



Subungual Glomus Tumor -Case Report

SENTHIL KUMARAN B BAGAVATSINGH

Department of Plastic Reconstructive Surgery,
MADRAS MEDICAL COLLEGE AND GOVERNMENT GENERAL HOSPITAL

Abstract :

We report two patients who complained of chronic pain in the tips of finger and toe. High-resolution magnetic resonance imaging findings helped diagnose the existence of a mass at the subungual area and all patients were treated with excision and biopsy. The pathological diagnosis was glomus tumor. MRI is useful in the diagnosis of patients with subungual glomus tumor.

Keyword : finger, toes subungual, glomus tumor, MRI

INTRODUCTION:

Glomus tumor is a tumor arising from a neuromyoarterial glomus, which is an arteriovenous anastomosis functioning without an intermediary capillary bed. Normal glomus bodies are thought to aid in the regulation of skin circulation and to be highly concentrated in the finger tips, particularly beneath the nail. The most common site of glomus tumor is the fingers.

However, it is difficult to diagnose because of obscure symptoms, such as chronic pain and hypersensitivity, and the small size of the lesion. We diagnosed patients, who had obscure chronic pain and hypersensitivity, with glomus tumor at the subungual area of the finger using high-resolution magnetic resonance imaging and treated the patients with surgical excision. The patients and/or their families were informed that data from the cases would be submitted for publication and gave their consent.

CLINICAL CASE

Two patients were treated surgically and diagnosed with glomus tumor (Table). Both patients were female. The mean age of the patients is 41 years. The complaints of all patients were severe pain on touching or with exposure to coldness in the finger tip. Neither mass of the finger pulp nor deformities of the nail were observed. All patients were referred to us because clinical diagnosis was difficult and there were no abnormal findings on the radiographs. The patients were examined with MRI upon

initial consultation. The mean duration from the onset to clinical diagnosis was 4.5 years. The Patients were treated with surgical excision through an appropriate incision. Symptoms such as pain on touching or with exposure to coldness disappeared immediately after surgery. Recurrence of the symptoms was not observed.

on T1-weighted image and hyperintense on T2-weighted image (Figure 1). Surgical excision was performed through a volar incision close to the margin of the nail (Figure 2). Histological examination confirmed the diagnosis of benign glomus tumor composed of blood vessels surrounded by a proliferation of round

Case	Age	Location	Symptoms	Duration to diagnosis	MRI	Treatment	Results
1	42	Left middle finger	pain on touching and exposure to coldness	six years	T1: isointense of the nail bed T2: hyperintense	Excision	Pain releived
2	40	Right big Toe	pain on touching and exposure to coldness	three years	T1: isointense of the nail bed T2: hyperintense	Excision	Pain releived

Case Report (case 1)

The patient is a 42 year-old-man who was a manager in a private company. Without any known cause, he felt pain and hypersensitivity on exposure to coldness on the left middle finger. he consulted some doctors, however, no adequate diagnosis was made. He visited our institution six years after onset. There was neither deformity of the nail nor limitation of the range of motion of the fingers. The radiographs of the right hand did not detect any abnormal findings. The patient was examined with MRI. A small space occupying lesion was detected at the subungual area and adjacent to the distal phalangeal bone. The mass was isointense of the dermis of the nail bed

cells in a fibrous stroma (Figure 3). The pain on exposure to coldness in the little finger disappeared after surgery and he was asymptomatic at postoperative two years.

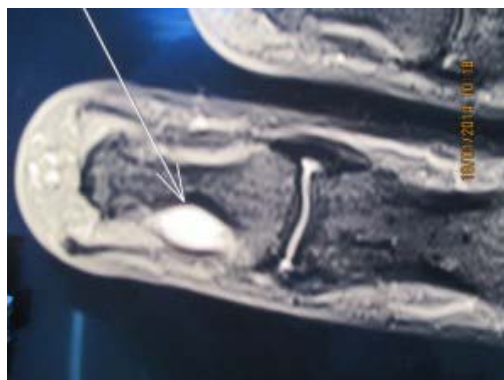


Figure 1 MRI findings of the distal phalanx in case 1

A mass is detected at the subungual area and adjacent to the distal phalanx. The mass was hyperintense on T2-weighted image .



Figure 2,3

Intraoperative findings in case 1.

The intra-operative picture demonstrates the tumor seated adjacent to the distal phalangeal bone (A).

The tumor was excised en bloc (B).

