

TUBERCULOSIS OF THE GREAT TROCHANTER WITH SPECIAL REFERENCE TO THE TREATMENT BY CHEMOTHERAPEUTICS

By

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MATERIAL

During the years 1940-1950, 1365 cases of orthopedic tuberculosis were treated at St. Görans sjukhus. Of these, 640 or 47 % were spondylitis cases, 194 or 14 %, coxitis, and 35 or 2.6 %, trochanteritis. The age of this last group varied at the onset of the disease from 6-66 years with an average of 35 years. There were 14 women and 21 men. In 17 cases the process was right-sided and in 18, left-sided. The duration was from 1 week to 18 years, the average being 25 months, or if the 3 cases with the longest anamneses are excepted, 10 months. These findings are shown on the graph in Table 1. As far as is known, tuberculosis occurred solely in the trochanter in 10 cases; in 12 there was an associated involvement of the lungs and pleura; in 13, it was present in other joints and bones. There was an associated coxitis in 6 cases, in 1 prior to the trochanteritis, in 1 simultaneously and in 4 cases after, the time differences being 2, 9, 13 and 20 years. There was spondylitis in 7 cases. These findings are summarized in Table 2.

Radiographic changes in the form of osteitis in the trochanter were revealed in 25 cases but were absent in 10. The first hospital treatment varied between 2 days and 3 years, with an average of 5 months. The average observation period was 6 years with extremes of 18 months and 32 years. On admission, ESR was 6-102 mm, average 36 mm, whereas on discharge it was 5-88 mm, with an average of 21 mm. Local recurrence occurred one or more times in 9 cases, but 25 had no recurrence. One patient died at the hospital from multiple localisations of tuberculosis with amyloidosis (Table 3).

DIAGNOSIS

In 17 cases the method of making the diagnosis was by pathological anatomical investigation (PAD) only, in 5 solely by the positive guinea-pig tests of abscess exudate, in 5 by both positive guinea-pig tests and PAD, and in the remaining 8 cases by the clinical course and roentgen pictures. The PAD cases included 1 in which tuberculous bacilli were found in the incision, 10 where the pathologist considered the diagnosis to be definitely tuberculosis, and 11 where it was very probable. (Table 4).

TABLE 1

Cases of orthopedic tuberculosis.

1940-1950	1365 cases.
Spondylitis	640 cases (47 %).
Coxitis	194 cases (14 %).
Trochanteritis	35 cases (2.6%).
<i>Trochanteritis cases (35).</i>	
Age: 6-66 years. Average 35 years.	
Sex: 14 women, 21 men.	
Side: right 17, left 18.	
Duration of anamnesis: 1 week-18 years. Average 25 months.	
Average, excepting 3 cases with very long anamnesis, 10 months.	

TABLE 2

Coincidence with other tbc during the observation period.

Trochanteritis only	10 cases
Also tbc pulm., pleuritis	12 cases
Also other bone-joint tbc	13 cases
<i>Coxitis:</i> 6 cases (17 %) of which 1 case occurred previously, one simultaneously and 4 after trochanteritis. Time difference: 2, 9, 13 and 20 years.	
<i>Spondylitis:</i> 7 cases.	

TABLE 3

Roentgen changes (Osteitis).

Present in 25 cases, absent in 10.	
<i>Under hospital care:</i> 2 days-3-years. Average 5 months.	
<i>Obs. period:</i> 18 months-32 years. Average 6 years.	
<i>ESR on admission:</i> 6-102 mm. Average 36 mm.	
<i>ESR on dismissal:</i> 5-88 mm. Average 21 mm.	
<i>Recurrence:</i> 9 cases. Free, 25 cases.	
<i>Mortality:</i> 1 case died from multiple tuberculous localisations with amyloidosis.	

TABLE 4

Method of diagnosis:

PAD only	17 cases.
Pos. guinea-pig test only	5 cases.
PAD and guinea-pig test	5 cases.
<i>PAD cases:</i>	
Tub. bac. in the section	1 case.
Certified tbc	10 cases.
Very probable tbc	11 cases.

