



## Subcutaneous Leiomyomas in the Lateral Aspect of Knee, A Rare Case Report and Literature Review

Harun Karaduman<sup>1</sup>, Hala Halbony<sup>1</sup>, Ozge Duymaz<sup>2</sup>, Mehmet Bekerecioglu<sup>1</sup>

<sup>1</sup> Department of Plastic, Reconstructive and Aesthetic Surgery, Kahramanmaraş Sutcu Imam University Faculty of Medicine, Kahramanmaraş, Türkiye

<sup>2</sup> Department of Pathology, Kahramanmaraş Sutcu Imam University Faculty of Medicine, Kahramanmaraş, Türkiye

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### Corresponding author:

Harun Karaduman,

Department of Plastic, Reconstructive and Aesthetic Surgery, Kahramanmaraş Sutcu Imam University Faculty of Medicine, Kahramanmaraş, Türkiye

harunkaraduman@ksu.edu.tr

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### ABSTRACT

Leiomyomas are benign neoplasms of mesenchymal origin. Leiomyomas can arise in any soft tissue, they mainly occur in the uterus, and are considered the most common neoplasms of the uterus. In the extremities they arise as subcutaneous masses, representing 1.7% of all benign soft-tissue tumors in the lower extremity. In this report we present a case of four leiomyomas arising in the lateral aspect of the right knee joint.

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### INTRODUCTION

Leiomyomas are benign neoplasms of mesenchymal origin (1). Leiomyomas can arise in any soft tissue, they mainly occur in the uterus, and are considered the most common neoplasms of the uterus (2,3). In the extremities they arise as subcutaneous masses, representing 1.7% of all benign soft-tissue tumors in the lower extremity. In this report we present a case of four leiomyomas arising in the lateral aspect of the right knee joint.

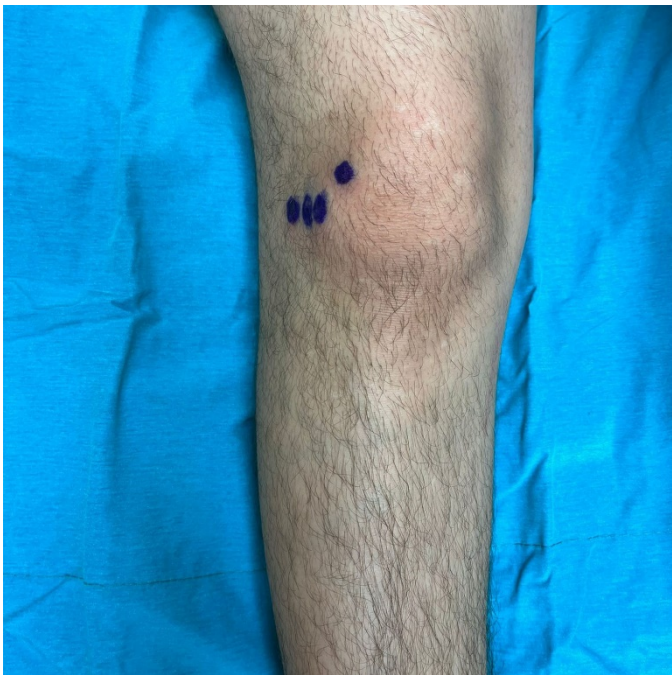
### CASE PRESENTATION

A 27-year-old male medically free patient presented to the Plastic Surgery outpatient clinic of Kahramanmaraş Sutcu Imam University Hospital complaining of four lesions on the lateral aspect of his right knee joint for ten years prior to his visit. The patient complained of tender lesions which often

