10.5005/jp-journals-10003-1212

CASE REPORT

Bleeding Mass in the Ear: A Rare Etiology

[1]Bassin Thomas John, [2]Ann Mary Augustine, [3]Anjali Lepcha, [4]John Mathew, [5]Vinu Moses

ABSTRACT

We report a case of a 63 years old man who presented with a profusely bleeding mass in the left external auditory canal. He had been diagnosed to have left skull base osteomyelitis and had undergone surgery twice for the same. The mass was diagnosed radiologically to be a pseudoaneurysm arising from the left retroauricular artery. He subsequently underwent embolization of the retroauricular branch of the left external carotid artery following which the mass subsided and bleeding from the ear stopped.

Keywords: Ear canal mass, Ear mass, External ear, Malignant otitis externa, Pseudoaneurysm, Skull base osteomyelitis.

How to cite this article: John BT, Augustine AM, Lepcha A, Mathew J, Moses V. Bleeding Mass in the Ear: A Rare Etiology. Int J Otorhinolaryngol Clin 2015;7(3):144-146.

Source of support: Nil

Conflict of interest: None

INTRODUCTION

Profuse bleeding from the ear is rare and usually occurs secondary to skull base trauma, vascular tumors, such as glomus jugulare or vascular abnormalities. We present a rare case of profuse bleeding from the ear secondary to a pseudoaneurysm of the retroauricular artery.

CASE REPORT

A 63 years old gentleman, a known diabetic for 20 years presented to our emergency department with complaints of profuse spontaneous bleeding from the left ear for 10 days. He claimed to have had nearly 6 episodes of ear bleed with approximately 100 ml of blood loss during each episode. The bleeding was controlled on applying pressure.

He gave history of left ear pain, mucopurulent discharge and decreased hearing in the same ear for 6 months followed by decreased eye closure on the left side and deviation of the angle of the mouth to the right. He visited a local hospital where he underwent left ear cortical mastoidectomy with left facial nerve decompression 5 months ago. Histopathological examination of the tissue from the ear showed granulation tissue. Details of the intraoperative findings were not available. He was treated as a case of left ear chronic otitis media squamosal disease with underlying skull base osteomyelitis and was started on intravenous antibiotics.

As his pain, ear discharge, hearing loss and facial palsy did not improve; he consulted another ENT surgeon and underwent modified radical mastoidectomy 4 months after the first surgery.

Three weeks following this second surgery he began to have spontaneous profuse bleeding from the left ear.

Left ear examination revealed a pulsatile mass almost filling the external auditory canal with fresh clots in the ear (Fig. 1). Left postoperative mastoid cavity could also be visualized partially. There was a well-healed postaural surgical scar. The right ear was normal. He had a left sided grade 4 (House-Brackmann) lower motor neuron facial palsy. He was also found to have an absent gag reflex on the left and left vocal cord palsy. Audiogram done showed profound hearing loss in the left ear and a moderate to moderately severe mixed hearing loss in the right ear. His packed cell volume at admission was 24% and his fasting and post prandial blood sugars were 246 mg/dl and 312 mg/dl respectively. His platelet count, prothrombin time and activated partial thromboplastin time were normal.

The magnetic resonance imaging (MRI) and computed tomography (CT) of the left temporal bone showed features of left side skull base osteomyelitis. There was

Fig. 1: Mass filling left external auditory canal

[1-5]Consultant

[1-4]Department of ENT, Christian Medical College and Hospital Vellore, Tamil Nadu, India

[5]Department of Radiology, Christian Medical College and Hospital, Vellore, Tamil Nadu, India

Corresponding Author: Bassin Thomas John, Consultant Department of ENT, Christian Medical College and Hospital, Vellore Tamil Nadu, India, Phone: 9159074660, e-mail: btjoman@yahoo.com

