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Glomus Tumor of Left Ring Finger. A Case Report and Review of Literature.

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Abstract: *Glomus tumor (Glomangioma) is a rare slow growing benign tumour,exquisitely painful tumor constituting about 2% of all hand tumors. It arises from a neuromyoarterialglomus,which is an arteriovenous anastomosis functioning withoutan intermediary capillary bed. Normal glomus bodies are found in the dermal retinacular layer of the skin and thought to aid in the thermoregulation of skin circulation and to be highly concentrated in the finger tips, particularly beneath the nail bed.[1]Glomus tumors that was described first by Masson in 1942, can occur anywhere in the skin or soft tissue,and the most common site is the finger . The tumor usually presents as a painful, firm, purplish solitary nodule of the extremities, most commonly in the nail bed.We report case ofglomustumour over the left ring finger, in a 31 year old male.*

Keywords*: Glomus tumor, tip of the finger, surgical excision*

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I. Introduction

Glomustumourt is difficult to diagnose because of itsobscure symptoms, such as chronic pain and hypersensitivity,and the small size of the lesion. Thistumor has solitary and multiple forms. Solitarytumors are commonly found in the distal phalanxin a paraungual or subungual location. They presentwith a classic triad of paroxysmal pain, pinpointtenderness, and cold hypersensitivity. Multipletumors are extremely rare, are inherited in anautosomal-dominant pattern, and can have involvement outside the hand and may be associated with von Recklinghausen' s neurofibromatosis. Histopathologic characteristics can be used to differentiate the solitary and multiple forms.Glomus tumors are usually located in the distalsegment of the fingers under the nail matrix or inthe pulp. Symptoms may have been persisting fora long time because of failure in diagnosis andtreatment. Changes in temperature, palpation, andtouching may cause pain and hypersensitivity .When located in deep layers like in pulp, it is difficult to make a diagnosis because of less obvioushypersensitivity, there is no palpable mass and theextent of hypersensitive area is almost a pencil point wide. These patients without objective findingsusually do not accept an operation.[2]US and MRI are useful. As long asthere is no bony erosion, plain X-rays cannot behelpful except in long standing cases where bonyerosions are evident.[3]The aim of reporting this case is to appreciate rare but debilitating tumor and emphasize the role of proper preoperative tumor site localization that leads to successful surgical excision and to avoid recurrence.

II. Case Report

A 31-year-old man presented with a swelling with a 2 month history, measuring about 2 x2 cm, located on thetip of the left ring finger. He denied any local trauma, exhaustive physical activity or any other probable cause of tumor formation.His swelling over the tip of the left ring finger was initially peanut in size and later developed to a size of 2x2 cm (fig 1).Physical examination revealed 2x2 cmsize, non-tender, swelling present over the plantar aspect of tip of left ring finger, No local rise of temperature,cystic inconsistency.Pulses were normal, no abnormalities were found in the right upper extremity, and there were no thrills or murmurs. The patient underwent excision of swelling under local anesthesia using 2% lignocaine, with novasoconstrictive agents. A skin incision was made, tissue layers were separated, and the vessels were carefully dissected (fig 2). A large number of collateral veins were seen, and some had thrombosed. The swelling was fully excised and sent for histopathology examination (fig 3).Postoperative period was uneventful.Histopathology revealed a tumor made up of polygonal cells with small and regular nuclei, some in solid groups, but others in regularly organized cell threads. Few mitotic figures were found.Dilated and congested blood capillaries proliferated in the middle of the tumor cells, containing recent thrombi and covered by a single layer of endothelial cells.
Patient was discharged on post operative day 8, he has been visiting us for follow up. He is able to do his day to day activities with ease.

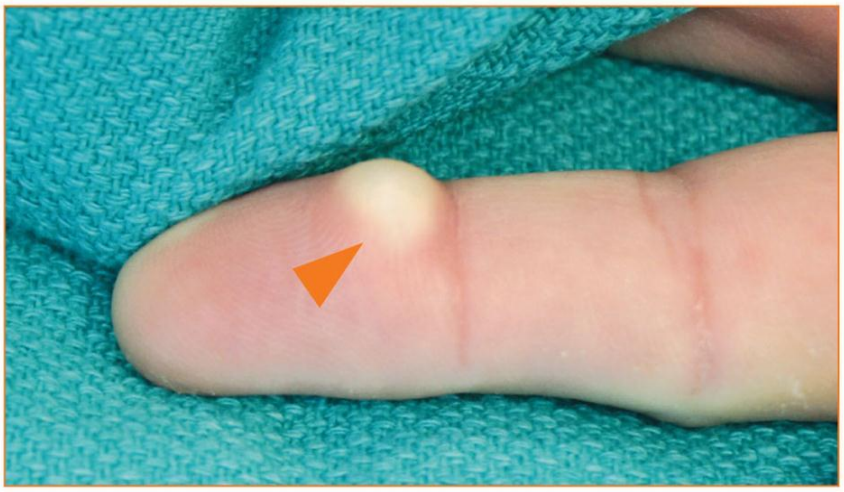

Fig 1: 2x2 cm swelling on the plmar aspect ofleft ring finger.

