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Original Research Paper

Plastic Surgery

SUBUNGUAL GLOMUS TUMOURS OF HAND: AN INSTITUTIONAL STUDY

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ABSTRACT Glomus tumours were first described by HOYER in 1877 , while the first complete clinical description was given by MASSON in 1924. A glomus tumour is a rare neoplasm arising from the glomus body and mainly found under the nail, on the fingertip or in the foot. The majority of glomus tumours are benign, but they can also show malignant features in less than 2% cases. Our study includes 8 clinical cases of glomus tumours and our institutional experience in their management.

KEYWORDS :

INTRODUCTION:

The pathognomonic presentation of glomus tumour is painful tip[1], cold hypersensitivity[2] and nail deformity[1]. The main focus of treating these tumours must take into account the chance of recurrence[3] , and post excision nail deformity. It constitutes about 1 – 5 % of all hand tumours[4] and 50 % occurs in the subungual site[5]. In this study we shall review eight cases of glomus tumour most of which presented to us more than 3 years of duration with severe nail deformity and pain. All cases were subungual in position.

METHODOLOGY:

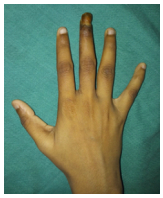
A Retrospective study of eight patients with subungual glomus tumour from the March 2015 to September 2018 were studied. 6 female patients and 2 male patients with mean age of 29 (18 to 43). Common presentation was nail deformity with colour change through the nail and 3 patients had cold hypersensitivity (Hildreth's test positive)[2] and all patients had pain. Mean age of presentation to was 30 years. Cases were followed up for 1 year with no case of recurrence.

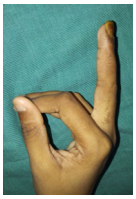
Three of the cases had completely deformed nail(Figure 1-3) and nailbed and required reconstruction with a reverse cross finger flap and the remaining 5 cases transungual approach[7-9] was done with reconstruction of nail bed and splinting with the same nail[10]. Specimen was sent for histopathologic confirmation, and all 8 cases turned out to glomus tumour.

Follow up was done every 3 months for upto 1 year, and 2 patients had recurrence of pain which resolved with medications and no cases of recurrence.

CASE 1:

23 Year female patient with symptoms of nail deformity , pain and cold hypersensitivity for past 3 years, with previous surgical excision 4 years back. Managed with total excision of the nail bed and the nail, reconstruction was possible only with a reverse cross finger flap. (Figure 1 – 6)





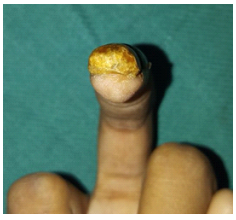
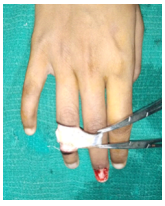
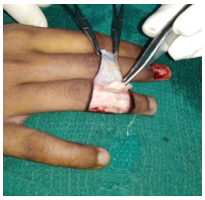


Figure 1-3 – Subungual glomus tumour of left middle finger with nail deformity 1) dorsal view 2) radial lateral view 3) tip of the finger





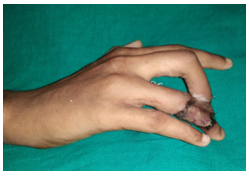


Figure 4- 6: steps of the reverse cross finger flap - 4) elevating the dermal flap 5) the subdermal fascial flap 6) final inset over the defect

CASE 2:

A 26 year old female with similar symptom triad for past 2 years without significant nail deformity

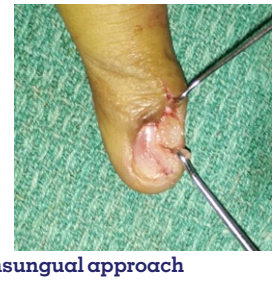


Figure 7 - transungual approach

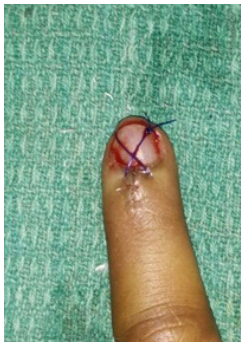


Figure 8 – nailbed repair and splinting with the nail

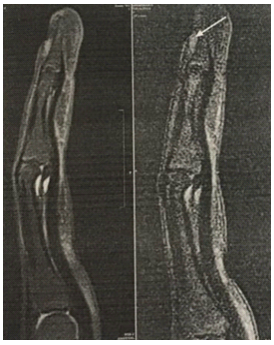


Figure 9: MRI finger – subungual tumour

MRI was taken for cases with nail deformity to rule out the extent and degree of invasion [6] Xray may show bony indentation or erosion in some case, but it may not be diagnostic.

