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SUBUNGUAL GLOMUS TUMOUR: THE ENIGMATIC CAUSE OF CHRONIC PAINFUL FINGER PULP - A CASE REPORT

General Surgery

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KEYWORDS

INTRODUCTION

Glomus tumour, also referred to as Barré–Masson syndrome is an enigmatic, rare, painful tumour that is that represents a proliferation of the normal capsular-neural glomus apparatus. These are rare hamartomas that arise from the traditional glomus apparatus, located in subcutaneous tissue These are benign soft tissue neoplasms presenting usually within the second to fourth decade of life, originating from the glomus body. It accounts for 1-5% of all upper limb soft tissue tumors*[1]*. It's a component of the dermis layer of the skin, involved in thermoregulation. It structurally consists of an arterio-venous shunt which is surrounded by a connective tissue capsule and is found in increased amounts in the fingers and toes.

The mechanism of pain could be associated to myofilaments contraction in response to temperature variation, resulting in an increased intracapsular pressure.

The etiology of glomus cell proliferation is still unclear, however various theories suggests that trauma induces solitary subungual glomus tumors. Other theories suggested that a weakness in the structure of a glomus body could lead on to reactive hypertrophy after trauma. It has a variable evolution time between days and decades; it's a difficult tumor to diagnose, thanks to its rarity, which justifies long delays in diagnosis and therefore, establishment of therapy.They can be either solitary or multiple. Most typically they present as a tiny, round, bluish nodule visible through the nail plate with a classic triad of symptoms: hypersensitivity to cold, heightened pinprick sensitivity, and paroxysmal pain. Glomus tumors that are located in the nail matrix have a higher recurrence rate*[2]*. The ideal treatment of choice for solitary glomus tumors is total surgical excision which minimizes the rate of painful recurrence.

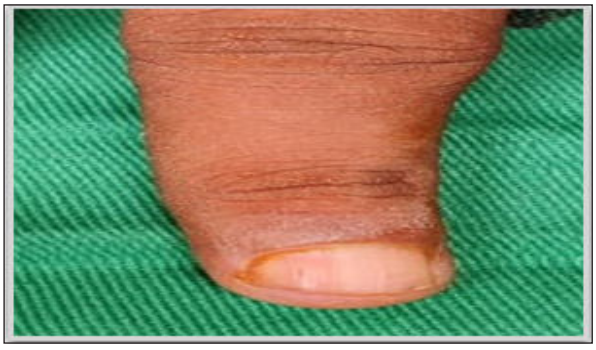
Several tests aid in diagnosing these tumors with multiple imaging tools such as X-ray, magnetic resonance imaging, and ultrasonography. However, only histology can confirm the diagnosis. They are treated with total nail avulsion followed by complete excision. Complete surgical excision of the tumor is the most effective treatment and has a low recurrence rate.

In cases of multiple glomus tumors, excision could be harder due to the large number of lesions. Several studies showed that the use of argon, carbon dioxide or Nd:YAG laser therapy, or sclerotherapy with hypertonic saline or sodium tetradecyl sulfate are proved to be a better choice of treatment*[3]*.

Case Description

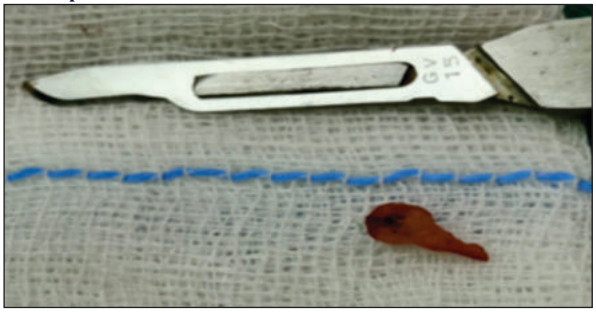
A 49-year-old male presented with a 6-year history of severe paroxysmal pricking type of pain in the left middle fingernail bed which aggravates on pressure and exposure to cold environment. He also had history of nail discoloration, which was not associated with any history of trauma. He had visited various doctors, without a definitive diagnosis. He also had no past intervention.

