PostScript

LETTERS

Papilloedema secondary to otitic hydrocephalus

Otitic hydrocephalus was described by Sir Charles P Symonds upon his observation of intracranial hypertension occurring after otitis media with no clinical or serological evidence of meningeal inflammation.¹ In 1936, Ersner and Meyers proposed its pathophysiology to be the obliteration of the lateral cerebral sinus.² The introduction of antibiotics in the modern era has made the disease and its sequelae a rare phenomenon.³ A case of otitic hydrocephalus in a child, resulting in papilloedema with visual loss, is described.

Case report

A 5 year old female presented with pansinusitis, bilateral mastoiditis, and thrombosis of the right lateral sinus demonstrated by magnetic resonance imaging (MRI) and venography (fig 1A). Medical history was insignificant. Cerebral spinal fluid from a lumbar puncture was unremarkable for

composition or micro-organisms. Intravenous antibiotics were initiated. Bilateral placement of pressure equalisation tubes and a right tympanomastoidectomy were performed. The later procedure was complicated by a cerebrospinal fluid leak and necessitated a temporary lumbar drain. Cultures from mastoid surgery revealed *Streptococcus pneumoniae*.

Four days after surgery, the lumbar drain was removed and intravenous antibiotics were continued. On postoperative day 9, the child became increasingly irritable and complained of neck pain. She remained afebrile with a normal white blood cell count. Computed tomography angiography of the brain revealed a continued thrombosis of the right lateral cerebral sinus (fig 1B). Hypercoagulable investigation was negative. Lumbar puncture was only significant for an opening pressure of 54 cm H₂O. Acetazolamide was initiated at a dose of 400 mg per day.

Ophthalmic evaluation revealed a visual acuity of 20/20 in both eyes. Pupillary function was normal with no afferent pupillary defect. Extraocular movements were full. Anterior segment examination was

unremarkable. Dilated fundus examination revealed a sharp, right optic nerve. There was mild swelling of the left disc. Follow up examination 1 week later showed bilateral disc swelling with preserved vision and pupillary function. Weekly lumbar punctures demonstrated continued intracranial hypertension with elevated opening pressures. Anticoagulation versus a cerebrospinal fluid shunting procedure was considered by the primary team and family. Eventual visual decline to 20/30 in both eyes with progression of papilloedema (fig 2) and the development of an afferent pupillary defect in the left eye prompted the placement of a lumboperitoneal shunt. Improvement of visual acuity and resolution of disc swelling ensued a month later.

Comment

Cerebral sinovenous thrombosis in children is a rare event with an incidence of 0.67 per 100 000.⁴ Thrombosis of the lateral sinus in otitic hydrocephalus has been attributed to direct extension from an infected mastoid cavity through a bone dehiscence and/or thrombophlebitic spread through small emissary veins. Anticoagulation has been considered because of concerns of venous infarction, embolisation, and persistent septic thrombophlebitis.⁵ While children can safely be anticoagulated, no randomised controlled trial to evaluate the efficacy of anticoagulation in the setting of sinovenous thrombosis has been performed in a paediatric population and thus its role remains undefined.⁶ In this case, the unexpected placement of a temporary lumbar drain probably postponed the onset of papilloedema and vision loss. Intracranial hypertension with progressive visual decline in otitic hydrocephalus merits the consideration of lumbar or ventricular shunting.

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Figure 1 Radiological findings in a child with otitic hydrocephalus. Thrombosis of the right lateral cerebral sinus (arrow) in the setting of mastoiditis demonstrated by magnetic resonance venography (A) and computed tomography angiography (B).

Figure 2 Fundus examination in a child with otitic hydrocephalus. Papilloedema resulting from cerebral sinovenous thrombosis is observed.

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