

POTT'S DISEASE

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ABSTRACT:

24 patients were treated at the Wolfgang Goethe University Offenbach City Hospital between 1992 and 1996 for tuberculosis of the spine. A high index of suspicion is required for Pott's disease, which occurs in fewer than 1 percent of patients with tuberculosis, often presents with non specific symptoms, and may results in permanent deformity or neurologic impairment. All patients had triple chemotherapy with or without decompression surgery. 6 patients including 4 children, were treated conservatively, 18 patients were treated surgically. 17 patient had anterior radical decompression surgery, and for 7 of them, anterior surgery was preceded by posterior instrumental stabilization surgery. One patient with healed disease had posterior decompressive corpectomy. 10 patients had lesions between T3-T10, where the spinal canal is narrow, of whom had neurologic involvement. All ten underwent anterior approach (thoracotomy) for decompression, debridement and spinal fusion.

14 patients had lesions between T11-S1. 4 patients had neurologic involvement but responded to medical treatment alone. Combined surgical and medical treatment gave excellent results in this series.

Key Words: Spine Tuberculosis, Combine surgical and medical treatment.

INTRODUCTION

Skeletal tuberculosis, which occurs in approximately one percent of patients with tuberculosis (5). Patient with spinal tuberculosis have nonspecific symptoms that can result in delay in the diagnosis if high index of suspicion is not maintained and neural involvement occurs in 10 to 47 percent of these patients, which if not adequately and promptly treated can cause irreversible damage (8, 16).

Spinal deformity or paraplegia are the most problematic complication of tuberculosis of the spine. Both complications occur more of them in case of delayed diagnosis and management (1, 3, 8).

The development of modern, specific antituberculous drugs has revolutionized the treatment of patients who have spinal tuberculosis. The good results that are obtained with modern drug therapy have led to controversy between the advocates of chemotherapy and those of operatif treatment (9, 10).

MATERIAL AND METHODS

The medical records of 24 patients diagnosed as having spinal tuberculosis (Pott's Disease) between

1992-1996 at the Wolfgang Göethe University Offenbach City Hospital were reviewed. The following information was obtained; age, sex, symptoms and signs at presentation, PPD, tuberculin skin status, chest X-ray film, CT scan, medical treatment and outcome.

RESULTS

There were 11 females 13 males with age distributions of 12 to 83 years (mean 4.5) There were 52 vertebrae involved in the 24 patients (mean 2.2 vertebrae per patient). The site of involvement varied from the third thoracic vertebra to first sacral vertebra, the upper lumbar vertebra being the most common site of involvement.

The presenting symptoms are listed in Table 1. All 24 patients were symptomatic at the time of presentation. The durations of symptoms before diagnosis ranged from four weeks to five years. Back pain was the most common symptoms at presentation, occuring in 19 of 24 patients (79 percent).

A summary of the diagnostic procedures is given in Table 2. The PPD skin test was positive in 21 of 24 patients; three were anergic. The chest X-ray film was abnormal in nine patients (37.5 percent), including inactive pulmoner tuberculosis in four, miliary

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Table 1. Presenting Symptoms in 19 Patients with Tuberculosis of the Spine.

Symptom	No
Back pain	19
Weight loss	10
Weakness of lower extremities	7
Numbness	6
Flank or groin mass	5

Table 2. Diagnostic Procedures in 24 Patients with Tuberculosis of the Spine.

Procedure	No. Positive/ Total No. Done
CT scan	24/24
PPD skin test	21/24
Chest x-ray film	9/24
Culture for mycobacteria	7/18

tuberculosis in three, diffuse infiltrates in one and right pleural effusion in one.

CT was used for all patients with suspected tuberculosis of the spine. CT revealed positive findings in all 24 patients (Table 3). Psoas or paraspinous abscesses were seen in 8 patients with calcification in 5 of these, vertebral body destruction in 12, intervertebral disc space narrowing in 10 and pedicle fracture in 3.

Table 3. CT Findings in 24 Patients with Tuberculosis of the Spine.

CT Finding	No.
Vertebral body destruction	12
Psoas or paraspinous abscess	8
Intervertebral disk space narrowing	10
Calcification within the abscess	5
Pedicle fracture	3

All patients received medical treatment as soon as the diagnosis was suspected. This treatment consisted of at least three of the following drugs: Isoniasid, ethambutol, rifampin and streptomycin.

18 patients required surgical treatment in addition to the medical treatment. The indications for surgery

were progressive neurologic deficit in 10 patients, spinal deformity in 3, poor response to medical treatment in 1 and enlarging psoas abscesses in 4 patient. The procedures performed were anterior 17, radical decompression surgery and spinal fusion in 17 patients and for 7 of them, anterior surgery was preceded by posterior instrumental stabilization surgery. One patient with healed disease had posterior decompressive corpectomy. Drainage of psoas abscesses were done in 4 patients. All patients survived operations and were free of symptoms on follow up.

Fourteen of the 24 patients had neurologic deficit or spinal cord involvement. Four of them responded to medical treatment alone. Ten of them underwent anterior decompression, debridments and spinal fusions. All of them were cured and free of symptoms on follow up (6 months to 5 years).

There were 14 patients in the series with lesions between T11-S1. Four of them had neurologic symptoms but were treated medically and did not require surgical intervention. Eight of these 14 patients underwent an operation. Four had drainage of psoas abscesses with anterior lumbal spinal fusions followed by posterior spinal fusion. Three had anterior spinal fusion followed by posterior spinal fusion. One patient had decompressive corpectomy.

Two patients in this series died of miliary tuberculosis after admission and 7 of them had marked improvements in their symptoms with minimal residual back pain on follow up.

DISCUSSION

Tuberculosis of the spine is an uncommon form of the tuberculosis occurring in fewer than 1 percent of patients with tuberculosis (5, 7), but it should always be kept in mind, because any delay in the diagnosis can result in irreversible neurologic damage. The clinical presentation is nonspecific with back pain being the most common symptom (5, 12, 15).

Positive PPD skin test is the most important diagnostic clue, normal chest X-ray findings do not rule out the diagnosis of skeletal tuberculosis (4).

A thorough neurological examination should be performed to reveal any sensory or motor deficits. The incidence of neurologic involvement in patients with Pott's disease varies from 10 to 47 percent (8, 16). This high incidence combined with irreversible

damage and disability if the diagnosis was delayed, made early diagnosis and initiation of therapy of great importance (4). Neurologic complications were more frequent when the disease involves the upper and midthoracic spine (13, 16). This predilection to neurologic involvement may be due to the narrow, rounded spinal cord in the thoracic region into which the cord and nerve roots fit snugly (6).

The spinal canal is narrowest between T3 and T10 and this is because the thoracic spinal canal "grows slower" than that of the cervical or lumbosacral spine (14).

Thus early operative intervention must be considered in patients with Pott's disease involving the thoracic spine (2, 11). The recommended surgical procedure is anterior spinal fusion (2, 16). Anterior approach, which is done through a left posterolateral thoracotomy permits direct access to the diseased vertebral bodies allowing effective mechanical decompression of the spinal canal and stabilization of the spine. Early aggressive surgical approach in this series allowed a prompt and full recovery and gave excellent results.

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