CASE REPORT

Ancient Schawanoma of radial nerve: a rare case report

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Abstract

Soft tissue swellings on the forearm can present with a range of clinical and histopathological diagnosis. Ancient Schawanoma is a rare benign condition that can develop over the flexor surface of the forearm as a cystic swelling and can involve the median or the ulnar nerve. However, the presentation of this condition on the extensor surface with involvement of the radial nerve is an extremely uncommon diagnosis. A 69 year old female presented at the outpatient department with a swelling on the extensor aspect of her right forearm for the past 2 years. Ultrasound examination showed a mixed cystic solid mass and MRI report revealed a complex predominantly cystic mass in the extensor compartment of the forearm, measuring 4.3 x 5.3 x 7.2 cm size. After obtaining informed consent, the patient was operated under tourniquet control and the mass was removed sparing the radial nerve that was adherent to its capsule. The final histopathological report confirmed the diagnosis as Ancient Schawanoma.

Keywords: Ancient Schawanoma, Forearm swelling, surgical treatment, Histopathology, MRI.

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Introduction

Schwannomas are benign tumours with a well-defined capsule and arise from Schwann cells, which form the nerve sheath [1]. The term "schwannoma" was first described by Ehrlich & Martin in 1943[2] and ancient schwannoma was coined by Ackerman and Taylor[3] for schwannomas of long duration.[4] These are slow-growing tumours and usually asymptomatic in their initial stages. However, as they grow and increase in size, they can compress the nearby nerves, leading to pain with sensory or motor deficit. Diagnosis of cystic schwannoma is difficult due to their similarities of features with other tumours such as ganglion cyst, synovial cyst and hydatid cyst etc.[5]A rare variety of schwannoma is ancient schwannoma which is different from classical tumours due to its long standing course to develop with haemorrhagic and degenerative changes and nuclear atypia[6]. Microscopic and histological differentiating features of ancient schawannoma include Antoni A, Antoni B, Verocay bodies, pleomorphic nuclei, giant cells and haemosiderin deposition while cellular schawanoma has predominant Atoni A with high cellularity and plexiform schawannoma is well encapsulated, with multiple nodules composed of spindle schwann cells separated by fibrous tissue. These nodules show varying cellularity, Antoni A, Antoni B areas, nuclear palisading and Verocay bodies. Location wise these lesions are present in the head and neck region, trunk, retro peritoneum, pelvis and less commonly in the distal extremities. In distal extremities involvement of lower limb is more common with [7] reported cases and tibial nerve is most frequently involved.[7]

Ancient Schawannoma appear in patients between 20 and 70 years of age with males and females being equally involved. In the Upper limb they are classified into proximal and distal tumours. Proximal tumours are seen in the brachial plexus and nerves of the arm and distal tumours appear in the nerves of the forearm and hand[2]. Adani et al. reported a series of 34 patients with schwannoma in the upper limbs with their origin mostly in the ulnar nerve (50%), median nerve (25%) with rare involvement of radial nerve[8].The differential diagnosis of ancient Schwannoma includes ganglion cyst, fibro sarcoma, lymphangioma, synovial cyst, intramuscular myxoma, or high-grade sarcomas such as leiomyosarcoma [9].

Preferred treatment is surgery and careful excision of the tumour without causing any damage to the involved nerve. The complications reported are temporary and mainly include sensory and motor deficits. This case is presented to observe how a complete cure was achieved along with functional and aesthetic improvement a patient with Ancient Schwannoma of the Radial nerve.

Case Report

A 69 year old female with swelling over the right forearm on the extensor aspect, presented at the OPD of Burn &

