Short Communication

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Pott's Disease: One of the Most Common Manifestation of Extrapulmonary Tuberculosis in the Southeast of Iran

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In order to determine the prevalence of spinal tuberculosis in Zahedan region, this study was conducted. In this cross-sectional and retrospective study, in a time period of ten years, from Feb 1996 to Dec 2005, in Zahedan (Southeast of Iran), all patients who were treated for spinal TB in the medical and orthopaedic wards in Zahedan University Hospitals and Zahedan Tuberculosis Center were evaluated. After recording the demographic data, the clinical notes, radiographs and hematological results of the patients were evaluated and then analysed. One hundred eighteen patients were seen, 82 males and 36 females, age range 4-73 years (mean 29.2±23.7 years). One hundred seven patients had complete clinical data in their case notes. Twenty eight patients had paraplegia and eighty six had concomitant pulmonary TB, more old tuberculosis. The thoracic spine was the commonest site of involvement. Two thirds (78 patients) had positive Mantoux test. All patients had chemotherapy and only six cases was lost to follow up within three months because they had been expired. Only four patients had surgical intervention. Upon our results, spinal TB is still a common disease in Southeast of Iran with significant complication. There is need for patient health education, contact tracing, provision of free hospitalization and general improvement in the economy to reduce the prevalence of spinal TB in the country.

Key words: Pott's disease, extrapulmonary tuberculosis, prevalence, Iran

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INTRODUCTION

Tuberculous spondylitis has been documented in ancient mummies from Egypt and Peru and is one of the oldest demonstrated diseases of humankind. Percival Pott presented the classic description of spinal tuberculosis in 1779 (Hidalgo and Alangaden, 2004; Pott, 2002). Since the advent of antituberculous drugs and improved public health measures, spinal tuberculosis has become rare in industrialized countries, although it is still a significant cause of disease in developing countries such as Iran (Rezai et al., 1998). Tuberculous involvement of the spine has the potential for serious morbidity, including permanent neurologic deficits and severe deformity (Watts and Lifeso, 1996). Medical treatment or combined medical and surgical strategies can control disease in most patients. Approximately 1-2% of total tuberculosis cases are attributable to Pott disease (Colmenero et al., 2004). Tuberculous spondylitis is the most common manifestation of musculoskeletal tuberculosis (40-50% of cases) (Hidalgo and Alangaden, 2004). Iran, especially Southeast of Iran is an endemic area for tuberculosis. The annual incidence rate for all kinds of tuberculosis disease and smear positive pulmonary tuberculosis is 71 and 40 in 100,000 population, respectively (Moghaddasi and Naini, 2003). Several studies have been conducted about the prevalence of extrapulmonary tuberculosis in developed and underdeveloping countries (Almesia, 2005; Lifeso et al., 1985; Pertuiset et al., 1999; Colmenero et al., 2004; Dursun et al., 2003; Fice et al., 2003) and the results are different according to area but there was no any report about epidemiology of the Pott's disease in this region. Therefore, we decided to determine the prevalence of this form of tuberculosis and then to analyse clinical notes, radiographs and haematology results in the patients.

MATERIALS AND METHODS

This study was a cross-sectional and retrospective study. We evaluated all patients who were treated for spinal tuberculosis in a time period of ten years from Feb 1996 to June 2005, in Zahedan Tuberculosis Center and Medical and Orthopaedic Wards of University Hospitals in Zahedan. First we determined all cases with extrapulmonary tuberculosis, then musculoskeletal TB and then evaluated patients with Pott's disease. After recording the demographic data, the clinical notes, radiographs and haematology results of the patients evaluated and then analysed.

RESULTS AND DISCUSSION

During ten years 122 patients were treated for skeletal tuberculosis. Only four cases had arthritis. One hundred eighteen patients (82 males and 36 females) with age range 4-73 years (mean 29.2±23.7 years) had Pott's disease (Table 1). One hundred seven patients had complete clinical data in their case notes. Low back pain was the most common clinical complaint (90%). Fever and weight loss was seen in 71% of cases. Twenty eight patients had paraplegia (Table 2). The thoracic spine was the most common site of involvement (Table 3). Eighty six had concomitant pulmonary TB, more old tuberculosis. Two thirds (78 patients) had a positive mantoux test more than 10 mm. Seventy two cases had a sedimentation rate (ESR) more than 70 mm h⁻¹ and among these patients, 23 cases had ESR more than 100. Anemia (HT = or < 31%) was seen in 97% of our patients. The whole diagnosis of spinal tuberculosis was made by radiographically-MRI and CT scan.

