Otogenic Lateral Sinus Thrombosis in Children: A Review of Seven Cases

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ABSTRACT

Objective: Otogenic lateral sinus thrombosis (LST) is a rare but serious intracranial complication of acute or chronic otitis media (OM). Mortality rates for LST are quoted as 8-25% in most recent large case series. Controversy exists regarding the surgical and medical management of LST. We sought to clarify this by reviewing our experience in patients who presented with otogenic LST in the past eight years.

Methods: A retrospective chart review was conducted. Seven patients were identified and charts were reviewed for clinical presentation, co-existing intracranial complications, treatment, cultural outcomes, and outcome.

Results: Patients most commonly presented with fever (5/7), otalgia (5/7), and mastoid tenderness (4/7). Co-existing intracranial complications were present in 4/7 patients, including meningitis (1/7), epidural abscess (2/7), otitic hydrocephalus (2/7), and cavernous sinus thrombosis (1/7). All patients received IV antibiotics and underwent mastoidectomy with unroofing of the sigmoid sinus and tympanoantral tube placement. Thrombectomy was not performed on any patient. Anticoagulation was used on 5/7 patients without complication. Streptococcus sp. was the most common organism isolated (2/7). All patients recovered well without major sequelae. One patient with cavernous sinus thrombosis and otitic hydrocephalus had a persistent right visual field deficit.

Conclusion: In this limited series, we demonstrate good outcomes by emergently treating LST from an otitic source with mastoidectomy and unroofing of the sigmoid sinus, IV antibiotics, and selective anticoagulation. We did not find thrombectomy to be necessary.

INTRODUCTION

Otogenic lateral sinus thrombosis is a rare but serious intracranial complication of acute or chronic otitis media. Mortality rates are quoted as 8-25% in most recent larger case series1,2, but pediatric mortality rate may be as low as 5%. Controversy still exists over the medical and surgical management of this condition. Management has traditionally included intravenous antibiotic therapy and mastoidectomy with thrombus removal3-5. Anticoagulation is used peripherally in some cases, and its use continues to be an area of debate. Intravenous anticoagulation, historically a common part of surgical intervention, is no longer routinely employed6-8. Successful non-surgical management of otogenic lateral sinus thrombosis has recently been reported in highly selected patients9-12. We examined our recent experience in treating this rare condition.

METHODS & MATERIALS

A retrospective chart review was conducted from January 2000 to January 2008. Seven patients were identified with a diagnosis of otogenic lateral sinus thrombosis and their charts were examined for presentation, co-existing intracranial complications, treatment, cultural outcomes, and outcome.

CASE EXAMPLE

A ten-year-old female presented to the emergency room with a history of ataxia and blury vision. On physical exam she was noted to have papilledema and right otorrhea. CT scan demonstrated mastoid and ethmoid opacification on the right and a triangle of contrast-enhanced dura at the level of the sigmoid sinus, the so-called ‘delta’ sign (Fig. 1). MRV was obtained and demonstrated right sigmoid and transverse sinus thrombosis, right proximal internal jugular vein thrombosis, and bilateral cavernous sinus thrombosis (Fig. 2). The patient underwent urgent tympanoanctoidectomy with unroofing of the sigmoid sinus, BMTT, and right-sided FESS. In addition to IV antibiotics, the patient was anticoagulated post-operatively. The patient recovered well, but she was left with a persistent right visual field deficit. Repeat MRV two months post-op showed a persistent thrombus. An MRV obtained nine months after surgery demonstrated improved flow on the right side, but the thrombosis had not yet fully resolved.

RESULTS

Seven patients with otogenic lateral sinus thrombosis were treated at our institution in the eight years from 2000 to 2008. Patients most commonly presented with fever (5/7) and otalgia (5/7), followed by mastoid tenderness (4/7). Co-existing intracranial complications were present in four patients (57%). These included epidural abscess (2/7), otitic hydrocephalus (2/7), meningitis (1/7), and cavernous sinus thrombosis (1/7). Streptococcus sp., was the most common organism isolated (2/7). Table 1 summarizes the clinical presentations, intracranial complications, treatments, organisms isolated, and outcomes for our seven patients. All patients recovered well without major sequelae. One patient with cavernous sinus thrombosis and otitic hydrocephalus had a persistent right visual field deficit. All patients received intravenous antibiotics and underwent mastoidectomy with unroofing of the sigmoid sinus and tympanoantral tube placement. Sinus exploration with thrombectomy was not performed on any patient. Anticoagulation was used peripherally on five patients (71%) without complication.

CONCLUSIONS

In this limited series of seven patients treated in our institution over an eight year period, we demonstrate good outcomes by emergently treating lateral sinus thrombosis from an otitic source with mastoidectomy and unroofing of the sigmoid sinus, tympanoantral tube placement, intravenous antibiotics, and selective anticoagulation. In agreement with the trend toward more conservative surgical management, we did not find the trend toward thrombectomy to be necessary.

REFERENCES


Table 1: Summary of clinical presentation, intracranial complications, treatments, organisms isolated, and outcomes for our seven patients.