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Surgical treatment of the subungual glomus tumor guided by Doppler ultrasonography

Tratamento cirúrgico do tumor glômico subungueal orientado pela ultrassonografia doppler

ABSTRACT

The subungual glomus tumor is a benign neoplasia of glomus cells and is clinically characterized by paroxysmal pain and hypersensitivity to cold, which causes functional impairment to patients. Diagnosis is based on history and physical examination, and can be better guided based on radiologic study – with ultrasound and Doppler. The authors demonstrate clinical and ultrasonographic aspects of a case, describing the surgical procedure.

Keywords: glomus tumor; ultrasonography, doppler, color; ambulatory surgical procedures.

RESUMO

O tumor glômico subungueal é uma neoplasia benigna de células glômicas sendo caracterizado clinicamente por dor paroxística e hipersensibilidade ao frio, o que gera prejuízo funcional ao paciente. O diagnóstico é baseado na anamnese e exame físico, podendo ser melhor orientado com base no estudo radiológico, com o ultrassom e doppler. Demonstramos os aspectos clínicos e ultrassonográficos de um caso, descrevendo o procedimento cirúrgico.

Palavras-chave: tumor glômico; ultrassonografia doppler em cores; procedimentos cirúrgicos ambulatoriais.

INTRODUCTION

In dermatology, lesion diagnosis is essentially a clinical matter. However, for the diagnosis of subungual lesions such as glomus tumors, exostosis, mucoid pseudocysts and fibrokeratomas, further assessment through imaging methods is necessary. In addition to identifying alterations, it is possible to assess the precise size and location of these tumors pre-operatively. Ultrasonography is a noninvasive method, which when performed with skill can describe tumors as small as 3 mm.

CASE REPORT

A 38-year-old Caucasian female patient from Nova Iguaçu, RJ – Brazil, who worked as a homemaker, sought care complaining of pain in the left thumb for about three years, accompanied by the sensation of “electric shock” when coming into contact with low temperatures and local trauma. She

described progressive worsening, denying comorbidities or family history. On physical examination, erythronychia with undefined limits measuring roughly 3 mm, was observed in the central region of the nail plate, best seen on dermoscopy (Figure 1). The needle puncture test caused local discomfort.

Clinical suspicion of a glomus tumor was raised, with the ultrasound examination revealing a correlation between the pain symptoms and the observed location of the lesion. The analysis showed a nodular, hypoechoic image with well-defined contours (Figure 2) that was hypervascularized under power Doppler examination (Figure 2), occupying the medial unguial bed and causing bone remodeling of the underlying distal phalanx.

The excision of the lesion was carried out through a longitudinal incision in the nail plate, (Figures 3 and 4) which was replaced and sutured. The histological report revealed proliferation of perivascular round cells with eosinophilic cytoplasm and central vesicular nucleus, and a conclusive diagnosis of glomus tumor. (Figure 5)

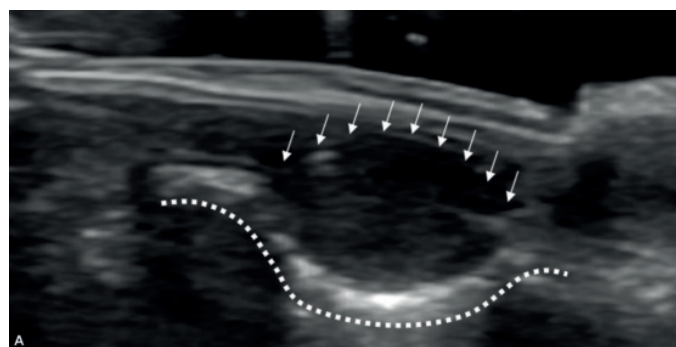


FIGURE 1: Ultrasound examination performed in the sagittal plane, B mode, with 18 MHz probe, showing a nodular, hypoechoic image with well-defined borders (arrows) in the medial nail bed, causing bone remodeling in the underlying distal phalanx (dotted line).

