Prognosis Of Spinal Tuberculosis

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Citation

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Abstract

Tuberculosis (TB) is a major health problem in developing countries. The highest rates of the disease are seen in Sub - Saharan Africa, the Indonesian and the Philippine, Archipelagos, Afghanistan, Bolivia and Peru. About 20% of the world population afflicted with TB reside in India. 20% of TB involves the musculo-skeletal system.

We reviewed twenty five patients who had spinal TB from 2004 to October 2006. One patient defaulted treatment. More than three quarter of our subjects had neurological deficits on presentation. All subjects were initially treated medically. About half of the patients who had neurological deficits improved on medical treatment. For those who required surgery, three (3/4) showed rapid neurological recovery. Spinal TB is a disease with a fairly good outcome.

INTRODUCTION

Tuberculosis (TB) is a worldwide major health problem particularly in developing countries. It is estimated that 20% of the world population afflicted with TB reside in India. There is also an increasing number of patients with TB in developing countries due to HIV/AIDS epidemic.

It is estimated that 20% of TB involves the musculo-skeletal system, while 50% of muscular skeletal TB involves the spine. Spinal TB (like all other extra – pulmonary TB) is an AIDS – defining condition in HIV positive patients. Treatment of spinal TB is largely medical; surgery is adjunctive.

Spinal tuberculosis has a good prognosis.

PATIENTS AND METHODS

- We reviewed all medical records from Kalafong Hospital Spinal Unitfrom 2004 to October 2006.
- The total number of patients was 25. There were 19 males and 6 females. 1 patient was lost to follow up.
- The average age of patients was 37 years (range: 5 – 73). The demographic and clinical data of the patients are shown in Table 1

Figure 1

Table 1: Demographic And Clinical Data Of Patients With Spinal Tuberculosis (from 2004 – October 2006)

PATIENT NUMBER	SEX	AGE	DURATION OF COMPLAINTS (MONTHS)	CO-MORBIDITY	LEVEL OF INFECTION	NEUROLOGICAL STATUS (FRANKEL GRADING)*	MEDICAL TREATMENT DURATION (MONTHS)	OUTCOME OF MEDICAL TREATMENT (FRANKEL GRADE)*	SURGICAL TREATMENT	OUTCOME OF SURGICAL TREATMENT (FRANKEL GRADE)*
1	M	36 y	24	-	T_7	D	9	E	-	-
2	M	53 y	21/2	Epilepsy, Ca of Lungs	T_4	A	3 weeks	DIED	-	-
3	M	38 y	Unknown	-	T_2, T_3	B	9	B	YES	E
4	F	55 y	36	-	$T_{10}L_1L_2$	D	9	E	-	-
5	M	49 y	18	-	$T_{12}L_1$	D	9	D	-	-
6	M	73 y	1	Bronchus ca	L_3L_4	D	2 weeks	DIED	-	-
7	M	51 y	12	-	L_3L_4	D	9	D	-	-
8	M	7 y	Unknown	-	L_3L_4	E	9	E	-	-
9	M	5 y	Unknown	-	L_3	E	9	E	-	-
10	F	22 y	Unknown	-	L_3L_4	E	9	E	-	-
11	F	25 y	72	-	L_3S_1	D	9	E	-	-
12	M	32 y	Unknown	-	T_8	E	9	E	-	-
13	F	23 y	24	-	$L_3L_4L_5$	C	9	D	-	-
14	M	28 y	2	-	T_9	D	9	D	-	-

Figure 2

Table 2: Demographic And Clinical Data Of Patients With Spinal Tuberculosis (from 2004 – October 2006)

