CASE

A 74-year-old female presented to an outside medical facility with gradual decline in neurological status over a period of 6 to 8 weeks. The patient's symptoms began with headache and progressed to confusion, altered sensorium, escalating ataxia, and expressive aphasia. The patient was transferred to our medical center. Review of the patient's past medical history was negative for head trauma, prior neurosurgical or otologic procedures, neoplasms of the skull base, or chronic infections of the middle ear or mastoid. Secondary to the presence of a pacemaker, magnetic resonance imaging (MRI) was contraindicated; therefore, CT of the head was obtained and revealed a 5 by 3 cm pneumatocele in the area of the posterior fossa. Imaging showed evidence of compression of the right middle cerebellar peduncle and posterior right upper pons with associated hydrocephalus. (Fig. 1) The pneumatocele needed to be decompressed to relieve pressure on the affected portion of the brain and the mastoid-intracranial communication needs to be definitively closed. Many autologous and synthetic materials have reportedly been used for closure of the defect; in our case, we used a combination of temporalis fascia and muscle, abdominal fat, fibrin sealant and bone wax with a good result.

The patient underwent transmastoid retro labyrinthine approach to the cerebellopontine angle (CPA) to decompress the area of pneumocephalus. A conventional mastoidectomy was performed. However, dissection in the area of the attic was minimized to avoid a cerebrospinal fluid (CSF) leak. The sigmoid sinus, all semicircular canals, and the facial nerve were skeletonized. The sigmoid sinus was decompressed and then bone overlying the posterior fossa dura between the sigmoid sinus and the posterior and horizontal semicircular canals was removed. With removal of this bone, the posterior fossa dura ballooned out laterally. No sign of infection or mass was evident, but the dura in this area was appreciably atrophic. The operative field was then filled with saline and the dura incised; release of air was demonstrated. A trap door flap was created in the dura and the posterior fossa was examined. No evidence of mass, bleeding, or other significant abnormality could be appreciated. The dural defect created for decompression was repaired with a combination of fascia, abdominal fat, and fibrin sealant (TISSEEL, Baxter Healthcare, Westlake Village, CA). The mastoid defect was repaired with temporalis muscle, abdominal fat, and bone paste.

Head CT on post-operative day 1 showed near complete resolution of pneumocephalus. (Fig 3) The patient showed improvement in neurological status in the first 2 days after her surgery. By post operative day 2, the patient had near resolution of her aphasia and was speaking in full sentences.

REFERENCES