# Capillary Hemangioma in the Hallux: Case Report

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**ABSTRACT**

**Introduction:** Hemangiomas are benign neoplasms originating from endothelial cells and may rarely be malignant. The most common symptom is pain, due to the compression of a nerve or nerve trunk by the hemangioma. We present the case of a patient with this type of tumor in an infrequent location. The patient was a 35-year-old female with a painful, brown-colored and friable tumor in the distal region of the hallux which had increased in size in the last months before treatment. Complete surgical resection of the tumor was performed, with a histopathological diagnosis of capillary hemangioma. No recurrence was observed during the 36-month follow-up. **Conclusion:** We recommend a complete resection of these neoplasms and their posterior histopathology analysis.

**Keywords:** Capillary hemangioma; foot, hallux.
**Level of Evidence:** IV

## Hemangioma capilar en hallux: presentación de un caso

**RESUMEN**

**Introducción:** Los hemangiomas son neoplasias benignas que se originan de células endoteliales; rara vez resultan malignas. Su síntoma más común es dolor debido a que el hemangioma comprime un tronco nervioso cercano o un nervio directamente. Presentamos un caso de hemangioma en una región muy poco frecuente. Se trató de una mujer de 35 años que presentaba una tumoración friable, de coloración marrón, dolorosa, en la región distal del hallux, con aumento de tamaño en los últimos meses. Se realizó la exéresis completa de la tumoración en forma quirúrgica, con diagnóstico anatomopatológico de hemangioma capilar, sin recidiva luego de 36 meses de seguimiento. **Conclusión:** Frente a estas neoplasias, se recomienda la exéresis de la pieza y su posterior estudio.

**Palabras claves:** Hemangioma capilar; pie; hallux.
**Nivel de evidencia:** IV

## INTRODUCTION

Hemangiomas are benign neoplasms that originate from endothelial cells and are rarely malignant. They are blood vessels that cause damage to the skin and mucous membranes in childhood. Most of these injuries are in the head and neck area.[1-4]

The tumor may first be seen as a flat, circumscribed lesion, with telangiectasia in the superficial layers of the skin. The lesion grows rapidly and often becomes pedunculated.[1,3] The most common symptom is pain due to the hemangioma compressing a nearby nerve trunk or a nerve directly. The impairment of function depends on the location of the tumor.[1]

We present a case of hemangioma in a very rare location, the hallux, with its resolution, and we carry out a literature review on the subject.

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## CLINICAL CASE

A 35-year-old woman, with no relevant personal or family history, came to the clinic due to a painful and bleeding tumor in the distal region of the hallux of the left foot, which had increased in size in recent months, making it difficult for her to use of any footwear. The patient reported that it had started as a macule, and that she suspected that it was a boil. On clinical examination, a friable tumor was observed, painful on palpation, round, with a diameter of approximately 2 cm, brown in color, not attached to deep planes, located on the distal region of the second phalanx of the hallux (Figure 1).

