




# Purely Intramuscular Giant Epidermoid Cyst of the Temporalis Muscle

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## Introduction

An 18-year-old lady presented with a right temporal region swelling that was progressively increasing over several years duration. There was no history of trauma, and the lesion was nontender, soft, noncompressible, not attached to skin, approximately 10 × 9 cm in size and showed no transillumination. The skin over the swelling was normal and the lesion became slightly less prominent when the patient clenched her teeth indicating that it was probably below the temporalis fascia. Magnetic resonance imaging (MRI) scans showed a well-demarcated T2 hyperintense and T1 hypointense lesion within the substance of the temporalis muscle (→Fig. 1A–C). The underlying skull was normal, and the lesion had no intracranial extension. There was no enhancement on administration of contrast. There was diffusion restriction of the lesion on diffusion-weighted imaging (DWI) sequences (→Fig. 1D).

The patient underwent excision of the lesion under general anesthesia. Intraoperatively the lesion was within the substance of the thinned out right temporalis muscle and was accessed after opening the temporalis fascia (→Fig. 1E). It had a firm capsule that was opened and cheesy toothpaste like material and strands of hair were removed piecemeal from inside the lesion (→Fig. 1F). The cyst wall was then easily separated off the muscle fibers and total removal was achieved with closure of the temporalis fascia (→Fig. 1G). Histopathology was reported as an epidermoid cyst. Her postoperative course was uneventful.

## Discussion

*Pure intramuscular* epidermoid cysts with no connection to the overlying skin are rare lesions.<sup>1</sup> The two hypotheses for

their origin include either epidermal cells driven inwards by trauma in the distant past or following aberrant implantation of ectoderm during embryogenesis.<sup>1,2</sup> They enlarge due to slow accumulation of secretions inside them, and the term giant epidermoid cyst is used when the size of the lesion is greater than 5 cm in size.<sup>3</sup>

A literature review showed purely intramuscular epidermoid cysts, though rare, that have previously been described in the erector spinae,<sup>1</sup> forearm,<sup>2</sup> and gluteal muscles.<sup>4</sup> We found no instance prior to this of an epidermoid cyst in the temporalis muscle. The commonest lesions described in the substance of the temporalis muscle are hemangiomas,<sup>5,6</sup> which are hypo- to isointense to temporalis muscle on MRI on T1 imaging, hyperintense on T2 imaging, show contrast enhancement and may contain hemosiderin, calcification, and areas of thrombosis and fibrosis, none of which were present in our case. We had not paid cognizance to the diffusion restriction on DWI sequences that might have made us consider this diagnosis preoperatively.

## Conclusions

Epidermoid cyst purely within the temporalis muscle with no cutaneous connection is a previously unreported entity. As it grows slowly and is painless, it may reach a large size before the patient seeks medical attention. Imaging findings of absence of contrast enhancement and diffusion restriction in DWI sequences on MRI can help clinch this diagnosis preoperatively. As such cysts have no cutaneous connection or punctum, there is no need to remove any skin along with the lesion. Complete excision of the cyst wall is recommended to prevent any recurrence.

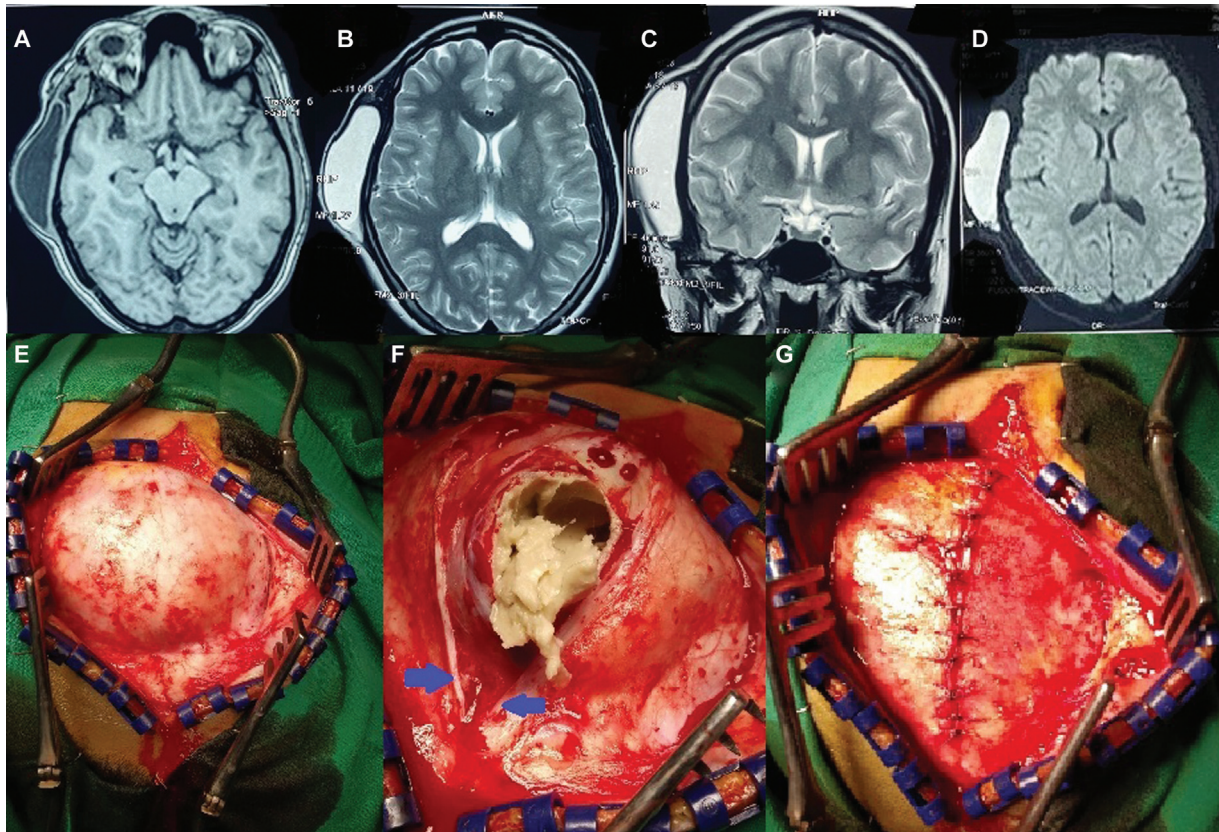
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**Fig. 1** Magnetic resonance imaging showing an encapsulated well-defined lesion, with no intracranial extension in right temporalis muscle (A). The lesion is hypointense to the muscle on T1 sequences and hyperintense to the muscle on T2 axial (B) and coronal images (C). It shows diffusion restriction on diffusion-weighted imaging sequences (D). Intraoperative images showing (E) lesion to be beneath the temporalis fascia; (F) cheesy material and hair seen after the capsule is opened while piecemeal removal is carried out. The cut edges of the temporalis muscle are shown (blue arrows); and (G) temporalis fascia resutured after complete removal of lesion with capsule.

**Informed Consent**  
Received.

**Conflict of Interest**  
None declared.

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