Fibrochondroma of Digital Flexor Tendon Sheath-a Rare Presentation

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Case Report

A 34 year old female typist presented to the orthopaedic outpatients clinic with a painless swelling in her right ring finger for 3 years duration. Examination revealed a mobile, hard lump on the volar aspect of the right ring finger at the level of the proximal interphalangeal (PIP) joint with restricted range of movement at the PIP joint. The swelling was a cause of concern for the patient and was affecting her job as a typist. Plain radiography (Fig. 1) demonstrated a discrete soft tissue ossified swelling adjacent to the PIP joint which appeared separate from the underlying joint, but the exact nature of the swelling could not be identified. An Ultrasound examination performed showed high density echogenic shadow, consistent with cancellous bone formation. The lesion was relatively mobile, lying superficial to the flexor tendon and arising from the flexor sheath without involving the underlying bone. The decision to proceed with surgery was made keeping in mind the benign nature of the swelling. Intra-operatively, the tumor which was found to be originating from the digital flexor sheath was 1×0.5 cm in diameter, grey in color and firm in consistency. Complete excision of the swelling was carried out with preservation of the digital neurovascular bundles. Microscopic examination of the specimen sent for histopathology showed dense fibrous tissue merging into fibrocartilagenous tissue with

ossification. This was regarded as a soft tissue fibrochondroma with ossification arising in a tendon sheath. (Figs. 2 & 3). No cellular atypia was identified in the cartilaginous component.

The patient was followed up 2 weeks and 6 months after surgery, there was no clinical evidence of recurrence and she had complete functional recovery with painless full range of movement at the proximal and distal interphalangeal joint.

Discussion

Benign extraosseous cartilaginous lesions are uncommon, usually present as tumor like masses [1], and are classified pathologically as chondromas or chondromyxoid fibromas.

Chondromas are well demarcated and firm on palpation rarely manifesting as a cystic mass. About two thirds of the chondromas contain hyaline cartilage on microscopy and the remainder show focal or diffuse calcification. Some of the tumors may show focal fibrosis (fibrochondroma), ossification (osteochondroma) or myxoid changes (myxochondroma) [1].

Extraskeletal chondroma occurs primarily in the hands and feet and has no relation to the underlying bone or the joint. The most common site for an extraskeletal chondroma is finger where more than 80 % of them occur followed by the hands, feet, toes, and trunk [1]. Other rare sites reported are the dura, oral cavity, skin, pharynx and larynx [1].

Fibrochondroma is a soft tissue tumor with cartilaginous and fibrous elements visible on microscopic examination. It is considered as a benign histological variant of extraskeletal chondromas. It has a slow clinical progress and benign nature with no evidence of malignant change. It is a clinically and histologically distinct entity from fibromas which also have a predilection for tendons especially in the hand [2].

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Fig. 1 Lateral projection radiograph of the right hand showing the lesion on the volar aspect of the proximal interphalangeal joint

Differential diagnosis of fibrochondroma includes an array of soft tissue tumors [1]. Calcifying aponeurotic fibroma [1], occurs mostly in the hand and microscopy shows short bar-like foci of cartilaginous metaplasia within a poorly circumscribed fibromatous background. Giant cell tumors occur on extensor or flexor aspect of a digit, usually fixed to deep articular structures such as tendon sheath. Microscopy shows more uniform cellular pattern and rarely metaplastic cartilage or bone [1].

Other differential diagnoses that could be considered include fibroma of flexor tendon sheath, tumoral calcinosis, periosteal chondroma, subungual osteochondroma, synovial chondromatosis, chondrosarcoma and myxoid chondrosarcoma.

Some extraskeletal chondromas can be a cause of concern because of their atypical cellular features but clinically, they behave as well differentiated, adult-type hyaline cartilage tumours.

Magnetic Resonance Imaging (MRI) of hand tumors is becoming the standard for pre-operative assessment, especially if there is any doubt about the nature of the swelling. In our case, the history, clinical examination and ultrasound

Fig. 2 Histology slide showing fibrocollagenous tissue with hyaline cartilage, bony trabeculae with osteoclasts

Fig. 3 Histology slide showing foci of ossification present in fibrous tissue

findings suggested a possible benign nature of the tumor and therefore MRI was not performed.

with Local excision remains the preferred mode of treatment despite some cases of local recurrence.

A search of the literature revealed a very few reported case of fibrochondroma. Holthouse DJ et al. [3], reported a case of solitary intradural fibrochondroma in a 16 year old boy presenting with a 2 month old history of headache. Other reported sites included the cauda equina [4], costal margin [5], femoral diaphysis [6] and Preauricular region [7]. To the best of our knowledge, our case is the first reported case of a fibrochondroma arising from a flexor tendon sheath of a finger treated surgically with full functional recovery. High index of suspicion and post operative pathological examination is required for diagnosis of such a rare condition as fibrochondroma when assessing patients with digital soft tissue masses.

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