

# VOLAR GLOMUS TUMOR – DIAGNOSTIC ULTRASOUND OF A RARE ENTITY – CASE REPORT

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## ABSTRACT

*Glomus tumors are rare benign perivascular lesions and symptoms are disproportionate due to his size. They are characterized as hamartomatous proliferation with origin in the glomic bodies that are neuromyoarterial structures and are responsible for regulating the capillary flow in response to temperature changes. They match with less than 2% of all primary soft tissue tumors and 1% to 5 % of all tumors of the hand.*

*The clinical criteria are based on paroxysmal pain, local hyperalgesia and cold hypersensitivity. Thus, these criteria delay among 4-7 years to be determined, the imaging examinations are utilized as complementary diagnostic techniques.*

**KEYWORD:** GLOMUS TUMOR, DIAGNOSTIC, ULTRASOUND, VOLAR, RARE.

## INTRODUCTION

Glomus tumors are rare benign perivascular lesions that are difficult to diagnose due to their size.<sup>1,4</sup> Characterized by hamartomatous proliferation originating from the glomus bodies, which are neuro arterial structures responsible for regulating the flow in the skin microvasculature in response to changes in temperature.<sup>2,3</sup>

Correspondem a menos de 2% dos tumores primários de partes moles e de 1% a 5% de todos os tumores da mão. Acomete adultos jovens entre a quarta e a quinta década de vida tendo predileção pelo sexo feminino sendo sete vezes mais frequente que no sexo masculino.<sup>5</sup>

They account for less than 2% of primary soft tissue tumors and 1% to 5% of all hand tumors. It affects young adults between the fourth and fifth decade of life, with a predilection for females, being seven times more frequent than for males.<sup>5</sup>

Clinically, the cardinal sign is local hyperalgesia. The clinical picture presents the triad of paroxysmal pain, local hyperalgesia and hypersensitivity to cold, however the clinical triad has a sensitivity of 50-90% and takes between 4-7 years to be determined. As the clinical criteria have low sensitivity, we resorted to imaging methods for diagnostic complementation.

Its treatment is complete surgical excision<sup>2,5</sup> and subsequent confirmation by histopathological study of the specimen.<sup>7</sup> Differential diagnoses include hemangioma, mucous cyst, osteochondroma, neurilemoma and neuroma, among others.<sup>5,7</sup>

## CASE REPORT

A 56-year-old female patient complaining of pain in the digital pulp of the left fifth finger, the ultrasound examination was performed with a portable ultrasound device, SAEVO, model EVUS<sup>5</sup>, with a high-resolution L7 linear transducer (4-16Mhz), which demonstrated a hypoechoic oval image with well-defined regular contours and irregularity of the volar bone surface of the distal phalanx (figures 1-4).<sup>2,3</sup>



**Figure 1:** USG in the longitudinal section where we visualize an oval, hypoechoic image and irregularity of the bone surface.



**Figure 2:** USG in cross section.

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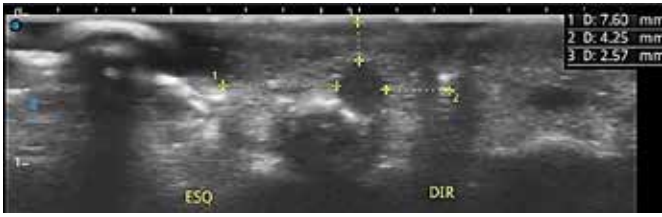


Figure 3: Cross-sectional USG marking distances relevant to anatomical structures.

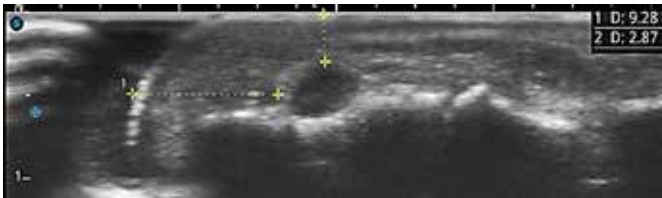


Figure 4: Longitudinal USG marking distances relevant to anatomical structures.

Referred to surgery where complete excision of the tumor was performed (figures 5 and 6), later referred to histopathology in which the diagnostic impression was confirmed.<sup>7</sup> After the surgical procedure, the patient reports complete resolution of symptoms.



Figure 5: Macroscopic aspect of the tumor during surgery.



Figure 6: Macroscopic aspect of the tumor after excision prior to referral to histopathology.

## DISCUSSION

Glomus tumor is an uncommon entity with subungual predominance and its presentation in the region of the digital pulp is even more rare.<sup>4,8</sup> Complementary diagnostic exams such as plain radiography do not provide significant findings, in turn, magnetic resonance (MRI) has good specificity and sensitivity at high cost and morbidity from the use of contrast.

Ultrasonography has great advantages and diagnostic reliability and a non-ionizing method. It allows three-dimensional localization, performing a dynamic study in both axes and verifying the characteristics of the contours, echogenicity, bone surface irregularities, mobility, positivity at the Doppler of the lesion, dimensions and pertinent distances from the lesion to anatomical structures (figures 3 and 4).<sup>1, 2, 3</sup>

## CONCLUSION

The use of high-resolution ultrasound as a diagnostic tool demonstrates an important role in providing high sensitivity and specificity with greater safety and less cost than MRI, being effective in detecting lesions smaller than 2mm in its shortest axis, aiding in surgical planning; providing accurate three-dimensional location of the tumor lesion.

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