Subungual Glomus Tumour: Magnetic Resonance Imaging and Treatment: A Case Report

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ABSTRACT

We report a rare case of subungual glomus tumour in the fingertip. Thorough history, physical examination and magnetic resonance imaging findings helped diagnose the existence of a mass at the subungual area of the digit. The patient was treated with excision biopsy and the histopathological result showed glomus tumour.

Key Words:
Finger, Subungual, Glomus Tumour, MR Imaging

INTRODUCTION

Glomus tumours are rare benign hamartomas arising from neuromyoarterial glomus, which is an arteriovenous anastomosis functioning without an intermediary capillary bed [1]. Glomus bodies are typically found in the reticular areas of skin and are responsible for thermoregulation [2]. Approximately 75 % of glomus tumours are found in the hand and up to 65% in the distal tips of the digits [2].

As the lesions are generally very small in size and thus difficult to palpate, delay in correct diagnosis of glomus tumour is common. Plain x-rays do not show any bony involvement. As with any soft tissue tumour, magnetic resonance imaging (MRI) remains the gold standard to detect a subclinical mass [2]. Here, we describe the case of a woman with clinical, radiographic, and histological findings of a solitary glomus tumour in the digit of the hand.

CASE REPORT

A 54 year old Indian lady presented to the clinic with a painful discrete swelling over the tip of the left index finger for the previous two years. The paroxysmal pain was excruciating especially at night and was affecting her daily activities. There were no other systemic complications nor significant past medical or surgical history. Physical examination revealed bluish discoloration of the fingernail and a small discrete nodular swelling. Pain was reproduced by exposing the finger to ice. Plain radiographs and laboratory investigations showed no abnormalities. MRI revealed a dark well circumscribed lesion in T1-weighted images and a bright lesion in T2-weighted images (Figure 1). MR imaging also showed bony erosion not visible in plain radiographs. A small portion of the distal phalanx showed bony erosion.

The patient was scheduled for elective surgical excision of the mass. A lateral incision close to the margin of the nail was used. The dissection was carried out down to the distal phalanx, and a subperiosteal flap was raised dorsally. The tumor was encapsulated and bone curettage was performed over the area of bony erosion at the distal phalanx of the affected finger (Figure 2a). The flap was then sutured back into its original position and the wound closed. The mass measured 0.7×0.3×0.2 cm (Figure 2b).

Histopathology revealed the mass to be consistent with the pre-operative diagnosis of a glomus tumor. No recurrence, pulp tenderness or nail deformity was noted at the one year post-surgical follow-up. The patient exhibited complete symptom relief and she was able to return to her daily activities.

DISCUSSION

Glomus tumours are a relatively rare and benign condition. Generally, pain is the presenting complaint. Pain usually presents first and is commonly associated with sensitivity to cold sensitivity and point tenderness [4]. Bluish discoloration and a deformed nail bed are seen in some individuals with long standing glomus tumours [4]. Several clinical tests are useful for diagnosing glomus tumours. Love's pin test has been used frequently, an exam in which the patient should experience excruciating pain when the skin overlying the tumour is pressed with pointed end instruments such as pinhead or end of paperclip [4]. The cold-sensitivity test is positive when immersing the hand in cold water for 60 seconds elicits severe pain in and around the lesion [4].

The patient described in this report was seen by several medical practitioners but the diagnosis was missed because

