European Annals of Otorhinolaryngology, Head and Neck diseases 136 (2019) 57–58

Available online at
ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com/en

Letter to the Editor

Posttraumatic sigmoid sinus thrombosis secondary to transmastoid foreign body

The authors report the history of a 3-year-old girl who presented with left sigmoid sinus (SS) injury with incarceration of a foreign body following a fall onto a vase. On examination, there were no signs of facial paralysis or CSF otorrhoea or rhinorrhoea. The child presented a retroauricular wound containing a piece of glass. Otoscopic and neurological examinations and hearing assessment were normal. The child had no history of thrombosis and her vaccinations were up-to-date. Unenhanced head CT scan (Fig. 1A and B) showed a foreign body penetrating the mastoid cortex with a suspected lesion of the left SS, but no lesion of the inner or middle ear or intracranial haematoma. Emergency canal wall up mastoidectomy (Fig. 2) confirmed penetration of the foreign body into the SS, the distal part of which presented a violet colour suggesting the presence of thrombus. The foreign body was removed by means of micro-instruments, causing SS haemorrhage, which was controlled by haemostatic matrix followed by muscle graft. The postoperative course was marked by headache. No papilloedema was observed on fundoscopy. Contrast-enhanced head CT scan on postoperative day 1 (Fig. 3) showed thrombosis of the distal two-thirds of the left SS with no signs of jugular vein extension. After discussion between the otorhinolaryngologists, neurosurgeons and paediatricians, symptomatic treatment without anticoagulation was proposed due to the risk of postoperative haemorrhage.

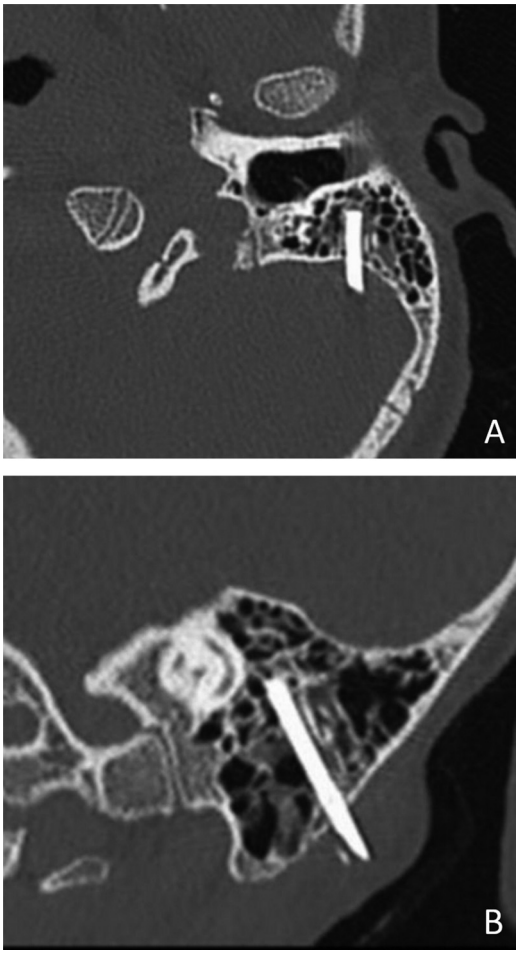

Fig. 1. CT scan, axial (A) and coronal (B) sections, bone window setting. Transmastoid foreign body and suspected lesion of the left sigmoid sinus.

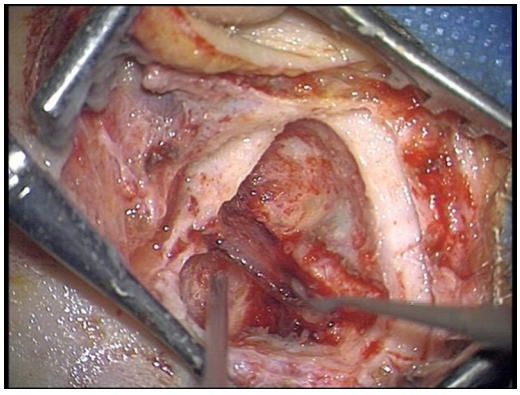

Fig. 2. Left canal wall up mastoidectomy. Extraction of the foreign body penetrating the sigmoid sinus.