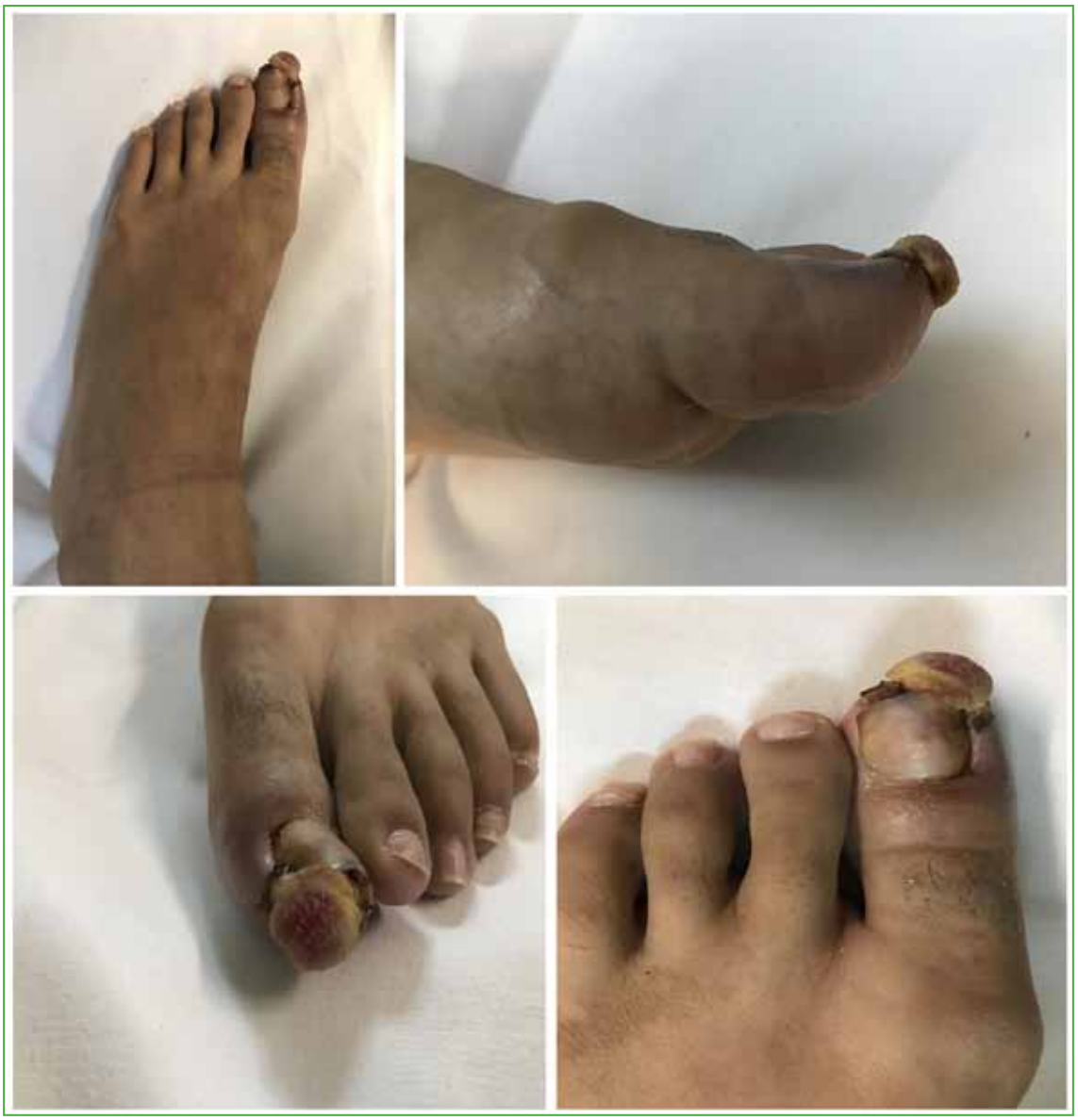

**Figure 1.** Clinical image of the tumor, friable, round, approximately 2 cm, located in the distal region of the second phalanx of the hallux.

The radiographic and analytical examinations did not provide data of interest. MRI revealed a hyperintense image in the distal region, which did not compromise the bone region (Figure 2).

