Tuberculosis Of The Spine In Nepal

--Dr. W. M. Gould.

Introduction

This paper represents a study of 100 patients suffering from tuberculosis of the spine in the country of Nepal. Some of the difficulties in the treatment of this condition in a developing country are considered as well as the indications for surgical intervention. Guidelines are suggested for a uniform method of treatment in the country at this present time considering our limited resources.

Pathology

Perhaps the major problem of Nepal from a health point of view is Tuberculosis. We are all familiar with the problems of pulmonary tuberculosis in the country, but tuberculosis of bones and joints is also a common occurrence. We are told that there is always an initial bacillaemia and infection is derived from primary sites in the pulmonary or alimentary tract. I have been impressed by the lack of evidence in my series of primary infection or of another focus of tuberculosis in the body. Only 24% showed evidence of TB at other sites and these were pulmonary lesions. It can be argued that the primary site in the other cases could be the alimentary tract, but I am frequently impressed by the lack of evidence of a primary site judging by signs and symptoms. However, once tuberculosis has infected a bone or a joint it seems the dominant sites are the spine and the hip. A recent series from a large Indian city covering admission in four different hospitals of 426 in-patient with bone and joint tuberculosis, 61% had spinal disease and 14% had hip disease. The remaining 25% represented all the other possible sites of orthopaedic tuberculosis.

Clinical Features

Initially the onset of recognisable features is spread over a period of months. Constitutional symptoms of malaise, fatigue and loss of weight may precede local evidence. Certainly in this series people in Nepal seek medical help later rather than sooner! In our cases the commonest presenting complaint—in 33% of our patients was deformity. Obviously for kyphosis to develop there has been severe bony destruction and this amount of destruction takes several months to develop. Pain is a common presenting symptom and so is paresis (weakness) of a limb or limbs or frank paralysis. One fifth of our patients presented with signs of paresis or paraplegia and one fifth complained of back pain. Others presented with fever or with a palpable abscess. There was little difference in the sexes in the series there being 47 males and 56 females. One third of the patients were under 14 years of age, but 4 patients were over 60. By far the commonest site of tuberculosis of the spine was the thoracic spine (57% of the cases) and almost all the rest were lumbar lesions. Only 4% of the series showed cervical involvement.

Diagnosis

A good history is essential and so is a full examination of the patient. Particular features to be noted are a kyphosis, signs of an abscess, local tenderness, inability to fully flex the spine and constitutional signs. The abscess may be quite a distance from the lesion e.g. the Psoas abscess. In the younger age groups a tuberculin test (Mantoux or PPD) can be helpful. Culture of pus or simple ZN staining may reveal AFB. Radiologically the characteristic narrowing of the intervertebral disc space is the first sign, followed quite quickly by destruction of bone on either side of disc. The paravertebral abscess is a fairly late manifestation but it is typical of the disease at this stage. In the thoracic area it produces a spindle shaped shadow but in the lumbar area it distends the sheath of the psoas muscle and this produces enlargement of the psoas shadow on the X-ray. Biopsy from a lesion usually gives undeniable proof but this investigation is not always possible or advisable. Helpful investigations I believe are the ESR (raised in 82% of our patients in whom we did this test) and the haematocrit was lowered in about 40% of our cases. Diagnosis of TB spine in a country like Nepal is a simpler problem than it is in the West. If a lesion looks at all like TB it will probably be tuberculosis. In a series from Hong Kong the clinical and radiological diagnosis was confirmed histologically in 88% and in the remaining 12% no other organism was found, so that these too were almost certainly tuberculosis. A final point might be made that a condition which appears to be TB of the spine and is treated with anti-tuberculous drugs and responds clinically and radiologically will almost

certainly be tuberculosis.

Treatment

My plan of treatment of any patient with tuberculosis of the spine here in Nepal has been evolved over my period of service in this country which is now ten years. Having watched Masalawalla at work in Bombay and Selvapandian in Vellore, having read Hodgsons work from Hong Kong and Konstams work from Nigeria I can say how much these men have taught me as I have considered the best way we can tackle the problem in Nepal. May I suggest that we think of 3 distinct categories and the patient with TB of the spine will fit into one of these categories. Treatment for each category is different:-

Category 1 - The patient who presents with a kyphosis and no pain or abscess can be treated immediately as an outpatient with two drugs and the combination we favour now is 150 mg Thiocetazone and 300 mg INH for adults, with smaller doses in children. Our aim is to continue treatment for 18 months.