PATIENT NUMBER	SEX	AGE	DURATION OF COMPLAINTS (MONTHS)	CO-MORBIDITY	LEVEL OF INFECTION	NEUROLOGICAL STATUS (FRANKEL GRADING)*	MEDICAL TREATMENT DURATION (MONTHS)	OUTCOME OF MEDICAL TREATMENT (FRANKEL GRADE)*	SURGICAL TREATMENT	OUTCOME OF SURGICAL TREATMENT (FRANKEL GRADE)*
15	F	40 y	12	HIV+VE	T_9T_{10}	C	9	C	YES	C
16	M	40 y	7	-	T_7T_{10}	C	9	E	-	-
17	M	50 y	24	-	L_4L_5	E	9	E	-	-
18	M	41 y	6	HIV+VE	$T_{12}L_1$	C	9	DIED	-	-
19	M	30 y	17	HIV+VE	L_4L_5	D	9	E	-	-
20	M	52 y	6	-	C_5C_6	C	9	D	-	-
21	M	51 y	Unknown	LYMPHOMA	T_2T_3	C	3	DIED	-	-
22	F	37 y	10	HIV+VE	$T_{12}L_1$	D	9	Deteriorated (C)	YES	E
23	M	14 y	3	-	T_9T_{10} L_3L_4	C	9	C	YES	E
24	M	32 y	9	-	L_4	D	9	E	-	-

* FRANKEL GRADING: (Neurological status)
A = Complete
B = Sensory only
C = Motor useless (M.R.C. Grade 0/5 – 2/5)
D = Motor useful (M.R.C. Grade 3/5 – 5/5)
E = Normal

RESULTS

The majority of patients affected with spinal TB are in their third decade. Most of our patients presented late; fifteen months after onset of backache. The main complaint was backache. 80% of patients presented with neurological deficits. All female patients had neurological fallout on presentation.

On clinical investigations, 4 patients were HIV positive (16%). All patients had radiological evidence of spinal TB on presentation. The distribution of the disease was as follows; 11 lumbar, 9 thoracic, 4 thoraco-lumbar and 1 cervical.

All patients were initially treated medically with anti – TB therapy. One patient defaulted therapy. Four patients died during treatment. Eight (53%) patients who had neurological deficits on presentation improved to functional level (Frankel Grade E) on medical treatment; one patient deteriorated and three remained the same. Subjects who did not improve neurologically within two months of medical treatment were considered candidates for surgery (as per protocol).

Surgery was needed in four patients.

Those who had spinal surgery showed different outcome; one patient did not improve neurological (after one year follow up) and the other three had complete neurological recovery after one year follow-up.

DISCUSSION

Our study shows that Spinal TB has a fairly good outcome. Half of our subjects who initially presented with neurological deficits improved to a functional level (Frankel E) on medical treatment. Medical treatment is the principal treatment regardless of the neurological status on presentation. Surgery is adjunctive. All subjects who presented without neurological deficits did not deteriorate or develop neurology during treatment.

Abhay et al (1) re-iterated our findings that Spinal TB affects males more than females. Their study also confirmed that the disease is common in patients in their third decade. They confirmed that patients with mild neurological deficits (Frankel Grade D) can be expected to recover fully on medical treatment. This is in agreement with our study. Kalita et al ([2]) in their analysis of the prognosis of Pott's paraplegia concluded that patients are likely to recover fully by six months if they have mild weakness, lower paraplegia score, normal S.E.P. (sensory evoked potential) and M.E.P. (motor evoked potential).

The most commonly affected areas of the spine in our study are the lumbar region followed by the thoracic area. Spiegel et al ([3]) in their study showed that the most commonly affected region was the thoracic spine, followed by the thoraco – lumbar region. There is a wide variation in the distribution of the disease in the spine, depending on the study.

The role of surgery in spinal TB is controversial ([1,3]). Dharmalingam ([4]) in his study stated that surgery is adjunctive and controversial: it is used for biopsy, abscess drainage and as an adjunct to chemotherapy. Surgery is definitely indicated where there is no neurological improvement following adequate medical treatment. The advantages of surgery are; rapid relieve of pain and faster neurological recovery. We operated on four patients who failed to recover neurologically after two months of medical therapy. Half of these patients showed rapid neurological recovery within six weeks of surgical intervention. Three out of four patients who had surgery recovered completely within a year following surgery. It is not possible to conclude from this study whether patients with HIV have a different prognosis compared to subjects without HIV.

The shortcomings of the study are:

- It is a retrospective study.
- Patients are few (<30).

CONCLUSION

We can draw the following conclusions from our study;

- Medical treatment is the cornerstone of spinal TB.
- A large proportion of patients (in our study 53%) who present with neurological deficits will recover to a functional level (Frankel E) on medical treatment.
- Surgery has a definite role in those patients who failed to recovery neurologically on medical treatment.

COMPETING INTERESTS

The Authors declare that there are no competing interests.

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