Localized Cervical Extradural Abscess

Case Report

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Extradural abscess of the spinal canal, whether due to hematogenous spread of infection from a distant focus or to direct extension from a nearby source, usually an osteomyelitis of the adjacent vertebrae, is an extremely serious but fortunately uncommon condition. Up to 1946, Rankin and Flothow were able to collect only 225 cases from the world literature. The majority of abscesses have been reported at the thoracic and lumbar levels, the cervical spine rarely being involved. The morbidity and mortality in this disease have been extremely high.

We are reporting the successful treatment of a patient who was quadriplegic as a result of a localized cervical epidural abscess.

Case Report

A 33-year-old truck-driver was transferred to this hospital on January 4, 1961, because of the acutely progressive development of quadriplegia. In November, 1960, a furuncle in the occipital scalp had healed spontaneously but was followed in early December by a persistent generalized illness characterized by a high fever (103°F), anorexia, vomiting, and loss of weight. A week later his neck became stiff and painful to move. During the week before admission, while in another hospital, paresis of the right arm progressed in a counterclockwise fashion to complete quadriplegia. Three days before transfer, urinary retention and marked dyspnea appeared.

Examination. The patient was acutely ill, cyanosed, dehydrated, and quite confused. The blood pressure was 110/70 mm Hg, pulse 100/min and regular, temperature 99°F, and respirations rapid, shallow, and labored, with paralysis of the diaphragm and intercostals on the right side. The neck was rigid, painful, and very tender over the midcervical spine. There was a marked spastic quadri-

plegia, only weak voluntary flexion, and extension of the digits. Both plantar responses were extensor, with sustained clonus at the right ankle. Sensation was lost to all modalities below the C-3 dermatome except for the crude preservation of some of the sensation transmitted through the posterior column. He had urinary retention and a 3-cm pressure sore over the right buttock. A diagnosis of high cervical compression myelopathy with epidural abscess was made. Routine blood studies revealed a markedly elevated sedimentation rate (111 mm/hr), and 10,600 white blood cells/cu mm, 77% of which were polymorphonuclear. Urinalysis was normal.

Plain radiographs of the cervical spine showed osteomyelitis of the posterior elements of the C-3 vertebra (Fig. 1). A cervical

Fig. 1. Lateral radiograph of the cervical spine showing the irregular and moth-eaten appearance of the laminae and spine of third vertebra.

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myelogram on the night of admission demonstrated complete block at the C4-5 level (Fig. 2 left). Cerebrospinal fluid obtained at lumbar puncture was under low pressure, sterile, and xanthochromic; there were 10 lymphocytes/cu mm, and the protein was 1700 mg%.

Operation. Surgical decompression of the cervical cord was undertaken immediately. To control head and neck movements, Crutchfield tongs were inserted and 8 lbs of traction applied. The patient was then transferred to a Foster bed, and, under general endotracheal anesthesia, a posterior cervical exposure from C-3 through C-5 was performed. Pus exuded freely between the laminae of C-3 and C-4. The posterior elements of these vertebrae, of C-3 in particular including its articular facets, were grossly involved with osteomyelitis. The dural pus, granulation, and infected bone tissue were thoroughly debrided; the articular facets were spared. The process did not appear to extend anterior to the dural sac. After copious irrigation and debridement, the wound was closed without drainage; the latter was intended to facilitate postoperative nursing care. A tracheotomy was performed to alleviate the marked respiratory distress.

Postoperative Course. Initially the patient was kept on the Foster bed. He was given large doses of Staphcillin for a period of 3 weeks, since coagulase positive Staphylococcus aureus, sensitive to this antibiotic, had been cultured from the pus. Progressive neurological recovery began from the first postoperative day. The skull tongs and tracheotomy tube were removed on the eleventh day with the return of function in the muscles of respiration. Bladder function was normal by the twenty-third day, and active rehabilitation and mobilization were begun at this time. A Minerva jacket with a posterior window to allow inspection of the wound was now used to stabilize the cervical spine. Five weeks postoperatively the wound became red, tender, and indurated and had to be opened, drained, and packed. It had healed.