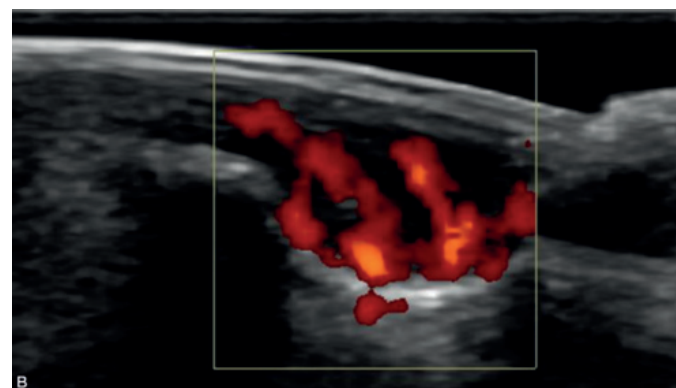


FIGURE 2: Power Doppler assessment – signs of hypervascularization of the lesion (red).

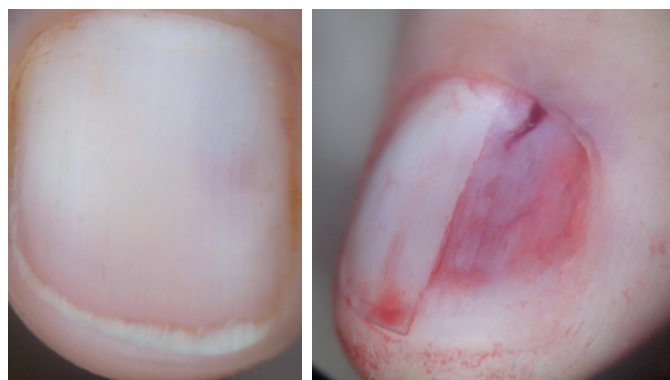


FIGURE 3: Intraoperative dermoscopy –bluish erythematous tumor measuring around 3mm, more clearly viewed with the exposure of the nail bed



FIGURE 4: Surgical treatment – simple tumor excision

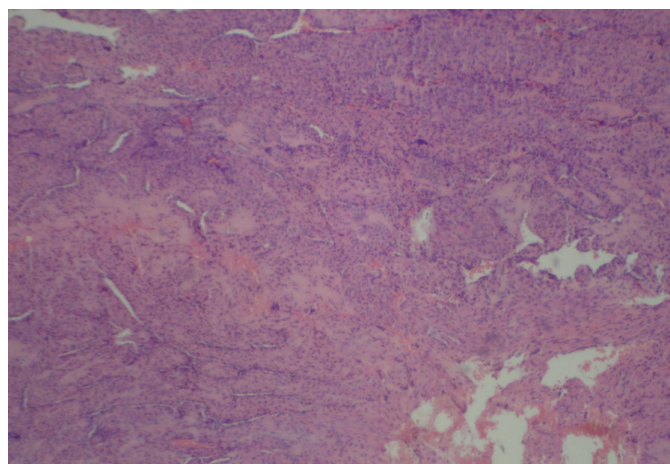


FIGURE 5: Histopathologic study – proliferation of perivascular round cells with eosinophilic cytoplasm, consistent with glomus tumor

DISCUSSION AND CONCLUSION

Glomus tumors are benign neoplasms of glomus cells derived from neuromyoarterial glomus bodies. In about 75% of cases the lesion is located in the hand, especially in the subungual region where glomus bodies are found in higher concentrations.^{1,2} They occur with any age group and are rare, account-

ing for only 1–5% of all tumors of the hand.² Multiple lesions are infrequent (2–3%), and are more common in children.³

Most lesions of this type present clinically with the classic triad (paroxysmal pain, hypersensitivity to temperature changes, and local sensitivity). Physical examination reveals bluish erythematous lesions of small dimensions (3–10 mm in diameter). However, due to the fact that they are located beneath the nail plate, it is difficult to assess their exact size and location, sometimes resulting in incorrect diagnoses.^{3,5}

Ultrasonography is a useful tool for diagnosis and pre-operative localization of the tumor, which facilitates surgery and decreases recurrence rates and is currently the method of choice for the evaluation of lesions that affect the nail bed and plate. Another function of this examination is to dismiss differential diagnoses such as epidermal inclusion and mucous cysts, which are avascular cystic lesions, i.e. devoid of flow under Doppler examination and generally without remodeling of the adjacent bone.^{2,4,5} ●

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