. Synovial cysts are herniated sacs of the joint capsule lined by synovium and are usually associated with rheumatoid arthritis, osteoarthritis, gout, infectious arthritis, and posttraumatic degenerative disease. In addition, DeFrang et al. reported an uncommon case of synovial cyst formation associated with polyethylene wear and presenting several years following total hip arthroplasty. In our case, synovial cyst formation was considered unlikely because the hip joint displayed only subtle arthritic changes. The possibility is that the cystic lesion in our patient could be attributable to a bursa, a synovium-lined sac that arises at points of musculotendinous friction around the joint, but does not originate from the joint capsule. The most frequently observed bursa surrounding the hip joint is the iliopsoas bursa, which is capable of enlarging and presents as an apparent groin mass.

Magee and Hinson described 13 patients with hip ganglia distinguished by MR imaging and related to labral tears. However, most of these structures were small and nonpalpable. When they enlarge and impinge on neurovascular structures, ganglionic cysts may become symptomatic. Although large ganglionic cysts of the hip resulting in femoral vascular and nerve compression are rare, such lesions have been described. There have been 2 prior reports on acetabular paralabral cyst of the hip that was related to sciatica. By contrast, a giant intramuscular ganglionic cyst arising from the posterior femoral trochanteric region and causing sciatica, as was observed in our patient, has never been reported.

Why most ganglionic cysts of the hip are more frequently found to extend anteriorly as opposed to posteriorly remains unclear. Two hypotheses are postulated to explain this observation. First, the iliopsoas bursa, the largest synovial bursa in the body, is located just anterior to the hip joint. In up to 40% of osteoarthritic hips, communication between the iliopsoas bursa and the hip joint is observed. Bursae can enlarge in response to excessive synovial fluid production in an arthritic joint or because of an increase in intraarticular pressure. Cystic protrusion may occur through the weaker portion of the joint capsule or the bursa itself. Second, a ganglionic cyst formed anteriorly can intersect muscle groups, and such cysts usually present as a palpable groin mass. Additionally, presentation of symptoms consistent with femoral neurovascular compression due to a mass effect in the femoral triangle serves to alert the physician to perform the appropriate examinations.

The sciatic nerve is the largest of 7 nerve branches originating from the sacral plexus. This nerve emerges at the inferior border of the piriformis muscle and continues caudally and laterally, running deep into the gluteus maximus muscle and superficially to the short rotators. Sciatica is defined as pain in the lower back and hip that radiates down the posterior thigh and leg. Common causes...
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of sciatica can be categorized into intraspinal (herniated disc, synovial cyst of the spinal canal, epidural abscess, primary or metastatic neoplasm, degenerative hypertrophy of the facet joints), and extraspinal (retroperitoneal tumor, endometriosis, intrapelvic aneurysm, nerve sheath tumor, and sciatic herniated cyst) sources. Differentiation between intraspinal and unusual extraspinal sources of sciatica requires meticulous clinical examination. Because our patient had a history of intractable low-back and buttock pain with left lower limb radiation, and L5/S1 degenerative disc disease had been documented, the initial impression was intraspinal sciatica. However, most radicular pain caused by a herniated disc is evidenced by greater leg pain than back pain. Our patient, by contrast, reported minimal leg pain but predominant buttock and back pain. Moreover, pain arising from disc herniation is usually intermittent and increases with activity and coughing. By contrast, the pain endured by our patient was constant and unrelated to activity or coughing. Finally, the observations that lumbar spine mobility was unimpaired and that results of the straight-leg-raising test were negative in our patient did not support the presence of typical lumbar radiculopathy. Rather, the extreme pain generated by active and passive hip joint movement alerted us to the possibility of a hip-related cause. The final diagnosis was then established by means of MR imaging.

Treatment of a ganglionic cyst depends on its size and location. When compressive symptoms are established from the mass effect, resection is the generally accepted option. In our opinion, for a multilocular and deep-seated ganglion such as that found in our patient, aspiration with steroid injection is inappropriate and dangerous, due to an increased risk for iatrogenic nerve injury. In this situation, a meticulous excision should be performed.

Conclusions

The presence of a nonpalpable cystic lesion associated with the hip joint is consistent with a variety of serious disorders. A high index of clinical suspicion and a detailed clinical examination are therefore required to identify these lesions. The presence of a space-occupying cyst should be considered in the differential diagnosis of unusual gluteal pain, radicular pain, and peripheral vascular disorders.

Disclosure

The authors report no conflict of interest concerning the materials or methods used in this study or the findings specified in this paper.

Author contributions to the study and manuscript preparation include the following. Acquisition of data: Hu. Drafting the article: Wu. Critically revising the article: Kuo. Reviewed final version of the manuscript and approved it for submission: all authors. Study supervision: Huang.

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