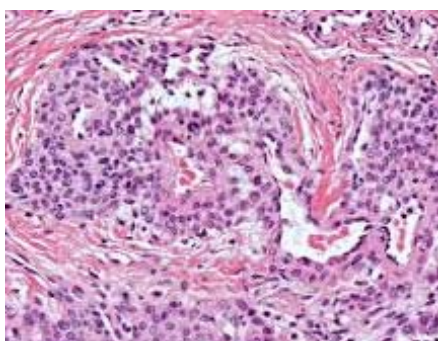


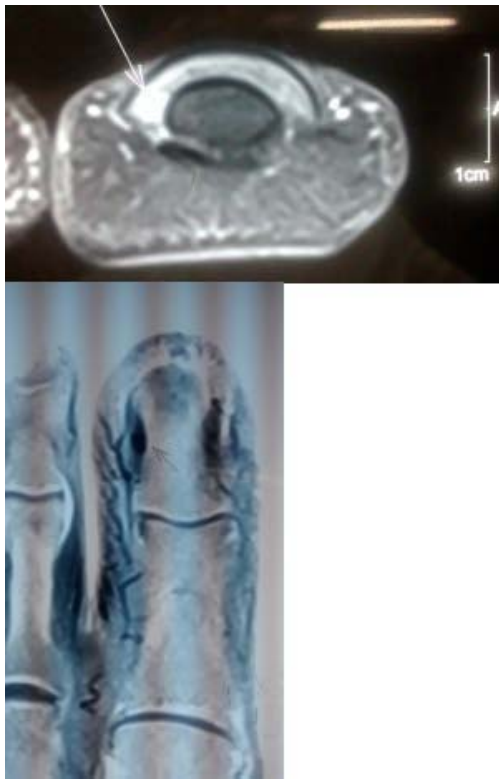
Figure 4

Histological section of the tumor in case 1. The section stained with hematoxylin and eosin demonstrates blood vessels surrounded by a proliferation of round cells in a fibrous stroma, which is diagnosed as glomus tumor

Case Report (case 2)

A doctor complains pain in the big toe for the last three years .Pain was severe even on tapping He was unable to wear shoes. One year back the lesion was diagnosed as ingrowing toe nail partial excision of nail was done elsewhere. The symptoms did not go away post operatively. As soon as he reported to our institution he promptly underwent MRI and was diagnosed as subungual glomus tumor .Excision was done through a lateral approach and he was symptomfree post operatively.





Figures 5,6,7

Hypertense swelling measuring 3X3 mm in the terminal phalynx of toe in T2 weighted Images in sagittal and coronal planes MR angio shows brilliantly enhancing subungual lesion.

DISCUSSION:

We have presented two patients, who had chronic pain and hypersensitivity. The patients were diagnosed with glomus tumor in the finger tip using MRI and were treated with surgical excision. Glomus tumor is a tumor arising from a neuromyoarterial glomus and the most common site of glomus tumor is fingers . Occasionally, in subungual glomus tumor, nail deformity and change of color beneath the nail on clinical findings and a scalloped defect of the distal phalanx on the radiograph are observed . However, in our cases, these findings were not observed and thus it is difficult to diagnose the patient with glomus tumor from characteristic clinical

findings and radiographs. Recently, MRI has been extended to diagnose small lesion and its usefulness has been reported in diagnosis of glomus tumor in the finger tips, which can be detected the mass as isointense of the dermis of the nail bed on T1-weighted image and hyperintense on T2-weighted image . In all cases of the present study, the mass detected as isointense of the dermis of the nail bed on T1-weighted image was clearly identified in the subcutaneous fat, however, the margin of the mass unclear in the subungual zone. By contrast, the mass detected as homogeneous hyperintense on T2-weighted image was clearly identified in the subcutaneous fat and in the subungual zone. Therefore, axial and coronal view of T2-weighted image gives the good information to make diagnosis. Patients in the study had a mass located in the finger and toe and the mass was not diagnosed until MRI examination was performed. They had a long history (mean,4.5 years) suffering from onset to clinical diagnosis using MRI, which detected the mass at the distal phalanx. Therefore, MRI is considered to be a useful method to diagnose glomus tumor in fingers. The patients were treated with surgical excision through an appropriate incisional. In all patients, symptoms such as pain on touching or with exposure to coldness disappeared after surgery and no recurrence was observed. Surgical excision and biopsy for glomus tumor is effective and necessary to confirm diagnosis and to relieve pain . However, it is important that surgeons understand the accurate localization of the tumor and make meticulous surgical plan preoperatively in order to avoid recurrence and nail deformity .

MRI is considered useful for planning surgical approach as well as for detecting the mass. Therefore, MRI is recommended in patients experiencing chronic pain and hypersensitivities in the finger. In addition, MRI can offer excellent diagnostic information in detecting the occult lesion. If MRI detects a mass of the fingers and glomus tumor is suspected, surgical excision, which gives pathological diagnosis and achieves pain relief, should be performed.

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