

## CASE REPORTS

ways present, and anesthesiologists need to be aware of this potential life-threatening complication.

## References

1. McAllister RG: Macroglossia: A positional complication. *ANESTHESIOLOGY* 1974; 40:199-200
2. Ellis SC, Bryan-Brown CW, Hyderally H: Massive swelling of the head and neck. *ANESTHESIOLOGY* 1975; 42:102-3
3. Teeple E, Maroon J, Rueger J: Hemimacroglossia and unilateral necrosis of the tongue in a long-duration neurosurgical procedure. *ANESTHESIOLOGY* 1986; 64:845-6
4. Mayhew JF, Miner M, Katz J: Macroglossia in a 16 months old child after a craniotomy. *ANESTHESIOLOGY* 1985; 62:6893-4
5. Tattersall MP: Massive swelling of the face and tongue. *Anaesthesia* 1984; 39:1015-7
6. Kuhnert SM, Faust RJ, Berge KH, Peipgras DG: Postoperative macroglossia: Report of a case with rapid resolution after extubation of the trachea. *Anesth Analg* 1999; 88:220-3
7. Pivalizza EG, Katz J, Singh S, Liu W, McGraw-Wall BL: Massive macroglossia after posterior fossa surgery in the prone position. *J Neurosurg Anesthesiol* 1998; 10:34-6
8. Figueredo-Gaspari E, Fredes-Kubrak R, Canosa-Ruiz L: Macroglossia after surgery of the posterior fossa. *Rev Esp Anesthesiol Reanim* 1997; 44:157-8
9. Moore JK, Chaudhri S, Moore AP, Easton J: Macroglossia and posterior fossa disease. *Anaesthesia* 1988; 43:382-5
10. Drummond JC: Macroglossia, *Deja Vu*. *Anesth Analg* 1999; 89: 534-5
11. Ishiyama T, Murakami N, Takeda T, Yamamoto M: Macroglossia after neck clipping of a VA-PICA (vertebral artery-posterior inferior cerebellar artery) aneurysm. *Masui* 1990; 39:503-7

Anesthesiology  
2000; 92:1835-7  
© 2000 American Society of Anesthesiologists, Inc.  
Lippincott Williams & Wilkins, Inc.

## Unusual Presentation and Treatment of Postlumbar Puncture Headache in an 11-yr-old Boy

Joseph F. Cassady, Jr., M.D.,\* George Lederhaas, M.D.,† William R. Turk, M.D.,‡ Daniel E. Shanks, M.D.,§

SPINAL anesthesia is commonly performed in the adult surgical population and less commonly in children. Al-

though complications of lumbar puncture and spinal anesthesia have been extensively reported in the adult medical literature, complications in the treatment of pediatric patients have been less frequently recognized and described.

Postlumbar puncture headache has been reported in children.<sup>1-4</sup> The use of an epidural blood patch to treat pediatric patients with postlumbar puncture headache<sup>2,5,6</sup> and subarachnoid fistula<sup>7,8</sup> has previously been described. We report an unusual presentation and the successful management of postlumbar puncture symptoms of 10-month duration in an 11-yr-old boy with cerebral palsy.

### Case Report

An 11-yr-old boy with extrapyramidal cerebral palsy was admitted to our hospital for a lower gastrointestinal hemorrhage that resolved with medical therapy. During the evaluation, the patient's mother described his longstanding difficulties with postural headache, marked postural dizziness, and intermittent bilateral lower extremity shooting pains. The etiology had not been clarified during workups by pediatricians, neurologists, and neurosurgeons.

\* Assistant Professor, Department of Anesthesiology Mayo Medical School, Jacksonville, Florida; and Attending Pediatric Anesthesiologist, Department of Anesthesiology, Nemours Children's Clinic, Jacksonville, Florida.

† Attending Anesthesiologist, Iowa Methodist Medical Center/Blank Children's Hospital, Des Moines, Iowa.

‡ Assistant Professor, Department of Neurology, Mayo Medical School, Jacksonville, Florida; and Chief, Division of Neurology, Nemours Children's Clinic, Jacksonville, Florida.

§ Assistant Professor, Department of Neurology, Mayo Medical School, Jacksonville, Florida; and Attending Pediatric Neurologist, Division of Neurology, Nemours Children's Clinic, Jacksonville, Florida.

Received from the Departments of Anesthesiology and Neurology, Nemours Children's Clinic, Jacksonville, Florida. Submitted for publication September 27, 1999. Accepted for publication February 10, 2000. Support was provided solely from institutional and/or departmental sources.

Address correspondence to Dr. Cassady: Department of Anesthesiology, Nemours Children's Clinic, 807 Nira Street, Jacksonville, Florida 32207.

Key words: Cephalalgia; pain; pediatric; postural; subarachnoid.