RESULTS OF TREATMENT

With regard to treatment, the series was divided into 4 groups. Eleven cases were treated conservatively, with bed rest, possibly in connexion with punctures, incisions or simple excavations, and the final application of plaster casts. Operations were performed in 12 cases, with removal of the tuberculous foci in soft tissue and bone, and with primary closure. Ten cases were treated by operation combined with chemotherapy. Chemotherapy was administered alone in the remaining 2 cases. The decrease of the ESR, under hospital care was about the same in all groups, averaging 14, 10, 15 and 24 mm. respectively. At discharge, 6 and 3 cases in the first two groups had fistulae, but there were none in the last two. There were 4 recurrences in each of the first two groups, none in the last two. Average time under hospital care was 265, 100, 63 and 58 days. The average observation period was 10 years, 9 years, 24 months and 28 months for the groups respectively. These data are summarized in Table 5.

TABLE 5

Results of treatment.

	Conservat.	Op.	Op. + chemo.	Chemo. only
Numb.	11	12	10	2
Average ESR decrease	14	10	15	24
Fistulae on discharge	6	3	0	0
Recurrence	4	4	0	0
Observation period	10 yrs	9 yrs	24 mths	28 mths
Time in hospital, days	265	100	63	53

DISCUSSION

The clinical diagnosis in tuberculous trochanteritis usually presents no difficulties, with the local symptoms—pain and/or swelling—regularly occurring. The one or the other of these symptoms was

present in every case. Then, as in the group reported, the diagnosis was certified by positive guinea-pig tests, by definite or almost definite PAD diagnoses or by the clinical course, roentgenographic findings and by the occurrence of other positive tuberculous foci.

From a strictly scientific viewpoint, a reliable diagnosis is not established until tubercle bacilli have been verified, in the histologic section, by the guinea-pig inoculation or by culture. Therefore, we always send tissue samples for both PAD and guinea-pig inoculation and if there is pus, it is cultured and inoculated into guinea-pigs.

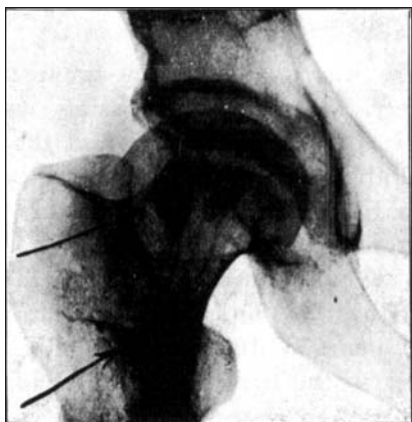


Fig. 1.

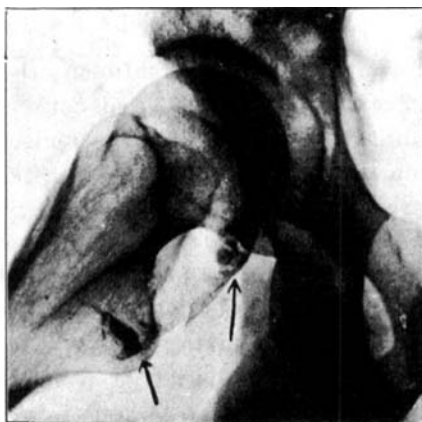


Fig. 2.

A question of great interest in trochanteritis is the manner in which the tuberculosis spreads to the hip joint. Opinions vary in this respect. It is assumed that spreading occurs through the bone or through the soft tissue or through both. In this series if the cases of concurrent trochanteritis and coxitis are first compared with those of concurrent spondylitis and trochanteritis, one finds that 6 cases of coxitis and 7 of spondylitis occurred simultaneously with trochanteritis during the observation period. These figures do not at first indicate that coxitis should be commonly expected in association with trochanteritis, but as the incidence of spondylitis is, in the group as a whole, 3 times as much as that for coxitis, there appears to be a real excess of coxitis. This excess may imply some connexion between the two processes. In considering the way of spreading it may be of interest to point out that of the 22 cases treated by operation 9 revealed fistulous processes medial to the femoral neck, anterior or posterior, and lying directly against the neck, in some cases extending towards the joint capsule of the hip. In some cases, roentgenograms with con-

trast filling of fistulae in the trochanteric region have shown penetration into the soft tissue, up to the hip joint. This is illustrated in Fig. 1 & 2. Still another intimation in this direction is the fact that in the 4 cases previously mentioned, the coxitis which followed on the trochanteritis appeared as a capsular tuberculosis with general decalcification and diminution of the joint space, and not as a bone focus near the joint. Obviously, spreading via the bone itself is conceivable, but the observations made in this study suggest a spread via the soft tissues.

