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Arthroscopic Treatment of a Ganglion Cyst Originating from the Transverse Acetabular Ligament in the Hip Joint A Case Report

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Learning Point of the Article:

Arthroscopic surgery is useful for intra-articular ganglion cyst in the hip joint.

Abstract

Introduction: Intra-articular ganglion in the hip joint is rare. Here, we present a case of ganglion cyst originating from the transverse acetabular ligament (TAL) in the hip joint treated by arthroscopic surgery.

Case Report: A 48-year-old man presented with the right groin pain after activity. A cystic lesion was found on magnetic resonance imaging. Under arthroscopic view, a cystic mass was identified between the TAL and ligamentum teres that discharged yellowish viscous liquid after puncture. The remaining lesion was resected in its entirety. A diagnosis of ganglion cyst was consistent with the histological findings. The patient has had no recurrence on magnetic resonance imaging as of 6 years postoperatively and had no complaints at the 6-year follow-up visit.

Conclusion: Arthroscopic resection is useful for an intra-articular ganglion cyst in the hip joint.

Keywords: Arthroscopic hip surgery, ganglion cyst, transverse ligament.

Introduction

Ganglion cyst is a common mass that usually arises in close proximity to joints or tendons. Arthroscopic resection is recommended in cases with an intra-articular origin, because it ensures complete resection, unlike aspiration guided by ultrasonography or computed tomography [1, 2]. Although intra-articular ganglion cyst is common, it is quite rare in the hip joint. Moreover, intra-articular ganglion cyst originating from the TAL has been reported in only two cases, both of which were treated by ultrasound-guided aspiration [3]. This case report concerns a patient with a ganglion cyst originating from the TAL in the hip joint who was treated by arthroscopic resection and has been followed up to the mid-term.

Case Report

A 48-year-old man had persistent severe right groin pain after activity for 9 months. He had played tennis and skied for over 20 years. Although he had full range of movement at the hip, he complained of pain on internal rotation. He experienced pain when undergoing both the flexion-adduction-internal rotation test and flexion-abduction-external rotation test. A radiograph of the hip showed acetabular dysplasia with a center-edge angle of 15 degrees (Fig. 1a). A cystic lesion was detected on magnetic resonance imaging (MRI) with T1- and T2-weighted images showing low and high signal intensity, respectively. Short inversion time inversion recovery images revealed an adjacent teardrop-shaped lesion (Fig. 1b-d). He underwent arthroscopic surgery under general anesthesia, during which he was placed in

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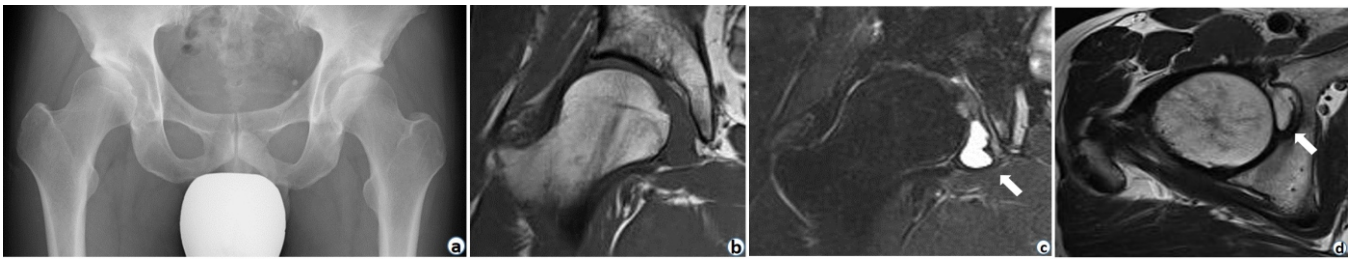

Figure 1: Pre-operative imaging. (a) Radiograph showing acetabular dysplasia in the right hip. (b) Magnetic resonance images showing a cystic lesion (arrows). T1-weighted image showing low signal intensity. (c) T2-weighted short inversion time inversion recovery and (d) T2-weighted images showing high signal intensity.

the supine position, and appropriate traction was applied on a traction table. A lateral portal was created over the tip of the greater trochanter and an anterolateral portal was placed between the lateral portal and the femoral artery and slightly distal to the transverse line. An anterior portal was established at the inguinal groove slightly lateral to the femoral artery. During arthroscopic evaluation of the central compartment, a cystic mass was identified between the transverse acetabular ligament (TAL) and ligamentum teres and in continuity with the TAL (Fig. 2a). When the cyst was punctured, a blood-streaked yellowish viscous liquid was expelled (Fig. 2b). The remaining cyst wall was resected in its entirety (Fig. 2c). Histological examination revealed a glassy fibrous tissue wall without lining cells, confirming a diagnosis of ganglion cyst (Fig. 3).

After surgery, weight-bearing was permitted as tolerated and the patient returned to recreational sports 6 months later. No recurrence was detected on MRI at the 6-year follow-up postoperatively (Fig. 4a and b), the patient had no complaints at that time.

Discussion

Ganglion is a cystic lesion that often originates near tendons or joints. A ganglion in the vicinity of the hip may be asymptomatic. However, a ganglion located near the sciatic [4] or femoral [5] nerve causes radicular pain and a ganglion that compresses the femoral vein causes leg swelling [6]. An intra-articular ganglion can cause biomechanical changes that lead to groin pain during walking, during flexion and abduction, and even at rest [3].