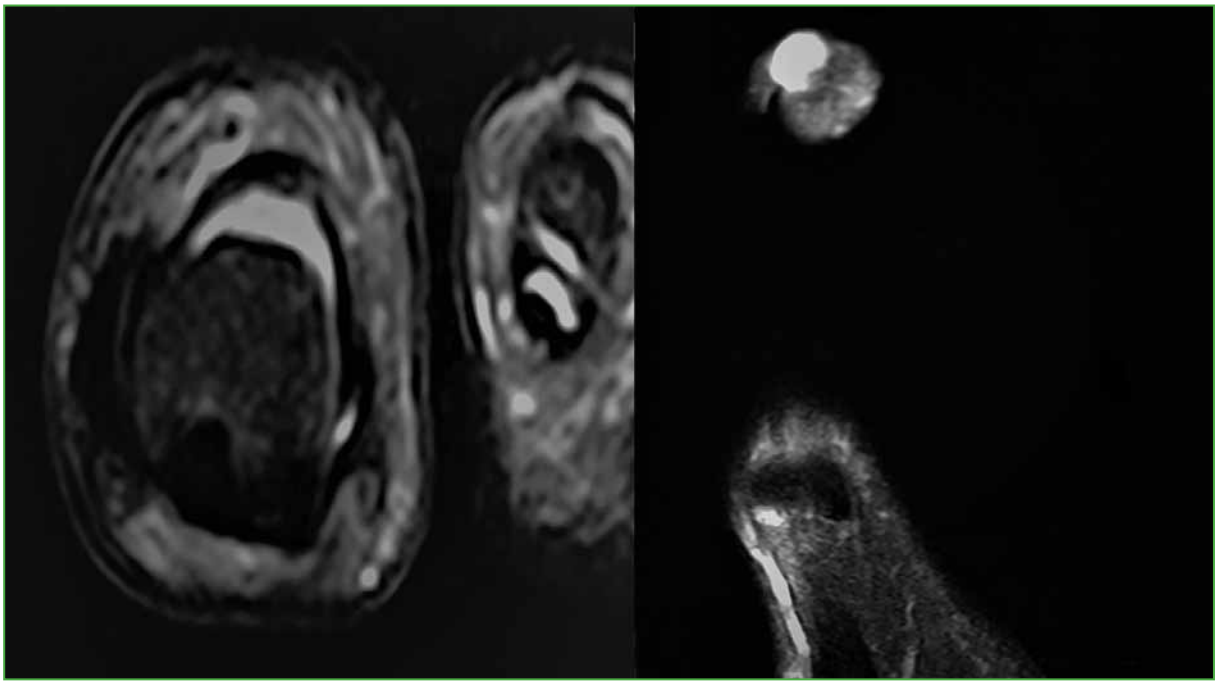

**Figure 2.** MRI, coronal and sagittal slices. No bone involvement is observed. Right: hyperintense image in the distal region of the toe, compatible with hemangioma

Under regional anesthesia, the tumor was removed through a longitudinal incision over the left hallux. A lobulated lesion with a bleeding and friable pedicle was identified; the excision of the lesion was carried out extensively up to the bone region (Figure 3).