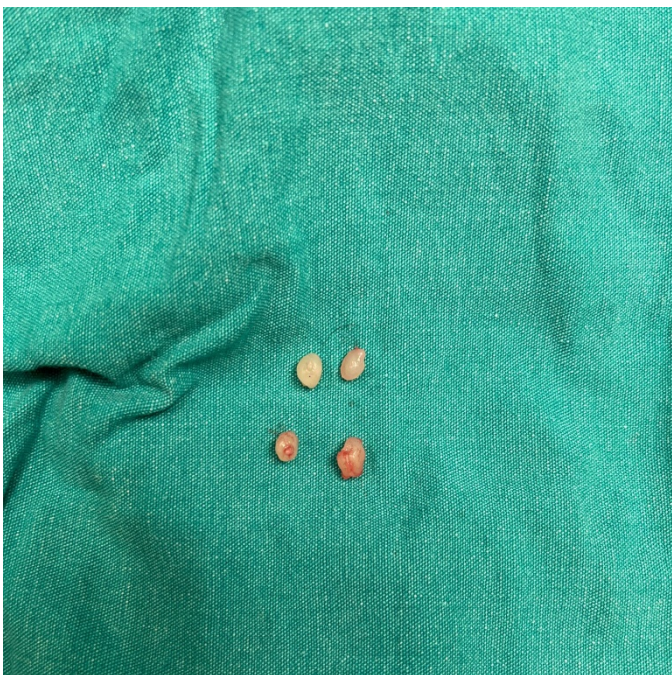
swell. The patient had no history of previous trauma or injections at that site, there was no family history of malignancies. The patient's pain has not been thoroughly investigated previously. On examination, lesions were not visible by inspection was, palpation showed four mobile 1\*0.5\*0.5 cm<sup>2</sup> soft lesions that are not fixed to the underlying tissues. Therefore lesions were marked preoperatively. (Fig. 1). There was no limitation in the range of motion of the joint.

Excision under local anesthesia was performed the lesions were subdermal well-defined, with the biggest measuring 0.5\*0.4\*0.4cm and the smallest measuring 0.3\*0.3\*0.3 cm greyish-white lesions were excised (Fig.2). The lesions were sent for histopathological examination where hypertrophic non-striated smooth muscles were noticed. On staining with H&E showed lesion consisting of spindle cells with cigar-shaped nuclei with a smooth sequence, low cellularity, definite numbers, eosinophilic cytoplasm arranged in a pattern typical

of smooth muscle tumors (H&E x4) (Fig.3). Spindle cells show strong positive cytoplasmic staining with Desmin (Desmin Immunohistochemistry length x10) (Fig.4). Postoperative period was uneventful and the patient did not complain of recurrence at the site of excision.



**Figure 1.** Preoperative view of lesions.

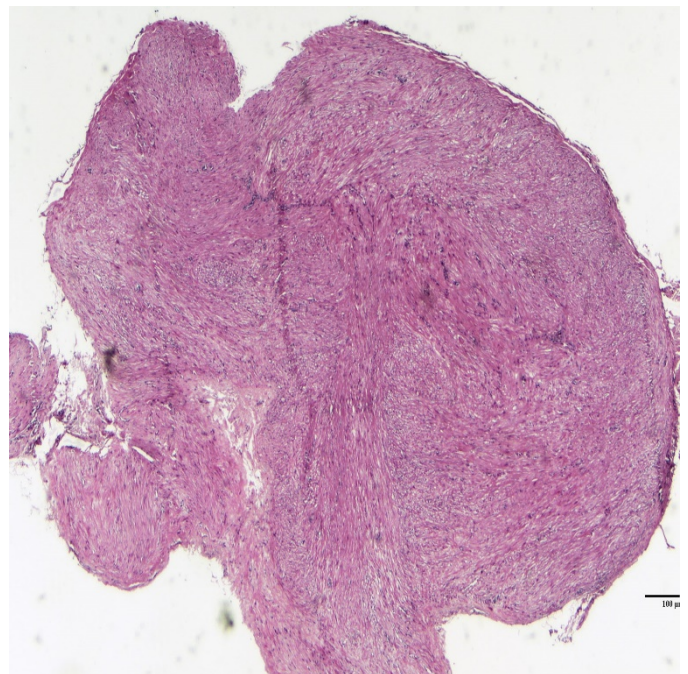


**Figure 2.** Excised lesions.

## DISCUSSION

Leiomyomas are benign neoplasms of mesenchymal origin (1). Leiomyomas can arise in any soft tissue, they mainly occur in the uterus and the gastrointestinal tract, and are considered the most common neoplasms of the uterus (2,4). Leiomyomas

