

EARLY CASES OF SPONDYLARTHROSIS ANCHYLOPOETICA¹

By

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Advanced spondylarthrosis presents no diagnostic difficulties. Reports in the literature generally describe the final stage, with the kyphotic, stiff back and typical roentgen changes, calcification of the ligaments and ankylosis of the intervertebral joints. During the last 20 years however, a study of the early stages has commenced. The works of *Krebs* (14, 15, 16) and *Scott* (18, 19), at the beginning of the 1930's, showed that the disease practically always manifests itself symmetrically at the onset, with arthritis in the sacro-iliac joints, but, strangely enough, without the appearance of any local symptoms in this region. The early symptoms are diffuse. They usually appear in the form of attacks of pain, of myalgic or radicular type; the pain may move from one region to another with pain-free intervals. It can happen that misjudgement of cases may continue for several years while such diagnoses are given as rheumatism, myalgia, growing pains and fibrositis etc. In all their irregularity, however, the symptoms are yet in some way characteristic. *Scott* even bases the diagnosis solely on the anamnesis, though roentgen changes may be absent in the sacro-iliac joints. He calls the symptoms prespondylitic and has encountered them in 95 % of 300 cases. He goes so far as to say that spinal symptoms first appear when arthritis of the sacro-iliac joints has reached the stage of ankylosis. The disease is often overlooked owing to the remarkable circumstance that, as mentioned before, no local symptoms proceed from these joints. A reliable diagnosis can only be made through radiographic examination of the sacro-iliac joints,

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which must therefore be made in every case with obscure, recurrent spinal and root symptoms.

It is generally stated that the disease progresses from the sacro-iliac joints to the small joints of the spinal column, where it brings about, secondarily and additionally, calcification of the ligaments (Güntz, 12). The disease can however terminate before the final stage (2, 11), and Scott says that arthritis of the sacro-iliac joints can heal without proceeding to the spinal column. But no further details are given. As a matter of fact, one finds no systematic reinvestigations published in the literature.

At an orthopaedic clinic, with so many patients revealing spinal and root symptoms, a relatively large number of spondylarthritis cases are diagnosed in various stages. In seeking to elucidate the course of the disease further, I have made post-examinations of the material from the orthopaedic clinic of Karolinska Institutet. Early cases were selected with roentgen changes in the sacro-iliac joints only, and typical history, but they were not clinically advanced. The examination comprises 22 cases discovered during the years 1936-1946. All were men between 19 and 42 years of age. The average age was 31 years. The symptoms made their appearance between the ages 14-42, the average being 26 years. The duration of the disease at the post-examination was 7-16 years, average 11 years. The period of observation was 4-11 years with an average of 7 years.

With regard to the symptomatology, prespondylitic signs occurred in 9 cases, hence with less regularity than Scott experienced. It was not possible to provoke pain by means of the various methods employed to test the sacro-iliac joints. This is considered to be typical of the disease, and distinguishes it from other pathologic processes in the same joint, for instance, tuberculosis, and septic arthritis, which are painful and, moreover, appear, as a rule, unilaterally. The disease histories afforded no guidance as to the etiology. Urogenital infections have been reported as contributory causes (Forestier 9, Volhard 21). I made careful enquiries as to earlier infections of the urinary canals and only one patient had had a gonococcal infection which was without complication. Rectal palpation revealed chronic anal infection in one case, but otherwise no pathologic processes. No complete urologic investigation was made. The whole of the spinal column and pelvis were examined roentgenologically in every case.

Of these 22 re-examined cases, 10 had developed typical spondylarthritis both clinically and roentgenologically, with stiff back, calcification of the ligaments and eventual ankylosis in the intervertebral joints. Three had clinically advanced but still showed roentgen chan-

ges in the sacro-iliac joints only. The remaining 9 cases had not progressed, and the whole back had normal mobility. The progression was independent of the observation time and duration of symptoms.

There was a remarkable number who had become stiff, but had retained straight backs which may perhaps be explained by the fact that the disease was discovered early, and that attempts had been made to counteract kyphosis. It is also striking how little the working capacity is affected in some cases. A farmer, for instance, with every sign of the disease progressing, was fully fit for work and able to carry sacks weighing 100 kg.

Conclusions drawn from the sedimentation rate, with respect to the activity of the disease, are apparently unreliable. In the majority of cases, the S.R. showed an increase, even if the spondylarthrosis seemed to be clinically healed. On the other hand, 2 patients revealed normal S.R. with unaltered symptoms.

