Lateral Cervical Meningocele

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Lateral cervical meningocele is an extremely rare developmental anomaly. We could find only one such case protruding from an enlarged C2-3 intervertebral foramen. It may be confused with an extradural cyst or cystic hygroma. Direct needling may introduce infection and thereby pyogenic meningitis and so should be avoided. Similarly, incision and drainage may transform it into cerebrospinal fluid fistula. A computed tomography scan is the most fruitful form of investigation for confirmation and localization of the disease. A lumboperitoneal shunt or water tight closure of the dural sac at the neck is the recommended procedure of choice.

Key Words: Meningocele, Cervical, Lateral

INTRODUCTION

Spinal meningocele or meningomyelocele is a commonly encountered congenital disorder. Usually it entails the posterior herniation of meningeal-neural elements from the spinal canal through the bony defect in the vertebral arches. Matson (1969) reported only 3.7% of such lesions in the cervical spine in a series of 1,390 cases. The most frequent site of the spina bifida cystica is the lumbar or sacral spine. Rarely, it can be situated laterally or anteriorly. A lateral or anterior meningocele, although infrequent, has a high affinity to the sacral or thoracic vertebrae. In the cervical region so far, only one case of lateral meningocele has been reported (Shore et al., 1982). Here we add another case of this extremely rare clinical condition to the literature.

CASE REPORT

An 8-year-old male child had suffered from cough and multiple furuncles for two months. He also had a mild to moderate degree of continuous fever. He was being managed at a primary health centre but, a week later he developed a generalized headache associated with occasional vomiting which would reduce the intensity of the headache. The next week he noticed a stiffness of the neck. It was suspected that he was

developing pyogenic meningitis and he was referred to the neurosurgery unit of this hospital. Here lumbar cerebrospinal fluid was examined and its findings confirmed the diagnosis. He was put on injectable penicillin, gentamicin and chloramphenicol. During the second week of his stay in hospital, his father found a swelling in the upper part of the right posterior triangle of the neck which at times became inapparent. It persisted for 8 days and increased in size. His meningitis responded well to the above drugs but there was no significant change in the size of the cervical swelling. There was no history of ear discharge, seizure, motor weakness or bladder-bowel dysfunction.

On examination, he had anemia, pyrexia and generalized emaciation. His pulse rate and temperature were 100/minute and 99.0°F, respectively. There were multiple furuncles scattered all over the body while few of them were in the healing phase. There were 2-3 firm, discrete, tender and mobile lymph nodes 2 cm in size in both submandibular regions. Cutaneous manifestations of von Recklinghausen's disease were not present. Cardiovascular, abdominal and respiratory systems were normal. Local examination revealed a swelling in the right posterior triangle, measuring 10cm x 8cm, extending from the posterior midline to the base of the mastoid process in the horizontal plane and vertically from the suboccipital area to the upper third of the neck (Fig. 1). It was tensely cystic, translucent, pulsatile, nontender and ill-defined. Swelling became less prominent after lumbar cerebrospinal fluid drainage. Neurologically, he had signs of meningeal irritation. His Glasgow coma scale score was 15. There

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Fig. 1. Photograph of the patient showing a swelling in the right posterior aspect of the upper neck.

was no sensory-motor deficit or cerebellar dysfunction. The cranial nerves were not involved. Fundus examination showed bilateral gross papilloedema with hemorrhages.

His laboratory examination revealed hemoglobin 9.0gm%, total leucocyte count 12,000/cmm, differential count: polymorph 81%, lymphocyte 16% and eosinophil 3%, erythrocyte sedimentation rate (corrected) 16 mm for first hour, and blood urea 24mg%. His roentgenograms of the chest, cervical spine and skull were inconclusive. Cerebrospinal fluid picture at the time of admission showed high pressure, protein-600 mg/dl, sugar-20 mg/dl and cells-1000/cmm (mostly polymorph). Culture of CSF grew *Staphylococcus aureus* which was sensitive to chloramphenicol and gentamicin. Computed tomography (CT) scan of the head depicted gross communicating hydrocephalus (Fig. 2). Cervical CT scan demonstrated a bony defect at the right pedicle of the axis and low attenuating zone occupying the part of the extradural space as well as the extravertebral compartment (Fig. 3). The neck of the swelling was narrow while the major portion lay

Fig. 2. CT scan (Head) depicting the communicating hydrocephalus.

outside the vertebrae. The attenuation value of the lesion was 1 to 2 HU. It did not take up any enhancement. There was no defect in vertebral body, lamina and spinous process. CT myelogram using Iohexol showed whole of the sac taking dye with no obvious neural element (Fig. 4). Ultrasonography of the cervical swelling demonstrated a hypoechoic well defined cyst with no solid component in it (Fig. 5). Four weeks after control of infection and achievement of normal CSF chemistry, a lumboperitoneal shunt was put in. The postoperative phase was smooth.

At the time of discharge, there was no fever, headache or cervical swelling. In the follow up check up after a month, the shunt was found to be functioning well and there was no recurrence of the neck swelling (Fig. 6).

DISCUSSION

The first lateral (anterior) meningocele was recognized in 1837 and since then more than 150 cases in the sacrum and about 100 cases in the thoracic column have been reported, but, its presence in the cervical and lumbar region is uncommon (Baleriaux-Waha et al., 1977; Haberbeck Modesto et al., 1981;

Fig. 3. Cervical CT scan demonstrating a low attenuating mass occupying the intraspinal and extravertebral space protruding from the right pedicle of axis.

Fig. 4. Omnipaque CT myelogram exhibiting the dye filled sac having communication with spinal subarachnoid space through a narrow neck.

Fig. 5. Ultrasonography of the cervical swelling showing the lesion as hypoechoic.

rological deficit so the best way of management is by lumboperitoneal shunt instead of by direct intervention. Spontaneous regression of cervical swelling may occur if the ventricular size and pressure returns to normal after the control of meningitis process. It is desirable to wait for six weeks before diverting the CSF pathway in order to eradicate the infection.

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