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Original Article

Subungual Glomus Tumor- Clinical Presentation And Treatment

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Abstract:

Glomus tumor is a rare condition and constitutes only 1 % of all soft tissue tumor of body. Glomus tumor is familiar for its unusual presentation and long standing symptoms due to delay in diagnosis. Authors have presented the clinical behavior and treatment of 7 patients with subungual soft tissue mass. Following surgical excision, all patients cured of symptoms, at the end of follow up, no recurrence occurred; post operative nail deformity was insignificant.

Key Words: *Glomus tumor, Subungual, treatment.*

Introduction:

Glomus tumor or glomangioma is an arteriovenous malformation(Hamartoma) surrounded by myoepithelial cells and nerve fibrils[1]. These specialized organs (normal glomus body) commonly present beneath the nail beds of phalanges and thought to be made for temperature regulation [2]. Glomus tumor can rarely occur in stomach, intestines, tendons, bones and other viscera[3].

Glomus tumor constitutes only 1% of all soft tissue tumors of body[4]. It is a benign tumor and unique for its triad of presentation- disproportionate pain, cold and touch sensitivity and paroxysm of attack [5]. Small size of the tumor and absence of diagnostic findings causes a long standing suffering to the patient[6].

Appropriate surgical excision ensures the cure[7]. We have diagnosed 7 patients who had unremarkable chronic pain and hypersensitivity of finger tips for long duration. Six had tumor in finger nail beds and one had toe nail bed. All patients diagnosed by clinical examination and plain x-ray. In two cases MRI done. After excision histopathology done in all cases. Six had glomus tumor and one patient revealed haemangioma of nail bed. All patients relieved of symptoms after surgery.

Patients and Methods:

We studied 7 patients with subungual mass clinically diagnosed as glomus tumor. This study was conducted between June 2008 to December 2012, operations done in different hospitals of Dhaka. Four females and three males with an average age of 33 years (range 21 to 56 years). Six patients had finger nail disease, of them 3 patients had middle finger and 2 patients with ring finger and one with index finger disease. One patient had 4th toe nail affection.

Interval between clinical onset and diagnosis average 2 years (range 6 months to 7 years). Clinically all patients had pain at the site, hypersensitivity to touch and exposure to cold.

On examination, increased convexity of nail bed found in one patient, 2 had dark bluish spot at nail bed. One patient had subcutaneous swelling between nail and nail fold whch subsequently diagnosed haemangioma. Loves test Hildreth's test and cold exposure test conducted in all patients.

Loves test is positive when sever tenderness is elicited by pressing with the tip of a pin over the suspicious region of nail bed. Hildreths test is positive when pin point tenderness is abolished upon application of a tourniquet on the affected limb.

Fig. 1: *Clinically presented with curved middle finger.*

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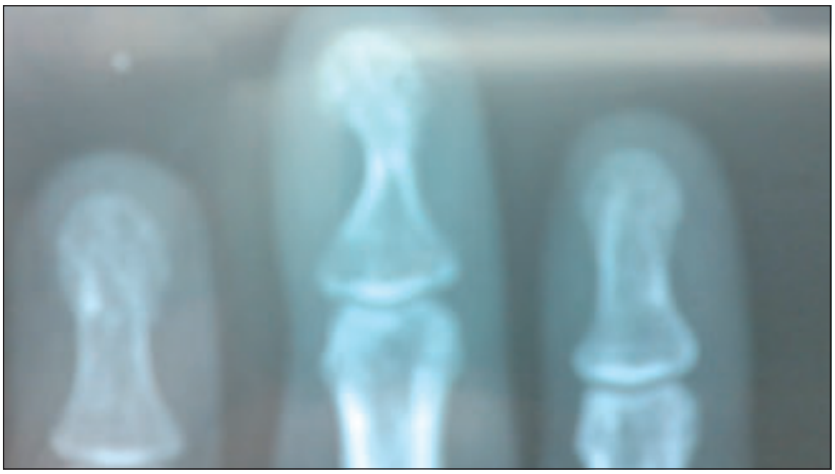

Fig. 2: *X-ray showing scalloping on the radial side of distal phalans of middle finger.*

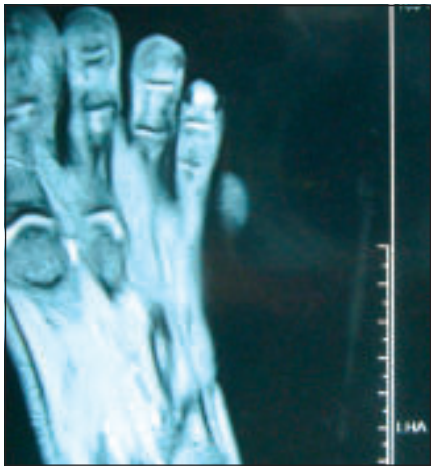

Fig. 3: *MRI findings in case of toe glomus tumor*

X-ray study done in all cases, 5 were normal, 2 had scalloping and narrowing of affected phalanx. MRI done in 2 patients- one report suggested subungual mass but the other report was inconclusive.

