



## Diagnosis of glomus tumor by nail bed and matrix dermoscopy

### Diagnóstico do tumor glômico pela dermatoscopia do leito e da matriz ungueal

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**Abstract:** Surgery is the best treatment for glomus tumors. Sometimes this can be a challenging procedure because, despite being a well-defined tumor, its visualization can be difficult. The use of nail bed and matrix dermoscopy facilitates the diagnosis and aids in the localization and demarcation of the tumor. It is a simple and low-cost procedure that does not involve additional risks to the patient who will undergo surgery.  
**Keywords:** Dermoscopy; Glomus tumor; Nail diseases

**Resumo:** A cirurgia é o tratamento definitivo para os tumores glômicos. Algumas vezes, esse procedimento pode representar um desafio, pois, apesar de ser um tumor bem delimitado, a sua visualização pode ser difícil. O uso da dermatoscopia do leito e da matriz ungueal facilita o diagnóstico e auxilia a localização e delimitação do tumor. Trata-se de método simples e de baixo custo que não implica risco adicional ao paciente que irá se submeter a um procedimento cirúrgico.

**Palavras-chave:** Dermatoscopia; Doenças da unha; Tumor glômico

For a long time, nail alterations were not viewed as a priority by doctors of various specialties. However, a growing interest in the diagnosis and treatment of nail disorders<sup>1</sup> transformed an area previously neglected by practicing physicians and researchers into an attractive and necessary field of knowledge to dermatologists.

Glomus tumors represent from 1 to 5% of soft tissue tumors of the hand. They are painful benign hamartomas with increased sensitivity to cold. They originate from the normal myoarterial apparatus and are constituted by an afferent arteriole and vascular channels with endothelial cells, surrounded by cuboidal cells.<sup>2,3</sup> Nearly 75% of glomus tumors are localized in the hands, particularly in the nail apparatus. These tumors present as purple-blue subungual nodules. They rarely cause changes in color or defor-

mity in the nail plate.

Diagnosis of glomus tumor is accomplished through clinical and imaging examination.

Clinical analysis involves the performance of the following procedures:<sup>2</sup>

Love's pin test: allows the identification of pain in the lesion, being positive if the patient withdraws the finger.

Hildreth's test: it is the repetition of the previous test after the use of a medical tourniquet – in this case pain is absent.

Cold sensitivity test: greater pain intensity with temperature drop.

Transillumination.

Nail plate dermoscopy.

Glomus tumors are often small and rarely palpable. Thus, clinical examination is insufficient to

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determine their precise localization.<sup>4,5,6</sup>

Imaging exams help the precise localization of tumors and the pre-surgical evaluation of their size. These are very important data in the choice of the surgical approach.<sup>7</sup> Ultrasound often shows hypoechoic lesions with up to 3 mm of diameter; however, it is an operator-dependent examination.<sup>5</sup> Magnetic resonance is more sensitive and shows the extension of the lesion. Its disadvantage, in addition to cost, is low specificity (50%, producing similar images in cases of mucous cyst, hemangioma, epithelial inclusion, and giant-cell tumor of the tendon sheath).<sup>6,8</sup> Its greatest advantage is its high sensitivity (90%), especially if high resolution is used, detailing the characteristics of the tumor and allowing the diagnosis while the tumor is still small.<sup>6,7</sup>

Nail plate dermoscopy can reveal the presence of vascular structures; however, sometimes these structures can be discreet or absent (Figure 1).

Once the diagnosis has been accomplished, tumor excision surgery is the definitive treatment, with immediate post-surgical pain relief. Direct excision is the standard procedure.<sup>2</sup> There are alternative techniques involving lateral incision which allow tumor exposure without nail plate avulsion. This reduces the chance of post-surgical deformity, but it increases the possibility of incomplete tumor resection.<sup>2,5</sup>

The treatment of glomus tumors can be a challenge because, despite being a well-defined tumor, sometimes its visualization is difficult. Recidivation often occurs within weeks and it is a consequence of incomplete tumor excision, which is caused by the

difficulty of distinguishing between normal and affected tissue.

To overcome these difficulties, we suggest the performance of bed and matrix nail dermoscopy,<sup>9,10</sup> before tumor exeresis. This procedure is performed during the intra-surgical period, after anesthetic block and careful avulsion of the nail plate. The use of tourniquets is recommended to avoid bleeding that may difficult the visualization of the structures to be examined. The tourniquet should not be too tight because ischemia can prevent the visualization of vascular structures. It is possible to examine the entire nail bed and matrix without contact with the area of surgery, preserving asepsis conditions, with polarized light dermoscopy.

This technique aids in tumor localization and in the visualization of the vascular pattern of the lesion (Figure 2), suggesting the diagnosis of glomus tumor. Especially when the tumor is not encapsulated, the use of dermoscopy facilitates the delimitation of surgical margins in the intra-surgical period (Figure 3). It also allows, after lesion exeresis, the visualization of other residual macroscopic tumor foci in the nail apparatus (Figure 4).

Dermoscopy does not replace histopathologic examination, which should always be performed. The study of the nail bed and matrix reveals non-observable aspects when the nail plate is interposed between the lesion and the dermatoscope. It is a simple and low-cost procedure that assists in the diagnosis and lesion exeresis and that does not involve additional risks to the patient who will undergo surgery.

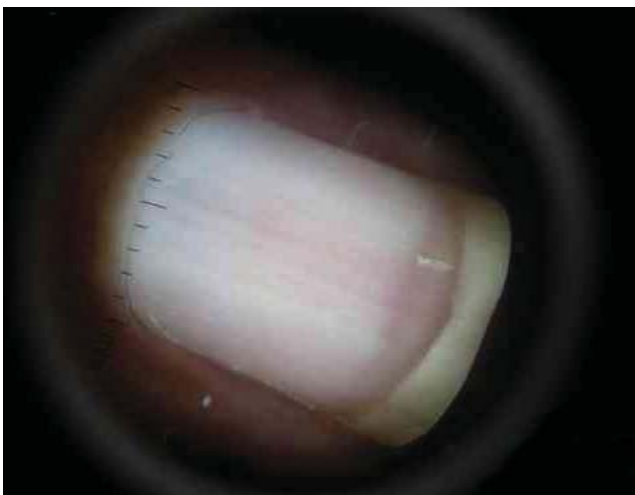


FIGURE 1: Polarized light dermoscopy (10X) of the nail plate of the left fourth finger; presence of discreet linear vascular structures on the distal end of the nail plate



FIGURE 2: Polarized light dermoscopy (10X) of the nail bed and matrix of the left fourth finger; presence of glomus tumor in the proximal third of the nail, showing numerous ramified telangiectasias



FIGURE 3: Polarized light dermoscopy (10X) of the nail bed and matrix of the left fourth finger; delimitation of glomus tumor with methylene blue



FIGURE 4: Polarized light dermoscopy (10X) of the nail bed and matrix of the left fourth finger; after removal of the glomus tumor, absence of macroscopic tumor residues

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