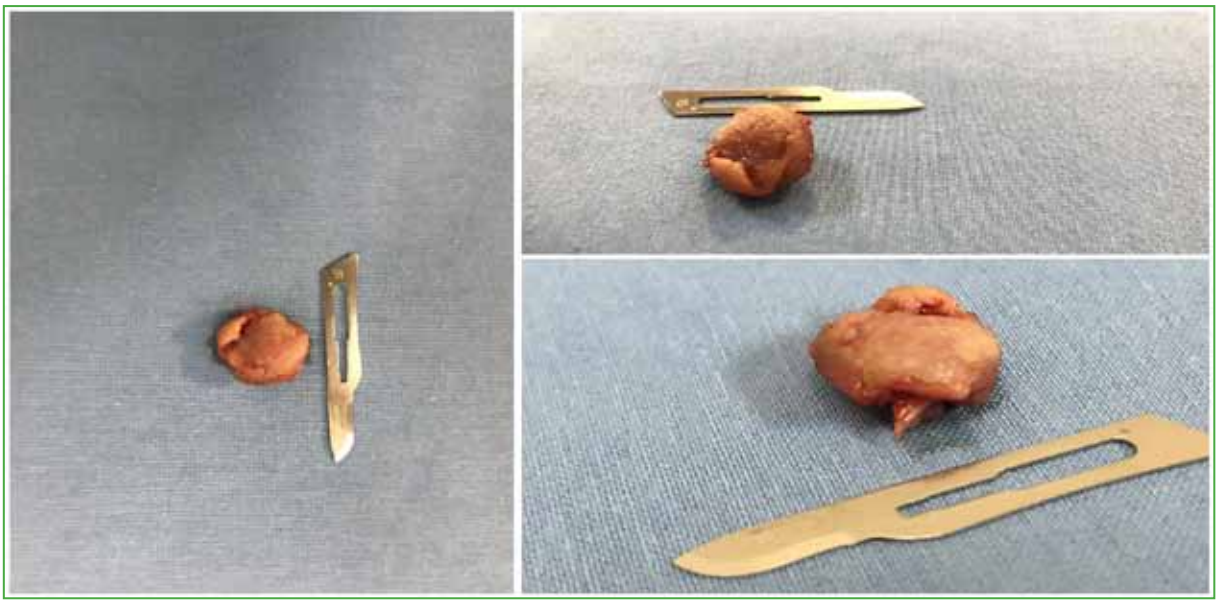

**Figure 3.** Resected piece. A lobulated tumor with a pedicle is observed. Total excision of the mass together with a border of healthy skin surrounding the neoplasm.

By pathology analysis, a capillary hemangioma with wide margins and lesion was diagnosed, with complete excision (Figure 4).

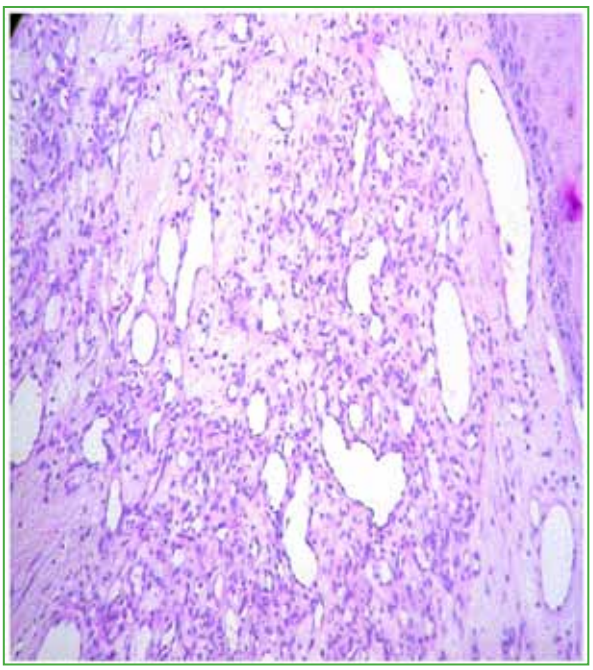

**Figure 4.** Pathological image stained with hematoxylin-eosin, showing capillaries grouped in tangles.

The patient evolved with a painless, healed wound, and was followed up for 36 months, with no signs of recurrence.

## DISCUSSION

Hemangiomas are classified by the International Society for the Study of Vascular Anomalies (ISSVA), an entity established in April 2014, in Melbourne, Australia. They can be classified into three types: cavernous (large vessels, >140 mm), capillary (small vessels, <140 mm), and mixed, according to the predominant vascular pattern. On the other hand, depending on their location, hemangiomas can be superficial (cutaneous or subcutaneous) or deep (intramuscular).[4-9]

Hemangiomas are common and can occur in superficial or deep tissues; they rarely involve the foot.[4,5] They are characterized by presenting three phases: a first proliferative phase, in which the lesion grows rapidly, a period of stability and, finally, an involutional phase in which, regardless of treatment, the lesion fades in color and decreases in size. The duration of each stage varies depending on the type of hemangioma.[4]

They are considered sporadic lesions; however, an autosomal dominant pattern of inheritance (chromosome 9p21-22) has been identified in 1-2%. Hemangiomas are the most common vascular pathology in the pediatric population, occurring in 4% to 10% of Caucasian children, more frequently in premature neonates weighing less than 1200 g, with a history of chorionic villus sampling during pregnancy, female gender and white race.[3]

In a review of 178 cases, Patrice et al. found that lesions were most commonly located in the head and neck area (62.4%), followed by the trunk (19.7%), upper extremity (12.9%), and lower extremity (5.0%).[10] The etiology of capillary hemangioma is unknown.

