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CASUISTIC PAPER

From diagnosis to recovery – a detailed case report on a nail bed glomus tumor

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ABSTRACT

Introduction and aim. Glomus tumors represent benign neoplastic proliferations of the glomus body, an integral thermoregulatory component within the cutaneous microvasculature. Although they can manifest at various anatomical sites, they are predominantly observed in the subungual region. The tumors present as painful, firm, purplish, solitary nodules of the extremities, especially in the nail bed. They may be solitary or multiple; solitary lesions are encapsulated and most commonly subungual, while multiple tumors are unencapsulated and rarely subungual.

Description of the case. Here, we present a case of multiple glomus tumors of the right hand in an 18-year-old female who presented with complaints of painful bluish discoloration of the right little finger for six years and progressive asymptomatic nodules on the right index finger for six months. A clinical examination revealed acute tenderness in both fingers. Love's pin test and Hildreth's test were positive. Excision of all lesions was done and sent for histopathology, which confirmed the diagnosis. The patient was symptom-free immediately following surgery. No nail deformities were noticed, and there was no recurrence of symptoms after one year of follow-up.

Conclusion. The transungual approach is a safe and effective minimally invasive surgical technique for the treatment of symptomatic nail bed glomus tumors. It offers high success rates, promising cosmetic outcomes, and minimal complications. However, careful patient selection and meticulous surgical technique are essential to avoid potential nail deformities.

Keywords. glomus tumor, subungual, transungual nail excision

Introduction

Glomus tumors denote benign neoplastic proliferations originating from the glomus body, a pivotal thermoregulatory entity within the cutaneous vasculature.[1] Clinically, these lesions manifest as indurated, violaceous nodules situated predominantly in the extremities, with a predilection for the nail bed. They may be solitary or multifocal. The key to diagnosing this condition is to be highly suspicious and conduct a thorough clinical examination.

Aim

To evaluate the feasibility and safety of the transungual technique for the complete excision of glomus tumors of the nail bed.

Description of the case

We report a case of an 18-year-old Indian female who presented to the outpatient department of Dermatology with complaints of painful bluish discoloration of the right little finger for six years and progressive asymptomatic nodules on the right index finger for six months. She gave a history of aggravation of pain upon

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Fig. 1. A solitary 1–2 cm bluish palpable, tender, round, uniform swelling present subungually, involving the phalanx of the right little finger

exposure to cold; however, there was no characteristic triphasic color change as seen in Raynaud's phenomenon. There was no history of preceding trauma. There was no similar history in any of the immediate family members. She had been taking a homeopathic treatment in the form of topical creams and oral medications for three months prior to presentation, but had no significant relief. Examination of the hands revealed a solitary 1–2 cm bluish, palpable, painful,

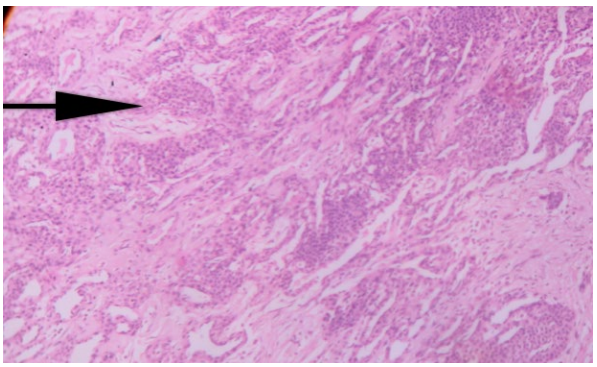

Fig. 3. Multiple dilated thin-walled blood vessels with surrounding clusters of glomus cells (H&E ×40)

round, uniform swelling present subungually, involving the phalanx of the right little finger (Fig. 1) and bluish discoloration seen over the right index finger. Obliteration of Lovibond angle with fluctuation of the nail bed and pseudo-clubbing was present. On bedside clinical examination, Love's pin test, Ice cube test, and Hildreth's test were positive. USG color Doppler revealed a well-defined hypo-echoic lesion measuring (1 × 0.4 cm) in the periungual region of the right little finger with significant internal vascularity. A clinical diagnosis of glomus tumor was made, and the patient was planned for nail avulsion surgery. Proximal nail avulsion and surgical excision of all glomus tumors were performed utilizing the transungual approach (Fig. 2), and the tissue was sent for histopathological examination, which showed numerous dilated thin-walled vascular spaces surrounded by glomus cells. These are sheets of uniform monomorphic cells with round punched-out central nuclei in a pale to eosin-

Fig. 2. Tumor resection using transungual approach with careful preservation of the nail bed

ophilic cytoplasm and well-defined margins (Fig. 3). The patient was symptom-free following surgery and developed no nail deformity or recurrence in the next year of follow-up.

Discussion

Glomus tumor is a benign vascular hamartoma that originates from the neuromyoarterial cells of endothelium-lined vascular spaces (the Sucquet-Hoyer canal).[1] It accounts for 1–5% of soft tissue tumors of the hand.[2] It typically presents with a triad of cold hypersensitivity, pain and tenderness, and occasionally nail deformities or nail discoloration.[3] The tumor usually presents as a painful, firm, purplish, solitary nodule of the extremities, especially in the nail bed. Multiple glomus tumors are described as softer, more compressible, bluish nodules and they occur with less frequency than solitary tumors. Infrequently, atypical glomus tumors have been reported to involve other sites, including muscles, joints, head and neck, stomach, penis, and rarely the mediastinum.[4,5] Surgical excision is the treatment of choice, although radiotherapy has been advocated as a primary or adjunctive modality.[6] The approach is decided according to the location of the lesion and described as periungual, paraungual and transungual. Various published reports have stated that the transungual approach is associated with subsequent nail deformity.[6,7] Jawalkar H et al., in a study of 12 glomus tumors treated with transungual excision, reported to have no recurrence or new nail deformity.[8] Subungual glomus tumors are more difficult to treat because they are small, and their total eradication requires several procedures. Local recurrences occur due to inadequate excision because of infiltrative growth and local invasion of the capsule around the glomus tumor have been reported in only 1–2% of cases. Other treatment options include sclerotherapy and laser therapy with CO_2, KTP, Nd: YAG, and pulsed dye laser, but with variable results. Prompt diagnosis and early institution of appropriate therapy help to significantly lower patient morbidity.

Conclusion

Glomus tumors of the nailbed, while seemingly small, can cause significant discomfort and disruption to daily life. A high index of suspicion and careful clinical examination is the crux of diagnosing this condition. Delayed or misdiagnosis and improper management result in undue suffering for the patient. Though bilateral glomus tumors are rare, the possibility should not be excluded in bilateral unexplained digital pain. Symptomatic glomus tumors are successfully treated with surgical excision. The transungual approach offers a minimally invasive solution with high success rates and promising cosmetic outcomes. While meticulous technique and potential for nail deformities exist, careful patient selection and experienced surgeons can ensure a positive experience.

Declarations

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Author contributions

Conceptualization, H.I.S.; Methodology, H.I.S..; Validation, H.I.S.; Formal Analysis, H.I.S.; Investigation, H.I.S.; Resources, H.I.S..; Data Curation, H.I.S.; Writing – Original Draft Preparation, H.I.S..; Writing – Review & Editing, H.I.S..; Visualization, H.I.S.

Conflicts of interest

The author discloses no conflicts of interest.

Data availability

Not applicable.

Ethics approval

The patient gave written informed consent for inclusion before participation in the study.

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