The treatment and its results form a question of special interest with reference to possible improved results through the application of chemotherapy. It is of course dangerous to judge the therapeutic results of a clinical material which is relatively small, especially when it is remembered that chemotherapeutic treatment has been under observation only a short time. In my opinion, however, the data from this study show that the combined operation and chemotherapy as now employed have a real and improved effect on the disease. The average diminution of the ESR during the treatment period argues in favour of cases treated with this routine, but the difference is too small to be significant. The frequency of recurrence also indicates the pre-eminence of the modern treatment, though it is too early to be certain that there will be no recurrences in these groups. The figures which are more informative, and which are not influenced by the time element or dissimilarities between the groups, are those concerning the occurrence of fistulae at the time of discharge from the hospital and the period of hospital treatment. In the groups treated by modern methods there were no fistulae at this time, while in the groups treated with older methods fistulae were relatively common. It has also been possible to reduce considerably the treatment time. Thus the conservatively treated cases required 265 hospital days, those treated surgically alone, 100 days, and for those operated on plus the application of chemotherapy, 60 days. Calculated at the present cost of hospital care per day per patient (38 Kr.), it would involve a saving of 1420 Kr. per patient in comparing the patients operated on with those with operation + chemotherapy, and 7800 Kr. per patient in comparing the groups conservatively treated and those treated with operation + chemotherapy. The cost of the chemotherapeutics is modest, an average of 180 Kr. per patient,

THE PRESENT PRINCIPLES OF TREATMENT

On admission to the hospital para-aminosalicylic acid (PAS) is administered in a daily dosage of 14 gr. After a preparatory period of some weeks, the operation is performed. The abscesses or fistulae are filled with contrast media, and roentgenograms are made in order to localize the process. Sometimes detritus and thick pus have prevented effective spreading of the contrast medium. The trochanter region is thoroughly exposed at the operation by means of an oval longitudinal incision, to enable a good survey of all the diseased tissues to be made. Abscesses and granulations are drained, and carefully evacuated with a blunt scoop. The outer membrane of the abscess—the body's reaction zone—is retained. If there are bone foci, they should be carefully curetted; the harder reaction zone against the surrounding bone is spared. Streptomycin 1-2 gr. and penicillin $\frac{1}{2}$ -1 mill. I.U. are inserted locally and the wound is closed. A small hip plaster bandage is applied. Three days prior to the operation the patients are also given a general treatment of 1 gr. streptomycin and $\frac{1}{2}$ mill. I.U. penicillin per day. The patient reacts poorly to PAS on the day of operation and for some days following, but the medicament is administered again later. Streptomycin and penicillin are discontinued after 2-3 weeks, when the primary healing of the wound has taken place. The plaster is worn for 6 weeks, after which the patients usually begin to get up. PAS medication is continued for 3 months after the operation.

SUMMARY

The results of combined chemotherapeutic and operative treatment of tuberculous trochanteritis are particularly good in this study. The advantages gained are, a shortened time of treatment in the hospital, the absence of fistulae on discharge with diminished risk of infection and, as we hope further observation will show, a reduced frequency of recurrence and less risk of a spreading to the hip joint.

RESUME

Les résultats de chimiothérapie combinée au traitement opératoire de la trochantérite tuberculeuse sont particulièrement bons dans cette étude. Les avantages obtenus sont la diminution de la durée du traitement à l'hôpital, l'absence de fistules avec moins de risques d'infection et, comme nous espérons que des observations ultérieures le montreront, une fréquence réduite de la récurrence et moins de risques de la propagation à l'articulation de la hanche.

ZUSAMMENFASSUNG

Die Erfolge der kombinierten chemotherapeutischen und operativen Behandlung der tuberkulösen Trochanteritis sind besonders gut in dieser Untersuchungsreihe. Die Vorteile sind: Abkürzung der Behandlungsdauer im Krankenhaus, das Nichtvorhandensein von Fisteln bei der Entlassung mit der verringerten Infektionsgefahr, und, wie weitere Beobachtung hoffentlich zeigen wird, eine Verringerung der Rezidivhäufigkeit, zusammen mit geringerer Gefahr des Übergreifens auf das Hüftgelenk.

REFERENCES

See: *Lindahl, Olov*: Tuberculosis of the Great Trochanter. Acta Tub. Scand. 1951 (in press).