

Giant Cutaneous Leiomyoma of Scalp

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Abstract

Leiomyomas are benign tumors arising from smooth muscle, most commonly seen in uterine myometrium, gastrointestinal tract, skin, and lower extremities of middle-aged women. Leiomyomas of head and neck region account for less than 1% of all leiomyomas. The most common site of leiomyoma in the head and neck region is the lips followed by tongue, and other maxillofacial regions. The clinical features, etiology, differential diagnosis, and treatment of leiomyoma are discussed in this case report. The aim of this case report is to raise awareness about a rare form of scalp giant giant leiomyoma. This could expand its consideration as a possible cause of uncertain neoplasms and promote accurate clinical diagnosis, leading to better treatment results.

Keywords

- giant leiomyoma
- neurosurgery
- scalp leiomyoma

Introduction

Leiomyoma is a benign tumor that can occur in any location with smooth muscle with uterus being most common location of leiomyoma and scalp leiomyoma rarely reported.¹

right occipital swelling with regular margins, firm to hard, and with normal skin. The swelling was in the subcutaneous plane, noncompressible, mobile from underlying bone with negative transillumination test (**►Fig. 1**). Intraoperatively, the tumor was firm in consistency and vascular with scalloping of the occipital bone underneath (**►Fig. 1**).

Clinical Presentation

A 30-year-old woman presented with a painless swelling in the right occipital region. There were no complaints of headache, vomiting, and neuromuscular deficits. On examination, there was a 12 cm X 9cm X 6 cm sized freely mobile globular, smooth

Radiology

Preoperative computed tomography brain plain (**►Fig. 2**) showed a swelling in the suboccipital region extending to the upper neck region with no intracranial extension.



Fig. 1 Lateral view showing preoperative size of tumor and operative specimen of $12 \times 9 \times 6$ cm.

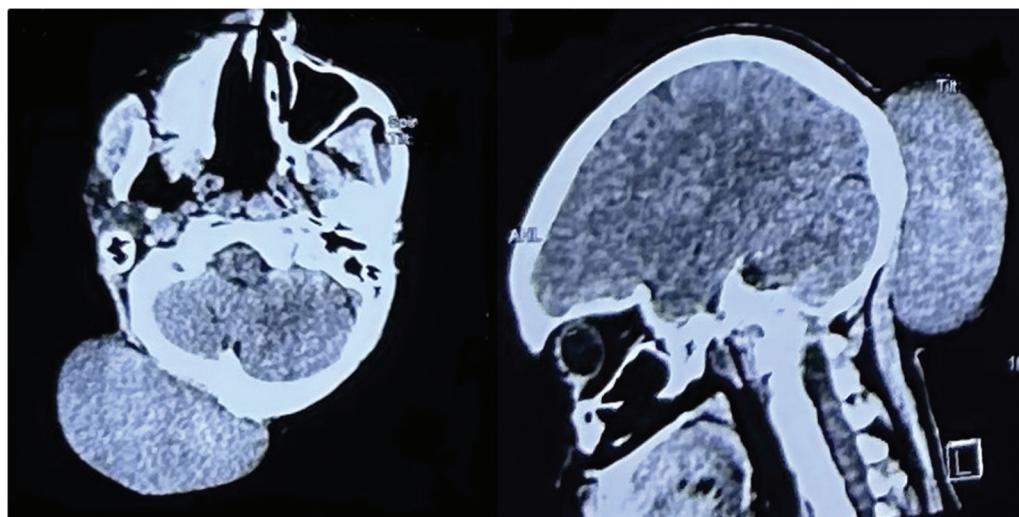


Fig. 2 Preoperative computed tomography brain plain axial and sagittal image showing the tumor with no intracranial extension.