The roentgen changes in the sacro-iliac joints are typical. They have been described by *Krebs* and *Scott* and co-workers (10, 13). *Knutsson* (17), who examined the roentgen pictures of this material, has followed a long series of spondylarthrosis cases and devoted special interest to the sacro-iliac joints. The surface contours of the

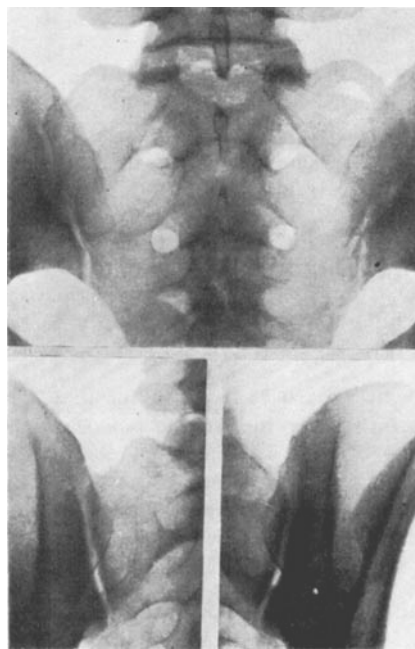


Fig. 1.

Normal sacro-iliac joints.

joints are initially somewhat blurred. Later on, the joint fissure becomes narrow, erosions appear on the joint surfaces and sclerosis develops juxta-articularly. Finally the fissure tends to disappear more and more and the last stage is osseous ankylosis with diminishing sclerosis. *Boland & Shebesta* (3) noticed a certain parallel between the clinical degree of severity and the type of the roentgen changes. This was not verified in the present material.

Lastly, a brief description of the cases in which the disease made no progress.

Case 1. A motor lorry chauffeur, aged 20, with recurrent, diffuse leg-pains. Neg. status. Normal S.R. Roentgen: Erosions. Pictures taken 5 years earlier at another hospital, on comparison, proved to be almost similar. S.R. was then about 40 mm. After a period of 10 years, free from trouble, normal S.R. Roentgen: Osseous ankylosis (Fig. 2). (Compare picture of normal sacro-iliac joints, Fig. 1). No treatment.

Case 2. Clerk, aged 36. Recurrent sciatica, subsequently, pain in the back. Lumbar stiffness. S.R. 18 mm. Roentgen: Cartilage reduced, erosions. Five years later, free from trouble, mobile. S.R. 25 mm. Roentgen: Increase of erosions. No treatment.

Case 3. An official, aged 38. Root symptoms from arms, legs and chest. Back, straight and stiff. S.R. 41 mm. Roentgen: Erosions. Five years later, slight trouble, mobile back. S.R. 16 mm. Roentgen: The erosions have diminished. Joint surfaces have become more even. No treatment.

Case 4. Printer, aged 19. Pain in the back and slight peripheral joint symptoms. Neg. spinal status. S.R. varying between 20 and 30 mm. Eight years later, residual but slight trouble. The back is mobile. S.R. 22 mm. Roentgen: At the initial examination, erosions. The post-examination revealed ankylosis (Fig. 4). Underwent treatment with gold and roentgen.

Case 5. Labourer, aged 35. Had suffered from recurrent sciatica. He exhibited typical sciatic scoliosis and had pos. Lasègue. S.R. 90 mm. Had had iritis earlier which, as is known, sometimes occurs in spondylarthritis. Four years later, free from trouble, and mobile. S.R. 19 mm. Roentgen: No change in the residual erosions on the whole (Fig. 5). No treatment.

Case 6. Railway labourer, aged 35. Pain in the back and root symptoms from one leg. After a lapse of 10 years, the trouble remains about the same, the status is unchanged with lumbar kyphosis, but good mobility. S.R. 15 mm. which, at the re-examination had increased to 28 mm. Roentgen: Erosions that appear to be healed. Moreover, pronounced disc degeneration (doubtful case, both subjective and objective symptoms resemble those which occur in disc degeneration) (Fig. 6). Treatment with corset.

Case 7. Farm labourer, aged 42. Recurrent sciatica, scoliosis and pos. Lasègue. Twelve years later, free from trouble, mobile. S.R. not taken at the first examination. At the re-examination 5 mm. Roentgen: Indistinct joint surfaces. Erosions and slight sclerosis remain unchanged (Fig. 7). Treated with corset and roentgen.

