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Supraorbital Leiomyoma – a Case Report

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We present a case of a 49-year-old woman who is receiving treatment with a formation above her left eyebrow. 10 years ago, the patient suffered trauma in this area without compromising skin integrity, and for about two months noticed a small bump in the area. Under local anesthesia, a skin incision was made and a 1.5-1.8 cm formation was extirpated. The material was sent to a histological examination laboratory, on the basis of which the patient was diagnosed with Leiomyoma.

Key words: facial leiomyoma, maxillofacial surgery, leiomyocytes, formation extirpation, rare benign neoplasm

Introduction

Leiomyomas are rare benign soft tissue neoplasms that arise from smooth muscle [1, 7]. These tumors are common in the skin, gastrointestinal tract, and female genital tract, especially the uterus, and represent well-described neoplasms [3, 5]. Oral leiomyomas are extremely rare, with a frequency of less than 1% of all benign soft tissue tumors, as smooth muscle cells are relatively rare in the oral cavity compared to the gastrointestinal tract [8]. In practice, leiomyomas in the face are extremely rare.

According to literature, leiomyomas have been described as neoplasms that develop as a result of a mutation that results in the loss of mechanisms to regulate the growth of smooth muscle cells [8, 9]. The development of a benign tumor depends on a complex interaction between growth factors and cytokines, hormones (estrogen, progesterone), as well as genetic predisposition [6, 4]. Risk factors include: middle-aged (between 40 and 60 years of age), women with a history of chronic disease, including recurrent gynecological infections, dark skin and high body mass index [2]. Leiomyomas are clinically manifested as slow-growing, asymptomatic or painful lesions, which are most commonly described as being in purple [1]. Histologically, three types of leiomyoma can be distinguished [3]:

1) leiomyoma (hard leiomyoma)
2) epithelioid leiomyoma (leioblastoma)
3) angioleomyoma (vascular leiomyoma)
piloleimyoma and genital leiomyoma.

The diagnosis is based on histopathological examination and surgical excision is the treatment of choice, with recurrence being extremely rare [6].

Case Report

We present a case of a 49-year-old fimale patient who is receiving treatment with a formation above her left eyebrow. Anamnesically, the patient reported that she had suffered trauma in this area 10 years ago without disturbing the skin integrity, and for about two months had noticed a small bump in the area that was beginning to grow. The patient consulted a dermatologist who directed her to consult a specialist in maxillofacial surgery. Clinical examination revealed a formation above the left eyebrow that is not painful and the skin above it is unchanged. Under local anesthesia, a skin incision was made and a 1.5-1.8 cm formation was extirpated. The material was sent to a histological examination laboratory.

Histological analysis of the tissues was perfomed and stained haematoxylin-eosin (HE).

Immunohistochemical procedure for SMA detection

Sections were cut at 4 microns, de-paraffinized in xylene, hydrated in graded ethanol concentrations to distilled water, and digested with pepsin (5 mg/mL 0.01 N HC1 for 45 minutes at 37°C). The slides then were washed in distilled water, treated with 0.5% hydrogen peroxide in methanol for 30 minutes to block endogenous peroxidase, and washed further in distilled water and phosphate-buffered saline (PBS) (pR 7.3). Normal mouse antiserum (DAKO) was applied at a 1:20 dilution for 10 minutes, followed by two washes in PBS. All further incubations were at room temperature and in a humidified chamber. The primary antiserum, anti SMA antibody, was applied at a 1:200 dilution for 30 minutes, followed by swine anti-rabbit immunoglobulin antiserum (DAKO) at a 1:20 dilution. The sections were washed in PBS and incubated with a rabbit peroxidase antiperoxidase complex (DAKO) at a 1:30 dilution for 30 minutes. The sections were then treated with fresh 3'-diaminobenzidine in 0.05 M Tris HC1, pH 7.6 (activated by hydrogen peroxide) for 1-5 minutes, to visualize the brown color indicative of peroxidase activity. Hematoxylin was used as a counterstain, after which the sections were dehydrated in graded ethanol concentrations, cleared in xylene.