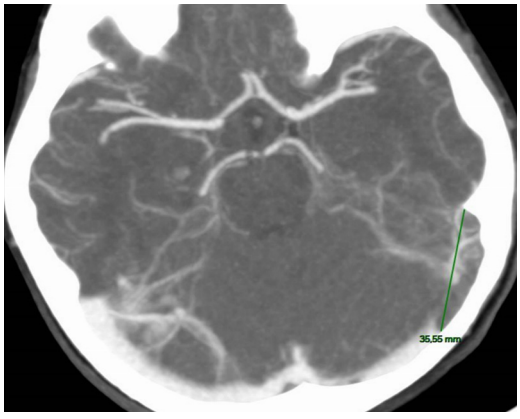

Fig. 3. Contrast-enhanced head CT scan, parenchymal window setting, on postoperative day 1. Thrombosis extending to the distal two-thirds of the left lateral sinus. Good patency of the contralateral lateral sinus.

https://doi.org/10.1016/j.anorl.2018.10.012

Imaging on day-7 showed a stable appearance of the thrombus, followed by revascularization of the SS on day-30.

1. Discussion

The main causes of SS thrombosis in children are infectious due to contiguous spread (meningitis, mastoiditis, etc.), possibly associated with a constitutional or acquired laboratory risk factors for thrombosis. Traumatic SS thrombosis is rare and complicates 4% of penetrating head injuries.

The pathogenesis of SS thrombosis has not been clearly established. Muthukumar [1] suggested that SS thrombosis could be related to dura mater injury, endothelial alterations and impaired haemostasis induced by trauma. According to Stiefel et al. [2], the quality of the collateral circulation determines the severity of the symptoms, which may comprise headache, vomiting, ataxia, or even signs of potentially severe intracranial hypertension [1,3].

The diagnosis is based on identification of the thrombus on imaging. Contrast-enhanced head CT scan shows the delta sign, indicating absence of enhancement of the sinus [4]. However, MR angiography is a more sensitive examination. Anticoagulation is recommended in the presence of cerebral venous thrombosis due to a medical cause in children because it prevents the immediate complications and decreases the risk of extension of the thrombus. However, no consensus has been reached concerning the management of posttraumatic and postoperative thrombosis. Multidisciplinary assessment of the risk of extension of the thrombus and the bleeding risk must be performed in every case. In the absence of anticoagulation, symptomatic treatment is proposed with maintenance of homeostasis, especially good hydration [2]. However, according to Awad et al. [5], anticoagulant therapy would decrease the morbidity and mortality and the length of hospital stay in the absence of secondary haemorrhage. Randomized controlled trials are therefore necessary to evaluate the efficacy of this approach in children. In the case presented here, revascularization of the SS was observed after 30 days in the absence of anticoagulation.

Disclosure of interest

The authors declare that they have no competing interest.

References

[1] Muthukumar N. Uncommon cause of sinus thrombosis following closed mild head injury in a child. Childs Nerv Syst 2005;21:86–8.
[2] Stiefel D, Eich G, Sacher P. Posttraumatic dural sinus thrombosis in children. Eur J Pediatr Surg 2000;10:41–4.
[3] Taha JM, Crone KR, Berger TS, Becket WW, Prenger EC. Sigmoid sinus thrombosis after closed head injury in children. Neurosurgery 1993;32:541–6.
[4] Stringer L, Peerless SJ. Superior sagittal sinus thrombosis after closed head injury. Neurosurgery 1983;12:95–7.
[5] Awad A, Bhardwaj R. Acute posttraumatic pediatric cerebral venous thrombosis: case report and review of literature. Surg Neurol Int 2014;5:53.

G. Badidi [a,*]
S. Chabrier [b]
J.M. Prades [a]
A. Karkas [a]
[a] *Service ORL et chirurgie cervicofaciale, hôpital Nord, CHU de Saint-Étienne, 42055 Saint-Étienne cedex 2, France*
[b] *Service de pédiatrie et génétique, hôpital Nord, CHU de Saint-Étienne, 42055 Saint-Étienne cedex 2, France*

* Corresponding author.
E-mail address: ghitabadidi@gmail.com (G. Badidi)