



Intra-osseous Schwannoma of Proximal Phalanx of Middle Finger: A Rare Case Report

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ABSTRACT

Intra osseous schwannoma is an extremely rare solitary benign tumour derived from peripheral nerve sheath. Majority of them are localized in the jaw and maxillary bone. Very few cases involving the bones of hand has been reported. It is usually very difficult to diagnose clinically and radiologically. It is commonly diagnosed by surgical resection and histopathological study. This patient presented with mild pain and swelling of proximal phalanx of middle finger after trivial injury. Radiologically there was a lytic, expansile, trabeculated lesion with a pathological fracture. CT section showed cortical expansion and destruction with soft tissue extension. Curettage after excision and bone grafting were done. No complication was noticed postoperatively. The histopathological study confirmed it to be neurilemmoma. Very few cases have been published till date. There was no recurrence after 2 years of follow up.

Keywords: Intraosseous neurilemmoma (schwannoma), primary bone neoplasm, proximal phalanx, middle finger.

INTRODUCTION

Schwannoma, also known as neurilemmoma are benign slow growing neoplasms derived from schwann cells covering the myelinated nerve fibers^{1,2,3}. Most of them arise in the jaw and maxillary bone. These are usually solitary, encapsulated tumors found on nerve roots.^{1,3} Clinically these tumours may be present for years before becoming symptomatic. Pain and swelling is the usually presentation but no symptoms are present in about 25% cases.^{4,5,6,7} Of all bone tumors neurilemmoma accounts for less than 0.2%.⁵ Intraosseous schwannoma are extremely rare benign neoplasm of phalanx of hand. As per the literature there are very few cases of neurilemmoma of phalanx of hand has been published. These tumors are more common in males with peak in adult age group (20-70).⁷ Mostly patients are treated on different lines before the diagnosis is confirmed. We present a rare case of schwannoma of proximal phalanx of right middle finger in a 30 years young male.

CASE REPORT

A 30 year old man presented with a painful swelling of middle finger. He first noticed it after a trivial injury to the finger. On examination, there was a firm, tender swelling of the proximal phalanx of the middle finger. There was no discoloration of skin and the skin above it was not adherent to the underlying bone (Fig 1). Movement at the meta-carpophalangeal joint was slightly restricted. Radiograph of hand in anteroposterior (AP) (Fig 2) and oblique view (Fig 3) showed a lytic lesion at the base of proximal phalanx of middle finger extending distally to almost half of the phalanx. The lesion appeared to be multiloculated and traversed by irregular bony septa. The

tentative diagnosis of enchondroma was made with a differential diagnosis of Giant Cell Tumour. CT scan showed expansion of the base of proximal phalanx, cortical thinning and destruction of anterior cortex with extension into adjacent soft tissue (Fig 4).

Operation

With anterior approach (Fig 5), the tumour was excised with blunt dissection and separating it from the surrounding tissue. The defect was filled with autologous cancellous graft taken from proximal tibia. The wound was closed in layer and the hand was immobilized. No complication was observed post operatively. The splint was removed at third week and was allowed to do full flexion and extension of finger.

Histopathology examination

Grossly the tumour tissue appeared as soft, lobulated, encapsulated with well defined surface and had a grayish white colour. Microscopically-well circumscribed tumour composed of spindle shaped cells arranged in a palisading fashion. Antoni A, area with central area of clearing Verocay bodies and Antoni B area along with microcystic space were seen (Fig 6). There was no mitotic activity or malignancy features were seen. Immunostaining revealed S-100 protein confirming the diagnosis of schwannoma. The patient had no post operative complication and the lesion had healed clinically and radiologically (Fig 7). There was no recurrence after one and half years of follow up. The patient had returned to full activity at the end of two years (Fig 8).


DISCUSSION

Intraosseous neurilemmoma is a very rare neoplasm accounting for less than 1%.^{7,8,9} Usually 5-60 years



affected age range has been reported with slightly more predilection for male. The major site of involvement is manible¹⁰. Other sides include vertebral bodies, radius, ulna, tibia, humerus and sacrum¹⁰. Schwannoma are typically benign painless slow growing tumors.^{11,12,13} They generally arise is the sensory portion of the nerve but can arise in association with any peripheral nerve. They usually arise on the flexor aspect of the extremities.

Very few cases of schwannoma of phalanx of hand have been reported.^{11,12,13} They rarely present with pain or neurological symptoms.^{4,5,6} The fact that radiographic appearance of schwannoma resembles other commonly encounter bone lesion may lead to misdiagnosis.

		
<p>Figure 1: Preoperatively image showing swelling of proximal part of middle finger</p>	<p>Figure 2: Antero-posterior view (AP) showing lytic lesion at the base of proximal phalanx of middle finger</p>	<p>Figure 3: Oblique view showing a lytic lesion at the base of proximal phalanx of middle finger with breakage of anterior cortex</p>
		
<p>Figure 4: CT scan showing expansion of the base of proximal phalanx, cortical thinning and destruction of anterior cortex with extension into adjacent soft tissue.</p>	<p>Figure 5: Intra operative picture showing the tumour in situ.</p>	

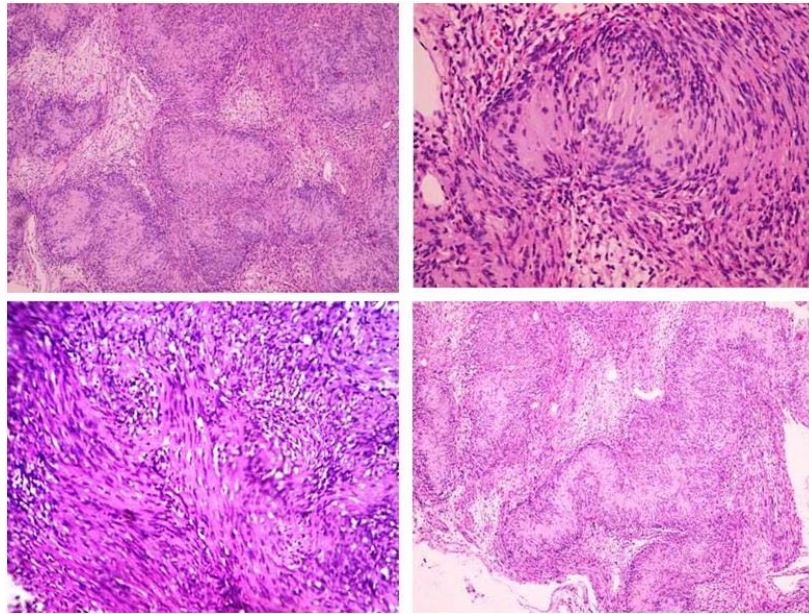


Figure 6: Histopathological slide showing, Antoni A area with central area of clearing verocay bodies and Antoni B area along with microcystic space.



Figure 7: 1 year follow up of the patient showing full flexion and extension



Figure 8: Two year follow up X-ray of right hand in Antero-posterior (A) and oblique (B) showing complete healing of the bone.

CONCLUSION

CT helps to know the extent of the tumour and whether there is any cortical break with soft tissue extension.¹⁴ Diagnosis is based on the histopathological study¹⁵. Schwannoma composed of two cellular patterns. Antoni A and Antoni B. Antoni A has palisade appearance and an spindle shaped cellular nuclei. Verocay body is characteristic of Antoni A pattern. The Antoni B pattern is characterized by a diffuse cellular structure with rounded nuclei. Treatment consists of curettage and bone grafting. Recurrence is rare even when the excision is incomplete.^{8,15}

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