Five patients were operated by regional intravenous block (BIER'S BLOCK) and 2 under general anaesthesia. Nail avulsion done in all patients under a finger tourniquet using a glove's finger. Four larger tumor were visible after removal of nail plate which protruded above the nail bed but 3 smaller lesion found after longitudinal incision of nail bed. The tumors were encapsulated and excised enmass, size between 0.2 cm to 1.4 cm. histopathology revealed glomus tumor in 6 **cases and haemangioma in one .**

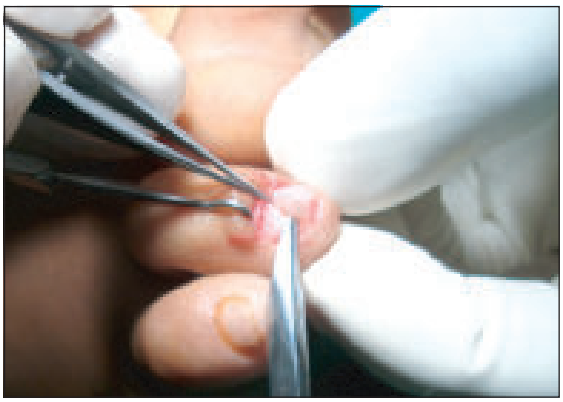

Fig. 4,5: *Peroperative Pictures showing subungual glomus tumor*

Fig. 6: *Excised Glomus tumor Mass*

Fig. 7: *Reposition of nail plate*

Nail plate resutured to its bed by 2-3 non absorbable suture, soft dressing applied for 7 days and limb kept in a sling. At 2 weks sutures removed. Full grown nail plate developed within 3 month time. The records which included clinical impression, operation record, and pathology report, imaging study, location and size and biopsy findings of all 7 patients are given in the following table:

Results:

All 7 patients relieved of symptoms after surgery. Postoperative nail bed pain continued for 2 weeks to 3 weeks which eventually cured. Nail deformity in one patient. No recurrence occurred at the end of follow up.

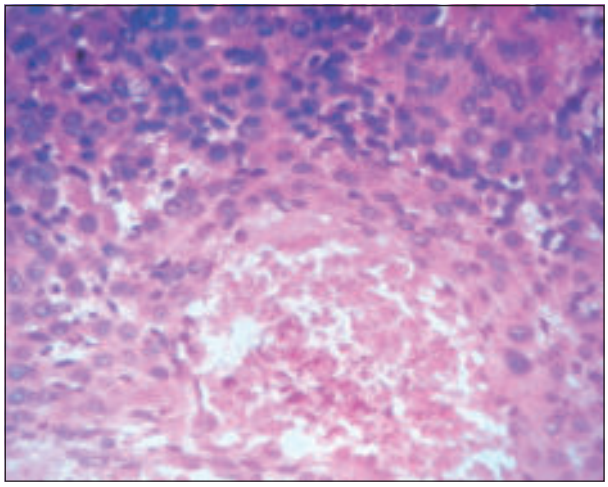

Fig:8: *Microscopic findings*

Table-I

Patient	Age (Years)	Sex	Toe/ finger	Duration of symptom	Operation date	X-ray/ MRI	Tumor size (cm)	Anesthesia	Histopathology
Mr. Rafiqul	56	Male	Middle finger (R)	2 Years	2/10/08	X-ray-NAD	0.6	Biers Block	Glomus tumor
Mr. Jahangir	47	Male	Ring finger (L)	6 Months	3/07/10	X-ray-NAD	0.8	Biers Block	Glomus tumor
Mrs. Hena	29	Female	Middle finger (L)	5 years	5/11/11	X-ray: Scalloping at distal phalanx	1	Biers Block	Glomus tumor
Miss. Abanti	20	Female	Ring finger (L)	4 years	25/1/12	X-ray-NAD	0.7	GA	Glomus tumor
Mrs. Jothsna Begum	35	Female	Index finger (L)	3 years	5/6/12	MRI-Inconclusive	0.8	Biers Block	Haemangioma
Mr. Bishawjit	28	Male	Middle finger (R)	7 years	24/8/12	X-ray: Narrowing of phalanx	1.1	Biers Block	Glomus tumor
Mrs. Kamelia Akter	21	Female	4th toe (R)	1 year	2/11/12	MRI-Subungual mass	0.2	GA	Glomus tumor

Discussion:

Glomus tumor is a rare soft tissue tumor of body but not uncommon to hand surgeons[8]. Although small size and benign behavior of the lesion minimally affects the patients limb function but pain is disproportionately high and patient frequently changes doctor to get relief of symptoms. Shugart et all [9] in his large series shown many patients were treated for functional disorder or neurosis for long periods.

King [6] reported pain starts long before the development of tumor. High index of suspicion, positive loves test [10], x-ray findings can aid in diagnosis but high resolution MRI is confirmatory whereas conventional MRI is often inconclusive. Histology shows multiple vascular channels called Sucquet -Hoyer [11] canal comprised of a single layer of endothelial cells lined by their fibrous layer which are surrounded by numerous glomus cells. Glomus cells are modified myoepithelial cells with contractile properties. Nerve fibrils within the glomus body are thought to be the cause of pain[12].

In our series most patients are of young age group with female predominance and middle finger nail mostly affected. One patient had toe nail affection. Other less common sites of glomus tumor are head, check, eyelid, stomach, ligamentum patellae and viscera [13].

Surgical excision is the only treatment [8]. Complete recovery after removal of an encapsulated mass is the rule. In this series all patients became symptom less after removal of the tumor. All specimens after surgery studied histopathologically. Six had glomus tumor and one diagnosed as haemangioma. Shugart et al [9] describes vascular myoma, Haemangioma, Sclerosing angioma can mimic the feature of glomus tumor. No recurrence occurred till last date of follow up.

Patric Maxwell [3] reported incidence of recurrence is 25% due to multiple lesions. Recurrence can also occur due to inadequate excision. Nail deformity can be avoided by repositioning of the avulsed nail which supports regeneration of healthy nail.

Conclusion:

Glomus tumors are characteristic due to disproportionate pain. Subungual glomus is more common and surgical excision of the lesion gives complete relief. Patients became satisfied even with mild deformity of nail plate after surgery.

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