



Case Report

A case report on intratendinous ganglion cyst of the semimembranosus tendon

半膜肌腱肌腱內腱鞘囊腫一病例報告

Cho K.Y.^{*}, Au K.Y., Tam C.W., Sung H.T., Man K.Y., Cheng H.M.

Department of Radiology, Pamela Youde Nethersole Eastern Hospital, 3 Lok Man Road, Chai Wan, Hong Kong

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ABSTRACT

Ganglion cysts are benign cystic masses that occur in association with musculoskeletal structures. The aetiology of ganglion cysts is controversial; however, it is generally thought to result from myxoid degeneration of connective tissue associated with joint capsules or tendon sheaths, to which the lesions are usually attached. They may occur in any part of the extremities within muscles, menisci, tendons or bones. Hereby, we present a rare case of intra-tendinous location of a ganglion cyst of the semimembranosus tendon occurring within the tendon substance itself. To date, there have only few cases reports in the literature reviewing intra-tendinous ganglion cysts occurred in the lower limbs.

中文摘要

腱鞘囊腫是與肌肉骨骼結構相關的良性囊性腫塊。腱鞘囊腫的病因是有爭議的；然而，通常認是由與關節囊或肌腱鞘相關的結締組織的粘液樣性退變導致的。腱鞘囊腫通常附著有關節囊或腱鞘。它們可能發生在肌肉、半月板、肌腱或骨骼四肢的任何部位。因此，我們介紹一個在肌腱物質內發生的半膜肌腱鞘囊腫的罕見情況。迄今為止，文獻報導下肢肌腱內腱鞘囊腫只有少數的病例報告。

Introduction

A ganglion cyst is a benign musculoskeletal lesion arising from various soft tissue structures postulated to be related to myxoid degeneration of commonly the joint capsules or tendon sheath of the extremities.¹ A ganglion cyst located within the tendon substance itself is rarely encountered.² As reported in the literature, intratendinous ganglion cysts raise diagnostic difficulty clinically before contemplating surgery and excision.³ Patients usually present with nonspecific mild symptoms such as pain or nerve compressive effects.^{4,5}

Imaging techniques such as ultrasound (US) and magnetic resonance imaging (MRI) can help to differentiate a ganglion cyst from a soft tissue tumour or tumour-like lesion in addition to providing useful anatomical and morphological information.^{4,6–7} To the best of our knowledge, this is one of the first few case reports to document an intratendinous ganglion cyst arising from the semimembranosus tendon itself.

Case report

A 59-year-old lady with a history of varicose veins presented with a 1-year history of posterior left thigh swelling. The patient was working as a cleaner requiring prolonged standing and walking. There was no history of trauma. The lesion was not associated with any pain nor was there interval increase in size. Physical examination showed a vague nontender, nonmobile deep nodule in the left posterior thigh, measuring around 1 cm in size. There was no documentation of nerve or functional deficit.

US showed a well-circumscribed elongated anechoic fluid collection at the posteromedial left thigh, located medial to the semitendinosus tendon and in close proximity to the semimembranosus tendon (Figure 1A and 1B). No Doppler flow signal was demonstrated (Figure 1C). Thin septa and echogenic debris were seen (Figure 1D). The semimembranosus and semitendinosus, biceps femoris and adductor magnus showed no muscle or tendon tear.

Subsequent follow-up MRI examination was performed using a Siemens Magnetom Avanto 1.5T magnet. It showed a well-defined tubular elongated mass within the left semimembranosus tendon, measuring 1.6 cm × 1.6 cm × 11.8 cm in size (AP × TS × LS). The

^{*} Corresponding author. Department of Radiology, Pamela Youde Nethersole Eastern Hospital, 3 Lok Man Road, Chai Wan, Hong Kong.
E-mails: cky440@ha.org.hk, chofrancis@gmail.com (K.Y. Cho).

