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Schwannoma of the Finger – A Rare Case Report

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Abstract **Case Report**

Schwannomas are benign peripheral nerve sheath tumor arising from Schwann cells. They are also known as neurilemmomas. They occur all over the body commonly found in the head and neck region but cutaneous lesions on the fingers are rare. Most of them are asymptomatic. The diagnosis is by clinical suspicion confirmed only after biopsy. Schwannoma should be included in the differential diagnosis of any swelling arising from the digits. Here, we present a case of a digital schwannoma on the dorsum of the index finger at the base of the nail for which an excision biopsy was done.

Keywords: Schwann cell, Peripheral nerve tumour, Benign, Rare, Surgery.

INTRODUCTION

Soft tissue tumours are a common entity in a surgeons repertoire with ganglion being the most commonly hand tumour [1]. Other soft tissue tumours include giant cell tumour, lipoma and its variants, fibroma and peripheral nerve sheath tumour [2]. Peripheral nerve sheath tumours are neurofibroma and schwannoma, with schwannoma being the most common [3]. Schwannoma also known as neurilemmoma is usually a solitary benign tumour of well differentiated Schwann cells growing slowly over the peripheral nerve. Schwannomas are distinguished intraoperatively as round, well-encapsulated eccentric tumours that are easily separated from local peripheral nerves [4-6]. Most occur sporadically but are also associated with neurofibromatosis type [2, 7, 8]. Histologically, they consist of differentiated Schwann cell with two components, a highly ordered dense arrays of spindle cells (Antoni A areas) and a hypo cellular region of connective tissue with less organized spindle cells (Antoni B areas) [9]. Immunohistochemistry helps in differentiating schwannomas from neurofibromas. The treatment consists of excision while safeguarding the contributory nerve and regular follow up [6, 7]. Recurrence of a schwannoma after excision is rare, as is erosion of the adjacent bone [6, 10-14]. The malignant transformation is also very unusual [15].

CASE REPORT

26 year old female student presented to us with a swelling of the left index finger tip since 2 years. It started spontaneously and was insidious in onset. She complained of occasional pain since 1 month. There was no ulceration or bleeding from the swelling. There was no history of comorbid illnesses. On examination, a 1 x 0.5mm firm non-tender swelling was present on the dorsum of the left index finger at the base of the nail plate. The swelling was in the cutaneous plane and free from the underlying structures. A clinical diagnosis of a dermoid was made and planned for surgical excision. Under local anaesthesia, loupe magnification and digital tourniquet, the lesion was excised in toto with a dorsal midline incision. Haemostasis was secured and the incision was closed with 4-0 nylon sutures. Dressing was done and finger bandage was applied. Post-

operative was uneventful and the sutures were removed on the 10th post-operative day. Histopathology confirmed the lesion to be a schwannoma with no features suggestive of malignancy.

