

Symptomatic Intratendinous Ganglion Cyst of the Patellar Tendon: Case Report and Review of the Literature

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Learning Point of the Article:

Intratendinous ganglion cysts of the patellar tendon should be recognized as a potential cause of anterior knee pain.

Abstract

Introduction: Ganglion cysts are benign soft-tissue lesions most commonly encountered around the wrist and hand, while their occurrence in the knee joint is relatively uncommon. An intratendinous location within the patellar tendon is exceptionally rare. This report describes a unique case of an intratendinous ganglion cyst of the patellar tendon, outlining its clinical presentation, imaging characteristics, surgical management, and histopathological confirmation.

Case Report: A 39-year-old male with a history of Osgood–Schlatter disease presented with progressive anterior knee pain. Magnetic resonance imaging (MRI) demonstrated a well-circumscribed, multilobulated cystic lesion within the patellar tendon, consistent with a ganglion cyst. The patient underwent complete surgical excision of the lesion, and histopathological examination confirmed the diagnosis. At follow-up, the patient exhibited full clinical recovery, return to sporting activities, and no evidence of recurrence on control MRI.

Conclusion: Intratendinous ganglion cysts of the patellar tendon are extremely rare and can mimic other etiologies of anterior knee pain. MRI remains the gold standard for diagnosis, whereas surgical excision provides definitive management. Recognition of this entity is essential for accurate differential diagnosis and appropriate treatment planning.

Keywords: Patellar tendon ganglion cyst, Intratendinous ganglion cyst, Anterior knee pain patellar tendon, Knee ganglion cyst.

Introduction

Ganglion cysts are benign, mucin-filled cystic lesions most commonly observed in the wrist and hand, accounting for approximately 50–70% of all ganglion cysts [1]. Their occurrence around the knee joint is relatively uncommon, with most arising from the cruciate ligaments, joint capsule, or adjacent soft tissues [2, 3, 4]. Intra-articular ganglion cysts of the cruciate ligaments – particularly those involving the anterior cruciate ligament – have been increasingly reported in recent years [5, 6].

In contrast, ganglion cysts originating within the patellar tendon are exceedingly rare, with only a few cases documented in the literature [7,8,9,10,11]. Their etiology remains uncertain; proposed mechanisms include mucoid degeneration, repetitive microtrauma, synovial herniation, or embryologic remnants [3, 9]. Because of their rarity, these lesions are often overlooked in the differential diagnosis of anterior knee pain, which is more frequently attributed to conditions, such as patellar tendinopathy, Osgood–Schlatter disease, or infrapatellar bursitis. Magnetic resonance imaging (MRI) plays a pivotal role

Author's Photo Gallery



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Figure 1: Lateral knee radiographs demonstrate residual ossicles at the tibial tuberosity, consistent with sequelae of Osgood-Schlatter disease.

in the accurate characterization of these lesions and in guiding appropriate management [8, 11].

We report a rare case of an intratendinous ganglion cyst of the patellar tendon in an adult patient with a prior history of Osgood-Schlatter disease, along with a review of the relevant literature.

Case Report

A 39-year-old male presented with a 6-month history of progressive anterior knee pain, aggravated by physical activity and kneeling. He denied any recent trauma but reported a history of Osgood-Schlatter disease during adolescence.

Physical examination revealed tenderness over the anterior aspect of the knee and a palpable fusiform swelling along the course of the patellar tendon. Range of motion was preserved, and ligamentous stability tests were negative. No signs of meniscal pathology were detected. Plain radiographs demonstrated residual ossicles at the tibial tuberosity, consistent with sequelae of Osgood-Schlatter disease (Fig. 1). MRI revealed a well-circumscribed, multilobulated cystic lesion – hypointense on T1-weighted and hyperintense on T2-weighted sequences – located within the substance of the patellar tendon, measuring $2.5 \times 1.5 \times 1.2$ cm. The lesion showed no communication with the knee joint cavity. Surrounding tendon fibers appeared intact, with no evidence of rupture or inflammatory changes (Fig. 2).

Given the symptomatic nature of the lesion, surgical excision was indicated. Across an anterior longitudinal approach, the patellar

tendon was exposed, and the cystic lesion was identified within its substance. Careful dissection enabled en bloc removal of the cyst while preserving the surrounding tendon fibers. The resulting defect was repaired using side-to-side sutures. Histopathological examination revealed a cystic cavity lined by dense fibrous connective tissue without a synovial lining, consistent with a ganglion cyst (Fig. 3).

Rehabilitation protocol

Post-operatively, the patient was allowed full weight-bearing as tolerated with the assistance of crutches and a knee brace for the first 48 hours. Analgesics, including non-steroidal anti-inflammatory drugs, were prescribed on an as-needed basis for pain control. During the initial 2-week period, knee flexion

was restricted to $0-30^\circ$, and only passive range-of-motion exercises were permitted to minimize mechanical stress on the patellar tendon. The sutures were removed at 14 days.

