Soft Tissue Chondroma of the Thumb: A Clinical Case Presentation

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INTRODUCTION

A soft tissue chondroma is a rare entity of a benign tumor that tends to occur in the hands and feet. Both sexes are affected equally and mainly occurs in those aged between 30-60 years. This presents as a slowly growing mass in the hands and feet and it is hypothesized that recurrent microtrauma may be the initiating factor. When initially discovered, the tumor should be differentiated from other pathologies, such as a pseudomalignant osseous tumor, osteochondroma, ganglion cyst, myositis ossificans, and more malignant etiologies, such as a chondrosoarcoma, synovial sarcoma, and an extra skeletal osteosarcoma. It is known to arise from the synovial sheath of either the long tendons, the para-articular tissues, or paratendinous soft tissues. They are composed of hyaline cartilage paired with focal calcifications and can simulate worrisome radiological and histological pictures mimicking a chondrosarcoma. The method of choice for evaluating this entity is through MRI, and this type of tumor rarely can evolve into a malignant type. A positive diagnosis is the only successful solution and recurrence is not uncommon, as seen in this case.

CASE PRESENTATION

A 33-year-old female presented to the orthopedic clinic with a growth on her left thumb that had regrown since her previous office visit two months ago. She had a history of chondroma to the left thumb that underwent surgical excision in June 2016. The patient noted increased growth at the previous excisional site of the thumb which did not cause any pain. The patient opted for surgical intervention and risks and benefits of the procedure were discussed. The patient was brought to the operating suite and after successful induction by the anesthesia team well-padded tourniquet was applied to the left upper extremity. The left arm was prepped and draped normal fashion. Both arms were exsanguinated with inflation. Bruner type incision was used utilizing her existing cicatrix with a full-thickness radial sided flap and the flap was elevated. Blunt dissection was carried out through subcutaneous tissues. Electrocautery was utilized to achieve hemostasis. The neurovascular bundle was protected. The mass was encountered and found to be a light bluish-gray loculated mass that measured approximately 2 cm in length and approximately a centimeter and a half in width. The flexor tendon sheath was over top of the mass and was tediously dissected and the flexor pollicis longus tendon was retracted radially. The mass was found to be adherent to the volar cortex of the proximal phalanx base. The mass was excised and sent to pathology for evaluation. There was a small rent in the volar cortex at the base of the proximal phalanx. This was opened using a rondure. This bone was found to be soft. There was cartilaginous type material within the intramedullary canal of the proximal phalanx. With the help of the C-arm fluoroscopic imaging machine, this was tediously curetted with a microcurette. Once all of the intramedullary contents were cleaned out the wound was copiously irrigated sterile solution. The cavity was packed with allograft bone graft and final C-arm imaging was obtained. The flexor tendon remained intact neurovascular bundles remained intact, and the ulnar side of the tendon sheath was loosely approximated with Vicryl suture. Skin edges were reapproximated with nylon suture. Sterile dressing was applied along with a well-padded thumb spica splint. The patient was stable for discharge and was followed up posteoperatively for three months. After one month, the patient was placed into a gauntlet-type thumb spica cast with extension beyond the interphalangeal joint. The patient was unable to flex at the interphalangeal joint at that time. After two months, the spica cast was removed and tendon glide exercises and gentle stretching including flexion and extension exercises were reviewed with the patient. After three months, the thumb splint was removed, and the patient demonstrated good range of motion and was able to make a fist.

RESULTS & DISCUSSION

As stated previously, soft tissue chondromas are a very rare clinical entity. Some distinct characteristics that this type of tumor possess include having a benign clinical course, slow growth, having an absence of age or sex predominance, and not having any attachment to the underlying bone. The patient had developed the tumor originally in 2016 with the certain characteristics and was subsequently excised. 5 years later, the patient exhibited a recurrence of the slow growing tumor, which she remined asymptomatic throughout, except for the last couple of months prior to surgery, where she developed increased pain and irritation upon flexion of her first interphalangeal joint. The mass itself was positioned within the soft tissue and did not appear to have any attachment to the underlying bone in the affected region. Upon further clinical examination, it was observed that the mass was fixed, and further histological assessment of the pathology showed characteristics of the benign chondroma. Soft tissue tumors themselves should be carefully investigated especially if the clinical diagnosis itself is a definite matter of concern. As stated previously, MRI is the best radiological modality to utilize as it can define the true contour, shape, extent, as well as the intensity of the tumor itself, allowing to observe its relation to other surrounding structures and if any calcifications are present. The patient had underwent an MRI to confirm that the lesion arose from soft tissue and it helped determine the exact location of the tumor, the extent of the relation to surrounding structures, as well as the extent of the mass as well. In this clinical case report, the postoperative histological examination of the excised tumor allowed the best diagnostic modality to confirm the final diagnosis and the determine the prognosis for the patient. Soft tissue chondromas rarely recur, but there have been case reports in literature that indicate that areas including the bursa of the Achilles tendon as well as the popliteal fossa are at higher risk for recurrence of soft tissue chondromas found in that region.

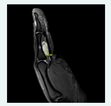

Figure 1. T2 Sagittal view MRI image showing 1.54 cm hyperintense lesion between the first proximal phalanx and flexor tendon.

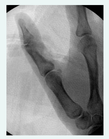

Figure 2. Preoperative fluoroscopic x-ray image showing soft tissue chondroma in left first proximal phalanx.

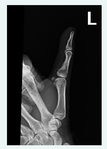

Figure 3. Postoperative x-ray image showing complete resection of soft tissue chondroma.

CONCLUSION

Soft tissue chondroma is a rare clinical tumor of benign characteristics that common affect the extremities including the hands and feet. Fortunately, it has a slowly progressing benign course. MRI is often used for diagnosis of the soft tissue chondroma itself and is performed due to the high risk of misdiagnosis as a malignant tumor based on its clinical features unless proper radiological and histopathological examinations of the tumor and the affect limb are performed. Generally, if the tumor is excised completely, recurrence is rare, but as seen in this clinical case presentation, it can tend to recur in certain areas such as the extra-axial extremities, the bursa of the Achilles tendon, and the popliteal fossa.

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