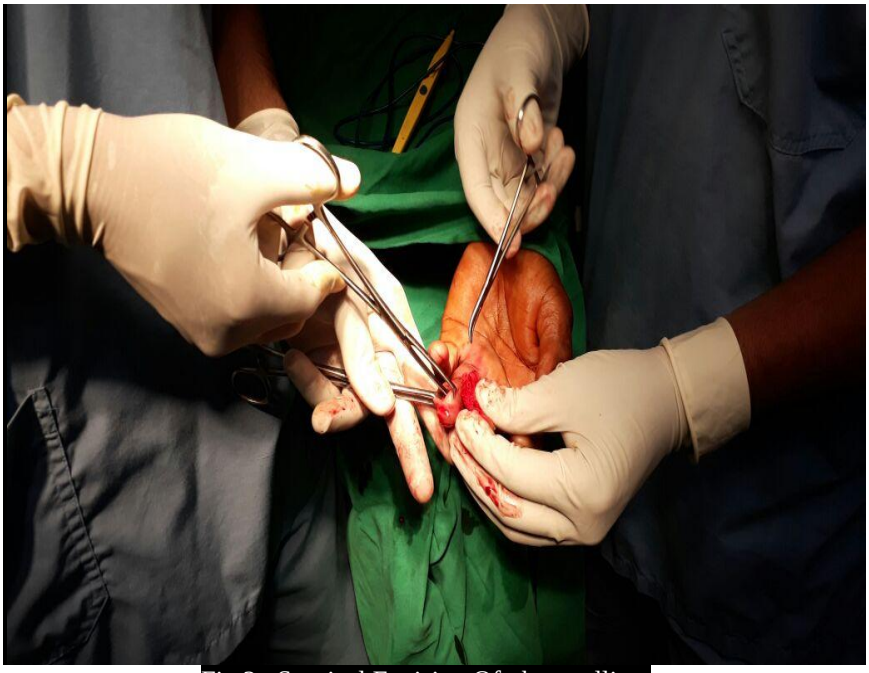

Fig 2 : Surgical Excision Of the swelling.

III. Discussion

A neuromyoarterial glomus and its tumor were firstdescribed by Masson in 1924, and in 1972 Martorrel classified it as a glomangioma, or glomus tumor.[4] It is formed by nervous fibers, muscle cells and vascular components and, for that reason, it was called glomangioma.It is a rare tumor and accounts for less than 2% of all tumors that affect soft tissues. Its appearance and clinicalpresentation is reported by patients as mild pain in the beginning, but later becomes intense and unbearable. There is someregularity in time between pain episodes, but as the disease progresses, pain frequency increases and the simple touch of clothing is often enough to trigger a crisis.[5] Pain usuallyoccurs at night, which makes it impossible for the patient to sleep. One of the hypotheses to explain pain intensity is based on tumor expansion, that is, as it is contained ina pseudocapsule, its growth is restricted, which leads tothe necrosis of the central cells and their replacement by connective tissue. Another hypothesis to justify pain is tumor site, as it arises in the myoneural junction. The region most frequently affected by an extremity glomangioma is the dermis, the subcutaneous tissue,particularly in the nail bed, because there is little resistanceto its development their, and not in small-caliber arteries,as Kamarashev et al[4]used to believe. These tumors may alsobe found in other sites, such as the stomach, knees, shoulder and mediastinum, as well as in the middle ear, where it may lead to serious balance disorders and hearing loss[4]. They arebenign tumors with a well defined oval shape, and they are never larger than 5 cm, regardless of the region where they arise or its progression time. When it is subungual anddoes not have space to grow, it loses its oval shape and may cause bony erosion, which may give the false impression of a malignant infiltrating tumor.[6]Imaging studies, such as arteriography and echo-color Doppler ultrasound, are useful to evaluate glomangiomas of the extremities, particularly to make the differential diagnosis with other tumors, but images are not conclusive. Its diagnosis, in general, is made early due to pain. Some authors suggest that cell atypia is a result of the accumulation of heterochromatin associated with DNA inactivation. Moreover, the increased capillarity, the local architecture in the arrangement of tumor cells with uniform sizes and forms, and the uniformity of basal cellssuggest the diagnosis of glomus tumor. From the moment the diagnosis of a glomangioma is made, no other case of such tumor goes unnoticed by the examiner because of its particular characteristics.Treatment is surgical using a conventional or laser excision and the latter is applied in special to the cases of multiple glomangiomas. However, there may be tumor cell implantation the capsule ruptures, and a new tumor may be implanted, at a mean recurrence rate of 13.3%. Tumor resection provides immediate symptom relief and complete pain resolution. In this case, we chose surgery because total tumor removal was importantto avoid the rupture of the capsule that contained it, the implantation of glomus cells and tumor recurrence, in agreement with treatment data in the literature.

IV. Conclusion

We report a case of a glomus tumor arising in the unusual location at the pulp of a left ring finger, with typical symptoms of long-term pain and sensitivity to touch. Glomus tumors are difficult to diagnose, without specific tests, considering the vague symptoms. The deep and unusual location of the mass presented here made diagnosis of the mass equivocal. However, the presence of localized pain in the fingertip was a reason to include glomus tumor in the differential diagnosis, to limit delay of treatment.Our interest in reporting this case is to create an awareness that any swelling in the body has to be looked with high suspicion.

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