On examination, a band of Hyper-pigmented patch was noted on the radial aspect of the fingernail. He experienced excruciating pain, whereas pressure applied slightly to the other half of nail bed elicited no pain. A subungual glomus tumor was suspected. The differential diagnosis includes schwannoma, glomus tumor, neurofibroma, and mucoid cyst. A radiographic study was done for his left hand, which showed no bone involvement. MRI Scan confirmed the presence of the lesion and its precise location. MRI states "A well-defined T1 is0 intense / T2 hyper-intense lesion measuring 4.5x3.0 mm is noted in lateral paramedian aspect of nail bed region of middle finger (distal phalanx level) probably Glomus Tumour "



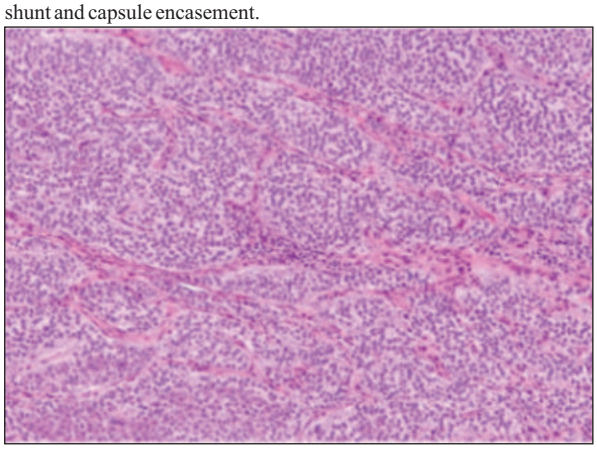
Clinical Image Of Patient's Finger With Classic Nail Changes

Intra-operative Picture Of Nailbed Dissection



Excised Glomus Tumour

After MRI, we performed an exploratory surgery by a dorsal, trans-ungual approach. After complete removal of the nail plate, a bluish lesion was evident at the nail bed. Histopathological examination demonstrated classical glomus body surrounded by Arterio-venous shunt and capsule encasement.



Histo-pathological Image Of Glomus Tumour, Thus Confirming The Diagnosis.

RESULTS

The patient's symptoms including paroxysmal pain, cold hypersensitivity resolved completely in the immediate post operative duration after surgical excision and the surgical wound healed without complications. There was no recurrence of the tumour at 4 months follow-up.

DISCUSSION

Glomus Tumors are uniformly benign, but they could cause disabling pain and tenderness. Subungual glomus tumors occur most commonly in females. Glomus tumors are difficult to detect, because of their small size, slower rate of growth, and late detection. Diagnosis is formed by a triad of symptoms: local sensitivity, pain associated with cold environment, and severe pain following minor trauma. Clinical examination tests include Love's pin test, cold sensitivity test and Hildreth's test*[4]*. These tests aid in diagnosing glomus tumors. A positive Love's pin test elicits exquisite, localized pain upon applying pressure over the suspected area with a pinhead. Cold sensitivity test elicits increased pain upon exposure of finger to cold water. Hildreth's test gives pain relief after applying a tourniquet proximal to the lesion. Once the pressure cuff is released, there's a sudden return of pain to the affected area.

A bloodless field is essential for meticulous removal of the tumor. Peri-ungual glomus tumors frequently causes bone depression and may become adherent within the periosteum. In these cases, meticulous curettage of the bone might prevent recurrence. If the surgeon doesn't feel confident that the lesions are often “shelled out,” a peripheral and deep curettage may improve the cure rate.

The differential diagnosis includes subungual exostosis, neuroma, ganglion, inclusion cyst, melanoma, soft tissue chondroma, keratoacanthoma and lobular capillary hemangioma *[5]*. Painful skin lesions also include blue rubber bleb naevus, eccrine spiradenoma, neuroma, angiolipoma, leiomyoma, dermatofibroma, benign cystic lesions (epidermal and mucoid cysts), and malignant tumors (squamous cell carcinoma and malignant melanoma). The treatment of choice is surgical excision.

While making a differential diagnosis of unexplained excruciating pain, temperature sensitivity and severe point tenderness in the finger, glomus tumour must be taken into consideration.

CONCLUSIONS

Patients with glomus tumors can presented to a spread specialty. General practitioners may be the first medical specialists to see these patients. It is of greatest importance to get a detailed history and perform a complete clinical examination to avoid missing this lesion. Complete surgical excision using transungual approach for subungual lesions and direct incision for pulp lesions has delivered excellent results. The alleviation of symptoms following surgery is quite gratifying both for the patient and therefore the surgeon.

Periungual glomus tumors can be reliably diagnosed upon clinical presentation as a tiny tumor with disproportionate symptoms. An MRI can localize the tumor to work out the best surgical approach. The first excision provides the most ideal chance for a cure with an aesthetic and functional outcome. In order to achieve this, proper planning, bloodless excision, and complete tumor removal are imperative.

The diagnosis is confirmed by histology. These tumors show immunoreactivity to smooth muscle actin and CD34. When the tumor is found centrally, removal of the nail is typically necessary, except for lateral tumors, an ingenious approach allows for tumor removal without disruption of the nail matrix or nail bed*[6]*.

Surgical success is measured by functional and aesthetic outcome with the resolution of pain. In our case, the patient was well-healed and symptoms-free till the recent follow-up 5 months after surgery.

We aim to highlight the importance of the inclusion of the glomus tumor among other possibilities of differential diagnosis of painful digital nodules, despite its low occurrence.

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