arising within veins also known as angioleiomyomas are rare and the reported cases in the literature are usually intracaval as a result of spread from uterine fibroids (5). However, very rarely primary leiomyomas arise intracranially especially in immunocompromised patients, and in the extremities, they arise as subcutaneous masses, representing 1.7% of all benign soft-tissue tumors in the lower extremity. Leiomyomas are most common in the female gender, these lesions are divided into three subtypes: the solid subtype showing a female gender predilection, the cavernous subtype, and the venous subtype (also known as angioleiomyoma) showing male gender predilection (1,4). Stout et al added this rare lesion to the literature in 1937(4). Although leiomyomas are considered as benign lesions metastatic leiomyomas have been reported in most solid organs (1). Leiomyomas are most common in 20-60 age group, the chief complaint is usually a slowly growing mass, some patients may complain of pain or tenderness as well. The differential diagnosis includes schwannoma, neurofibroma, hemangioma, ganglion cyst, liposarcoma, myxomatous tumor, traumatic neuroma, and eccrine spiradenoma. X-rays are not useful unless the lesions are calcified, 50% of these soft tissue tumors show calcification (4). Magnetic Resonance Imaging typically show well-circumscribed capsulated lesions, the lesions appear isointense to skeletal muscle and their fibrous capsule appear hypointense on T1 and T2 sequence, while appearing heterogeneously hyperintense with respect to skeletal muscle on T2 and STIR, there is marked enhancement with gadolinium contrast material (3). In our case radiological imaging was not performed. Excision of the well-circumscribed lesion was performed to enable histopathological diagnosis and potential cure.



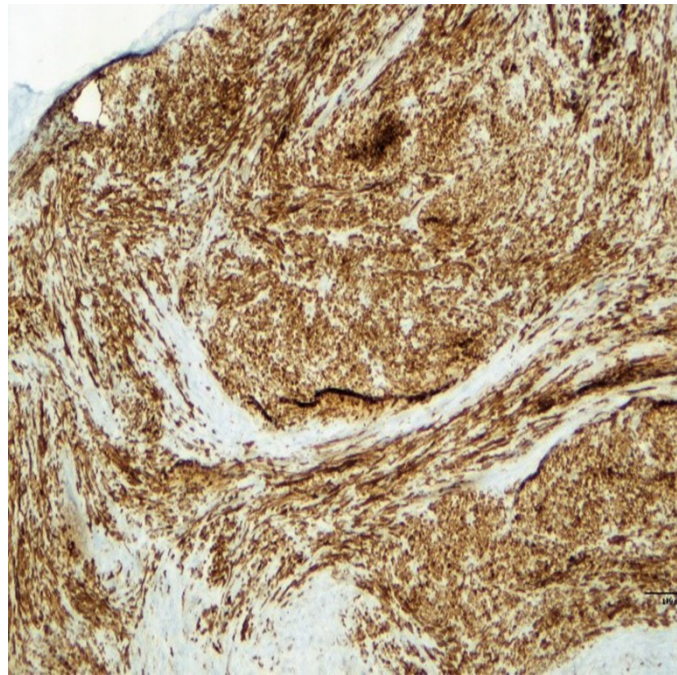
**Figure 3.** Smooth muscle tumors staining with H&E (H&E, 4x).

Histologically, the tumor consists of uniform compact spindle-shaped smooth muscle cells, cigar-shaped nuclei showing, neither atypia nor necrosis are usually present and the cells usually show SMA, desmin and caldesmon staining (4).



However, the only reliable predictor of malignancy is the mitotic rate where an arbitrary figure of 5 mitoses per 10 high power field is indicative of malignancy for leiomyomas outside the uterus (5).

Leiomyomas should always be considered in the differential diagnosis of patients presenting with tender, slow-growing masses, especially are in the 20-60 age group. Thorough clinical and radiological examination, and finally excision is essential for proper diagnosis.



**Figure 4.** Cytoplasmic staining of spindle cells with Desmin (Desmin, Immunohistochemistry length 10x).

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None to declare.

**Conflict of Interest**

None to declare.

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