Correspondence

SPINAL EPIDURAL HEMATOMA AND GARLIC INGESTION

To the Editor: The article by Rose et al. in the May 1990 issue of Neurosurgery, entitled “Spontaneous Spinal Epidural Hematoma with Associated Platelet Dysfunction from Excessive Garlic Ingestion: A Case Report” (26:880–882), raises an important issue in regard to our current understanding of spinal epidural hematoma and the need for immediate surgical intervention. The patient described began to improve clinically before surgery and continued to improve up to the point of surgical intervention. His postoperative rate of recovery was gradual and required a course of rehabilitation. One wonders if this outcome would have resulted without surgery.

In the case presented, surgery accomplished two goals: diagnosis and decompression. If, in the 42-hour observation period, a magnetic resonance imaging scan had been obtained, it might have shed further light on the pathology and, pari passu with the clinical improvement, altered the management. Clearly, these comments are made in retrospect and are not meant to detract from the meticulous and conscientious management of the patient involved. They merely reiterate the need to evaluate patients individually.

Stephen L. Fedder
Philadelphia, Pennsylvania

Reply: Dr. Fedder raises an important point. The clinical course of the patient changed dramatically with surgery. His improvement in the first 42 hours was minimal, from an almost complete thoracic lesion to slight evidence of long tract function. The response after surgery was dramatic. He made rapid progress in the hours and days after decompression. This improvement slowed but continued to the point that he now is completely self-sufficient. He has regained bowel and bladder function and is able to drive a car.

My experience with the devastating effects of thoracic cord injury led me to believe that the minimal improvement he demonstrated gave a flicker of hope, and that surgical decompression offered a far greater opportunity for recovery than did conservative management, in the face of cord compression and complete obstruction, as noted in the diagnostic studies. In addition, a recent article by Y. Yoneyama in Rissho Shinkeigaku (29:754–757, 1989) states that there have only been five reported cases of spontaneous nonsurgical recovery from spontaneous epidural hematoma. From the dramatic recovery seen in our patient, early surgical therapy should continue as the treatment of choice for spontaneous epidural hematomas.

Paul D. Croissant
Bloomfield Hills, Michigan

ADULT HYDROCEPHALUS AND SHUNTING

To the Editor: Dr. Benzel and his associates are to be commended for a carefully planned study on predicting shunt results in communicating hydrocephalus (“Communicating Hydrocephalus in Adults: Prediction of Outcome after Ventricular Shunting Procedures,” Neurosurgery 26:655–660, 1990). My own investigation of adult hydrocephalus preceded the introduction of computed tomography (1). I have always regretted not having computed tomographic scan results for this study and have been awaiting a good review of its application to shunt prediction.

Unfortunately, this series leaves several lingering questions. It is retrospective, and the criteria for shunting are not given. I would assume that they vary with the surgeons involved, thus limiting the value of the analysis. The number of patients is quite small, as are the differences in outcome between most groups. For example, 75% of those exhibiting all three clinical criteria improved, versus 65% of those lacking one or more characteristics. Eighty-three percent of patients without gyral atrophy responded to shunting, as opposed to 61% of those with atrophy. A x2 test found no significant difference between these groups.

I am afraid that no statistically valid conclusions can be drawn from these data. This is not to say that Benzel et al. have not found predictive criteria; there are simply not enough patients in this report to determine them. The authors admit how few patients were available in whom findings on computed tomographic scans were most predictive of good shunt results. Would that they had waited to publish their criteria for shunt success until enough experience allowed them to prove (or disprove) their validity.

Sherman C. Stein
Camden, New Jersey


Reply: We appreciate Dr. Stein’s comments and recognize the limitations of our study. We presented an evaluation of a small population of patients treated by a single surgeon in a similar manner (with relatively liberal operative indications). Adding more patients, selected and treated in a different manner, would not have added additional validity.

The selection of patients with suspected adult communicating hydrocephalus for treatment is very subjective. Our efforts, as well as those of others, can only illustrate this fact and attempt to assist the clinician with this difficult decision. Individualizing the decision-making process is critical and cannot be truly statistically analyzed.