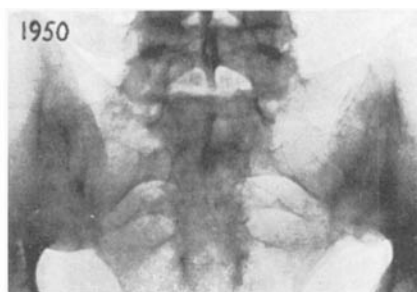
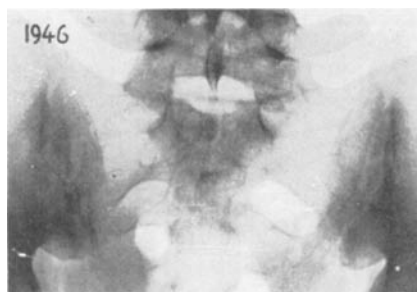


Fig. 2. Case 1.

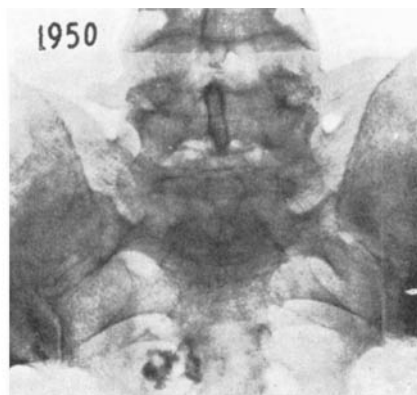


Fig. 3. Case 3.

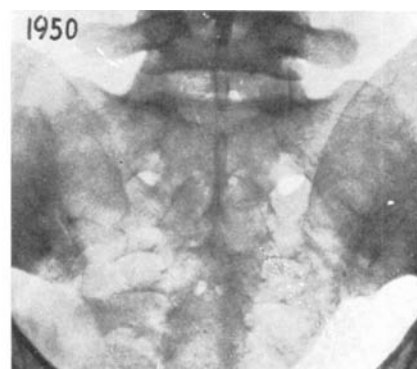
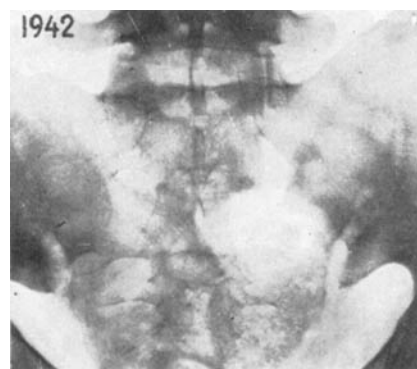


Fig. 4. Case 4.

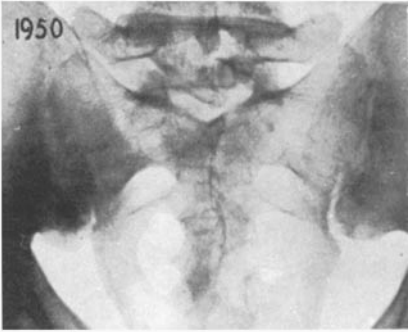
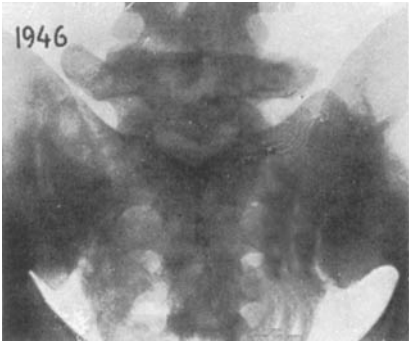


Fig. 5. Case 5.

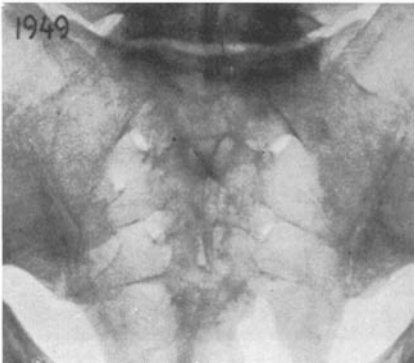
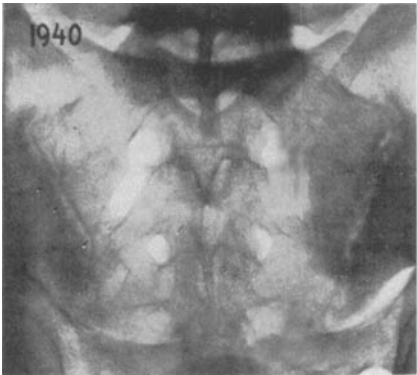


Fig. 6. Case 6.

