Small cerebellopontine angle cisterns in
patients with trigeminal neuralgia

To the Editor: We read with great interest the recent article by Park et al. (Park SH, Hwang SK, Lee SH, et al.: Nerve atrophy and a small cerebellopontine angle cistern in patients with trigeminal neuralgia. Clinical article. J Neurosurg 110:633–637, April, 2009), in which patients with trigeminal neuralgia (TN) were reported to have smaller cerebellopontine angle (CPA) cisterns and shorter cisternal segments of the trigeminal nerve on the affected side.

This manuscript was in line with another MR imaging study of CPA cistern volume performed by Rasche et al.,6 in which it was suggested that a smaller cistern on the affected side, with descending cerebellar tentorium, may lead to a closer nerve–vessel relationship. For years, we have observed that patients with TN often have small CPA cisterns and/or a small posterior fossa during neurovascular decompression. However, in the literature, the association of skull base abnormalities and TN is sporadic, and these conditions are mainly related to other concurrent pathological entities, such as achondroplasty, Chiari malformation, or Paget disease.2,3,5,7 To date, it is unknown whether the presence of small CPA cisterns influences satisfactory neurovascular decompression.

To contribute to this topic, we describe here a 49-year-old woman with left-sided TN in the maxillary and mandibular division who experienced no pain control despite receiving high doses (1800 mg/day) of carbamazepine (CBZ). An MR image of the brain showed a very small CPA cistern with a neurovascular conflict with the superior cerebellar artery (SCA) (Fig. 1). The cross-sectional area of the CPA cistern was measured at 8 mm² by using Park’s methods (Fig. 1B). At surgery, we observed that there was a very short cisternal trigeminal nerve compressed by the SCA, which ran parallel to the nerve. There was no space among the nerve, the artery, and the descending cerebellar tentorium. Following the arachnoid dissection, the SCA was freed, and a piece of shredded Teflon felt was placed between the artery and the trigeminal nerve.

The postoperative course was uneventful, and the patient was completely relieved of pain following a slow reduction of medication. One month later, the patient experienced pain recurrence in the mandibular division, which reached preoperative levels 3 months after surgery. High doses of CBZ provided partial pain relief, but with side effects. Radiofrequency rhizotomy of the gasserian ganglion was performed, and following this procedure the patient was pain free without medication.

In this case, the offending artery was dislodged using Teflon interposition, but it could not be maintained far from the trigeminal root entry zone (REZ) because of the narrow CPA cistern. In Park’s article, all of the patients were treated using Gamma Knife surgery, and it is possible that anatomical and morphological variations may influence the outcome and complication rates following use of this technique.1,4 Future studies are necessary to define the roles of these anatomical and morphological
characteristics in long-term surgical outcomes, which will allow the most appropriate surgical techniques to be selected to treat patients with small CPA cisterns.

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References


RESPONSE: We thank Dr. Parise for her thoughtful comments. The purpose of this article is to provide information to aid in confirmation of the diagnosis of TN by using MR imaging. In our study, presence of atrophy of the trigeminal nerve and a small CPA cistern were relatively common MR imaging findings on the affected side of TN, compared to the unaffected side. As Dr. Parise pointed out, we did not evaluate treatment outcome according to anatomical characteristics (that is, nerve atrophy, smaller cistern, and descending cerebellar tentorium).1–3 We agree that to demonstrate long-term treatment outcome and appropriate treatment modality in TN, it will be necessary to define the relationship between anatomical characteristics and clinical results. Prospective, randomized, multiinstitutional studies evaluating anatomical characteristics and treatment outcome are needed to determine the optimal surgical technique for treatment of medically refractory TN. Nevertheless, we hope that this article will make a contribution to our understanding of the pathophysiological causes of TN. (DOI: 10.3171/2009.10.INS091517)

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1. Milhorat TH, Chou MW, Trinidad EM, Kula RW, Mandell M,

Neurosurgical forum

Tonsillar herniation

To THE EDITOR: With great interest we have read the case report of Sugrue et al.1 concerning a patient with symptomatic cerebellar tonsillar herniation after intraoperative lumbar drainage (Sugrue PA, Hsieh PC, Getch CC, et al: Acute symptomatic cerebellar tonsillar herniation following intraoperative lumbar drainage. Case report. J Neurosurg 110:800–803, April, 2009). There is a clear lesson to be learned, as stated by the authors, in recognizing the dangers of lumbar drainage, especially in certain patients. A couple of aspects of their case have invited us to expand the discussion. First of all, we wonder about the relation of symptoms of the patient and the cavernoma. Obviously, the focal seizures as reported could be associated with the cavernoma, but probably the left-sided sensory disturbances and headache cannot. Second, we consider drainage of 225 ml of CSF intraoperatively to be quite a lot, considering an average adult has 150 ml of CSF. In our experience, drainage of about 40 ml CSF intraoperatively serves in most cases for brain relaxation. Perhaps the authors had additional reasons to drain a relatively large volume of CSF? Third, the authors do mention a preexisting caudal displacement of the cerebellar tonsils and, at one point, call this an asymptomatic Chiari malformation Type I (CM-I). Had this been noted preoperatively? They do not mention the increased tentorial angle, as seen on the preoperative MR image (the angle between the tentorium and the Twining line is 44° when there is no postprocessing distortion of the image), which has been associated with CM-I.2 Therefore, we wonder whether the combination of tonsillar displacement, increased tentorial angle, and the presenting symptoms in this patient suggest that the actual problem of this patient might have been a symptomatic CM-I.

