

Case Report

Giant frontoparietal scalp lipoma presenting as a massive cranial swelling: clinicoradiological, cytological and histopathological correlation

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Received: 23 June 2026

Accepted: 20 July 2026

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ABSTRACT

Lipomas are the most common benign mesenchymal tumors composed of mature adipocytes. While frequently encountered in the trunk and extremities, giant lipomas of the scalp are rare owing to limited subcutaneous tissue and cosmetic concerns prompting early treatment. A 59-year-old male presented with a gradually progressive swelling over the left frontoparietal scalp for 14 years in OPD of Department of General Surgery of Saraswathi Institute of Medical Sciences, Hapur, U.P., India. Examination revealed a painless, well-circumscribed, soft-to-firm swelling measuring approximately 11×8 cm with normal overlying skin. Ultrasonography demonstrated a well-defined heterogeneous hyperechoic lesion measuring 11.1×8.6 cm in the subcutaneous plane without internal vascularity, suggestive of lipoma. Fine-needle aspiration cytology showed mature adipocytes without atypia, favoring a lipomatous lesion. The patient underwent complete surgical excision under appropriate anesthesia. Intraoperatively, a large encapsulated adipocytic mass was identified and excised en bloc. Histopathological examination confirmed lipoma. Postoperative recovery was uneventful. Giant scalp lipomas are uncommon and may attain considerable size before presentation. Imaging, cytology, and histopathology are useful for diagnosis. Complete surgical excision remains curative with excellent cosmetic and functional outcomes.

Keywords: Giant scalp lipoma, Benign adipocytic tumor, Frontoparietal swelling, Surgical excision, Case report

INTRODUCTION

Lipomas are benign tumors arising from mature adipose tissue and constitute the most common soft-tissue neoplasms encountered in clinical practice.¹ They usually occur in the trunk, shoulder region, neck, and proximal extremities.² Scalp lipomas are relatively uncommon owing to the limited amount of subcutaneous adipose tissue in this region.³ Giant lipomas are generally defined as lesions measuring more than 10 cm in at least one dimension or weighing more than 1000 g.⁴ Such lesions are rare and may pose diagnostic and reconstructive challenges owing to their size and location.^{4,5}

CASE REPORT

A 59-year-old male presented to the OPD of Department of Surgery of Saraswathi Institute of Medical Sciences, Hapur, U.P., India with complaints of a progressively enlarging swelling over the left side of the scalp for 14 years.

The swelling initially appeared as a small painless nodule and gradually increased in size. There was no history of trauma, pain, headache, neurological symptoms, ulceration, discharge, bleeding, fever, weight loss, or rapid increase in size.

The patient had no significant medical comorbidities such as hypertension, diabetes mellitus, chronic obstructive pulmonary disease, asthma, thyroid disease, or ischemic heart disease.

Clinical examination

General physical examination was unremarkable. Local examination revealed a solitary, well-defined, dome-shaped swelling over the left frontoparietal region of the scalp measuring approximately 12×8 cm. The swelling was non-tender and soft to firm in consistency, with free mobility over the underlying structures and no fixation to the underlying calvarium. The overlying skin appeared normal without evidence of ulceration, sinus formation, or discoloration. There was no associated local rise in temperature, and no regional lymphadenopathy was detected on examination. Provisional diagnosis of scalp lipoma was considered.



Figure 1: Clinical picture showing giant lipoma over frontoparietal region of scalp.

Investigations

Skull radiograph demonstrated a large extracranial soft tissue swelling without evidence of calvarial erosion or intracranial extension.



Figure 2: X-ray of scalp suggestive of extracranial swelling without calvarial erosion.

Ultrasonography showed well-defined heterogeneous hyperechoic lesion of size approximately 11.1×8.6 cm in

subcutaneous plane with no internal vascularity on color doppler.

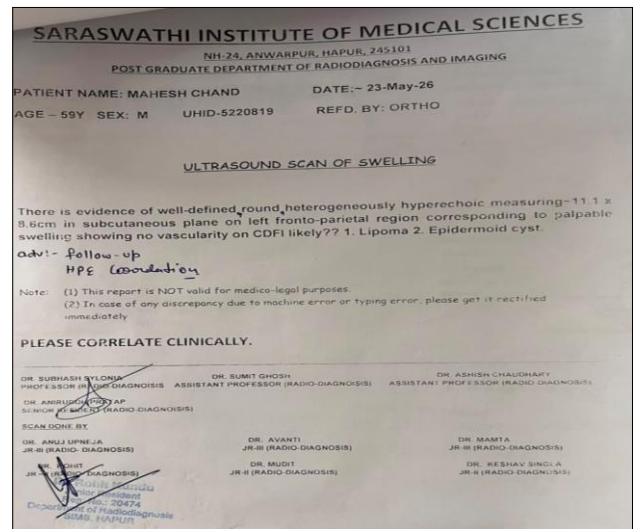


Figure 3: Ultrasound of scalp suggestive of subcutaneous well defined heterogeneous hypoechoic frontoparietal swelling.

Fine needle aspiration cytology smears revealed mature adipocytes, fibroadipose tissue fragments, intervening capillaries, no atypia and no granulomatous pathology suggestive of lipomatous lesion.



Figure 4: Fine needle aspiration cytology suggestive of lipomatous lesion.

