

Lateral sinus thrombosis following myringoplasty: a rare complication

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Abstract

Objective: We report lateral sinus thrombosis occurring as a rare complication following a routine and uneventful otological procedure.

Case report: Lateral sinus thrombosis is a rare but known complication of otitis media. It has not been documented as a complication of routine otological surgery. We present a case of this rare complication following a myringoplasty. We also discuss the presentation, investigation and treatment of lateral sinus thrombosis. It is essential to be able to recognise and treat this rare complication early, due to its high mortality rate.

Conclusion: Lateral sinus thrombosis is a rare but potentially life-threatening complication. It is therefore essential for clinicians to be able to recognise and treat this condition early.

Key words: Lateral Sinus Thrombosis; Myringoplasty

Introduction

Sigmoid sinus thrombosis is a rare but potentially fatal complication of otitis media. Widespread use of antibiotics has reduced the incidence of this condition. Broad spectrum antibiotics and canal wall up mastoidectomy are effective treatment for this condition. Anticoagulants represent another treatment option if they are administered with guidance from the haematologists.

This paper presents a unique case of sigmoid sinus thrombosis following a routine, uneventful otological procedure.

Case report

A seven-year-old Aboriginal girl underwent a right endaural myringoplasty performed utilising temporalis fascia via the same incision.

Two weeks following discharge from hospital, she presented to the emergency department with a 4-day history of headache, pyrexia, lethargy, photophobia and neck stiffness. She was admitted for intravenous broad spectrum antibiotics and investigation for meningitis and any complications following her recent surgery.

A computed tomography (CT) scan with contrast, performed on admission, revealed no intracranial collections. However, there was a filling defect suggestive of thrombosis of the sigmoid sinus, extending into the proximal internal jugular vein on the operated side (Figure 1). Magnetic resonance venography indicated that the thrombus involved the right lateral transverse sinus, sigmoid sinus and internal jugular vein (Figure 2).

The child was taken to the operating theatre for a lumbar puncture and right ear exploration. Examination of the ear

revealed an intact temporalis fascia graft with no evidence of middle-ear infection. Cortical mastoidectomy was performed, revealing well pneumatized mastoid air cells with no pus or granulation tissue. This ruled out an infective cause for the sigmoid sinus thrombosis. The sigmoid sinus plate was decompressed and a 23 gauge needle was used to define the extent of the thrombosis, with return of blood in both the lateral transverse sinus and the proximal internal jugular vein. Thrombectomy was not performed. Exploration of the mastoid air cells and surgical definition of thrombosis were felt to be necessary in order to augment the radiological findings. The senior author was of the opinion that, due to the patient's neurological symptoms, surgical intervention was required in addition to intravenous antibiotics, in order to facilitate a more favourable outcome.

Lumbar puncture results did not reveal any evidence of meningitis. In addition to the child's intravenous antibiotics (continued for six weeks), she was commenced on subcutaneous enoxaparin (1 mg/kg twice daily) for a period of three months, on the recommendation of the haematology team.

The child had a relatively uneventful hospital stay. She was discharged home following completion of her intravenous antibiotic therapy. At the time of writing, she was awaiting a second magnetic resonance venogram to assess for recanalisation of the sigmoid sinus.

Discussion

Otogenic sigmoid sinus thrombosis is a rare but potentially fatal complication. Multidisciplinary management is recommended involving both medical and surgical



FIG. 1

Coronal computed tomography scan with contrast, showing a filling defect in the right sigmoid sinus. A = anterior

modalities, and including the otolaryngologists, microbiologists and radiologists. If there are any intracranial complications, the neurosurgical team should be involved as well. Surgical therapy, including mastoid exploration, drainage of the perisinus air cells surrounding the sigmoid sinus, and decompression of the sigmoid sinus plate, should be sufficient. Some authors have advocated removal of the



FIG. 2

Axial magnetic resonance venogram demonstrating extensive thrombosis of the right lateral transverse sinus, sigmoid sinus and internal jugular vein.

thrombosed clot, but this has the inherent risk of causing septic emboli.¹

The role of intensive intravenous antibiotics is well defined. However, the use of anticoagulants is still largely unproven, with few reports in otolaryngology journals. There is no definitive consensus in otolaryngology textbooks regarding the use of anticoagulants in the management of sigmoid sinus thrombosis. Anticoagulant use has been prompted by the risk of embolisation and persistent septic thrombophlebitis. Cases of embolisation due to sigmoid sinus thrombosis have been reported, but the incidence has decreased markedly with broad spectrum antibiotics.² The risks inherent in anticoagulation itself should also be carefully considered prior to commencement; these include bleeding, thrombocytopenia, osteoporosis and haemorrhagic skin necrosis.³

- **Lateral sinus thrombosis is a rare, potentially life-threatening otological complication**
- **Its presenting symptoms and signs should be recognised early**
- **The first report of occurrence after routine otological surgery is presented**
- **Antibiotics and surgery are the mainstays of treatment**
- **Use of anticoagulation is still controversial**

It remains unclear whether anticoagulation treatment aids in recanalisation of the affected sinus, and whether patient outcomes are affected if recanalisation is achieved.⁴ Further investigations are required regarding the role of anticoagulation in recanalisation and the impact on patient outcome.

Conclusion

Even in the post-antibiotic era, lateral sinus thrombosis is still encountered as a complication of chronic suppurative otitis media. We highlight a case of this rare but potentially fatal condition following a routine and uncomplicated otological procedure. We therefore recommend that clinicians be vigilant in order to recognise the signs and symptoms of lateral sinus thrombosis as early as possible. These include headaches, otalgia, visual symptoms and 'picket fence' pyrexia.⁵ If lateral sinus thrombosis is suspected, CT with contrast should be obtained, looking for the 'empty triangle' ('delta') sign.³ Magnetic resonance venography is a useful adjunct for the identification of thrombosis in the sigmoid sinus, as evidenced by a flow void.⁶ The use of antibiotics and surgery in this condition is well defined, while that of anticoagulation is still controversial.

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