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References

1. Milhorat TH, Chou MW, Trinidad EM, Kula RW, Mandell M,

RESPONSE: It is with great interest that we receive the comments of Drs. ter Laan and Hoving in regard to our case report concerning the development of acute symptomatic cerebellar tonsillar herniation following intraoperative lumbar drainage.4 Their first concern stems from the patient’s preoperative symptoms. The patient had a left mesial temporal lobe cavernoma and was experiencing left upper-extremity sensory disturbances and headaches. While the patient’s left-sided symptoms from a left-sided lesion are difficult to explain, the patient was experiencing increasing headaches potentially from small episodes of hemorrhage that triggered an inflammatory response leading to her headache. Likewise, Drs. ter Laan and Hoving suggest that the preoperative tonsilar displacement of 4 mm was perhaps actually the root of her symptoms and not what we thought was an asymptomatic CM-I. While such an idea is plausible, the preoperative MR image demonstrated clear CSF signal dorsal and ventral to the spinal cord. This amount of space and free CSF flow suggests that there was no actual compression of the spinal cord by the mildly descended tonsils. Thus, while the increased tentorial angle potentially predisposes the patient to anatomical or radiographic tonsillar ectopia, the patient’s presenting symptoms cannot be explained by tonsillar descent and are not consistent with the clinical picture of true symptomatic CM-I as referenced by Milhorat et al.2 and Sekula et al.3 Furthermore, the symptoms of true brainstem compression only became evident after surgery, and Dagnew et al.1 have shown that acutely descended tonsils tend to be more edematous and more likely to cause compression as compared to chronically low-lying tonsils, which are more sclerotic and less likely provide mass effect. Drs. ter Laan and Hoving also raise concern about the amount of CSF drainage intraoperatively. The volume drained, 225 ml, was simply the amount needed to obtain appropriate brain relaxation so that the cavernoma could be resected. While that volume may seem high, the senior author (H.H.B.) has used this technique numerous times without complication previously.

Drs. ter Laan and Hoving raise some interesting points about this unusual case. The unique nature of this case has allowed us to learn a great deal about the dangers of lumbar drainage and the potential for complications. Hopefully, by reporting this complication and potentially stimulating discussion or debate we can all learn from it and use such lessons to help our future patients. (DOI: 10.3171/2009.6.JNS09782)

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References

Meralgia paresthetica

To The Editor: In their recent article, Alberti et al. (Alberti O, Wickboldt J, Becker R: Suprainguinal retroperitoneal approach for the successful surgical treatment of meralgia paresthetica. Clinical article. J Neurosurg 110:768–774, April, 2009) point out that even though meralgia paresthetica is a very common entrapment neuropathy, very few neurosurgeons have amassed series of more than 10 operations for this condition. In my 47-year neurological career, with a heavy emphasis on spine and pain problems, I have encountered meralgia paresthetica frequently, but I am among that majority with fewer than 10 operated cases. As these authors point out, most of my patients improved with a combination of reassurance and patience, perhaps aided by abdominal muscle strengthening exercises, antineuralgia medication, and simple anodynes. However, in my practice I have also been able to provide considerable relief for many of these patients through the simple expedient of injecting a long-acting corticosteroid adjacent to the nerve beneath the inguinal ligament—a technique quite similar to the often useful technique of steroid injection for carpal tunnel syndrome.

These authors are to be congratulated on their description of an extremely logical and innovative technique. I was especially impressed by their observation that this approach allows additional decompression and lengthening of the lateral femoral cutaneous nerve by sectioning the psoas muscle fascia over the nerve proximal to its point of emergence.

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Response: No response was received from the authors of the original article. (DOI: 10.3171/2009.6.JNS09790)

Intracerebral hemorrhage and seizures

To The Editor: We were interested to read the ar-
article by Yang and colleagues (Yang TM, Lin WC, Chang WN, et al: Predictors and outcome of seizures after spontaneous intracerebral hemorrhage. Clinical article. J Neurosurg 111:87–93, July, 2009) regarding seizures after intracerebral hemorrhage. We agree with the authors that there is uncertainty surrounding the optimal use of antiepileptic drug (AED) therapy, but we urge the authors to reconsider their recommendation for 2 years of AED prophylaxis in patients with intracerebral hemorrhage. Both their reported results and new data suggest that such prophylaxis would be harmful to most patients. In their cohort, seizures were uncommon (20 of 243 patients; Table 1), not associated with outcomes, and usually occurred early (Fig. 2), so it is unclear why AED prophylaxis should be continued in all patients for 2 years.

In addition, the percentage of adverse events with phenytoin (reported as 15%) in this study was higher than the percentage of patients who experienced a seizure. Data from our center2 and an industry-sponsored trial1 both associate prophylactic AED use (especially phenytoin) with worse functional outcome in multivariate models; if seizures were a cause of preventable poor outcome, AED prophylaxis should be associated with better outcomes. We agree that larger hemorrhage size and cortical location are risk factors for seizures, and that prospective trials would be helpful, but for most patients, prophylactic treatment is unlikely to be justified.

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References


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