RESULTS:

The specimen was sent for histopathologic studies. All 8 specimens came as glomus tumour. During the follow up of one year, none of the patients had recurrence, but two had symptoms of painful tip which was treated with short term anti-inflammatory and analgesic drugs. Nail was deformed in about 3 cases for which reverse cross finger flap had been done.

TABLE 1:

S..No	Age	Sex	Duration of symptoms	Symptoms			Post -Op complication	Recurrence during follow up
				Pain	Nail Deformity	Cold Hypersensitivity		
1.	18	F	3 years	✓	✓	✓	Nail deformity	None
2.	21	F	2 years	✓	✓	-	Pain	〃
3.	43	M	4 years	✓	✓	-	Nail deformity	〃
4.	28	F	4 years	✓	-	✓	-	〃
5.	30	F	1 years	✓	✓	-	Pain	〃
6.	26	F	5 years	-	-	✓	-	〃
7.	32	M	5 years	-	✓	-	Nail deformity	〃
8.	37	F	6 years	✓	-	-	Nail deformity	〃

DISCUSSION:

Glomus Tumour is a rare benign tumour arising from the neuromyoarterial component termed as glomus body of the finger , most commonly from the subungual site. There is a predilection for females. It was first described by Wood in 1812 [11]. Varying symptoms may be present and often times diagnosis is missed or ignored in the initially stages. Patient presents with Severe finger tip pain, which maybe localised with a Love's pin test[12], Nail colour change ,which later progresses to nail deformity and rarely but definite diagnostic symptom of cold hypersensitivity tested by Hildreth's test[2].

Glomus tumours have been observed in extracutaneous locations not known to contain glomus cells presumably arising from perivascular smooth muscle cells that differentiate into glomoid cells. Glomus tumors have been found in a vast array of different organs including the lungs, liver, stomach, colon, and kidneys. Glomus tumors in these locations mostly are discovered incidentally or with vague symptoms, but have been found to contain nerve bundles that correlate with presenting symptoms of pain.[13]

Histopathologically they resemble glomus bodies have 3 components: glomus cells, smooth muscle cells and vasculature. Angiocentric uniform sheets of cells with oval nuclei , forming a perivascular "collar" around vessels. Three histological variants of glomus tumors are observed. Common or Solid form with scant smooth muscle and poor vasculature. Glomangiomyomas with prominent vasculature and smooth muscle components. Glomangiomas with prominent vascular component. [14] a rare variant is the Glomangiopericytoma which occurs in the sinonasal tract[15]

Immunohistochemical and electron microscopic analysis suggest glomus cells have both a smooth cell and pericyte phenotype. Briefly, glomus tumors are characteristically and diffusely immunoreactive for α-Smooth Muscle Actin (αSMA), Muscle Specific Actin (MSA), and h-Caldesmon. Although nonspecific, vimentin and collagen type IV are also expressed. Variable expression of CD34, and to a lesser extent desmin, has also been reported.[16,17]

Besides the clinical features, this tumour occurs commonly in middle aged women, and imaging studies like X - ray and MRI helps in delineating the extent of the tumour.

Despite the well-documented cases of glomus tumor, the exact etiopathogenesis and cellular origins of this tumor is poorly understood. Several lines of evidence suggest a modified pericytic/modified smooth muscle phenotype for glomus tumor. First, the classic appearance of glomus tumor is that of small uniform glomus cells that are seen in a perivascular arrangement.[18]

The main focus of treatment is surgical excision with the capsule[11] and prevention of nail deformity and recurrence. Transungual approach has the disadvantage of damaging the nail bed but gives adequate exposure for excision. Periungual approach gives poor exposure but doesn't breach the nailbed.

CONCLUSION:

In our study of 8 patients with subungual glomus tumour, we have observed that there was a predilection of occurrence in females. Most patients had presented to us with more than 3 years of symptoms and misdiagnosis during that time. Hence atleast 3 cases had severe nail deformity warranting a nail removal for cosmetic and functional reasons. All specimens were sent for histopathology and came out as glomus tumour. Follow up for atleast 6 months , 3 cases had nail deformity due to surgery and one case had post op nail deformity. Pain was insignificant and managed with analgesics alone.

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