In a study of 256 cases, Jenkins and Delaney found that 47% were of congenital origin and trauma was the main factor in 17% of cases.[11] One-third of all orbital capillary hemangiomas are diagnosed at birth, and virtually all are diagnosed by 6 months of age. In a study of 600 hemangiomas, Lampe and Latouretter found that 61% were present at birth and 86% appeared in the first month of life.[12]

Kirby et al. reviewed 83 soft tissue tumors and tumor lesions of the foot and found only one hemangioma.[13] González-Guerra et al. described a case of capillary hemangioma with a superficial extension on the sole of the foot, in which they performed an excision, without recurrence in the follow-up of the patient.[2]

Planelles et al. described a case of intramuscular hemangioma in the 4th layer of the foot. It was surgically removed and there was no recurrence after 2 years of clinical follow-up.[7]

The tumor may first be seen as a flat, circumscribed lesion with telangiectasia in the superficial layers of the skin. The lesion grows rapidly and often becomes pedunculated. There may be discoloration of the skin that may vary from red to brown or blue to purple when the soft tissue mass is very close to the epidermis.[1]

Capillary hemangiomas can vary in consistency from soft and spongy to a hard mass, and can be fixed or mobile under the epidermis. They often ulcerate and protrude from the epidermis.[1]

Pulsations are rare, but if found, they are usually adjacent to the lesion and felt distal to it. A history of ulceration and spontaneous bleeding is common in capillary hemangioma. The first visit to the doctor is usually due to the onset of an epidermal crisis, scabbing, and bleeding.[1]

The typical microscopic appearance of a hemangioma is a well-circumscribed exophytic mass attached to a narrow stalk, consisting of aggregates of proliferating capillaries located within an edematous matrix.[1,6]

The tumor is composed of tightly packed, thin walls, arranged in lobes. The epidermal surface often shows focal areas of atrophy or ulceration.[1,6]

The clinical diagnosis of capillary hemangioma is difficult to make before a pathologic evaluation. Differential diagnoses may include a cyst, arteriovenous fistulas, senile angioma-like eruptions, pyogenic granulomas, angioblastomas, verrucous hemangiomas, tufted hemangiomas, and angiosarcoma.[1,6]

The usual treatment is cauterization with silver nitrate, electrodesiccation, curettage or tangential excision and cauterization.[1,4,6,7] Commonly used sclerosing agents include ethyl alcohol, ethanolamine oleate, and polidocanol. Ethyl alcohol is very effective; however, tissue necrosis, peripheral nerve injury, pulmonary embolism, pulmonary vasospasm, arrhythmia, and electromechanical dissociation may occur.[6]

Surgical excision of a hemangioma may be indicated at any stage of its life cycle. To avoid recurrence, the resection must be complete.[4,14] In published series, recurrence rates, especially after incomplete excision, have ranged from 18% to 61%. The risk factors for recurrence reported are, firstly, incomplete surgical margins and secondly, tumor size.[6,7]

## CONCLUSIONS

In summary, capillary hemangiomas, although not life-threatening, represent a diagnostic challenge. Their rarity, variable radiographic appearance, and sometimes enigmatic biopsy tissue pattern require close cooperation between the pathologist and the radiologist to arrive at the correct diagnosis.

Hemangiomas are benign vascular tumors. They are congenital and rarely hereditary, although trauma may be a predisposing factor. Common symptoms include pain, swelling, skin discoloration, and an associated mass. The definitive diagnosis is made through macroscopic and microscopic examination of the mass. Surgical excision is the standard treatment; percutaneous sclerotherapy is an alternative treatment.

Complete excision is important, since partial resection usually presents local recurrence. For this reason, a careful histological study of the limits of the resected specimen must be performed to confirm that the excision has been complete.

Conflict of interest: The author declares no conflicts of interest.

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