From weeks 2 to 4, knee flexion was gradually increased to $30-60^\circ$, with continued use of crutches and the knee brace during ambulation. Between weeks 4 and 6, controlled progression of knee motion was allowed, aiming to achieve a full range of motion by the 6th post-operative week. Quadriceps strengthening – focused on closed-chain, low-load exercises – was initiated once full motion had been restored and tendon healing appeared clinically stable. After 6 weeks, the patient progressed to advanced strengthening and functional rehabilitation, including proprioceptive training and a gradual return to daily activities. Return to unrestricted physical activity and sports participation was recommended at approximately 6

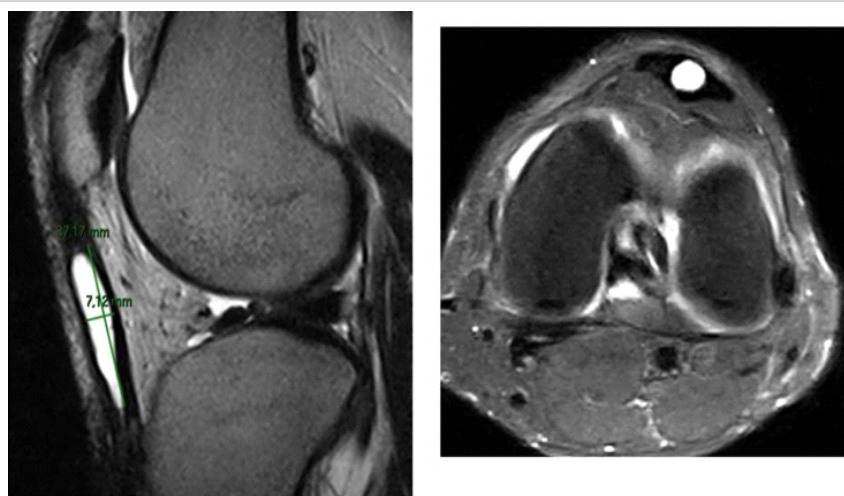


Figure 2: Magnetic resonance imaging highlights a large intratendinous ganglion cyst within the patellar tendon.

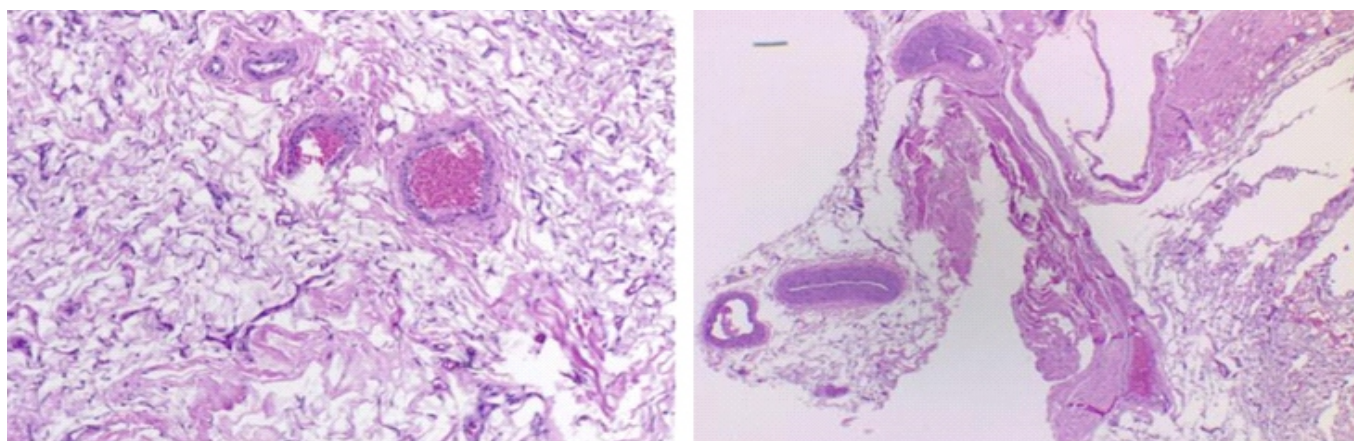


Figure 3: Hematoxylin–eosin–stained histological sections reveal a cystic cavity bordered by dense fibrous connective tissue and lacking a synovial lining, consistent with a ganglion cyst.

months, based on symptom resolution, functional performance, and tendon integrity.

MR confirmed satisfactory tendon healing with no evidence of ganglion cyst recurrence at 12-month follow-up (Fig. 4).

Discussion

Ganglion cysts of the knee are uncommon lesions, most of which are located intra-articularly, typically arising in association with the cruciate ligaments [1,2,3,4,5,6]. Intratendinous ganglion cysts of the patellar tendon are exceedingly rare, with only sporadic cases reported in the literature [7,8,9,10,11] (Table 1). The pathogenesis of these cysts remains controversial. Several mechanisms have been proposed, including mucoid degeneration of connective tissue, synovial herniation, embryonic remnants, and repetitive microtrauma [3,9]. In the present case, a prior history of

Osgood–Schlatter disease may have predisposed the patient to chronic microtrauma and subsequent cyst formation.