Edward C. Benzel
Albuquerque, New Mexico

OSTEOCHONDROMA OF THE VERTEBRAL COLUMN

To the Editor: I read with interest the article “Chondroma of the Lumbar Spine: A Rare Cause of Sciatica: Case Report” by Drs. Bland and McDonald in Neurosurgery (26:685–688,
In this article, the authors mention only three other case reports of vertebral osteochondroma associated with spinal cord compression. I would like to bring to your readers' attention that, in fact, there have been other case reports of solitary osteochondromas of the thoracic spine causing cord compression (1, 2).

In addition, I have recently treated a patient with a recurrent solitary osteochondroma at the T4 level. This patient was operated on 14 years ago at the same level for the same tumor at another institution. In the cases of Loftus et al. (1) and Marchand et al. (2), as well as in my own case, the lesion was a solitary one.

My patient is a 26-year-old man who had, first slowly, and then rapidly, progressive left lower extremity spasticity and weakness. Signs and symptoms in the left lower extremity have improved considerably as a result of another thoracic decompressive laminectomy, with initial removal of the ipsilateral facet out to the level of the costovertebral junction, and then virtual gross total removal of the ventrolateral tumor mass.

In any event, I wish to express the fact that solitary osteochondromas of the vertebral column causing neurological sequelae, although rare, may be more frequent than has been previously noted.

Reply: Dr. Yablon is correct in noting that the occurrence of osteochondromas causing spinal cord compression has been documented in the literature (1, 2). Although osteochondromas and chondromas both are benign, originate from the epiphyseal plate cartilage, and may transform into chondrosarcomas, especially after radiation therapy, their names are often erroneously interchanged; actually, they represent different clinical, radiographic, and histological entities. Therefore, our article, "Chondroma of the Lumbar Spine, a Rare Cause of Sciatica," did not review cases of osteochondroma of the spine.

Osteochondromas primarily occur as painless lumps on the long bones in 80% of cases. Chondromas most commonly occur as painful lesions on the hands and feet and are more likely to present with pathological fractures when associated with the long bones. Involvement of the spine is rare in both.

The pathogenesis of osteochondroma was speculated upon in 1891 by Virchow and has subsequently been experimentally produced by D'Ambrosia and Ferguson. A primary defect in the periosteal cuff of bone is responsible for outward herniation of the epiphyseal plate cartilage and results in an osteochondroma. Radiographically, an osteochondroma characteristically appears as a bony protruberance on a pedunculated stalk or sessile base, which typically points away from the joint, has pathognomonic cortical "flaring," and contains trabecular bone, which blends into the normal host bone. In contrast, chondroma, although arising from the periosteum, has not been experimentally produced and radiographically presents within the cortex eccentrically on a longitudinal plane. The lesion contains hyperdense round regions corresponding to cartilage and may have lytic areas and sclerotic edges of the internal bony border (3, 4).

Grossly, osteochondroma contains a large cartilage cup with a bony stalk, either pedunculated or sessile. Histologically, osteochondromas contain chondrocytes within their cap and demonstrate a blending of the subchondral spongy bone of the lesion into the normal host bone. In contrast, chondroma does not contain any bony elements and exhibits a sharply circumscribed region of host bone, composed of hyaline and/or myxoid cartilage, surrounding the lesion (3, 4).

INDOMETHACIN IN SEVERE HEAD INJURY

To the Editor: Indomethacin may be of relevance in the treatment of intracranial hypertension in severe head injury. In experimental (2, 4) and in clinical (6) studies, indomethacin, like hypocapnia, causes reduction of cerebral blood flow (CBF), whereas cerebral metabolism remains unchanged. Other experiments indicate that indomethacin reduces the formation of cerebral edema (1).

The nonsurgical treatment of intracranial hypertension in severe head injury consists of hyperventilation, barbiturate

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**Table 1**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Time Before or After Administration</th>
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<tbody>
<tr>
<td></td>
<td>15 min after</td>
</tr>
<tr>
<td><strong>P</strong>CO₂ (kPa)</td>
<td>3.4 ± 0.3</td>
</tr>
<tr>
<td>ICP (mm Hg)</td>
<td>28.4 ± 3</td>
</tr>
<tr>
<td>CBF (ml/100 g/min)</td>
<td>34.4 ± 9</td>
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<tr>
<td>CMRO₂ (ml O₂/100 g/min)</td>
<td>1.9 ± 0.5</td>
</tr>
<tr>
<td>Rectal temperature (°C)</td>
<td>38.6 ± 0.8</td>
</tr>
</tbody>
</table>

*Values represent means ± SD.

*P < 0.05 (Sign test).