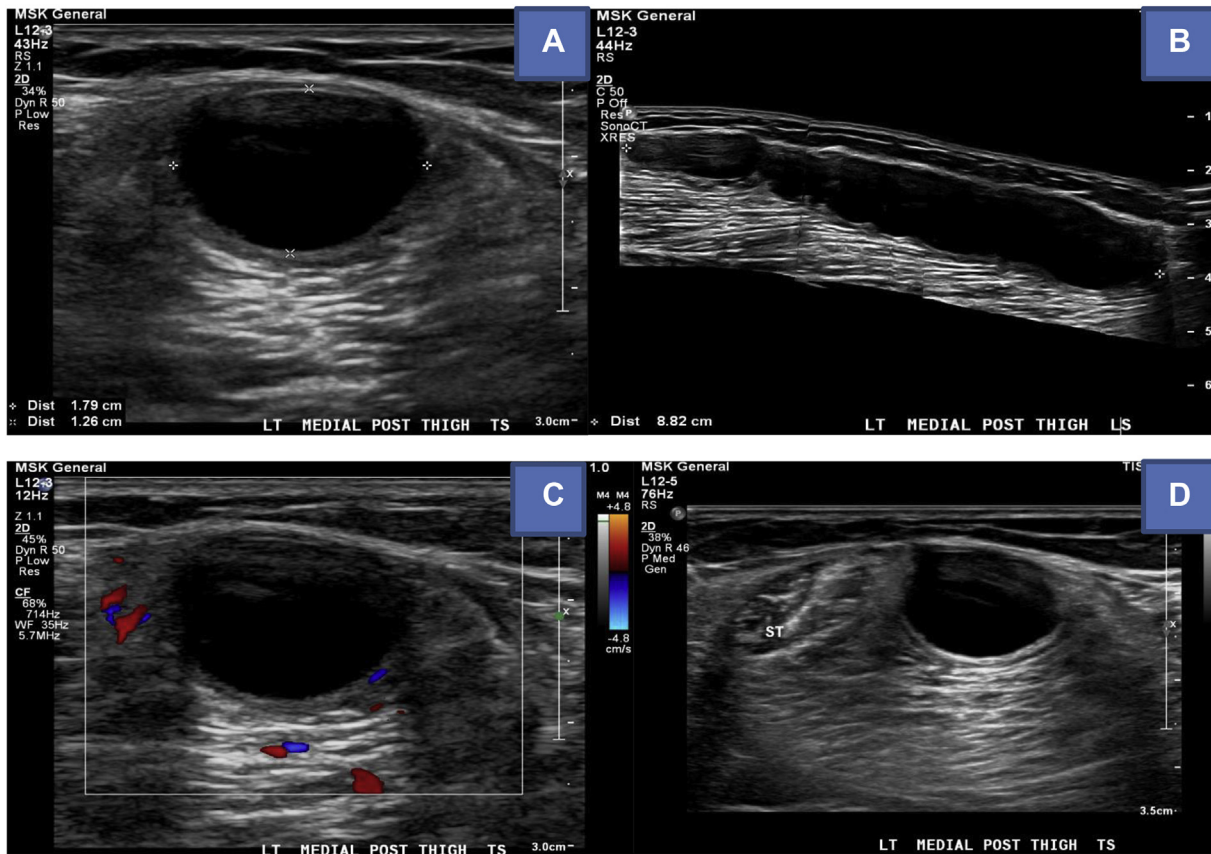


Figure 1. (A, B) US in transverse and longitudinal planes of the posteromedial aspect of the left thigh showed a well-circumscribed and elongated anechoic lesion, measuring 1.8 cm × 1.3 cm × 8.8 cm (TS × AP × LS); (C) colour Doppler examination showed no increase in Doppler signal within the lesion, ascertaining its cystic content; (D) the lesion was located medial to the semitendinosus tendon. Red and blue represents surrounding vasculature. ST = semitendinosus tendon; US = ultrasound; TS = transverse; AP = antero-posterior; LS = longitudinal; LT = Left.

lesion was T1W (T1 weighted) isointense to muscle (Figure 2A) and T2W (T2 weighted) hyperintense in signal (Figure 2B), with thin septa at the superior extent of the lesion (Figure 2C). Cylindrical thin peripheral wall enhancement was demonstrated (Figure 2D) after gadolinium contrast administration. There was no blooming artifact to suggest haemosiderin deposition. Features suggested a left thigh semimembranosus intratendinous ganglion cyst. During follow-up, management options including surgical excision were discussed with the patient. The patient revealed no significant symptoms; therefore, she opted for conservative management and regular clinical follow-ups.

Discussion

Ganglion cysts are cystic lesions in the soft tissues in association with joint capsules or tendon sheaths. They are frequently detected in the hands, wrists and feet. They have been categorised according to their sites of origin, such as from the tendon sheath, joint capsule, bone or other soft tissues. Ganglion cysts most commonly arise from tendon sheaths; whereas, lesions occurring within the tendon substance itself are rare.^{6,8}

In the literature, Lecéne first reported an intratendinous ganglion cyst within the common extensor tendon of the middle finger over the dorsum of the hand.⁹ Thereafter, there have been several publications documenting intratendinous ganglion cysts, most of which occurred within the extensor tendons of the wrists and hands.^{3,8} In the lower extremities, intratendinous ganglion cysts are even rarer, with case reports documenting lesions arising from the tendons of the peroneus tertius at the dorsolateral aspect of the

right foot,¹⁰ peroneus longus below the knee,¹¹ the extensor digitorum longus close to the ankle and the quadriceps femoris.¹² There was also one similar case report to ours by Kim et al documenting an intratendinous ganglion cyst of the semimembranosus tendon.² Literature review showed that most cases of reported intratendinous ganglion cysts occurred in middle-aged women.

Although the exact aetiology of an intratendinous ganglion cyst is unclear, cystic degeneration of the tendon related to prior recurrent injury may be a postulation because tenosynovitis or associated tendon tears are often detected around the ganglion cyst.¹³ In our patient, there was no documented history of injury and clinical or radiological evidence of inflammation. The occupation of the patient requiring prolonged walking and standing could be the causative factor to her varicose veins. Repetitive minor trauma and overuse may also contribute to developing an intratendinous ganglion cyst in the lower extremity in our patient.

With regards to imaging, MRI and US are both sensitive and specific in characterising the nature of the ganglion cysts and in providing valuable diagnostic information about the location and anatomical relationship between the lesion and adjacent musculoskeletal structures.⁴ On MRI, a ganglion cyst typically appears as a lobulated, well-circumscribed mass that is commonly located adjacent to a joint capsule or tendon sheath. It may depict simple or complex fluid signal. The lesion may also display thin rim enhancement on gadolinium-enhanced T1W images. Differential considerations may include tendon tear, tenosynovitis, abscess, bursitis, nerve sheath tumour, myxoma, pigmented villonodular synovitis or even synovial sarcoma.^{4,6,7} Nonetheless, imaging features of a lobulated cystic mass in the characteristic location within

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