The patient had a moderately severe developmental delay. The patient's mother reported that a large "lump" would sometimes appear near the lumbar midline after he had been upright. Although she had seen this lump on several occasions, it was not detected on physical examination. In both inpatient and outpatient settings, the patient was noted by multiple physicians to be in severe discomfort and distress. The patient had undergone an autonomic workup for dizziness and no abnormalities were discovered; however, two tilt tests could not be completed because of severe dizziness on head elevation. A magnetic resonance imaging scan of the lumbar spine was unremarkable.

Lacking an explanation and an effective treatment for the patient's headache, the neurologist consulted our Pain Service. Our evaluation confirmed that the patient's symptoms were markedly postural. His mother disclosed that the patient had undergone surgery for bilateral hip abductor and hamstring release with spinal anesthesia 10 months previously in another city. Onset of symptoms temporally coincided with the surgery; therefore, postlumbar puncture headache could not be ruled out.

The patient was kept at bedrest. Intravenous hydration and opioids were administered for 48 h without an improvement in symptoms. At his mother's request, the patient was discharged from the hospital with oral analgesic medications. After additional discussions with her husband at home, she accepted our recommendation to schedule an epidural blood patch on an outpatient basis.

On the appointed day, the patient was taken to a treatment room. Standard monitors were placed and intravenous access was obtained. Intravenous sedation was administered with incremental doses of alfentanil and propofol while the patient breathed supplemental oxygen in the lateral position. The back and one antecubital fossa were prepped aseptically. A 2-in, 18-gauge Touhy needle was placed in the epidural space at the L4-5 interspace using loss of resistance with saline while 10 ml blood were drawn from a peripheral vein. The blood was injected epidurally, and the Touhy needle was removed. The patient's recovery was uneventful.

The patient's headache, dizziness, and leg pains promptly resolved. Forty-eight hours later, his mother reported by telephone that he remained asymptomatic. On subsequent clinic visits that spanned more than 1 yr, the patient has remained pain-free, and the symptom of dizziness has not recurred.

## Discussion

Postlumbar puncture complications have been infrequently reported in preadolescents.<sup>3,9,10</sup> This may reflect age-related communicative limitations or the inability of parents to associate headache with a needle puncture in the back. To further complicate recognition, clinical manifestations of dural cerebrospinal fluid leak may be different in children than in adults.<sup>2</sup>

Anecdotally, untreated postlumbar puncture headaches generally undergo spontaneous resolution in 1 to 6 weeks. The longest previously reported postlumbar puncture headache in a pediatric patient lasted for 6 weeks before successful management using an epidural blood patch.<sup>2</sup> The clinical presentation in that patient

was noteworthy for protracted orthostatic nausea and dizziness with mild headache. After 4 days of conservative therapy without improvement, the patient's symptoms promptly resolved after the use of an epidural blood patch.

Our patient's pediatrician had sought treatment for the patient's symptoms for several months before the boy was admitted to the hospital for a gastrointestinal hemorrhage. However, prior to consultation of our Pain Service, no anesthesiologist had examined the patient during the 10 months since the spinal anesthetic. After extensive discussions with the patient's mother and pediatrician, we concluded that an epidural blood patch was indicated. At three separate clinic visits since the use of an epidural blood patch, the patient had been carefully evaluated by a neurologist and was found to be pain-free and asymptomatic. These findings provide overwhelming circumstantial evidence that a cerebrospinal fluid leak was the etiology of the symptoms.

Epidural collections of cerebrospinal fluid may cause pressure on nerve roots.<sup>1</sup> Epidural cerebrospinal fluid may have accounted for this patient's shooting leg pains because these symptoms did not recur after the use of an epidural blood patch. The lumbar lump was probably a needle-track subarachnoid-subcutaneous fistula. By history, the lump appeared only after the patient had been upright. Therefore, the failure of physicians to appreciate the lump can be explained because the patient's postural headache and dizziness necessitated continuous bedrest during the hospital stay.

The mother's reliability as a historian is pertinent to the validity of our report. It is conceivable that the epidural blood patch might have exerted a placebo effect on the mother's perception of the patient's condition, but the established facts of the case support the validity of our report. The fundamental facts have been confirmed by medical records. During the patient's autonomic workup, his failure of two tilt tests because of severe postural dizziness served as additional confirmation of his condition. Moreover, the patient's condition before and after the epidural blood patch was independently confirmed by his pediatrician and neurologist, both of whom knew him well.

The 10-month duration of our patient's postlumbar puncture symptoms is the most striking feature of this report. To the best of our knowledge, this report describes the longest documented postlumbar puncture headache on record in any pediatric patient.