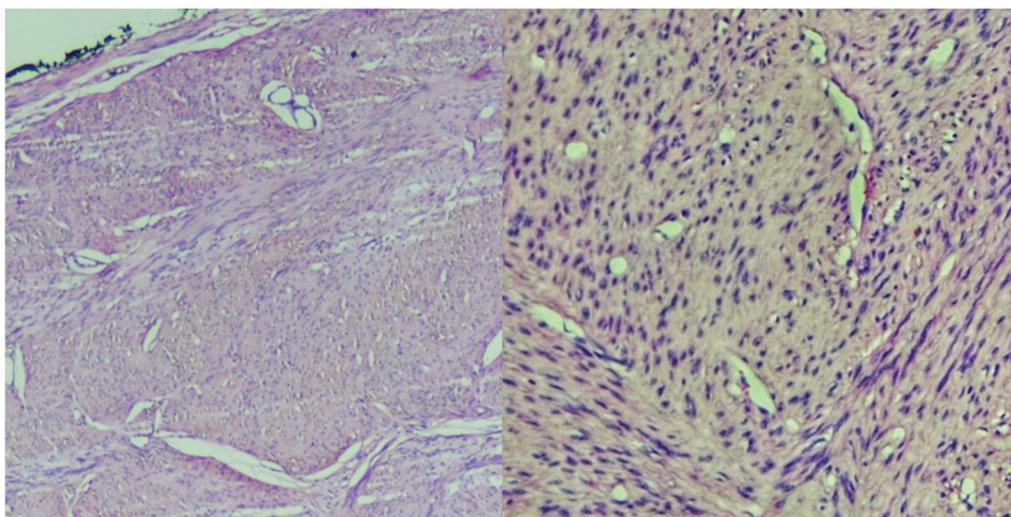


Fig. 3 Interlacing fascicles of benign spindle-shaped cells (40x); Benign spindle cells with indistinct cell borders, moderate eosinophilic cytoplasm and spindle shaped nuclei (100x).

Histopathology

Tumor was encapsulated and composed of spindle cells arranged in interlacing fascicles and whorls, showing minimum pleomorphism without necrosis or an increase in mitotic activity (**►Fig. 3**).

Discussion

The characteristics of different types of cutaneous leiomyomas is depicted in **►Table 1**. Solitary leiomyoma has indistinct boundaries and consists of intertwined

smooth muscle bundles with mixed collagen bundles. They possess elongated nuclei with blunt edges and exhibit low mitotic activity. Previously five cases of scalp leiomyoma have been reported.¹⁻⁵ The reported cases of scalp leiomyoma are detailed in **►Table 2**. Most patients had scalp lesions for a long time without pain. No mitotic figures were found in our case. Solitary lesions are usually amenable for complete surgical resection and recurrence is rare; however, complete excision is not possible with multiple lesions and they usually have higher rates of recurrence.^{6,7} Surgical excision is the best treatment for solitary scalp lesions.

Table 1 Characteristics of cutaneous leiomyoma

Type of cutaneous leiomyoma	Origin	Multiplicity	Age of onset	Gender	Typical appearance	Most common involvement	Pain	Location	Key features
Piloleiomyoma	Pilomotor muscle	Solitary or multiple	Adolescent	Equal distribution	Red brown firm rounded or oval smooth nodules	Extensor surface of the extremities	Present	Dermal layer	Composed of thin-walled vessels and surrounded by dermal collagen matrix. Relatively less well-defined than vascular leiomyoma
Genital leiomyoma	Smooth muscle cells of scrotum or labia	Solitary	35–50 years	Female more than males	Round or oval, painful, tender, firm and inflamed nodule	Areola of the nipple, scrotum, labium, penis, and vulva	Absent	Smooth muscle cell layer	More circumscribed and more cellular
Vascular leiomyoma	Media of vessel	Solitary more common than multiple	40–60 years	More common in female	Greyish white to brown appearance circumscribed solitary painful masses usually < 3 cm	Lower extremities	Present	Subcuticular layer	Composed of thick-walled vessels. Well circumscribed