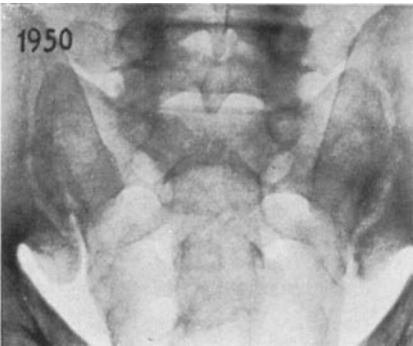
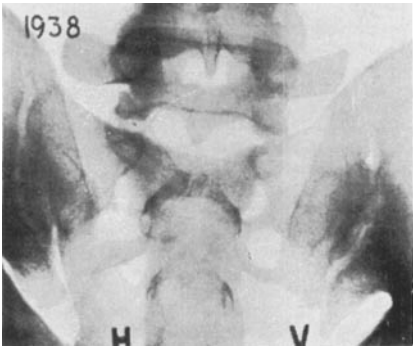


Fig. 7. Case 7.

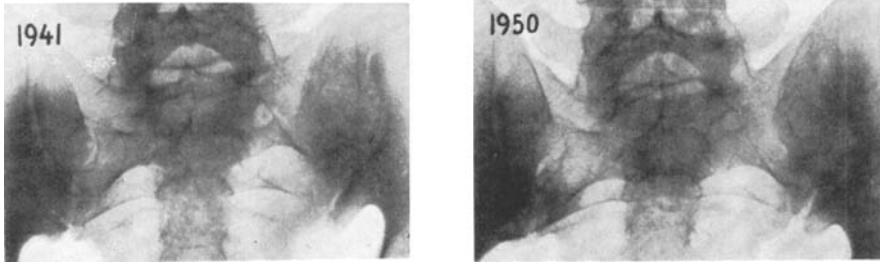


Fig. 8. Case 9.

Case 8. Custom House porter, aged 35. Attacks of lumbago and sciatica which later changed into dull pain in the back. Disc rupture was first suspected, and pronounced signs of spinal insufficiency were manifested S.R. 5 mm. Seven years later, dull pain in the back, which clinically indicated moderate insufficiency. Lasègue pos. bilat. S.R. 14 mm. Per rectum a distressing infiltration was palpated that resembled an anal abscess, but, which had caused no trouble. The patient declined a special investigation. Roentgen: Erosions and sclerosis approx. unchanged. Treated with gold and roentgen.

Case 9. Plater, aged 32. Periodic pain in the gluteal regions, but no spinal trouble. Neg. status. S.R. not taken. At the re-examination 9 years later, the affection remained unchanged and the status was still negative. S.R. 11 mm. Roentgen: At the first investigation slight changes led to suspicion of arthritis in the sacroiliac joints. Progression towards pronounced cartilage destruction, erosions and sclerosis (Fig. 8). No treatment.

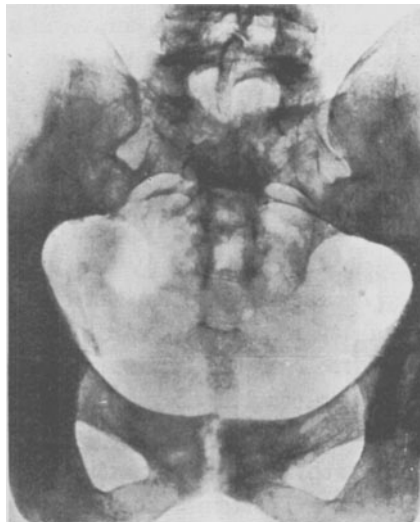


Fig. 9.
Erosion in the symphysis.

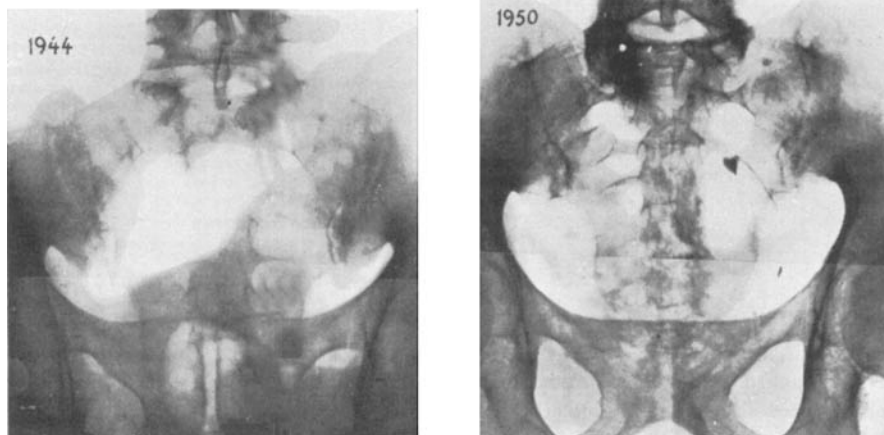


Fig. 10.
Symphyseal changes which led to osseous ankylosis.