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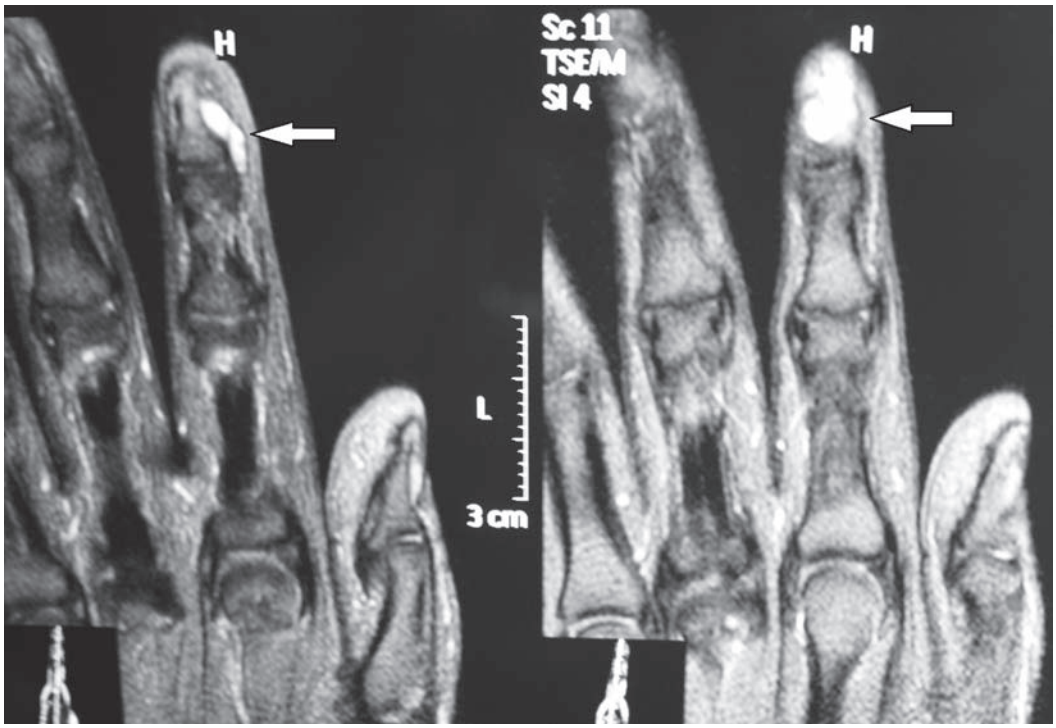

Fig. 1: MRI findings in the coronal view of the distal phalanx showed a mass at the subungual area and adjacent to the distal phalanx.

Fig. 2a: The intra-operative picture demonstrates the tumour seated at the subungual area adjacent to the distal phalanx.

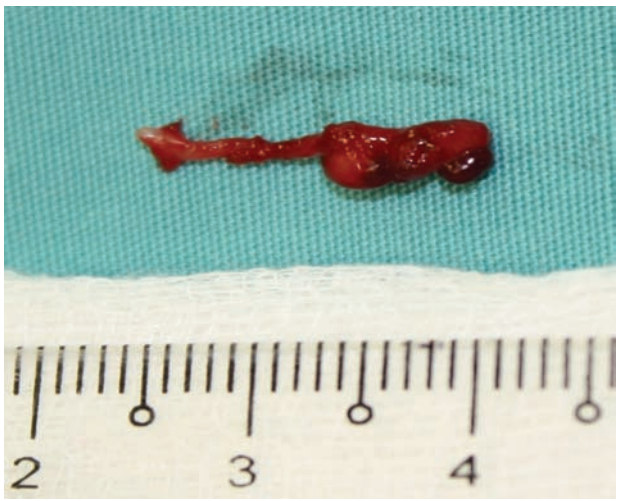

Fig. 2b: The tumour was excised en bloc.

radiographic findings were normal. Plain radiographs have a very limited role in early detection of soft tissue masses. On the other hand, MRI is very useful in delineating such masses and for enabling visualisation of the extent of the lesion as well as bony involvement if any. In MRI, the glomus mass is commonly isointense with the dermis of the nail bed in T1-weighted images and homogeneously hyperintense in T2-weighted images in subcutaneous fat and the subungual zone. Axial and coronal views of T2-weighted images typically present adequate information to make the diagnosis[3].

Very little literature exists regarding long term implications and complications of subungual glomus tumours. However, the excruciating pain that cannot be tolerated by patients often renders the choice for surgical intervention straightforward. Excision alleviates the symptoms completely. A bloodless field surgery carried out under loupe magnification aids the surgeon intra-operatively and is highly recommended [4]. It is imperative that surgeons accurately localise the tumour and make meticulous surgical plans preoperatively in order to avoid recurrence and nail deformity [5].

The dorsal transungual approach with or without nail removal is the most common approach used whereby a window is made through the nail plate, with later replacement back to its original site. Following incision of the nail bed, the tumour is excised and the nail bed is meticulously repaired. Alternatively, the nail bed may be elevated subperiosteally from the terminal phalange using a lateral incision around the side and free margin of the nail. Then, the glomus tumour can be removed from underneath the deep aspect of the nail bed [5]. In the present patient, the lesion was assessed via lateral subperiosteal approach and the tumour was completely removed. The prognosis following excision of glomus tumours is generally good. Excision of these painful lesions most often results in complete cure with a low recurrence rate for solitary lesions. If recurrence occurs within weeks to months, it is usually the result of inadequate excision. If it is delayed for years, it is likely the result of a new solitary glomus tumour [5].

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