

TUBERCULOSIS OF THE LOWER CERVICAL SPINE

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Since 1987, over 150 patients with tuberculosis of the spine have been examined in our clinic. The cervical spine was affected in 6 of them. We report here 4 of these patients. The remaining 2 had tuberculosis of the atlanto-axial joint.

Pain and stiffness were important and dominant symptoms. In the adult type, the disease is much more localized and produces pus. Often, it presents as a destructive lesion in a single vertebral body which may be difficult to differentiate from metastatic disease in the elderly.

The age of patients at the time of presentation ranged from 18 to 43 years. The average number of vertebral bodies involved was 2.5. The fifth cervical vertebra was most commonly involved. Cord compression particularly in adults is common. The incidence of cord compression was 75 percent (3 out of 4) in our series.

The commonest method of treatment was with antituberculous drugs, anterior excision of the diseased bone and grafting. The anterior operation was done through the simple Southwick-Robinson anterior approach which effectively and rapidly relieved pain. It was also effective in the rapid resolution of cord compression.

There was full recovery in cases with neurologic deficit at the end of the treatment.

Key Words: Tuberculosis, cervical spine.

INTRODUCTION

Spinal tuberculosis is still a common disease in the underdeveloped countries (6). Tuberculosis located in cervical spine is however a rarity (2, 5). Cervical tuberculosis is encountered in 3-6% of all spinal tuberculosis (5). Long-term follow-up results of cervical tuberculosis cases are not yet known in detail. A study by Hsu and Leong carried out in 1984 is the most comprehensive study with the longest follow-up (5).

In this article, a series of 4 patients with cervical spinal tuberculosis are reported.

CASE REPORTS

Among 150 cases with spinal tuberculosis treated in the İstanbul University İstanbul Medical Faculty, Department of Orthopedics and Traumatology, six patients (4%) had involvement of the cervical spine. This article presents 4 patients out of six, excluding the two in whom the atlanto-axial joint was involved.

CASE 1

18 year-old male patient presented with neck pain, torticollis and dysphagia. Neurologic examination revealed quadriplegia and destruction in the vertebral body of C3 and kyphosis was detected in plain reontgenograms. CT sections showed a paravertebral abscess and medullary compression at the C3 level. Anterior decompression using the Southwick-Robinson ap-

proach and anterior fusion with iliac bone grafting was performed. Following the operation, halo-vest was prescribed and neurologic symptoms regressed within the first postoperative week. Mycobacterium tuberculosis was isolated from the surgical specimen and the patient was put on long-term antituberculous therapy with three drugs for 9+ months. The patient was discharged from the hospital still wearing the halo-vest, which was replaced by a soft type cervical collar within three months. Follow-up examination after two years revealed full clinical and radiological recovery with correction of the kyphosis.

CASE 2

19 year-old female patient referred to our clinic with kyphotic deformity in the cervical spine and quadriplegia. Radiology showed destruction of the bodies of C4 and C5. The same surgical and medical procedures as in case 1 resulted in full clinical and radiological recovery within a year.

CASE 3

In the examination of the 30 year-old male patient with neck and kyphotic deformity, no neurological symptom could be detected. Radiologically, massive destruction in the C4-C5 vertebral bodies and a kyphotic deformity of 32° was present. Preoperative halo traction was applied in order to correct the kyphosis, following which extensive debridement and anterior fusion was performed using the Southwick-Robinson anterior approach. Wearing a halo-vest, the patient was

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allowed to stand up after the correction of the kyphosis and restoration of the normal cervical lordosis have been observed. The halo-vest was kept for 3 months and following this, complete fusion was acquired.

CASE 4

43 year-old male patient presented with neck pain, motor weakness and disability in his left upper extremity. Massive destruction was shown in C5 and C6 vertebral bodies in plain radiograms, where spinal cord compression and a wide epidural abscess were proven with magnetic resonance imaging examination. Neurologic examination revealed monoplegia in left upper extremity. Following anterior decompression and anterior fusion using fibular graft, halo-vest immobilization was prescribed. Neurologic improvement was observed within two weeks postoperatively. Although an antituberculous therapy of 9 months was planned, the patient could not be followed after the postoperative third month.

DISCUSSION

Pain is the leading symptom in cervical tuberculosis (1, 2, 6). All of our cases presented with pain. Torticollis occurs due to muscular spasm, restricting the cervical range of movements. Cervical tuberculosis usually presents with abscess formation in childhood, while kyphotic deformity and neurologic deficits are the frequently encountered symptoms in the adult (2, 5). Those symptoms in the adult can hardly be differentiated from metastatic tumours (5). In our series however, excessive abscess formation was observed in young adult patients. This finding is controversial to those of the Hong-Kong group.

Three patients out of four displayed neurologic deficit, in accordance to the literature. Involvement of multiple vertebrae (average 2.5 vertebrae) was observed in our series in contrast of the results of the Hong-Kong group.

Spinal cord compression is not uncommon (1, 5, 7, 9). In our series, three patients (75%) presented with spinal cord compression, while the Hong-Kong group reported the compression rate to be 42.5%. Cord compression is much more common than the risk of paraplegia, which is seen in 15 to 30% of spinal tuberculosis cases. The incidence of neurologic deficits increase after the first decade of life. In their series Hsu and Leong report neurologic deficits in 13 out of 16 cases older than 10 years. Spinal stenosis and loss of vertebral flexibility due to degenerative changes together

with inelasticity of the paravertebral fascia increase the risk of neurologic deficits increase after the first decade of life. In their series Hsu and Leong report neurologic deficits in 13 out of 16 cases older than 10 years. Spinal stenosis and loss of vertebral flexibility due to degenerative changes together with inelasticity of the paravertebral fascia increase the risk of neurologic deficits within the years (3, 5, 8). Two cases referring with quadriplegia exhibited full recovery, while the other presenting with monoparesis displayed partial recovery during the follow-up period.

Treatment of cervical tuberculosis cases presenting with neurological involvement include anterior decompression and fusion (3, 4, 5, 11, 13, 14). Laminectomy is contraindicated since it is insufficient to provide spinal cord decompression and also may result in subluxation and consequent neurological deficits by causing instability of the posterior elements (5). The Hong-Kong group reports tetraplegia in three cases following laminectomy.

Preoperative halo traction can be applied to correct the kyphotic deformity in patients with severe kyphosis. This method was used in one of our patients. Postoperative immobilization can be achieved by Minerva cast, halo-vest or halo-cast. Our patients received halovest. Following 12 weeks of postoperative immobilization, cervical collar was applied for 12 weeks.

Antituberculous therapy constitutes the major part of therapy following surgical intervention, as suggested by the Medical Research Council (3, 7, 8, 9, 10, 11, 12). Our cases received antituberculosis drug therapy for 6-9 months.

CONCLUSION

Pain and vertebral deformity are the leading symptoms of spinal tuberculosis in the lower cervical region in adults and more than 50% of cases refer with spinal cord compression and neurological deficits. The selected mode of treatment in these cases is (Southwich-Robinson type) anterior decompression and fusion, followed by antituberculous drug therapy. Conservative therapy has no indications, and posterior spinal fusion is usually unnecessary.

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