## CASE REPORTS

## References

1. Atabaki S, Ochsenschlager D, Vezina G: Post-lumbar puncture headache and backache in pediatrics: A case series and demonstration of magnetic resonance imaging findings. *Arch Pediatr Adolesc Med* 1999; 153:770-3
2. McHale J, O'Donovan FC: Postdural puncture symptoms in a child. *Anaesthesia* 1997; 52:688-90
3. Wee LH, Lam F, Cranston AJ: The incidence of post dural puncture headache in children. *Anaesthesia* 1996; 51:1164-6
4. Tobias JD: Postdural puncture headache in children: Etiology and treatment. *Clin Pediatr* 1994; 33:110-3
5. Robbins KB, Prentiss JE: Prolonged headache after lumbar puncture: Successful treatment with an epidural blood patch in a 12 year old boy. *Clin Pediatr* 1990; 29:350-2
6. Roy L, Vischoff D, Lavoie J: Epidural blood patch in a seven year old child. *Can J Anaesth* 1995; 42:621-4
7. Kumar V, Maves T, Barcellos W: Epidural blood patch for treatment of subarachnoid fistula in children. *Anaesthesia* 1991; 46:117-8
8. Kowbel MAM, Comfort VK: Caudal epidural blood patch for the treatment of pediatric subarachnoid-cutaneous fistula. *Can J Anaesth* 1995; 42:625-7
9. Raskin NH: Lumbar puncture headache: A review. *Headache* 1990; 30:197-200
10. Kuntz KM, Kokmen E, Stevens JC, Miller P, Offord RN, Ho MM: Post-lumbar puncture headaches: Experience in 501 consecutive procedures. *Neurology* 1992; 42:1884-7

Anesthesiology  
2000; 92:1837-9  
© 2000 American Society of Anesthesiologists, Inc.  
Lippincott Williams & Wilkins, Inc.

## Aspiration Pneumonia after Anesthesia in a Patient with a Zenker Diverticulum

Marie T. Aouad, M.D.,\* Carina E. Berzina, M.D.,† Anis S. Baraka, M.D., F.R.C.A.‡

PULMONARY aspiration is one of the most feared complications of anesthesia. Only the prevention and the consequences related to aspiration of gastric contents are widely discussed in the literature.<sup>1</sup> Few reports highlight the particularities in the management of patients at high risk for aspiration of esophageal contents caused by esophageal diseases.<sup>2,3</sup> Thiagarajah *et al.*<sup>2</sup> discussed the anesthetic implications in a patient presenting for surgical resection of a Zenker diverticulum (ZD). We report a case of pulmonary aspiration in a patient with a ZD who underwent surgery for a different pathology.

### Case Report

A 64-yr-old, 73-kg man with a known ZD was scheduled for the repair of an infrarenal abdominal aortic aneurysm. The preoperative blood tests, electrocardiogram, and cardiac echography were within normal limits. A chest roentgenogram showed a widening of the upper mediastinum, which was compatible with the diagnosis of a ZD. A barium swallow showed a large pouch in the proximal posterior esophagus, with a neck slightly above the level of the cricoid ring (fig. 1). The patient had fasted for more than 12 h preoperatively, and was premedicated with atropine 0.3 mg intramuscularly, diazepam 5 mg orally, and nizatidine (a dihydrogen blocker) 150 mg orally 1 h before induction of anesthesia. In the operating room, the patient was placed in the neutral supine position. After 3 min of preoxygenation, midazolam 1 mg, fentanyl 100 µg, lidocaine 80 mg, propofol 140 mg, and rocuronium 60 mg were consecutively injected intravenously. The subsequent application of backward pressure over the cricoid ring was immediately followed by a burping sound. The face mask was removed to show that the mouth of the patient was full with a yellowish fluid. Suction was immediately applied, and the head was tilted down. Laryngoscopy followed by tracheal intubation with an 8.0-mm cuffed Portex tube (SIMS Portex, UK) was easily performed. Before ventilation, the endotracheal tube was suctioned, but nothing could be retrieved from the tracheobronchial tree. Mechanical ventilation was started, and chest auscultation revealed normal breath sounds over both lung fields. A nasogastric tube insertion was attempted several times, but it was coiling and did not reach the stomach. The surgical time was 6 h and the oxygen saturation measured by pulse oximetry ranged between 95% and 100%. At the end of the surgery, it was decided to keep the trachea intubated. A chest roentgenogram was

\* Assistant Professor.

† Resident.

‡ Professor and Chair.

Received from the Department of Anesthesiology, American University of Beirut, Beirut, Lebanon. Submitted for publication December 10, 1999. Accepted for publication March 3, 2000. Support was provided solely from institutional and/or departmental sources.

Address reprint requests to Dr. Aouad: Department of Anesthesiology, American University of Beirut, P.O. Box 113-6044, Beirut, Lebanon. Address electronic mail to: mm01@aub.edu.lb

Key words: Pharyngoesophageal diverticulum; pulmonary complications; regurgitation.