Although the exact etiology is unknown, a ganglion is often associated with an underlying joint disorder, such as a traumatic, degenerative, or inflammatory process [7]. Our patient had engaged in intense sports activity and had radiographic evidence of acetabular dysplasia. It is likely that the ganglion was caused by degeneration of the TAL as a result of repeated microtrauma.

To diagnose a ganglion and detect its location, MRI is one of the most reliable and noninvasive tools available. A T1-weighted sequence depicts low signal intensity, and T2-weighted and short inversion time inversion recovery sequences depict high signal intensity [8]. On a T1-weighted image, a fluid collection containing proteinaceous material may show higher intensity compared with one containing synovial fluid [9]. However, to confirm the diagnosis, a sample for histological analysis is

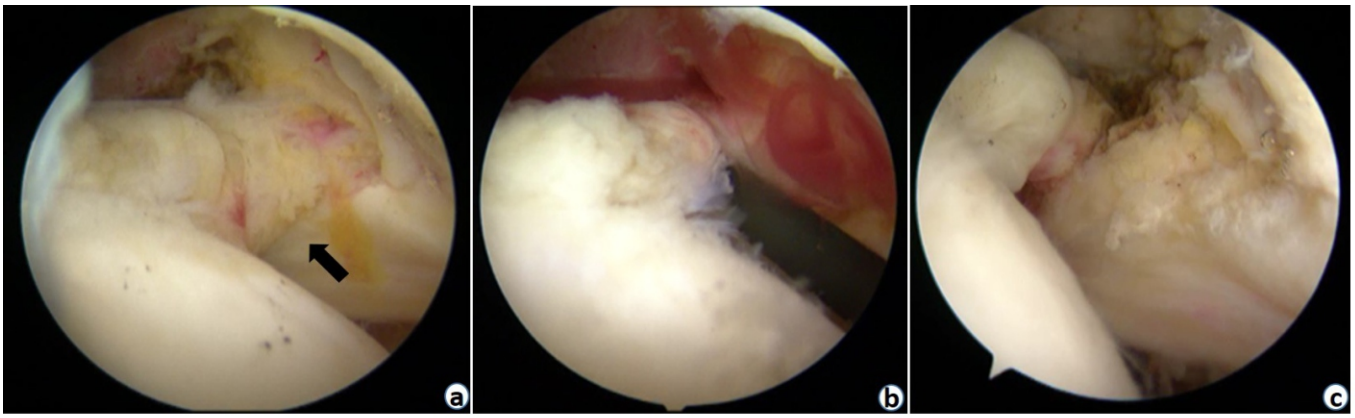

Figure 2: Arthroscopic findings. (a) A cystic mass present between the transverse acetabular ligament and ligamentum teres was identified (arrow). (b) Blood mixed with yellowish viscous liquid was expelled by puncture. (c) Image acquired after the remaining cyst wall was resected.

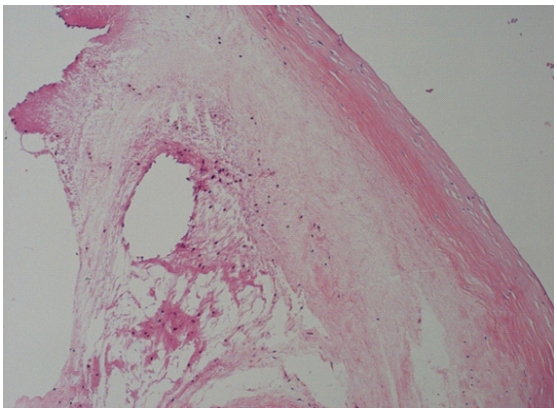

Figure 3: Histological findings. A glassy fibrous tissue wall without lining cells confirmed the diagnosis of a ganglion.

Figure 4: Magnetic resonance images acquired 6 years after surgery. No recurrence was detected on either (a) T1-weighted or (b) T2-weighted short inversion time inversion recovery images.

useful. The finding of a capsule composed of collagen fibers and fibrocytes without lining cells confirms that a lesion is not a true cyst [10].

The only previous report on treatment of an intra-articular ganglion is by Botchu et al., in which two cases of ganglion cyst originating from the TAL were treated by ultrasound-guided aspiration [3]. At the 18-month follow-up, both cases remained asymptomatic. For intra-articular ganglion, although ultrasound-guided aspiration and computed tomography-guided aspiration have been used, neither of these methods ensures complete excision and high recurrence rates have been reported [1, 2]. Arthroscopic resection is recommended due to the lower recurrence rate and lack of injury to adjacent structures. Brown and Dandy reported a 95% patient satisfaction rate after arthroscopic resection of these cysts, none of which recurred [11].

Lee et al. considered that the limitation of arthroscopic surgery was difficulty in approaching the posterolateral and posteromedial aspects. They recommended creating an additional medial portal when performing treatment at these sites [12]. However, a ganglion located in the central compartment can be treated using our technique.

Conclusion

We encountered a patient with ganglion originating from the TAL in the hip joint and resection was performed by arthroscopic surgery. He has had no complaints or recurrences as of mid-term follow-up. Arthroscopic surgery is useful for resection of an intra-articular ganglion cyst in the hip joint.

Clinical Message

For treating intra-articular ganglion cyst in the hip joint, arthroscopic surgery can reliably remove that lesion with low invasiveness.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given the consent for his/ her images and other clinical information to be reported in the journal. The patient understands that his/ her names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Conflict of interest: Nil **Source of support:** None

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