Case Reports and Technical Notes

Treatment of an Unusual Case of Tuberculosis of the Cervical Spine

Case Report

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Tuberculosis of the spine, although rare in the United States, is extremely common in the Orient where it continues to present a significant medical challenge. Hodgson and Stock published a preliminary report of 48 cases of Pott's disease of the spine treated by anterior spinal fusion in 1956. They followed with a more definitive report of 412 patients, which showed the anterior approach to be superior to older methods and emphasized two significant aspects of the disease: 1) the cervical spine is rarely affected (1.9% in their series), and 2) in spite of severe deformity, neurological symptoms are unusual.

We present the following case to demonstrate an over-all general method of management including a radical anterior surgical approach in a patient with extensive cervical involvement and severe angulation without myelopathy.

Case Report

This 12-year-old, Mongolian girl was in good health until 3 years prior to admission when she gradually developed kyphosis of the cervical spine. During that period she remained neurologically intact and was on antituberculous therapy intermittently. Despite the gradual onset of dyspnea, she failed to develop a productive cough. One month prior to admission, she developed a draining scrofula of the right side of the neck. On June 2, 1966, she was admitted to the World Vision Hospital in Kimpo, Korea, for treatment.

Physical Examination. The patient appeared thin, pale, and chronically ill, with marked generalized weakness which was attributed to her nutritional status. A severe kypho-scoliotic gibbus of the cervical spine was noted. A draining fistula was noted on the right side of the neck. Neurological examination was normal. The impression on admission was tuberculosis of the cervical spine without neurological involvement. Chest x-ray films demonstrated prominent calcific densities in the right hilar area, and films of the cervical spine showed severe kyphosis centered at the C5-6 level with $88^\circ$ of angulation (Fig. 1 left). Lytic lesions were noted in all of the vertebrae from C-2 through T-2; C-6 was essentially destroyed.

The patient was started on isoniazid, P.A.S., streptomycin, and pyridoxine, as well as tetracycline to combat the secondary infection of scrofula. On June 4, Crutchfield tongs were installed with 5 lbs of traction. During the next 4 weeks, the weight was gradually increased to 25 lbs. X-rays on July 7 demonstrated straightening of the previous kyphotic area and marked destructive changes typical of tuberculosis (Fig. 1 right).

On July 13, 1966, the patient was admitted to the 121 Evacuation Hospital in ASCOM, Korea. The physical findings were unchanged from the previous examinations with the exception of reduction in the amount of gibbus as well as cessation of drainage from the scrofula. Skeletal traction was reduced to 15 lbs.

Operation. On July 15, an anterior approach to the cervical spine was performed. The draining sinus tract and involved lymph nodes were excised. All of the granulation tissue and caseating necrotic material anterior to the cervical spine were removed. Severe destruction of the bodies of C-5, C-6,
and C-7 was noted. The greater portion of the body of C-6 was removed. The disease involved the bodies of all the vertebrae from C-2 through T-2. During dissection of the friable muscle and necrotic bone, the right vertebral artery was torn. Hemorrhage was controlled with surgicel and pressure. After all the necrotic tissue had been removed, a trough was created in the anterior aspects of the bodies of the vertebrae from C-2 through T-2 by the method of Bailey and Badgley. Three strips of iliac crest were fitted into this trough in the form of an on-lay graft. The colli muscles were sutured over the graft to hold it in place, as wedging for stability was impossible.

Postoperative Course. The 15 lbs of traction were maintained. The wound healed cleanly without any evidence of infection. In addition to the previous antituberculous therapy, the patient was also placed on pyrazinamide for 2 weeks. On July 27, she was transferred to the World Vision Hospital where she was maintained on antituberculous therapy and in 15 lbs of cervical traction until November 17. At this time, x-ray examination demonstrated early callous formation with good positioning of the graft and satisfactory reduction of the previous angulation (Fig. 2). A Minerva jacket was applied. Two months later, x-rays through

**Fig. 1.** Left: Initial lateral x-ray view of the cervical spine (June 13, 1966). Right: Lateral x-ray view of the cervical spine after 1 month of skeletal traction (July 14, 1966).

**Fig. 2.** X-ray film of the lateral cervical spine at the time of placing the patient in a Minerva jacket (November 16, 1966).