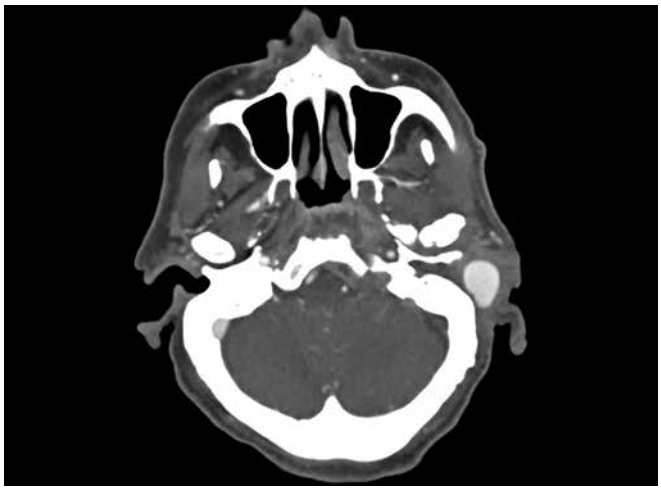

Fig. 2: Computed tomography angiogram showing saccular aneurysm in the left external auditory canal

Fig. 3: Angiogram showing pseudoaneurysm arising from left retroauricular artery

heterogenous enhancement involving clivus, bilateral petrous bone, soft tissue in the external and middle ear and complete absence of ossicular structures.

A CT angiogram showed a saccular aneurysm in the left external auditory canal measuring 21 × 20 × 16 mm in close relation to the posterior auricular branch of the left external carotid artery (Fig. 2).

The patient was planned for a digital subtraction angiogram and transarterial embolization under local anesthesia.

Selective left common carotid and left external carotid artery angiogram showed a large pseudoaneurysm arising from the retroauricular branch of the left external carotid artery (Fig. 3). The retroauricular artery was selectively cannulated and the pseudoaneurysm was embolized with 20% N-butyl cyanoacrylate. Post embolization angiogram showed complete occlusion of the pseudoaneurysm.

During his hospital stay, he was transfused two units of packed red cells and was started on intravenous antibiotics based on pus culture reports. He was given injection ceftazidime 1 gm thrice daily and injection ciprofloxacin 200 mg twice daily.

Postembolization he did not have any further episodes of bleeding from the ear. He was discharged in a stable condition and advised to continue intravenous antibiotics at his hometown.

On the 3rd and 5th month postprocedure, he was reviewed in the ENT clinic. He had no further episodes of ear bleed, his pain had significantly decreased and his facial palsy had improved to grade 3 (House-Brackmann classification) (Fig. 4).

Fig. 4: Left ear endoscopy at 5th month showing a clear external ear canal

REVIEW OF LITERATURE WITH DISCUSSION

An aneurysm is an abnormal widening or ballooning of a part of an artery due to weakness in the wall of the blood vessel as a result of chronic inflammation of the vascular bed.[1]

Aneurysms can be acquired from arteriosclerosis, polyarteritis, fungal infections and syphilis. Chronic middle ear infections and cholesteatoma are other possible causes.[2]

The development of an aneurysm as a complication of mastoidectomy and skull base osteomyelitis has also been described.[2,3]

A pseudoaneurysm also known as a false or traumatic aneurysm results from the disruption of one of the three layers of the arterial wall. A periarterial hematoma then forms, confined by the bony and connective tissue boundaries. As a result of continuous exposure to the turbulent flow of blood in the parent artery, a cavity forms within the organized clot lined by laminated thrombus and proliferating fibrous tissue resulting in a pseudoaneurysm.[4]

Majority of pseudoaneurysms arise secondary to iatrogenic trauma, infection, vessel biopsy, head trauma, radiation therapy, surgical complications, tumor invasion, fibromuscular disease, or chronic otitis media.[5,6]

There are numerous case reports that describe pseudoaneurysms arising from internal carotid artery (petrous part) and superficial temporal artery post trauma, ear infections or skull base osteomyelitis but there are no known reports of pseudoaneurysm arising from posterior auricular artery branch of the external carotid artery in the English literature.[2,3,7,8]

Malignant otitis externa usually causes vessel injury leading to extravasation of blood from vessels like the internal carotid artery leading to periarterial hematoma. The hematoma expands until constrained by the resistance of the surrounding tissues. Fibrous tissue envelops the hematoma, creating a potential space occupied by the expanding artery. An endothelial layer forms the inner lining of the hematoma. The blood pressure forces flow through this space, causing gradual dilation and enlargement into an aneurysmal sac. Our patient had repeated surgeries which could also predispose to the development of the pseudoaneurysm.[9]

