

Dartos Muscle Myoma

Mioma del músculo dartoico

To the Editor:

Cutaneous leiomyomas are benign neoplasms arising from smooth muscle fibers. They have been traditionally classified into 3 groups: piloleiomyomas, angioleiomyomas, and genital leiomyomas.¹ These neoplasms arise from the smooth muscle fibers in the arrector pili muscles (piloleiomyomas), vascular walls (angioleiomyomas), and in the scrotum (dartos muscle), vulva, and areola and nipple (genital leiomyomas).

There are other benign cutaneous tumors in which smooth muscle fibers are present: smooth muscle hamartoma, cutaneous angiomyolipoma, dermatomyofibroma, and solitary cutaneous myofibroma.¹

We present the case of a 26-year-old man, with no relevant history, who consulted due to a lesion that had appeared in the middle of his scrotum 2 years earlier. The lesion caused him discomfort and had grown considerably in the previous months. Physical examination revealed an oval tumor of rubbery consistency about 40 mm in diameter (Figure 1). Echography showed a heteroechogenic intrascrotal tumor separate from the testicle and the epididymis. In view of the clinical suspicion of benign scrotal neoplasm, a biopsy was taken. Histopathology showed a prominent proliferation of intertwined smooth muscle fibers with interlacing collagen bundles located in the lower two-thirds of the dermis (Figure 2). At greater magnification, we observed that the fibers were composed of large eosinophilic cells with elongated, round-ended nuclei. Examination of transverse sections revealed the presence of cytoplasmic vacuolization and perinuclear clear spaces (inset, Figure 2) that were highly suggestive of smooth muscle origin.² There was no evidence of atypia



Figure 1 Tumor lesion on the scrotum.

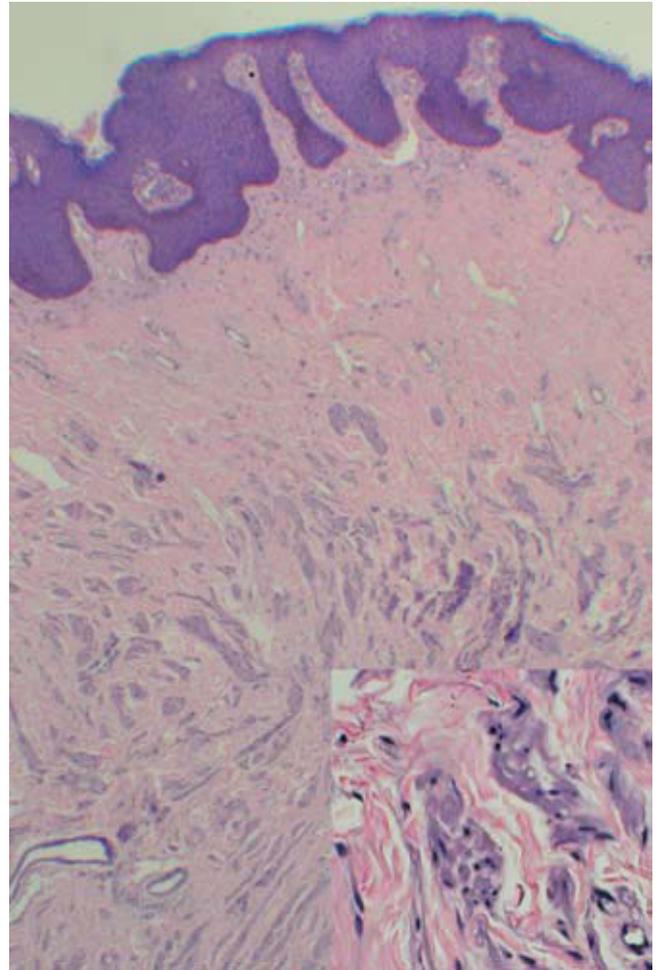


Figure 2 Proliferation of smooth muscle fibers in the middle and deep dermis (Hematoxylin-eosin, original magnification $\times 10$). Inset, detail of the cells making up the bundles (Hematoxylin-eosin, original magnification $\times 100$)

and the mitotic index was low. The muscle origin of the lesion was confirmed by positive immunoreactivity for smooth muscle actin (Figure 3). Immunohistochemical staining was used to detect hormone receptors (estrogens, progesterones, and androgens), all of which were negative.