Erosions similar to those in the sacro-iliac joints also occur in symphysis (Fig. 9). In all his great experience of spondylarthritis *Krebs* has not seen symphyseal changes lead to ankylosis. In this material it happened once in an advanced case (Fig. 10).

Where this exceedingly prolonged disease is concerned, it is risky to draw any definite conclusions regarding its course, without a very long period of observation. Among these cases just described however, there are some in which the progression of the disease ceased at the sacro-iliac joints. These can be looked upon as abortive cases of spondylarthritis. Roentgenologically, the picture does not differ from that of the advanced typical case, and even clinically the early symptomatology is similar. Once one's eyes are opened to the early diagnostics, the disease can be detected more and more often in the initial stage. Since this investigation began, there has been a decided increase in the number of cases detected in the early stage at the Orthopaedic Clinic.

Although we have no causal therapy, the prognosis need not be made too gloomy. Experience has shown that even if the disease progresses, it is not certain to lead to a typical *Bechterew* picture. The patients should be informed of the tendency towards back stiffness and the importance of counteracting kyphosis with postural exercises, plane bed, etc.

The cause of spondylarthritis anchylopoetica is still obscure. Everything points to its being a systemic disease and not an infectious complaint in the ordinary sense. When one has seen a number of such patients one is just as bewildered as when the literature is read

and therefore new experience is eagerly awaited in the endocrin domain. The essential requirement for a successful therapy will, however, always be an early diagnosis, and the object of this investigation is to throw light upon the early cases.

SUMMARY

Cases with roentgen changes solely in the sacro-iliac joints and which have not clinically shown the picture described by Bechterew with the kyphotic stiff back have been designated as early spondylarthritis. The early symptoms are pain in the back and diffuse, non-characteristic pains of radicular type. A reliable diagnosis can only be made roentgenologically.

The investigation comprises 22 cases. After an observation period of 4-11 years, 10 have progressed to advanced spondylarthritis, 3 have become worse clinically but not roentgenologically, while the other 9 have shown no progression. A brief account is given of the last-mentioned 9. Some of them are apparently healed, and can be characterised as abortive cases of spondylarthritis.

RÉSUMÉ

On a considéré comme des spondylarthrites précoces les cas ne présentant des modifications radiologiques que dans les articulations sacro-iliaques et qui, au point de vue clinique, n'avaient pas le dos cyphotique rigide. Les premiers symptômes sont les douleurs dorsales diffuses, peu caractéristiques, de type radiculaire. Un diagnostic certain ne peut être posé que par radiographie.

L'examen porte sur 22 cas. Après une période d'observation variant entre 4 et 11 ans, 10 sont devenus des spondylites avancées, 3 ont progressé au point de vue clinique mais non radiographique et les 9 autres sont restés stationnaires. Il est donné une casuistique sommaire de ces derniers cas. Certains d'entre eux semblent guéris et pourraient être considérés comme des cas abortifs de spondylarthrite.

ZUSAMMENFASSUNG

Als Früh-Spondylarthritis bezeichnete man Fälle mit Röntgenveränderungen nur in den Ileo-sakralgelenken, die klinisch nicht das von Bechterew beschriebene Bild des kyphotisch versteiften Rückens zeigten. Die ersten Symptome sind Rückenschmerzen und diffuse un-

karakteristische Schmerzen von radikulärem Typus. Eine sichere Diagnose kann man nur röntgenologisch stellen.

Die Untersuchung umfasst 22 Fälle. Nach einer Beobachtungszeit von 4-11 Jahren war in 10 Fällen eine fortgeschrittene Spondylarthritis festzustellen, 3 Fälle waren klinisch progredient, jedoch nicht röntgenologisch und die übrigen 9 hatten nicht zugenommen. Von den zuletzt erwähnten Fällen wird eine kurzgefasste Kasuistik gegeben. Einige von diesen waren scheinbar geheilt und konnten als abortive Fälle von Spondylarthritis bezeichnet werden.

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