The suspicion of a pseudoaneurysm can readily be made on history and physical examination alone. However, colour Doppler, cross-sectional imaging (CT and MRI) and digital subtraction angiography can be used to make a diagnosis and to exclude other conditions, such as arteriovenous fistula or vascular tumor.[5,10]

Therapeutic options described for treating pseudoaneurysms include: conservative surveillance, compression, thrombin injection, catheter-based embolization, and surgical resection.[11]

Dominique et al describe in their literature review that majority of patients with pseudoaneurysms and all patients with true aneurysms underwent surgical excision, which consisted of ligation and resection of the pseudoaneurysm. More than half of the procedures were performed with the patient under local anesthesia.[11]

While earlier studies have described surgical resection or ligation of the feeding vessel as the predominant choice of treatment, endovascular embolization of the pseudoaneurysm is presently the preferred treatment option. Endovascular embolization in addition to being minimally invasive and painless, does not require general anesthesia, and provides better cosmesis.[4,11]

In this patient, pseudoaneurysm of the posterior auricular artery was treated successfully by embolization. There were no complications during the procedure and follow-up visits showed complete resolution of the pseudoaneurysm. A surgical intervention was probably also an equally feasible option for management considering the peripheral nature of the blood vessel involved.

CONCLUSION

Pseudoaneurysm of the retroauricular artery is a rare complication of skull base osteomyelitis and should be considered as a differential diagnosis in case of profuse bleeding from the ear especially with such a clinical background. Catheter based transarterial embolization is a minimally invasive procedure that can be used safely to manage this condition with good results.

REFERENCES

1. Chakraborti S, Chowdury A, Alam MN, Sarkar J, Mandal A et al. Vascular aneurysms: a perspective. Ind J Biochem Biophys 2014 Dec;51(6):449-456.
2. Baker A, Rizk H, Carroll W, Lambert P. Cervical internal carotid artery pseudoaneurysm complicating malignant otitis externa: first case report. Laryngoscope 2015 Mar;125(3): 733-735.
3. Barrett JH, Lawrence VL. Aneurysm of the internal carotid artery as a complication of mastoidectomy. Arch Otolaryngol Head Neck Surg 1960 Sep;72(3):366-368.
4. Glasscock ME, Smith PG, Bond AG, Whitaker SR, Bartels LJ. Management of aneurysms of the petrous portion of the internal carotid artery by resection and primary anastomosis. Laryngoscope 1983 Nov;93(11):1444-1453.
5. Mann GS, Heran MK. Percutaneous thrombin embolization of a post-traumatic superficial temporal artery pseudoaneurysm. Pediatr Radiol 2007 Jun;37(6):578-580.
6. Choi SH, Hyun P, Tae Kym, Chan S. Pseudoaneurysm of the petrosal internal carotid artery in the middle ear as a complication of middle ear cholesteatoma. J Audiol Otol 2015 Apr;19(1):58-61.
7. Archer SM, Jones RO. Traumatic pseudoaneurysm of the posterior auricular artery. South Med J 1992 Jan;85(1):47-48.
8. Henriksen SD, Kindt MW, Pedersen CB, Rasmussen HJN. Management of pseudoaneurysm of a lateral aberrant internal carotid arter. Int J Pediatr Otorhinolaryngol 2000 Apr 15;52(2):163-167.
9. Nadig S, Barnwell S, Wax M. Pseudoaneurysm of the external carotid artery: review of literature. Head Neck 2008 Jul; 31(1):136-139.
10. Bold EL, Wanamaker HH, Hughes GB, Kinney SE, Eliachar I, et al. Magnetic resonance angiography of vascular anomalies of the middle ear. Laryngoscope 1994 Nov;104(11 Pt 1): 1404-1411.
11. Dominique JP, Uden V, Truijers M, Schipper EE, Zeebregts CJ, et al. Superficial temporal artery aneurysm: diagnosis and treatment options. Head Neck 2013 Apr;35(4):608-614.