Cirroid aneurysm of scalp: demonstration on CT angiography (CTA)

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DESCRIPTION

A 16-year-old girl presented with a progressively increasing pulsatile subcutaneous scalp swelling with linear tortuous structures in the frontoparietal region. A loud bruit was heard on auscultation. General examination and haematological investigations were

unremarkable. In suspicion of arteriovenous malformation a CT angiography (CTA) was performed which showed a large vascular mass formed of bunch of dilated and tortuous vessels in the scalp. Feeders from bilateral superficial temporal arteries were identified with venous drainage by superficial scalp veins

Figure 1 (A and B) CT angiography volume rendered images in anteroposterior and lateral oblique views show a vascular mass (*curved arrow*) composed of a bunch of tortuous vessels in the scalp subcutaneous plane of frontoparietal region. The arterial feeders (*arrow*) from both superficial temporal arteries (*arrow head*) are supplying the lesion.

Figure 2 (A and B) CT angiography maximum intensity projection images of neck vessels and brain showing a vascular malformation (*curved arrow*) in a scalp subcutaneous plane with arterial feeders (*arrow*) from bilateral superficial temporal arteries (*arrow head*). Neck vessels including bilateral carotid and vertebral arteries are unremarkable.

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To cite: Goel V, Verma AK, Singh S, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-202459

Figure 3 (A and B) Axial maximum intensity projection images of superior part of the head showing subcutaneous vascular scalp lesion in the superior frontal region (arrow).

(figures 1–3). On the basis of clinical and CTA findings a final diagnosis of cirroid aneurysm was made. The patient underwent open surgery with ligation of the feeders and excision of the arteriovenous fistula (AVF).

Cirroid aneurysm of the scalp is an AVF having abnormal connections between the feeding arteries and draining veins, without an intervening capillary bed.¹ They are usually congenital in aetiology, however, traumatic fistulas have also been described.² In the majority (~90%) of the patients, the superfi-

cial temporal artery is the main supply to the fistula with one dominant feeding artery in 71% of patients.³ Patients usually present with progressively increasing compressible, pulsatile scalp swelling with some facial disfigurement and a loud bruit on auscultation.

Imaging plays an important role in the diagnosis. CTA gives the actual location and extension of the lesion along with its relation to adjacent cranial structures. Over all CTA traces arterial feeders and venous drainage accurately and acts as a pivot in planning the appropriate treatment. Catheter angiography is still the gold standard with its therapeutic benefits in endovascular treatment.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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Learning points

- Cirroid aneurysm is an arteriovenous fistula (AVF).
- Majority of the scalp AVF are supplied by either one or both the superficial temporal arteries.
- A CT angiography can play a pivotal role in planning the treatment by tracing the feeder vessels and giving the relation of lesion with adjacent structures.
- Catheter angiography is still a gold standard technique with therapeutic benefits.

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