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LETTER TO THE EDITOR

Response to the Letter to the Editor: "Pediatric otogenic lateral sinus thrombosis: focus on the prognostic role of contralateral venous drainage"

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We appreciate the interest in our study. The Letter titled "Pediatric otogenic lateral sinus thrombosis: focus on the prognostic role of contralateral venous drainage" raises several points concerning the most appropriate neuroimaging technique for diagnosis, the role of contralateral venous drainage and the indication to surgical treatment and anticoagulant therapy.

With regard to the neuroimaging technique, the authors of the letter state that contrast-enhanced MRI and angio-MRI with a venous phase of contrast-enhancement should be the rule. Most of the cases described in our 11-year retrospective review were diagnosed with CT scan with contrast when they came to clinical attention in the emergency department of our hospital, for the simple reason that CT scan is much easier to be obtained than MRI, which often requires general anesthesia in children. A joint statement by the American Heart Association and the American Stroke Association [1] recommends that CT-venography or MR-venography be performed as soon as cerebral venous sinus thrombosis is suspected, and that MRI should be chosen whenever possible, because of its greater sensitivity in detecting thrombosis at an early stage. In the specific case of pediatric patients presenting with acute mastoiditis and/or with neurological symptoms, a CT scan can be obtained more quickly in the emergency department, and besides having an acceptable sensitivity for otogenic lateral sinus thrombosis (OLST), also gives the otologist very important information about cortical bone erosion and coalescence of the inflammatory process, which we consider to be crucial elements in deciding whether to operate or not. Generally, we prefer to plan contrast-enhanced MRI and angio-MRI in the follow-up, 1–2 months after OLST diagnosis and treatment initiation.

As far as surgical treatment is concerned, we do not adhere to the traditional assumption that OLST represents per se a surgical indication. Instead, our attitude has been rather conservative over the years, and in the light of our findings we are even more confident that mastoidectomy is not predictive of OLST resolution, intended as complete restoration of lateral sinus flow. Thus, as discussed in our paper [2], we agree that surgery should be indicated only in the presence of an erosion of the inner cortical bone or of a coalescent mastoiditis, whereas it should not be performed in cases of non-erosive mastoiditis. Therefore, OLST should not be an absolute indication to surgical treatment with mastoidectomy. Likewise, we agree that surgery should be limited to removing the inflammatory tissue in proximity of the sigmoid sinus and restoring a communication between antrum and tympanic cavity, as is routinely done with acute mastoiditis.

Another point raised in the letter concerns the functioning of the contralateral compensatory drainage, which the authors of the letter believe to be important in determining neurological symptoms. It is perfectly sensible to hypothesize that patients whose contralateral drainage is insufficient will have neurological signs and symptoms, whereas those with a well-functioning contralateral drainage will not. However, there is little evidence in the literature pointing to the prognostic role of contralateral venous drainage, or

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suggesting that this factor should be considered when deciding whether or not to undertake surgical and/or anticoagulant treatment. A work by Csákányi et al. [3] describes three cases with contralateral venous hypoplasia out of eight children with OLST, and reports internal jugular vein ligation plus thrombectomy in one case. Zanoletti et al. [4] found a significant correlation between the intensity of neurological signs and symptoms, and the presence of contralateral venous system anomalies in the transverse and sigmoid sinuses, but do not seem to rely on this datum when establishing an indication to surgery or anticoagulant treatment. Furthermore, there are no other studies reporting this association, nor a prognostic role of the compensatory venous drainage. However, we agree that this aspect is worthwhile studying in all patients with OLST in the future, because we acknowledge that it is a determining factor accounting for the onset and persistence of neurological symptoms.

As reported by the authors of the letter, the use of anticoagulation in otogenic sinus thrombosis is still controversial. Guidelines by the British Society of Hematology [5] recommend anticoagulation for 3 months in all children with cerebral venous sinus thrombosis, providing it is not associated with intracranial hemorrhage. They also recommend that anticoagulation should be continued for longer than 3 months in patients with an ongoing risk factor, in those with recurrent idiopathic thrombosis and in those with persisting signs and symptoms of venous hypertension. In our opinion and in accordance to these guidelines, we recommend the prompt initiation of anticoagulant treatment at diagnosis, also considering the high disease-related morbidity in the pediatric population and the low risk of bleeding associated to low-molecular weight heparin. Early anticoagulant therapy is aimed at preventing thrombus progression and embolization, and at obtaining a faster resolution of the thrombus, therefore, minimizing the risk for neurological complications.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

References

1. Saposnik G, Barinagarrementeria F, Brown RD Jr, Bushnell CD, Cucchiara B, Cushman M, deVeber G, Ferro JM, Tsai FY, American Heart Association Stroke Council and the Council on Epidemiology and Prevention (2011) Diagnosis and management of cerebral venous thrombosis: a statement for healthcare professionals from the American Heart Association/American Stroke Association. Stroke 42(4):1158–1192
2. Scorpecci A, Massoud M, Giannantonio S, Zangari P, Lucidi D, Martines F, Foligno S, Di Felice G, Minozzi A, Luciani M, Marsella P (2018) Otogenic lateral sinus thrombosis in children: proposal of an experience-based treatment flowchart. Eur Arch Otorhinolaryngol 275(8):1971–1977
3. Csákányi Z, Rosdy B, Kollár K, Móser J, Kovács E, Katona G (2013) Timely recanalization of lateral sinus thrombosis in children: should we consider hypoplasia of contralateral sinuses in treatment planning? Eur Arch Otorhinolaryngol 270(7):1991–1998
4. Zanoletti E, Cazzador D, Faccioli C, Sari M, Bovo R, Martini A (2015) Intracranial venous sinus thrombosis as a complication of otitis media in children: critical review of diagnosis and management. Int J Pediatr Otorhinolaryngol 79(12):2398–2403
5. Chalmers E, Ganesen V, Liesner R, Maroo S, Nokes T, Saunders D, Williams M, British Committee for Standards in Haematology (2011) Guideline on the investigation, management and prevention of venous thrombosis in children. Br J Haematol 154(2):196–207