Present result showed that among 1030 patient with extrapulmonary TB during ten years, 11.4% of patients had Pott's disease. After tuberculous lymphadenitis (31%) and pleural tuberculosis (11.6%), Pott's disease (11.4%) was the most common forms of extrapulmonary TB. Skeletal tuberculosis remains a potentially disease in the developing world, particularly as it usually affects children and young adults (Fitzgerald and Hass, 2005). Pott's disease is usually secondary to an extraspinal source of infection. The basic lesion is a combination of osteomyelitis and arthritis. Typically, more than one vertebra is involved (Hidalgo and Alangaden, 2004). The area usually affected is the anterior aspect of the vertebral body adjacent to the subchondral plate. In adults, disk disease is secondary to the spread of infection from the vertebral body (Moon, 1997; Pertuiset et al., 1999). In children, because the disk is vascularized, it can be a primary site (Hidalgo and Alangaden, 2004). The condition most commonly involves the thoracic and lumbar spinal. Lower thoracic vertebra account for the most common area of involvement (40-50%), with the lumbar spine in a close second place (35-45%). Approximately 10% of cases involve the cervical spine (Hidalgo and Alangaden, 2004). In our study, as reference book, thoracic spine especially lower thoracic vertebrae were the most common site of involvement. Also as reference book, fever and weight loss were very common (Fitzgerald and Hass, 2005). Pott's disease is the most dangerous form of musculoskeletal tuberculosis because
it can cause bone destruction, deformity, and paraplegia. Presence of complications such as neurologic deficits, abscesses, or sinus tracts (Almesdia, 2005). In the study of 25 cases with spondylodiscitis nine cases had tuberculosis (Fica et al., 2003). In the present study, 28 patients had paraplegia and discitis had been shown by MRI in 52% of patients. Cold abscess in the paravertebral was seen in 15% of cases but in Colmenero study among 78 patients with pott's disease 73.1% of cases had paravertebral abscess (Colmenero et al., 2004). The reported average duration of symptoms at the time of diagnosis is 3-4 months. Back pain is the earliest and most common symptom. Patients usually present for weeks prior to presentation. Pain can be spinal or radicular (Hidalgo and Alangaden, 2004). In the study, as our study, pain was the major complaint (Dursun et al., 2003). Pain also, can include spinal cord compression with paraplegia, paresis, impaired sensation, nerve root pain, or cauda equina syndrome. Although, neurologic abnormalities can occur in 50% of cases (Fitzgerald and Hass, 2005; Hidalgo and Alangaden, 2004) but among our patients, 18.4% cases had paraplegia. Diagnosis can be confirmed by the bacteriologic and histological studies from samples removed by puncture biopsy (Almesdia, 2005). Imaging test including CT and MRI is also necessary for diagnosis and MRI is the modality of choice in evaluating early marrow involvement and soft tissue extension of the lesion (Sharif et al., 1995; Toc and Peh, 2004; Ridley et al., 1998; Moorthy and Prabhu, 2002). In this study, there was no any culture in record notes because puncture biopsy had not been done by physicians and diagnosis was made by clinical signs, symptoms and almost, the whole diagnosis of spinal tuberculosis was made by radiographically-MRI and CT scan.

Table 1: Frequency of pott's disease according sex and date

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>9</th>
<th>12</th>
<th>5</th>
<th>9</th>
<th>5</th>
<th>8</th>
<th>7</th>
<th>11</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>18</td>
<td>13</td>
<td>18</td>
<td>9</td>
<td>12</td>
<td>11</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
</tr>
</tbody>
</table>

Table 2: Frequency of signs and symptoms in the patients with pott's disease

<table>
<thead>
<tr>
<th>Sign and symptom</th>
<th>No.</th>
<th>%</th>
</tr>
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<tbody>
<tr>
<td>Low back pain</td>
<td>107</td>
<td>90</td>
</tr>
<tr>
<td>Fever</td>
<td>88</td>
<td>71</td>
</tr>
<tr>
<td>Fatigue</td>
<td>88</td>
<td>71</td>
</tr>
<tr>
<td>Weight loss</td>
<td>88</td>
<td>71</td>
</tr>
<tr>
<td>Paraplegia</td>
<td>22</td>
<td>18.4</td>
</tr>
<tr>
<td>Cough</td>
<td>36</td>
<td>30.5</td>
</tr>
</tbody>
</table>

Table 3: Frequency of pott's disease according to the site of involvement

<table>
<thead>
<tr>
<th>Site</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thoracic</td>
<td>69</td>
<td>50.8</td>
</tr>
<tr>
<td>Lumbar</td>
<td>45</td>
<td>45.9</td>
</tr>
<tr>
<td>Cervical</td>
<td>4</td>
<td>3.3</td>
</tr>
</tbody>
</table>

CONCLUSIONS

With regards to our results, pott's disease is one of the commonest form of extrapulmonary TB in this region and in every patients with low back pain especially in endemic areas, every time, there is a history of contact with tuberculosis case, diagnosis of TB spondylitis must be in mind. Also, there is need for patient health education, contact tracing, provision of free hospitalization and a general improvement in the economy to reduce the prevalence of spinal TB in the country.

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REFERENCES


