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Myopericytoma of the Finger: Case Report and Literature Review

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Abstract **Case Report**

Myopericytoma is an uncommon type of soft tissue tumor characterized by a well-circumscribed, non-encapsulated nodular proliferation with thin-walled blood vessels and a concentric, perivascular arrangement of ovoid spindle-shaped myopericytes. Clinically, most myopericytomas present as painless, slow-growing tumors in superficial or deep soft tissues. They most commonly affect the lower extremities and are rarely found in the fingers. This report describes the case of a patient with a myopericytoma located on the left fifth finger.

Keywords: Myopericytoma, soft tissue tumor, hemangiopericytoid, finger, benign neoplasm, histopathology.

INTRODUCTION

Myopericytoma is a rare mesenchymal neoplasm derived from perivascularly differentiated cells (myopericytes), first described by Stout and Murray in 1942. Histologically, it is characterized by a well-circumscribed nodular proliferation of spindle or ovoid cells arranged concentrically around thin-walled blood vessels. Its pathogenesis remains uncertain, although genetic alterations such as PDGFRB gene fusions or ACTB and HRAS mutations have been implicated. Although most myopericytomas are benign, variants with locally aggressive or metastatic potential have been reported. Clinically, they typically present as painless, slow-growing masses, predominantly in the soft tissues of the lower extremities (thigh, leg), and less frequently in the head, neck, or trunk. Finger involvement is exceptional, accounting for less than 5% of reported cases, making this tumor a diagnostic and therapeutic challenge in functionally critical anatomical regions. Definitive diagnosis requires immunohistochemistry, with positivity for markers such as smooth muscle actin (SMA), caldesmon, and h-caldesmon, and negativity for S100 (helping to distinguish it from neural tumors). Complete surgical excision is the treatment of choice, given the tendency for local recurrence in cases of incomplete resection. In this context, we present an unusual case of myopericytoma on the left fifth finger, an atypical location that underscores the importance of considering this entity in the differential diagnosis of digital tumors, even in areas of low prevalence. This report contributes to expanding the clinical spectrum of this disease.

CASE REPORT

A 61-year-old male patient presented with a lesion located on the left fifth finger, with a three-month history (Figures 1, 2). The lesion was asymptomatic and had not shown significant changes in size or appearance during this period. Due to the persistence of the clinical presentation, the patient sought evaluation at the Dermatology Department, where an excisional spindle-shaped biopsy was performed for histopathological analysis (Figures 3, 4).

The histopathological report described a well-circumscribed subcutaneous nodule composed of fascicles of cells with myoid morphology. These cells exhibited elongated nuclei with blunt ends and abundant eosinophilic cytoplasm, without evidence of atypia. A characteristic growth pattern around blood vessels was identified, adopting a hemangiopericytoid arrangement; some vessels appeared dilated and tortuous. The neoplasm showed alternating areas of hypocellularity and hypercellularity, with no signs of necrosis. No cytological atypia or malignancy was observed. Surgical margins were reported to be free of tumor infiltration

(Figures 5, 6). Based on these findings, the histopathological diagnosis of myopericytoma was established.

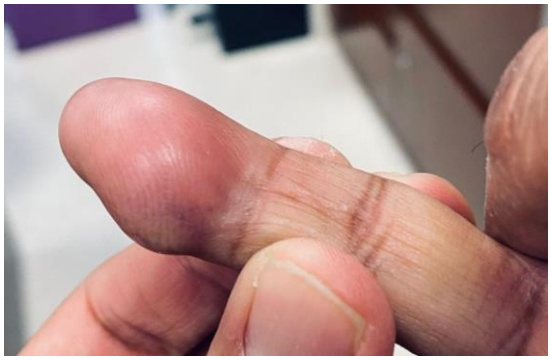

Figure 1: Clinical view of the dorsal region of the left fifth finger. A well-defined subcutaneous nodular elevation is observed, with slight violaceous coloration, without signs of inflammation or ulceration

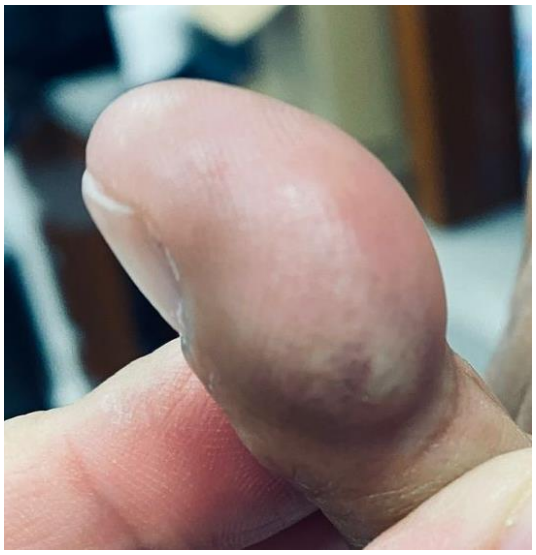

Figure 2: Lateral view of the nodular lesion on the left fifth finger, showing a smooth-surfaced subcutaneous nodule without apparent epidermal changes