Category 2 - The patient who complains of pain with or without other complaints of spinal TB. The pain may be due to bone destruction, it may be due to muscle spasm or weakness. These patients are admitted to hospital for an initial period of 2 weeks-complete bed rest and antituberculous therapy again using 2 drugs is instituted. A good number of these patients lose the pain and at this point they are sent home on antituberculous therapy. If they have not lost their pain but seem to be improving we continue with bed rest - if there is no improvement or after a further 2 weeks of bed rest pain is still present we then go ahead and immobilise the affected area of the spine with a POP jacket or an alkathene brace. In the series over a half of the patients required either POP or alkathene. We have recently found that an alkathene brace is cheaper to produce than a POP jacket considering the recent increases in POP prices and the fact that the alkathene can be taken off when the patient has a shower and then reapplied makes it considerably more popular with the patients than POP. I think the minimum period for wearing either a brace or a POP jacket is three months. Antituberculous therapy should be continued for 18 months.

Category 3 - The patient who presents with paresis or paraplegia or with a palpable abscess, which may or may not be discharging. This is the group in which surgery must be considered. An abscess which is already discharging may not need anything more than rest and daily dressings, but surgical intervention to increase

drainage may ultimately save the patient time in hospital. An abscess which is pointing or fluctuant is better drained and it is good to remind ourselves that cold abscesses are not always in the typical Psoas abscess position. If secondary infection has occurred then in addition to antituberculous drugs antibiotics should be started.

The patient with either paresis or paraplegia showing definite radio-logic evidence of a paravertebral abscess should have the abscess drained. In the west the operation of costo transversectomy (where we remove a posterior portion of rib together with the transverse process of the vertebra) is no longer popular but I am convinced that it still has a very important place in a country like Nepal where except in a few centres we have neither highly trained anaesthetists or highly trained thoracic surgeons. The results can be very gratifying when within a few days of operation where pus has been evacuated and drained the formerly paraplegic patient begins to move his legs again. Not all cases are as dramatic as this though and one can predict that the results are good in the very early paresis or paraplegic and they get correspondingly worse depending on the length of time the paresis or paraplegia has been present. In the present series just over 50% of those undergoing costo transversectomy were improved. An abscess in the lumbar spine can be drained using an anterolateral approach similar to the operation of lumbar sympathectomy, but we have done this operation on only one occasion primarily because it seems that pus from an abscess in the lumbar spine region tracks out to the surface much more easily than in the thoracic region – either along psoas to point in the groin or along quadratus lumborum or laterally from psoas insertion to point in the lateral region of the thigh.

Results

The results in this relatively small series of spinal tuberculosis are encouraging as we compare them with the results from Hong Kong and Nigeria which are centres of large numbers of TB spine cases. 78% of our patients improved clinically and radiologically. I think a disturbing feature in our results is that after one year only 50% of our patients were continuing with their treatment. We are now using a patient retained record for our patients with tuberculosis and this means they can go to other centres for continuation medicine. From this point of view may be I am being over pessimistic

I hope so. Certainly unless a patient continues with treatment for at least one year the chance of recurrence is high and it is wiser to inform each patient at the commencement of treatment that he or she should be prepared to keep up the treatment for 18 months.

Discussion

In sophisticated centres it can be argued that more radical surgery is indicated in dealing with spinal tuberculosis. Certainly we cannot deny the excellent results produced by Hodgson and his co-workers in Hong Kong. However we must be realistic as we tackle this disease in Nepal and I believe that our regime described in this paper is one that can be carried out in each zonal hospital. Certainly on this regime almost half of those presenting with TB spine can be treated in our district hospitals and only those requiring surgery need to be referred to the Zonal hospital. I believe this regime represents a realistic approach to the problem of tuberculosis of the spine here in Nepal at the present time.