

# Intratendinous ganglion cyst of the extensor communis tendon of the index finger: a case report

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## ABSTRACT

Ganglion cysts are the most common benign soft tissue tumors of the hand and wrist. They are usually found on the wrist, more often on the dorsal side. Very rarely, these cysts can be located in the nerves, tendons, and bones (the intraneural, intratendinous, and bony ganglions, respectively). In this article, we report a case of a ganglion cyst localized in the extensor communis tendon of the index finger in a 54-year-old woman. The nature of the

lesion was discovered intraoperatively; it was then resected. The postoperative course was uneventful and the patient recovered within 4 weeks. Histologic examination revealed that the cyst wall consisted of fibrous tissue with signs of degeneration and no epithelial lining.

**Keywords:** intratendinous ganglion; extensor tendon; operative treatment.

## INTRODUCTION

Ganglion cysts are the most common benign soft tissue tumors of the hand and wrist. They are usually found on the wrist, more often on the dorsal side. Dorsal wrist ganglions originate from the scapholunate ligament, whereas those located on the palmar wrist originate from the scapho-trapezial and radiocarpal joints. Much less commonly, ganglions are found on the palmar side of the digits. These lesions are smaller than the wrist ganglions and arise from the flexor sheath. Very rarely, these cysts may be located in the nerves, tendons, and bones (the intraneural, intratendinous, and bony ganglions, respectively). This presentation is more difficult to diagnose and usually requires imaging such as ultrasound or magnetic resonance imaging (MRI). There are only a few case reports of this pathology in the literature [1, 2, 3, 4].

In this article, we report a case of ganglion cyst localized in the extensor communis tendon of the index finger.

## CASE REPORT

A 54-year-old woman was referred to the author's institution with a soft and painless mass localized on the dorsal aspect of the right metacarpus, which she had noticed 3 months previously. The subcutaneous mass moved with the extensor tendon of her index finger during flexion and extension. The tumor was oval in shape and measured 2 x 1 cm. As the appearance of the mass was highly suggestive of a ganglion cyst located close to the extensor tendon, the patient underwent surgery without additional imaging. The operation was performed under local anesthesia (WALANT) and using a tourniquet.

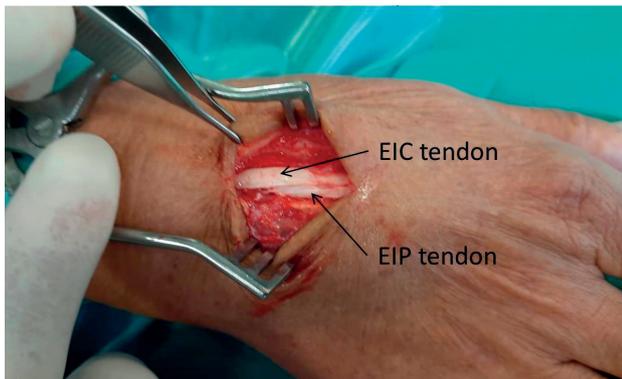
After exposure of the tumor through a longitudinal incision in the dorsal metacarpus, the tumor appeared to be localized in the extensor communis tendon of the index finger (Fig. 1). The tendon was thickened at a distance of approx. 2 cm. Next, the tendon was cut longitudinally over the mass, and a small amount of a colorless, gel-like fluid flowed from the cavity inside the tendon. The bottom of the cavity was smooth and irregularly shaped, and the tendon itself was thickened over a length of 2 cm (Fig. 2). The thickened tendon was trimmed longitudinally until it was of medium thickness (the same as the remaining portion of the tendon) – Figure 3. The split tendon was repaired using a fine 5/0 suture. The specimen was sent for histologic evaluation. The postoperative course was uneventful and the patient recovered within 4 weeks. Histologic examination revealed that the cyst wall consisted of fibrous tissue with signs of degeneration and no epithelial lining.



FIGURE 1. Tumor of the tendon exposed



**FIGURE 2.** The cyst opened. Note the appearance of the bottom of the cyst



EIC – extensor indicis communis tendon; EIP – extensor indicis proprius tendon

**FIGURE 3.** Extensor tendons of the index finger after excision of the ganglion

## DISCUSSION

Intratendinous ganglions are extremely rare; only 22 cases of these lesions have been reported in 11 case reports in the literature. There were no reports of this pathology in the Polish literature. Most of the intratendinous ganglions reported in the literature were symptomatic, and the symptoms and signs included the presence of the mass in the wrist or hand, pain on wrist movement, tenderness over the mass, inability to fully extend the hand, and painful triggering on finger extension [1, 2, 3, 4, 5, 6]. These ganglions originate from 20 extensor and 2 flexor tendons [1, 2]. Intratendinous ganglion cysts in the extensor tendons were usually smaller than those reported in our case and were localized on the surface of the tendon, making them easy to enucleate [5, 6, 7]. In contrast, intratendinous ganglions in flexor tendons are more difficult to diagnose until they are large enough to be noticed [2, 8]. In our case, no imaging modalities were used prior to surgery. In most cases reported in the literature, surgery was performed after precise characterization of the lesion by MRI and ultrasonography [1, 2, 5, 8]. This information is helpful in the diagnosis of ganglion cysts, but it is not mandatory, because the clinical presentation suggests surgical treatment regardless of the character of the lesion. Radiographs are useful only if there is clinical suspicion of an underlying bony abnormality such as carpal boss, osteoarthritis, or bone spurs [1, 2]. Therefore,

a definitive diagnosis of an intratendinous ganglion cyst may not be possible preoperatively.

The etiology of intratendinous ganglion cysts is unclear. It has been suggested that mechanical stimulation of the tendon, including friction on the extensor retinaculum or irritation by a bony prominence such as the metacarpal boss, may lead to cyst formation. Another hypothesis is synovial tissue invasion of the tendon parenchyma [1, 2, 5]. Neither of these hypotheses fits the present case.

Treatment of intratendinous ganglion cysts in the hand consists of enucleation of the lesion or resection of the tendon fragment with the cyst. Enucleation of the lesion followed by closure of the defect with multiple sutures is the most common procedure [1, 2]. However, this may lead to the risk of spontaneous tendon rupture due to its weakening at the site of the resected cyst [4, 5]. Sometimes, after excision of the cyst, the tendon is severely damaged and difficult to preserve. In these cases, resection of the tendon fragment with subsequent repair may be necessary. Of the 22 tendons reported in the literature, 5 were resected because of significant damage caused by the ganglion. If the affected tendon is not of major importance, it may be resected without repair. Reconstruction can be by tendon graft or transfer (i.e., extensor indicis proprius to extensor pollicis longus). However, functional outcomes after tendon reconstruction are generally worse than after simple enucleation of the lesion [1, 2, 6]. Recurrence of an intratendinous ganglion is rare and has only been reported in 1 patient [2]. Intratendinous ganglion of the flexor tendon may cause spontaneous tendon rupture before the lesion is diagnosed [9].

The author decided to report this case because of its rarity and the fact that this pathology has not been reported in the Polish literature.

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