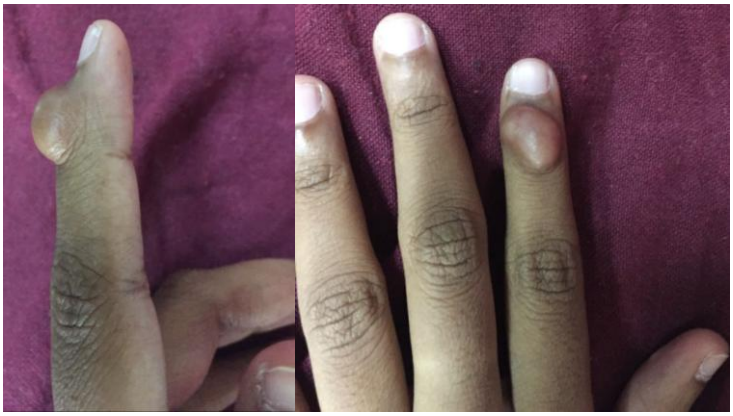

Fig 1: Photograph showing the lesion of the left index finger

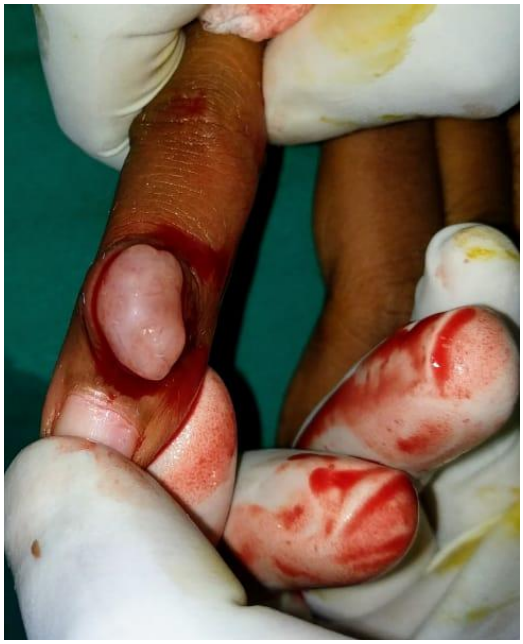

Fig 2: Incision made exposing the lesion

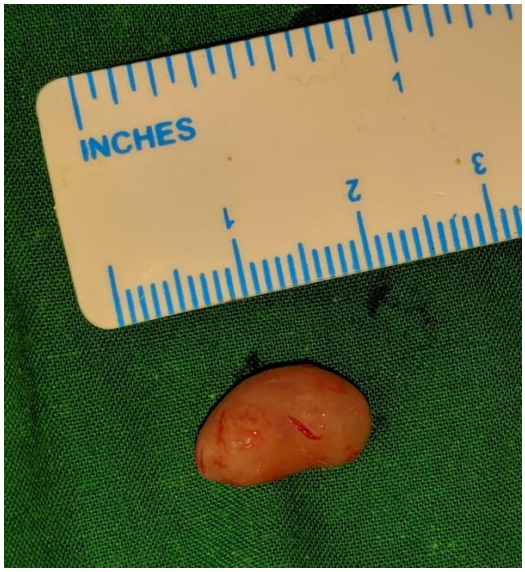

Fig 3: Lesion after excision

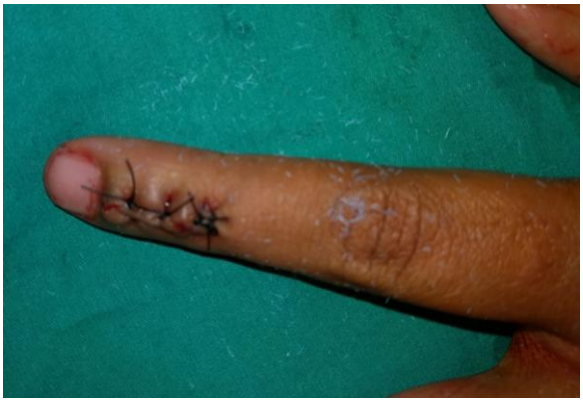

Fig 4: Immediate post-operative picture

DISCUSSION

Peripheral nerve sheath tumours, mostly schwannomas occur commonly in head and neck, trunk, abdominal wall and retroperitoneum [4]. These tumours are rare in the hand, especially on the digits. They generally arise in the sensory part of the nerve than the motor portion, but can arise in association with any peripheral nerve and along the flexor surfaces of the extremities [8, 12, 13]. The median and ulnar nerves are commonly involved in the forearm [16]. The fingers are usually involved by the plexiform variety of schwannomas [17]. In a study by Lincoski *et al*., who analyzed 208 soft-tissue tumours of hand and forearm, they found that twenty-four (11.5%) of them were benign nerve tumours [18]. The schwannoma was the third most common tumour following GCT of tendon sheath and inclusion cyst. 85.7% of the digital tumours were dorsally located and out of the twelve schwannomas, three were located on the digits and dorsally located. Hung *et al*., described 23 nerve sheath tumours of the upper extremity and only 1 of them involved the digit [19]. Takase *et al*., studied 20 patients with upper extremity neurilemmomas and none of them involved the digits [20]. Schwannomas of the digits are obvious and hence are detected and treated early. Kransdorf in a large study of 895 patients found that 11 of them had schwannoma with an incidence of 8.6% in

the hand and wrist.[21] In a series by Rockwell *et al*., of 21 schwannomas isolated to the hand and wrist, 81% of schwannomas were located on the volar surface commonly involving a branch of the digital nerve [22]. Schwannomas are composed of two organized cell patterns: Antoni A and Antoni B [4, 6, 8, 12]. The Antoni A pattern is a more organized pattern with a palisade appearance and an elongated, spindle-shaped cellular nucleus. The Verocay body which is a circular coalescence of elongated nuclei is a characteristic appearance in the Antoni A pattern. The Antoni B pattern is characterized by a diffuse cellular structure with rounded nuclei. These patterns are present in all cases of conventional schwannoma in varying proportions. Treatment of symptomatic schwannomas consists of surgical excision under loupe magnification and tourniquet control with emphasis on identification of the nerve fascicles and excision of the tumour stalk, thus preventing recurrence while preserving the parent nerve [5, 7, 23, 24]. Recurrence is rare, even when the excision is incomplete [6, 10, 11]. Bony erosion from a benign schwannoma can also occur because of secondary compression of bone if the schwannoma arises in the vicinity of bone. This phenomenon is rare and has been reported to occur in the spinal canal, proximal phalanx of a finger, or the carpus [10, 13, 14].

CONCLUSION

Peripheral nerve sheath tumours, especially schwannomas, are benign and rare, but they should be a part of the clinical diagnosis of a slow-growing painless soft tissue tumour over the digit. The treatment is excision and confirmation by histopathological examination. Maliganant transformation is extremely rare, but should be followed up on a regular basis.

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