Clinical Briefs

Recurrent meningitis in a child

F.B. Maroun, M.D., J.C. Jacob, M.D., W.D. Heneghan, M.D.,
A.R. Cooper, M.D., R.F. Kennedy, M.D. and K. Lewis, M.D.

The association of meningitis with congenital spinal lesion, particularly neurodermal sinus and intradural dermoid, is well documented. However, less is known about the precipitating factors in the occurrence of such meningitis. We present the case of a two year old child with an intradural lumbosacral dermoid who suffered three bouts of meningitis. Each episode of meningitis followed insertion of rectal suppository for treatment of chronic constipation.

Key words: Recurrent meningitis; intradural lumbosacral dermoid.

Case report

A two year old boy was treated for an illness diagnosed as meningitis, three months prior to admission to our Institution. Although clinical laboratory details of this illness were unavailable it was reported that the meningitis followed treatment of constipation by administration of laxatives and suppositories. During that illness, a small midline subcutaneous nodule was noted in the lumbosacral region, which was subsequently excised. The surgical report indicated that the mass tracted through a vertebral pedicle into a bony defect in the sacrum to end "blindly" in the epidural space. The tract was fibrosed, and there was no lumen. A diagnosis of non communicating neurodermal sinus was made. Two further episodes of meningitis followed the initial one, each following a period of constipation treated with suppositories and laxatives. The last episode had occurred three days prior to admission to our Institution. It was reported that he became restless and developed neck stiffness immediately after insertion of a rectal suppository. Lumbar puncture performed at the referring hospital showed "many WBC's", all neutrophils, glucose 27 mg percent and protein 160 mg percent. CSF smear showed intracellular cocci, but culture was negative. He responded quickly to Ampicillin; on admission to our Institution, there were no clinical signs of meningitis. Peripheral leukocyte count was 9700. A well-healed lumbosacral incision was noted. There was no abnormality on clinical examination, lumbosacral spine x-ray suggested a small bony defect in the sacrum at the S2-S3 level. He was scheduled for a myelogram, but in the interim developed fever and signs of meningeal irritation. He was treated with Ampicillin and Keflex with prompt resolution of clinical symptoms and signs. Ethiodan myelography was then performed. On injection of the contrast material it was immediately apparent that the needle was close to, if not actually inside a large intradural mass lesion which had an extradural component to the right of the
midline. The subarachnoid space below the level of the second lumbar vertebra was wider than normal, and there was obstruction to flow of contrast material below the superior margin of the sacrum on the right side. Repeat myelography with Metrizamide confirmed the presence of a large lumbosacral intradural mass lesion and also showed low position of the conus medullaris (Fig.).

The mass appeared to be lying anteriorly in the spinal canal. Following the two procedures, the child became extremely ill with high fever, opisthotonos, and marked signs of meningeal irritation. Repeated blood, CSF and urine cultures did not grow pathogens. After resolution of these signs, surgery was performed. Through a lumbar laminectomy the following was noted: the bone appeared normal, the epidural space was slightly congested. The dura was under marked tension. On opening the dura, a large amount of pus was evacuated. Immediately underneath and tracking with pus was a large dermoid tumor which had pushed the conus and cauda equina markedly to the left side. There were free fragments of the whitish tumor floating in the CSF, the conus was low, and the filum terminale was thick. There was no connection between the previously excised lesion in the sacral area and the intradural space. However, there was some scarring over the epidural space in this location. A total removal of the dermoid was carried out. The child's general condition improved and he was discharged home with no neurological sequelae.

Histopathological examination showed the tissue composed of cystic clefts completely lined by keratinizing squamous epithelium. The epithelium itself appeared stretched or loose, sometimes myxoid, connective tissue containing a variable amount of inflammatory infiltrates. Few structures resembling sweat glands and pilosebaceous apparatus were seen.

**Discussion**

Epidermoids and dermoid lesions of the central nervous system are rare\(^1\text{,}^3\text{,}^4\) although Guidetti and Gagliardi\(^2\) document the incidence of intraspinal epidermoids and dermoids to be as high as 2.6 percent. In their analysis of 4296 space-occupying lesions of the brain and spinal cord there were 31 epidermoids and 21 dermoids. The occurrence of repeated bouts of meningitis in children with neurodermal sinuses, with or