Genital leiomyomas are the least common type of cutaneous leiomyomas.^{1,3} This group includes scrotal or dartos muscle myoma, about 50 cases of which have been described in the literature.⁴ The neoplasm occurs in middle-aged men (third to seventh decade of life), usually as a solitary asymptomatic nodule measuring between 1 and 14 cm and displaying progressive growth.^{3,4} Due to its location and symptoms, it is essential that the differential diagnosis with other benign and malignant paratesticular tumors be carried out, as malignancies occur in up to 20% of cases.⁵ The use of echography makes it possible to determine whether the mass is intrascrotal or extrascrotal and whether it is solid or cystic.⁶ Such a mass may therefore be anything from a lipoma (the most common paratesticular tumor) to an adenomatoid tumor (the most common tumor of the epididymis).⁷ Inflammatory conditions should also be

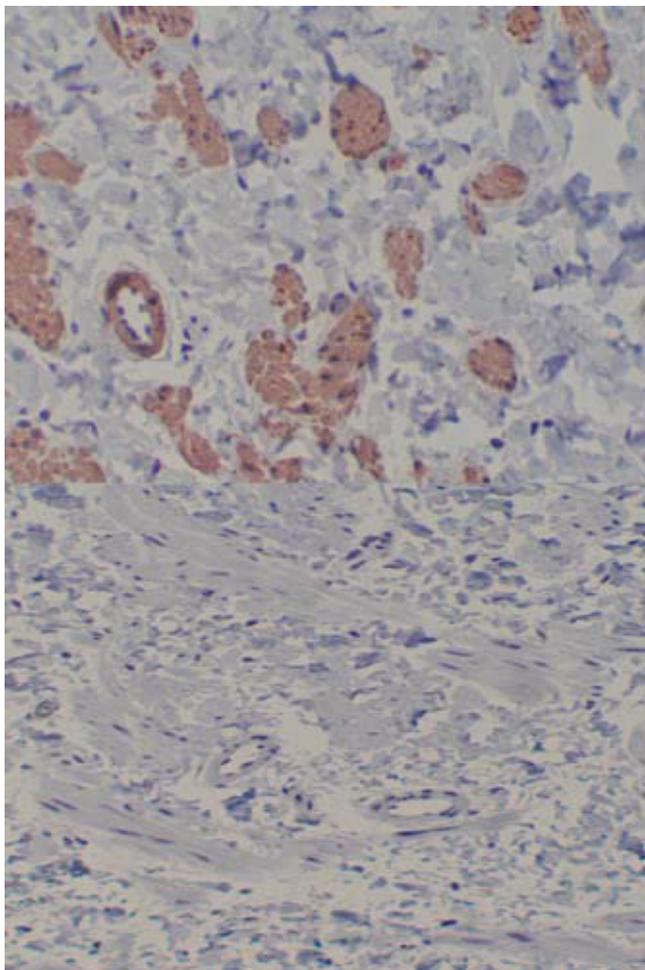


Figure 3 In the upper part of the image, positive immunofluorescence for smooth muscle actin. In the lower part, detail of negative immunoreactivity for androgen receptors.

considered in the differential diagnosis.^{5,8} For this reason, the histologic examination of paratesticular tumors is essential; dartoid myoma can easily be distinguished in this way from other tumors. In view of the benign nature of the lesion, simple excision is the treatment of choice.⁸

Histologically, it is not usually difficult to diagnose. In case of doubt, the use of immunohistochemical markers (smooth muscle actin, vimentin, desmin) can help to solve the problem in most cases. For the differentiation of each type of leiomyoma, the following clinical and pathological characteristics can be of use: 1) angioleiomyoma is generally a single tumor that appears on the lower limbs of women, is usually painful, and is characterized histologically by a circumscribed proliferation of smooth muscle fibers intertwined with vascular lumens^{1,9}; 2) multiple piloleiomyoma (the most common type of leiomyoma) usually presents as small grouped lesions, generally on the limbs; 3) leiomyoma of the areola or nipple is a single lesion measuring from 5 to 10 mm that is usually symptomatic, as is piloleiomyoma,^{1,3} and histologically very similar to piloleiomyoma, as the lesions

are poorly delimited and are usually found in the upper or mid dermis^{1,3}; 4) and finally, vulvar and scrotal leiomyomas, which are larger, asymptomatic, and histologically deeper and better delimited.³ For this reason, several authors distinguish between vulvar and scrotal leiomyomas and areolar leiomyomas.^{2,3}

Recent studies using immunohistochemistry have shown androgen receptor expression in scrotal leiomyomas, not present in piloleiomyomas or areolar leiomyomas.¹⁰ This would support the distinction between areolar leiomyomas on the one hand and vulvar and scrotal leiomyomas on the other, and argues against grouping them together as “genital leiomyomas.” The finding also shows that scrotal and vulvar leiomyomas may be more similar to uterine leiomyomas, which are also hormone sensitive.¹⁰ However, we were not able to verify this hypothesis. Although our patient’s lesion had increased in size rapidly, we were not able to demonstrate that this growth was hormone dependent.

It therefore seems advisable to continue to investigate such tumors. Learning what substances they respond to can help us to understand their origin and behavior.

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