Clinically, these cysts may manifest as anterior knee pain, swelling, or a palpable mass, often mimicking more common conditions, such as patellar tendinopathy or infrapatellar bursitis. Therefore, they should be considered in the differential diagnosis of anterior knee pain, particularly in young and physically active individuals. MRI is the diagnostic modality of choice, as it provides superior soft-tissue contrast and enables accurate delineation of the lesion, its extent, and its relationship with surrounding structures [8,11]. In our case, MRI allowed precise localization of the cyst within the patellar tendon and confirmed the absence of communication with the joint cavity.

Surgical excision remains the most widely reported and reliable treatment, offering both definitive diagnosis and durable symptom resolution [7,8,9,10,11]. Although excision remains the standard approach, less invasive alternatives have been

described. Ultrasound-guided aspiration may be considered in selected cases – particularly for superficial or extra-articular cysts – as it offers both diagnostic confirmation and temporary symptom relief [3]. However, recurrence rates following aspiration are considerably higher compared with open excision, and its applicability to intratendinous lesions is limited. Histopathological examination is essential to differentiate ganglion cysts from other cystic lesions, such as synovial cysts or degenerative myxoid changes. In our case, the absence of a synovial lining confirmed the diagnosis of a ganglion cyst.

The post-operative prognosis following surgical excision is generally excellent, with low

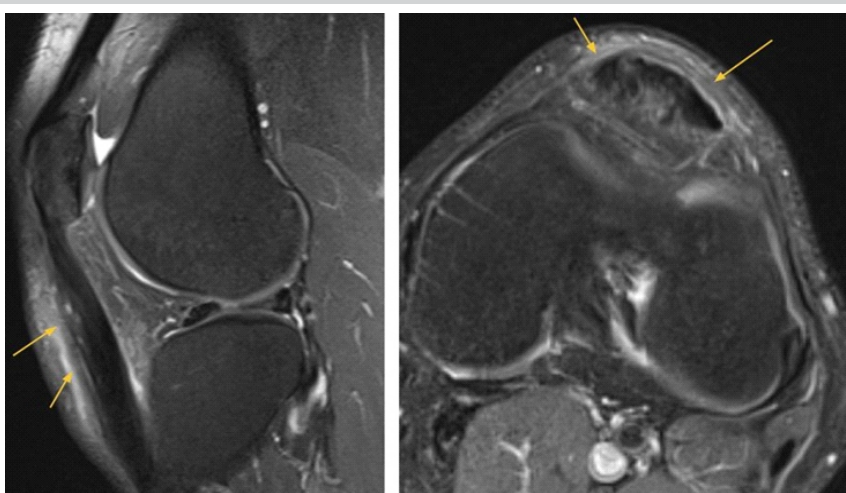


Figure 4: Post-operative knee magnetic resonance imaging reveals complete excision of the ganglion cyst and reparative tendinous scar tissue.

Table 1: Case report of Intratendinous ganglion cysts of the patellar tendon.

Author/Year	Age/Sex	Clinical context	Location in patellar tendon/size	Treatment	Follow-up/outcome
Mebis et al. (2016) [5]	19 M	History of Osgood–Schlatter disease	Intratendinous; size not specified	Conservative	Imaging follow-up only; no progression reported
Alshammari et al. (2021) [12]	30 M	Osgood–Schlatter disease with chronic anterior knee pain	Intratendinous size not specified	Imaging diagnosis only	Outcome not detailed
Venati et al. (2024) [13]	22 M	Repetitive jumping activities; chronic microtrauma	Intratendinous, mid-portion of patellar tendon	Conservative	Limited follow-up symptom improvement reported
Feyrer et al. (2024) [6]	72 M	History of single knee trauma	Intratendinous; size not specified	Ultrasound-guided aspiration	No recurrence at short-term follow-up
Ortiz E et al. (2026)	39 M	History of Osgood–Schlatter disease; progressive anterior knee pain	Intratendinous, (2.5×1.5×1.2 cm)	Complete surgical excision with tendon fiber preservation	Full recovery and no recurrence at 6-month MRI follow-up
MRI: Magnetic resonance imaging					

recurrence rates reported in the literature [7,8,9,10,11]. Our patient remained asymptomatic and recurrence-free at 6-month follow-up.

Conclusion

Intratendinous ganglion cysts of the patellar tendon are exceedingly rare entities that should be included in the differential diagnosis of anterior knee pain. MRI is

indispensable for accurate diagnosis, while surgical excision remains the gold standard treatment, ensuring symptom resolution and a low likelihood of recurrence.

Clinical Message

Even though exceedingly rare, intratendinous ganglion cysts of the patellar tendon should be recognized as a potential cause of anterior knee pain. MRI is essential for diagnosis, and surgical excision offers curative treatment with a low risk of recurrence.

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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