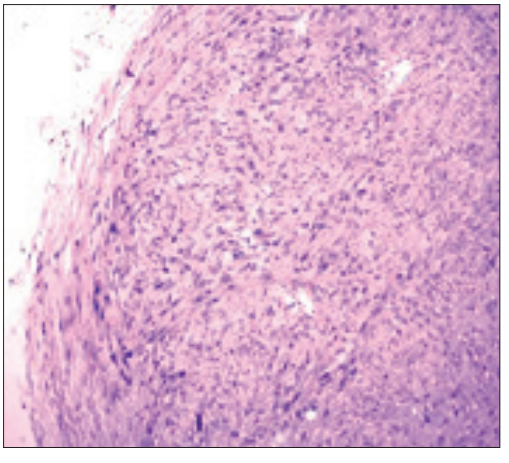

Fig. 1. Hematoxylin and eosin staining at low magnification reveals the fibrous capsule at left margin. × 100

We obtained the following results at magnification × 200 – the presence of a lesion that is made up of elongated

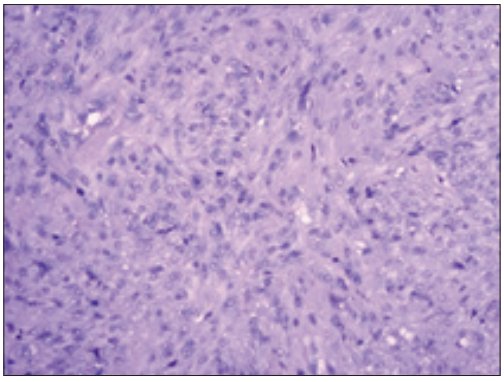

Figure 2. Haematoxylin and eosin staining revealed bundles of uniform, spindle-shaped cells. × 400

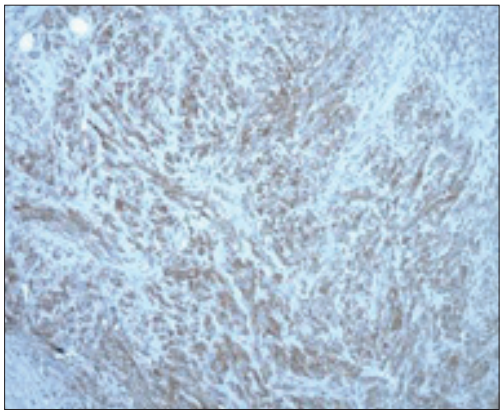

Figure 3. Immunohistochemical staining showed the diffuse staining with SMA (smooth muscle actin). × 100

eosinophilic cells with fusiform nuclei, fibrillar cytoplasm and distinct cell membranes, with less than 3 mitotic figures per 10 high power fields in most mitotically active area, and with no atypia (**Fig. 1, 2**). It was circumferentially delimited by a fibrous capsule (**Fig.1**). Strong diffuse immunohistochemical staining for SMA (Smooth muscle actin) was revealed (**Fig. 3**).

Discussion

The extraocular muscles develop from three preotic somites. These three somites correspond with the distribution of cranial nerves III, IV, and VI. These are the somites founds anterior to the developing ear of the embryo and are responsible for the development of the extraocular muscles [4].

Baden et al. described leiomyomas as a benign neoplasm of smooth muscle origin [2]. Leiomyomas can develop wherever smooth muscle is present. Skin is the second commonest site for leiomyoma comprise approximately 5% of all leiomyomas, right after uterus which accounts for 95% of cases [2]. Nevertheless, in extremely rare cases, they may become supraorbital and in cervix (only 1-2% of cases). The origin of leiomyomas in eyebrows has been a matter of speculation, it is most probably developed from arrector pili muscles or pericyst in vascular wall. Cutaneous leiomyomas are more common in adults, and without predilection for either sex.

The pathogenesis of leiomyoma can be caused by trauma, venous stagnation, hormonal changes and genetic alterations [7].

Previous studies [3, 5] have reported oral leiomyomas mainly in the lips, followed by the palate, mandible, tongue or cheeks [8, 9]. With this in mind, the case of leiomyoma reported here on the skin of a 49-year-old woman's face may be considered relatively rare. It is clinically difficult to distinguish facial leiomyomas from other lesions or tumors, such as nevi, fibroids, lipomas, hemangiomas [3, 5].

Beneficial characteristics of leiomyomas include lack of mitoses and necrosis, as well as cellular atypia and pleomorphism in histopathological evaluation.

Leiomyomas are only rare, although prognosis depends on the completeness of surgical excision of the tumor.

Conclusion

Supraorbital leiomyoma of the skin is a very rare benign neoplasm. With this report, we have presented a case of leiomyoma located on the skin above the left eyebrow of a patient at risk age for the appearance of predisposing factors. Tumors of this type are usually asymptomatic and can develop for months or even years. Despite variable clinical manifestations, majority of the lesions have a favorable prognosis. The diagnosis of this type of lesion requires histopathological evaluation.

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