

## Surgical Excision of Cirroid Aneurysm of the Scalp without Preoperative Embolization : A Better Strategy



### Medical Science

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### ABSTRACT

*Cirroid aneurysm of the scalp are rare disorders, they can cause headaches , excessive bleeding when traumatized , epilepsy , tinnitus and deformity. They are rare arteriovenous fistulas of the scalp.They are currently diagnosed by digital subtraction angiography , CT Angiography , MRI and MR Angiography. The choice of treatment method should be based on a range of typical characteristics of the lesion, including angioarchitecture, size and clinical presentation. Endovascular embolization was described either alone or prior to surgery in order to minimize the risk of bleeding. However, the endovascular therapy also carries the risk of scalp necrosis, button hole formation , escape of embolization material to circulation, and recurrence of the lesion. Here we present a case report of a patient with similar complaints and surgical excision without preoperative embolization was found to be beneficial and there were less complication and both surgeon and patient were satisfied with the results.*

### INTRODUCTION

Cirroid aneurysm of the scalp were first described in 1833 by Brecht and is used to describe a fistulous connection between the arterial feeding vessels of the scalp and the draining veins without an intervening capillary bed. They are rare arteriovenous fistulas of the scalp and are usually congenital in aetiology. Whatever the cause, the signs and symptoms are similar, including pulsatile scalp masses, headache, hemorrhage and facial deformity.

In 90% of the patient the superficial temporal artery is the main supply to the fistula with only one dominant feeding artery in 71% of patients. In the remaining cases , there is usually involvement of both the superficial temporal and occipital artery. Untreated patients can develop progressive scalp and facial cosmetic deformity from the markedly tortuous subcutaneous vessels.

The treatment of these lesions is difficult because of their complex vascular anatomy, high shunt flow, and cosmetic disfigurement. The treatment options of these lesions include endovascular treatment, direct intralésional injection of sclerosing agents, ligation of feeders, and surgical excision. We hypothesize that a well-planned surgical excision without preoperative embolization is sufficient to achieve satisfactory outcome for management of cirroid aneurysm.



### CASE REPORT

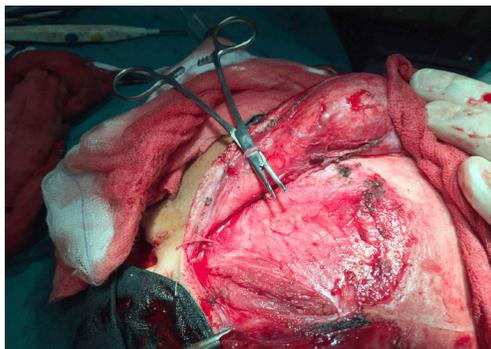
A 30 yr old male presented with continuous progressive pulsatile swelling on the left side of the scalp associated with continuous headaches for five years with colour changes of the scalp with impending necrosis.

General physical examination was normal. Local examination revealed a pulsatile swelling on the left fronto-temporal region of the scalp. Few dilated veins were noted in this region. On auscultation a bruit was detected over the lesion. Other systemic examination was normal , including thyroid and musculoskeletal system.

Patient underwent CT Angiography of the brain . Aneurysmal dilated mass of vessels were detected in the left fronto-temporal region of the scalp in the subcutaneous plane

Feeding vessel was from the occipital artery posteriorly and the superficial temporal artery. Large draining veins were noted running anteriorly and posteriorly. The surgical approach was planned from examination and ct angiography findings.

The aneurysm was excised without any difficulty. Post operative period was uneventful and patient was discharged under satisfactory conditions.



## DISCUSSION

Cirroid aneurysm of the scalp are rare. They are due to abnormal vascular connection within the scalp between the external carotid artery and scalp veins. They may be congenital or traumatic in origin. Whatever the cause the signs and symptoms are similar, including pulsatile scalp masses, headache and haemorrhage.

Differential diagnosis of a pulsatile scalp swelling includes the superficial temporal artery aneurysm although it should be considered when a temporal region mass is evaluated.

Clinical manifestation may include a loud continuous bruit, haemorrhage and throbbing headache and severe cases scalp necrosis. Metastatic deposit from follicular carcinoma of thyroid have to be ruled out prior to the diagnosis of cirroid aneurysm. Surgery was chosen over endovascular and percutaneous occlusion of the fistula because of low incidence of complications like scalp necrosis and buttonhole formation. Total excision without scalp necrosis was the principal goal of the surgery.



## CONCLUSION

Well planned surgery of cirroid aneurysm of the scalp without preoperative interventions could achieve complete excision of the lesion without any residual masses or recurrence and with a low incidence of complications (skin necrosis, buttonhole formation).

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