Pediatric Otolaryngologic Lateral Sinus Thrombosis: Role of Anticoagulation & Surgery
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INTRODUCTION

Otogenic lateral sinus thrombosis (OLST) is a rare complication of acute otomastoiditis. Classically, symptoms included “picket-fence” fevers, headache, photophobia, and malaise over the posterior portion of the mastoid (Figure 1). Now with widespread use of antibiotics to treat acute otitis media and agnogenic mastoiditis, OLST has been diagnosed rapidly. Previous large series have uniformly reported a mortality rate of 100% for untreated patients and a mortality rate of 50% when treated with antibiotics (Figure 2). With the advent of newer antibiotics the mortality rate for pediatric ODST has been reported to be 5% [1].

METHODS AND MATERIALS

Following IRB approval, the medical charts of all patients hospitalized at Children’s Hospital of Wisconsin between January 1, 1999 to February 14, 2011 were reviewed for cases corresponding with a diagnosis of lateral sinus thrombosis or sigmoid sinus thrombosis (ICD9 325, 437.6). Eighteen patients were identified with a median age of 7.5 years (IQR = 1-12) and a male to female ratio of 4:5. All patients had a history of acute otitis media or mastoiditis (ICD9 381.00-381.06, 382.00-382.02, 383.00-383.1) and diagnosis of lateral sinus thrombosis or sigmoid sinus thrombosis. Six patients underwent MRI and MRV (Figure 1B) and 1 patient underwent CT contrast CT in the detection of OLST 14, 15. Two of five contrasted CT scans in our series did not reveal thrombosis. These cases of OLST were confirmed with MRI. Our results confirm the increased sensitivity of MRI.

RESULTS

Presenting signs and symptoms were fever (n=6), otalgia (n=4), headache (n=2), vertigo (n=4), neck stiffness (n=1), nuchal rigidity (n=1). All but one patient had a history of acute otitis media or mastoiditis. Seven patients underwent myringotomy and tube placement, four patients had an aspiration of the sinus. All 19 patients were treated with anticoagulation. Seventeen patients received enoxaparin. Duration was given for 5 patients, which was between 3 weeks to 6 months (average 17.8 weeks). One patient received enoxaparin for 1 month and then converted to warfarin for 5 months. One patient received an anticoagulant with the name and duration reported.

Eight patients had a negative hypercoagulable workup. The only complication from anticoagulation use was an episode of epistaxis lasting less than 10 minutes that resolved with pressure at home.

CONCLUSIONS

The role of anticoagulation in the literature is unclear. Prevention of thrombosis progression or anticoagulation, and resolution of thrombus are not a good predictor of the use of anticoagulation. However potential complications of anticoagulation include bleeding, drug interactions, thromboplastinemia, anticoagulation, and hemorrhagic stroke. In addition most anticoagulants require either daily injections or weekly labs. In certain series of cases there was without consideration of anticoagulation. With a rate of requiring either further surgery or transillumination of blood clot at 90% and anticoagulation at 50%. In this series, all cases with evidence of thrombosis progression, thrombosis extending to other sites on initial exam ( jugular vein, transverse sinus, cavernous sinus), neurologic changes, persistent fevers, or embolic events received anticoagulation. Seventeen patients received enoxaparin. Duration was given for 5 patients, which was between 3 weeks to 6 months (average 17.8 weeks). One patient received enoxaparin for 1 month and then converted to warfarin for 5 months. One patient received an anticoagulant with the name and duration reported.

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REFERENCES

1. Discuss the presentation, work up, and treatment of a series of pediatric patients presenting with acute otologic lateral sinus thrombosis (OLST) and the role of anticoagulation in the treatment of this disease.

DISCUSSION

PEDIATRIC MEDICAL CENTER FOR CHILDREN'S HOSPITAL OF WISCONSIN

CONCLUSIONS

From this data we cannot draw conclusions in the terms of appropriate surgical treatment and medical management of the adult patients suffering from lateral sinus thrombosis. However, in the combined literature review and our series of the twenty to thirty, nearly all patients suffered from post-op bleed or hemorrhage, one requiring operative drainage of a post-op hemorrhage and another requiring repeated bed blood transfusions and fresh frozen plasma. Management of the other 2 postop bleeds or hemorrhage was not reported.

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