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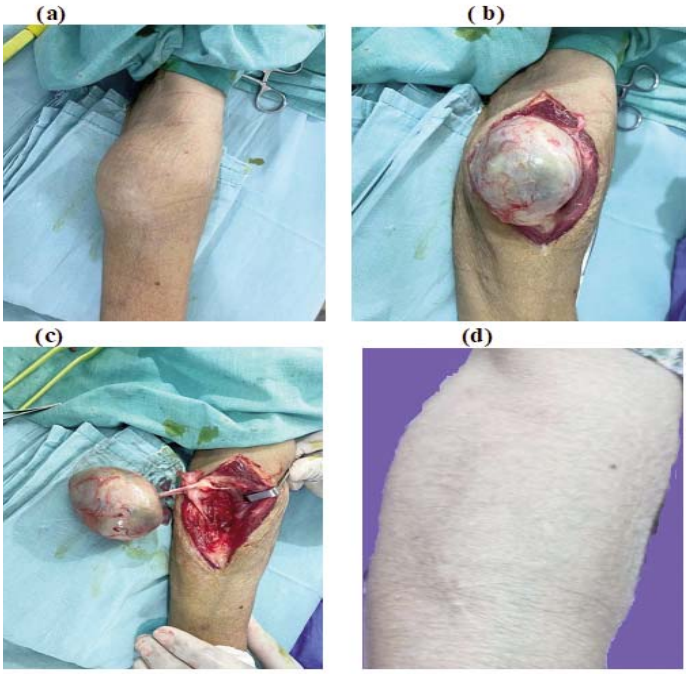

Figure-1: (a) Pre-operative Picture
(b) Intra operative picture after muscle split with intact capsule.
(c) Intra operative picture with mass removed and nerve spared
(d) Late post-operative picture with healed scar

Plastic Surgery Department, Teaching Hospital, Dera Ghazi Khan, on 20th May, 2022, with a swelling over the extensor aspect of her right forearm persisting for the last 2 years. The swelling had gradually increased in size, and was accompanied with intermittent pain and numbness. An Ultrasound of the swelling was advised, which showed a mixed cystic solid mass and MRI reported complex predominantly cystic mass in the upper portion of the extensor compartment of the forearm measuring 4.3 x 5.3 x 7.2 cm in size. After obtaining informed consent, the patient was operated under general anaesthesia with tourniquet control. An Incision was made over the mass and the mass was removed by splitting the extensor compartment muscles. The radial nerve was found adherent to the capsule and was preserved by careful dissection under loups magnification. (Figure 1a,b,c). The wound was closed after washing with normal saline, haemostasis secured and dressing was done. The patient was discharged and followed up on OPD basis every two weeks for the first 2 months, then monthly visits for the next 4 months with massage and physiotherapy added. The final histopathological report gave the diagnosis of Ancient Schawanoma involving the radial nerve. After 6 months follow up there was no recurrence and symptoms of pain and numbness were completely resolved. The functions of the radial nerve were preserved, with good cosmetic appearance of the scar (Figure 1d).

Discussion

Localized neurofibroma and Schwannoma are two main categories of solitary benign peripheral nerve sheath tumours. Ancient schwannomas were originally described in 1951 by Ackerman and Taylor[3]. They are typically located in the head and neck region, retro peritoneum and extremities and usually involve the vagus nerve and sympathetic trunk in the head and neck region. They are long standing benign tumours of the neural sheaths and can be asymptomatic or may develop pain, a positive Tinel's sign or a Tinel's like sensation and sensory alterations.[10] These benign tumours usually develop adaptation to the pressure effects over the involved nerve because of their slow growth pattern and they have a true capsule on histo-pathology examination. The hallmark diagnostic feature of schwannomas is the alternating pattern of Antoni A and B on histopathology. Ancient Schwannomas, in particular, demonstrate additional features such as cystic haemorrhagic changes and degenerative nuclei with hyperchromasia and pleomorphism, distinguishing them from neurofibroma, which exhibits a more haphazard arrangement of cells without these features[11, 12].

Schwannomas are generally encapsulated, eccentrically placed and push the nerve aside in contrast to malignant nerve sheath tumours and neurofibromas, which infiltrate the nerve fibre and are usually present in relation to the axis of the large peripheral nerve. These tumours can be removed from the fascicles of the affected nerve without causing severe or permanent nerve dysfunction[10]. To date, there are only two reported cases of ancient schawanoma involving the radial nerve.[13]

Conclusion

Ancient Schawanoma of the radial nerve is a rare entity with early diagnosis and surgical intervention resulting in complete resolution of symptoms, both in terms of function and aesthetics, as seen in the presented case.

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Authors' Contributions

AMM: Data collection, study concept, drafting.
ABS: Data drafting, literature search.
IA: Data analysis, proof reading, interpretation.
HK: Data analysis, revision, final approval.