Arthroscopic Treatment for Femoral Nerve Palsy Associated with Ganglion Cyst of the Hip: A Case Report

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Learning Point for this Article:
Arthroscopic surgery for hip ganglion was a safe procedure.

Abstract

Introduction: There are several case reports of nerve palsy caused by ganglions arising from the hip joint. We herein report the arthroscopic treatment of a patient who presented with femoral numbness due to the compression of the femoral nerve by a ganglion of the hip joint.

Case Report: A 61-year-old man presented with a 3-month history of increasing pain in his left groin, and numbness and radiating pain in the anterior and medial thigh caused by a ganglion cyst. Magnetic resonance imaging showed a cyst situated at medial the iliopsoas muscle and tendon. The dimensions of the cyst were 56 mm in the coronal view, 22×24mm in the axial view. The mass, which was compressing the neurovascular bundle, was connected to the hip joint. A ganglion stalk incision was performed using hip arthroscopy, and the pain and numbness disappeared immediately after surgery. At 6months after surgery, the ganglion cyst had almost disappeared.

Conclusion: It is important to be aware that a ganglion cyst arising from the hip joint may sometimes cause neurological symptoms. The advantage of the arthroscopic procedure that was used in the present case was that the incision site was far from the neurovascular bundle. It was, therefore, safer to perform an arthroscopic stalk incision than it was to perform open surgery.

Keywords: Hip, ganglion, nerve palsy.
radiographs showed no osteoarthritic changes (Fig. 1a, b). Computed tomography showed a bump and bone cyst in the anterolateral aspect of the femoral neck (Fig. 2a, b). The presence of cam type femoroacetabular impingement was indicated. Magnetic resonance imaging (MRI) showed a cyst situated at the medial side of iliopsoas muscle and tendon. Its dimensions were 56 mm in the coronal view and 22×24 mm in the axial view. The mass, which was compressing the neurovascular bundle, was continuous with the hip joint (Fig. 3a, b, c). Based on these findings, a ganglion cyst arising from the hip joint and femoral nerve palsy associated with the ganglion were diagnosed. Initially, the patient was treated conservatively for 2 months with a nonsteroidal anti-inflammatory drug. However, his pain and numbness worsened, leading us to perform surgery. Hip arthroscopy was performed under general anesthesia in the supine position with traction. Three portals (anterior: A-portal, mid-anterior: MA-portal, and anterolateral: AL-portal) were used. A Vulcan and Shaver (smith and Nephew: London, UK) were inserted through the MA-portal, and a 70° arthroscope was inserted from the AL-portal. Capsulotomy was performed to connect the AL-portal to the MA-portal. From the MA-portal, the joint capsule (which was adjacent to the iliopsoas tendon) was dissected, and the iliopsoas tendon was identified.

Neurological symptoms of the lower limbs are commonly caused by spinal disease, including lumbar disease. Thus, we began examining the patient of the present case for conditions in the area surrounding the hip joint (such as femoral triangle) after excluding the possibility of spinal disease. The ganglion cyst caused local pain through the increased pressure that is placed on the joint. Ganglions have been reported to cause symptoms other than local pain through pressure on the neurovascular bundle. There are reports of symptoms caused by leg pain and intermittent claudication in a patient with a compressed artery [4], and lower limb swelling and edema similar to deep vein thrombosis in a patient with a compressed vein [5]. With regard to the neurological symptoms caused by ganglion cysts around the hip joint, cysts...
on the posterior side of the hip joint have been reported to cause sciatic nerve palsy [6, 7], while cysts on the anterior side of the hip joint have been found to cause femoral nerve palsy [2, 3]. In the present case, the radiating pain and numbness in the patient's anterior thigh were considered to have been caused by the compression of the femoral nerve. Although ganglion cysts of the hip joint only rarely cause neurological symptoms, it is important to recognize that these cysts can cause the neuralgia and numbness in the lower limbs. When treating ganglion cysts, conservative treatments should be selected first because the cyst may heal naturally. Surgery should only be selected for the cases that do not improve with conservative treatment and/or cases with very strong symptoms. In surgery, it was important to excise the stalk of the ganglion cyst. There are previous reports concerning the treatment of ganglion cysts with open surgery [1, 2, 3, 4, 5, 6, 7, 8]. Open surgery allows for the excision of the ganglion with its stalk and is, therefore, considered to be beneficial. However, open surgery is associated with a high risk of complications because the procedure must be performed very close to the neurovascular bundle. There is also the possibility that the stalk might not be found during open surgery. Recurrence is a possibility in cases where the ganglion stalk remains. Furthermore, although recurrence often occurs in the ganglion, re-operation in cases of recurrence may be difficult and have a higher risk of complications due to adhesion. In the arthroscopic treatment of the present patient, we only performed a stalk incision from the intra-articular side. Although this was not a typical case because the hip joint is located deep in the body, arthroscopic ganglion stalk incision procedures have been reported in shoulder and knee, and the efficacy of such procedures has been proven [9, 10]. The present study is associated with a limitation in that we did not perform a histological examination because we only performed a stalk incision. The advantages of this procedure were that the incision site was far from the neurovascular bundle and that a clearer view of the incision site was possible than in open procedures in recurrent cases. For this reason, the procedure would be considered to be effective even in cases involving re-operation.

**Conclusions**

We herein reported a case of femoral nerve palsy caused by a ganglion of the hip joint. Although such cases are rare, it is important to be aware that ganglion cysts of the hip joint may cause neurological symptoms. Arthroscopic stalk incision was considered to be a safer procedure than open surgery for treating the ganglion cyst of the hip in the patient of the present study.

**Clinical Message**

Arthroscopic stalk incision was a safe procedure because the incision site was far from the neurovascular bundle, and a clear view of the incision site was possible.
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