Case Report

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Successful surgical management of post-traumatic cirsoid aneurysm

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ABSTRACT

Cirsoid aneurysms are rare arteriovenous malformations (AVM) of the scalp and extremities. They are commonly congenital but post-traumatic cirsoid aneurysms have also been reported. Clinical features include- gradually increasing swelling, pulsatile mass, bruit, headache and tinnitus. Post-traumatic aneurysms of the scalp are uncommon. We report a case with successful surgical excision of scalp AVM.

Keywords: Cirsoid aneurysm, Post traumatic AVM, Surgical excision

INTRODUCTION

Cirsoid aneurysms are rare arteriovenous malformations (AVM) of the scalp and extremities. They are commonly congenital but post-traumatic cirsoid aneurysms have also been reported.\(^1\) Clinical features include- gradually increasing swelling, pulsatile mass, bruit, headache and tinnitus. Treatment is by endovascular techniques-embolization (trans-arterial and trans-venous), surgical excision, en bloc resection of scalp lesion with primary closure or reconstruction and injection of sclerosing agent.\(^2\) We discuss a case of post traumatic AVM with successful surgical excision and good cosmetic outcome.

CASE REPORT

A 35-year-old male patient, presented with pulsatile swelling over right temporal scalp. Patient had history of accidental trauma with a sharp object 15 years back. A hematoma formed over site of trauma, which gradually subsided, hence he was not further evaluated. About 5 years later patient developed a slow growing tortuous pulsatile swelling over the same region. Now he complains of a painless swelling in the region, increasing in size over time with cosmetic disfigurement and

occasional tinnitus. On examination swelling of 8x5cm is present in the right temporal scalp (Figure 1).

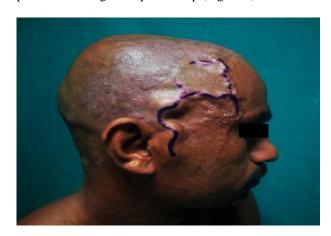


Figure 1: Pre-operative picture.

Palpable thrill and machinery murmur was present. No features of congestive cardiac failure or cardiomegaly present. MRI angiography revealed AVM in the right temporal scalp with arterial feeder from right superficial temporal artery, no intracranial communication. (Figure 2).



Figure 2: MRI angiogram image. (Red arrow shows dilated tortuous AVM seen on MRI angiogram).

Patient operated under general anaesthesia. Patient was positioned with a 30° elevation of head end. An inverted U shaped incision made over scalp. Superficial temporal artery identified and feeder to AVM was isolated, ligated and divided, other vessels were coagulated. Within the right temporalis muscle few vessels of the AVM were found which were ligated and divided. AVM was thus surgically excised. Post operatively all features of AVM disappeared, scalp healed well and patient was discharged (Figure 3). The pathological report confirmed AV fistula.



Figure 3: Post-operative picture.

DISCUSSION

Cirsoid aneurysms are abnormal arteriovenous communication situated within the subcutaneous fatty layer of the scalp. The aetiology is not well understood. Some are seen congenitally, others may have a history of trauma or iatrogenic intervention. It has been hypothesized that a functionally non-patent fistula may be present before the inciting incident, the abundant scalp collaterals aid in slow growth of the swelling and other associated symptoms once the fistula becomes functional.³ The main arterial feeders originate in the external carotid, occipital and supraorbital arteries. Superficial temporal artery is found to commonly feed post-traumatic cirsoid aneurysms, this may be accounted

to the long and superficial course of the artery on the scalp.⁴ Clinical features include slowly growing subcutaneous swelling, throbbing headache, pulsatile tinnitus, occasionally haemorrhage and rarely congestive heart failure in large AVMs. Diagnosis is made by careful clinical examination. Angiography is the gold standard test to define the origin and extent of the lesion. Varied treatment options are available- endovascular techniques, injection of sclerosing agents and surgical excision. Endovascular techniques involve placement of coils, gel foam or glues into the fistula or the mail feeders. Sclerosing agents like sodium tetradecyl sulphate and absolute alcohol have showed some success.

Complications include pain, hyperaemia over AVM site, patchy hair loss, escape of thrombogenic material into general circulation and recurrence. Surgical excision may involve significant per operative blood loss. In some cases preoperative endovascular intervention may be carried out to reduce the vascularity to the AVM. In large AVMs with thin scalp- excision and reconstruction may be advocated. Follow up of patients is mandatory as recurrences have been reported up to 18 years after treatment.

CONCLUSION

Post traumatic cirsoid aneurysms are rare. They present with their typical clinical picture. Investigation is by angiography- CT/MRI. Treated by surgical excision or endovascular techniques or by sclerotherapy.

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