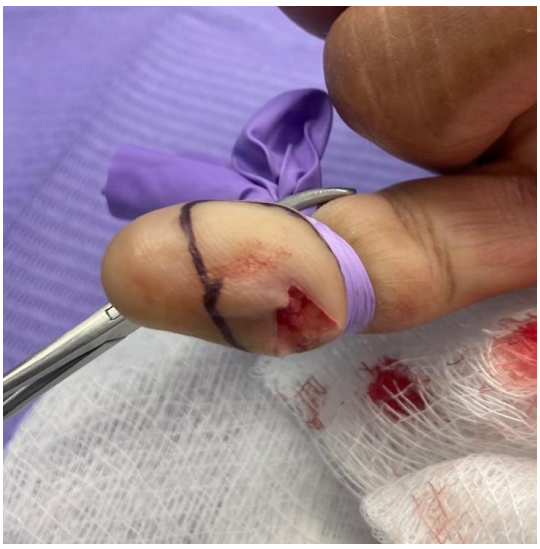

Figure 3: Intraoperative image. Elliptical spindle-shaped surgical marking and approach with digital tourniquet, showing the subcutaneous location of the tumor prior to complete excision

Figure 4: Excised surgical specimen. Oval-shaped, well-circumscribed reddish nodule with smooth surface, consistent with myopericytoma

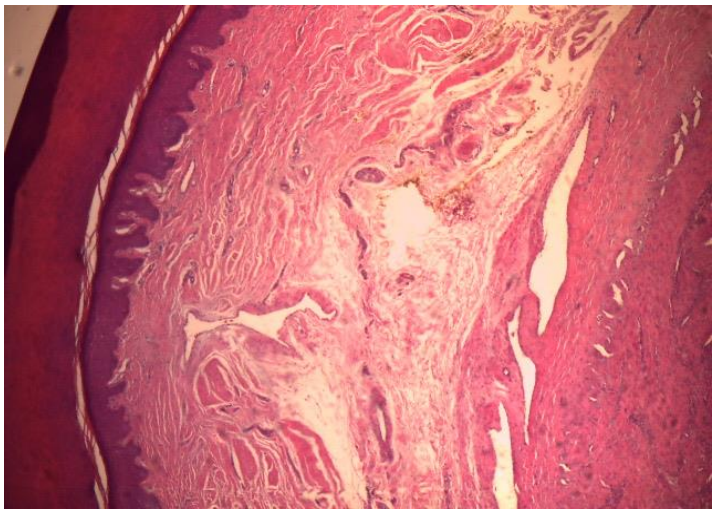

Figure 5: Histological section stained with H&E at low magnification (4x) showing a well-defined dermal nodule, without epidermal invasion, composed of cellular proliferation around blood vessels

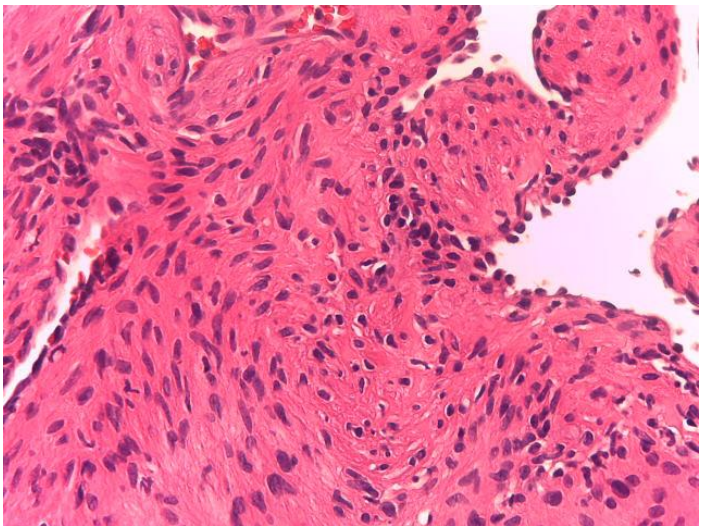

Figure 6: Histological section with H&E staining at higher magnification (40x), showing spindle-shaped cells with eosinophilic cytoplasm and elongated nuclei, arranged in a concentric perivascular pattern, without atypia or mitotic figures

DISCUSSION

Myopericytoma is a rare soft tissue neoplasm characterized by the proliferation of perivascular myoid cells, and its diagnosis can be clinically challenging due to its nonspecific presentation and low prevalence. Although most cases reported in the literature involve tumors located in the lower extremities, this case is notable for its unusual location on the left fifth finger a functionally important and anatomically uncommon site for this entity.

These tumors typically follow an indolent course, consistent with our patient's asymptomatic presentation. The decision to perform an excisional biopsy was key to establishing the diagnosis, as histological morphology and the concentric perivascular growth pattern are diagnostic hallmarks. The absence of cytological atypia, necrosis, and mitotic activity suggests a benign biological behavior, as seen in our patient.

Although immunohistochemistry was not detailed in this case, it is a crucial tool for diagnostic confirmation, with typical positivity for SMA and negativity for S100. In our case, the histopathological findings alone were sufficient to support a diagnosis of myopericytoma.

Surgical excision with clear margins remains the standard approach, as was performed in this case. Postoperative clinical follow-up is essential, particularly in cases with narrow margins or difficult-to-access locations, due to the documented risk of local recurrence.

This case emphasizes the importance of including myopericytoma in the differential diagnosis of subcutaneous digital tumors, even when asymptomatic and slowly progressive, particularly in older patients, where benign neoplasms may be overlooked or mistaken for more common lesions.

CONCLUSION

Myopericytoma is a rare, generally benign soft tissue tumor with a characteristic histological pattern. Its occurrence in the fingers is exceptional, which can hinder initial clinical diagnosis. Complete surgical excision remains the treatment of choice, offering a favorable prognosis when entirely removed. This case adds to the medical literature by documenting an uncommon presentation of this entity and reinforces the need to consider rare diagnoses in persistent lesions located in unusual anatomical sites.

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