Table 2 Reported cases of scalp leiomyoma

Study Id	Country	Age/Gender	Size (cm)	Location	Appearance	Duration	Pain	Treatment	Histopathology
Lotfi et al 2010 ⁵	Iran	5 months/male	2 × 3 × 0.5	Occipital	Smooth, firm, non-tender, pink, and semimobile mass with ulcerated center and crusting	Appeared 1 week after birth	Absent	Surgical excision	Nonencapsulated mass in dermis composed of spindle cells with no mitotic activity. IHC positive for smooth muscle actin and vimentin, negative for S100. Masson trichrome staining was positive
Kim et al 2011 ⁴	Korea	77 years/male	5.5 × 4.5	Forehead	Solitary erythematous indurated dermal nodule with yellowish papules and telangiectasia	50 years	Present	Surgical excision	Hyperplastic epidermis, muscles cells filled dermis and extended into subcutaneous fat, confirmed with Masson-trichrome staining on IHC. No cellular atypia
Arishima et al 2013 ²	Japan	6 years/male	2 cm in diameter	Top of head	Hard, firm	1 year	Absent	Surgical excision	Spindle cell neoplasm with numerous blood vessels and <1 mitosis/high power field. IHC positive for smooth muscle actin and negative for S100. Vascular leiomyoma
Fatima et al 2015 ¹	India	22 years/male	5 × 3 × 2	Right scalp	Solitary circumscribed red brown color, soft swelling	6 months	Present	Surgical excision	Well circumscribed and lobulated with cells arranged in a whorl like pattern. Tumor cells are composed of spindle cells and smooth muscle cells. No mitotic figures. Masson trichrome staining was positive
Kim et al 2017 ³	Korea	31 years/male	1 × 1	Frontal	Firm and pinkish mass	18 months	Absent	Surgical excision	Non encapsulated spindle cells arranged in whorls. No mitotic figures. IHC positive for actin and negative for S100
Present case	India	30 years/female	12 × 9 × 6	Occipital	Globular, smooth firm with well-defined margins	1 year	Absent	Surgical excision	Spindle cells arranged in whorls. No mitotic figures

Abbreviation: IHC, immunohistochemistry.

Conclusion

Diagnosis of cutaneous leiomyomas relies more on histological examination. Complete excision of solitary scalp leiomyoma with clear margins is the appropriate treatment.

Ethical Approval Statement

The study was started after the approval from institutional ethical committee.

Conflict of Interest

None declared.

References

- 1 Fatima Q, Singh O, Kothari DC, Godara SK. Cutaneous leiomyoma of scalp: a rare case report with review of literature. Intern J Res Med Sci 2014;3(04):993–997
- 2 Arishima H, Takeuchi H, Kitai R, Yamauchi T, Kikuta K. Vascular leiomyoma of the scalp with a small deformity on the skull mimicking a dermoid cyst. Pediatr Dermatol 2013;30(03): e27–e29
- 3 Kim DH, Lee JS, Kim JA, Lee JH. Solitary piloleiomyoma in the scalp. Arch Craniofac Surg 2017;18(01):62–64
- 4 Kim GW, Park HJ, Kim HS, et al. Giant piloleiomyoma of the forehead. Ann Dermatol 2011;23(Suppl 2):S144–S146
- 5 Lotfi S, Ghalamkarpour F, Rahimi H, Kani ZA, Yousefi M, Qaisari M. An ulcerated tumor in an infant. Dermatol Online J 2010;16 (04):9
- 6 Veeresh M, Sudhakara M, Girish G, Naik C. Leiomyoma: a rare tumor in the head and neck and oral cavity: report of 3 cases with review. J Oral Maxillofac Pathol 2013;17(02): 281–287
- 7 Holst VA, Junkins-Hopkins JM, Elenitasas R. Cutaneous smooth muscle neoplasms: clinical features, histologic findings, and treatment options. J Am Acad Dermatol 2002;46(04):477–490, quiz, 491–494