Surgical management

After routine preoperative evaluation and obtaining informed written consent, the patient was taken up for surgical excision under general anesthesia. The patient was positioned supine, and the scalp was prepared and draped in a sterile fashion. An elliptical incision was made over the swelling, and skin flaps were carefully elevated. On dissection, a large well-encapsulated adipocytic mass was identified in the subcutaneous plane. Circumferential blunt and sharp dissection was performed

meticulously while preserving the surrounding tissues. The tumor was excised completely and delivered intact along with its capsule. Hemostasis was secured, and the operative field was irrigated thoroughly. A closed suction drain was placed in the wound bed, following which layered wound closure was performed. A pressure dressing was applied, and the patient was shifted to the recovery room in a stable condition.

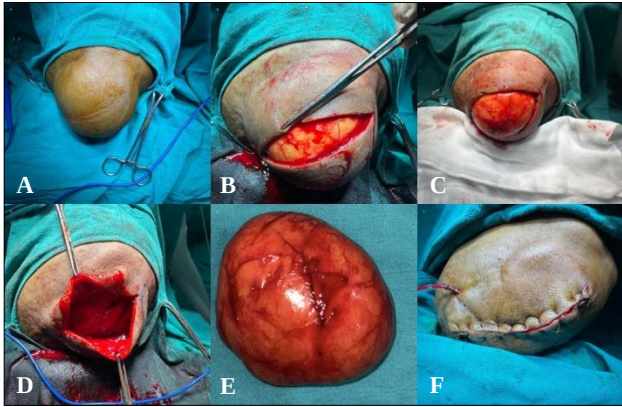


Figure 5: Excision of giant lipoma over the frontoparietal region. (A) Preoperative photograph showing a large, well-circumscribed swelling over the frontoparietal scalp region; (B) skin incision made over the most prominent part of the swelling; (C) intraoperative dissection demonstrating exposure and mobilization of the encapsulated lipomatous mass; (D) surgical bed following complete excision of the tumor, showing the residual cavity; (E) gross specimen of the excised lipoma after removal; (F) final wound closure with placement of a suction drain.

Specimen was sent for histopathological examination which was suggestive of lipoma.

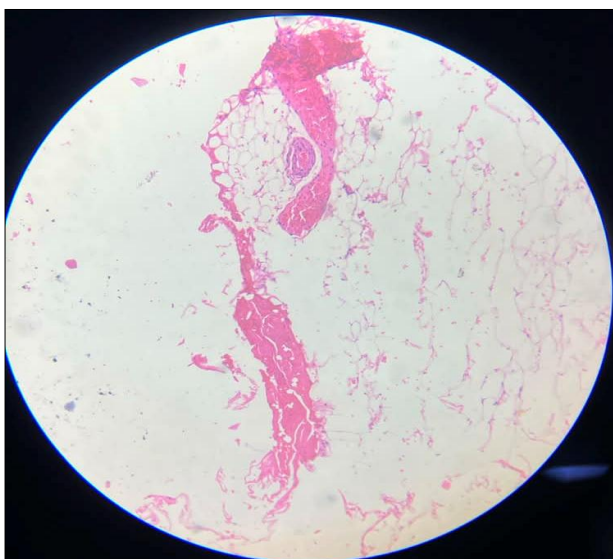


Figure 6: Histopathology suggestive of Lipoma.

Post operative period was uneventful. Patient was discharged the on day 3 after removal of drain and then followed up on day 9 for removal of sutures. Patient has no complaints on one month follow up and was satisfied with the scar.



Figure 7: Clinical picture showing post op scar after drain removal.

DISCUSSION

Lipomas are benign mesenchymal tumors composed of mature adipocytes and account for a substantial proportion of soft-tissue tumors.¹ Although common, giant lipomas of the scalp are rare.⁴ Their slow growth and painless nature often result in delayed presentation, allowing them to attain considerable dimensions before medical consultation.^{4,6}

The differential diagnosis of a large scalp swelling includes epidermoid cyst, dermoid cyst, trichilemmal cyst, neurofibroma, hemangioma, and liposarcoma.^{2,7} Careful clinical examination, imaging studies, and cytological evaluation help narrow the differential diagnosis.

Ultrasonography is often the first-line imaging modality and typically demonstrates a well-defined hyperechoic lesion with absent internal vascularity.⁷ FNAC can provide valuable preoperative information; however, histopathological examination remains the gold standard for diagnosis.⁸

Complete surgical excision with removal of the capsule remains the treatment of choice.^{9,10} Recurrence is uncommon when complete excision is achieved.⁹ In the present case, the lesion measured more than 10 cm clinically and radiologically and had been present for 14 years, making it an unusual presentation. Successful en bloc excision with primary closure resulted in excellent functional and cosmetic outcomes.

The present case fulfills the clinical criteria of a giant lipoma based on preoperative dimensions exceeding 10 cm and contributes to the limited literature describing giant scalp lipomas with comprehensive clinicoradiological, cytological, operative, and histopathological correlation.^{4,5}

CONCLUSION

Giant scalp lipomas are rare benign tumors that may attain massive dimensions due to slow asymptomatic growth. Careful clinical assessment supported by imaging and cytology facilitates diagnosis. Complete surgical excision provides definitive treatment with excellent cosmetic results and minimal recurrence risk.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Singh A, Saluja S, Khavya AR. Giant frontoparietal scalp lipoma presenting as a massive cranial swelling: clinicoradiological, cytological and histopathological correlation. Int Surg J 2026;13:1554-7.