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"SPONTANEOUS HEALING" OF SPONDYLOLISTHESIS

By

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This paper is concerned with a report of a case of Bechterew's disease and spondylolisthesis that ran an unusual course.

Report of case.—The patient was a male, born on December 27, 1911. Apart from peptic ulcer for which he had been operated upon in 1952 he had always felt well until 1934 when he began to experience spontaneous back pain resembling lumbago. The attacks only lasted a couple of days. He had no bladder trouble. At the end of 1952 the attacks were more protracted with pain and stiffness of the lower back and hips. Roentgen examination in May 1953 showed spondylolisthesis of the fifth lumbar vertebra (Fig. 1). At the end of 1953 the symptoms progressed, and the fingers, right knee, left ankle and toes of the left foot became painful and stiff. He was admitted to hospital, where roentgen examination showed not only spondylolisthesis of the fifth lumbar vertebra, but also changes suggestive of Bechterew's disease in the sacro-iliac joints. (Check examination of the roentgenograms taken in May 1953 showed changes of the sacro-iliac joints of the type seen in Bechterew's disease). Physical therapy produced no appreciable relief.

In March 1954 the patient was admitted to the Orthopaedic Department, Lund. The thoracic and lumbar spine was then stiff and the patient was tender to palpation over the spinous process of L I to L V inclusively. In addition, a "step" was palpated at the level of L IV. There was no impairment of mobility of the thoracic spine. ***Roentgen examination.***—Thoracic spine: slight thoracic kyphosis with very slight reactive changes. Lumbar spine: accentuated lumbar lordosis. Spondylolysis of the arch of the fifth lumbar vertebra with slipping (8 mm.) of the vertebral body. The lumbosacral disc was somewhat low, and was surrounded by reactive changes. Pelvis: the joint space in the sacro-iliac joints was reduced, the joint surfaces were eroded and periarti-

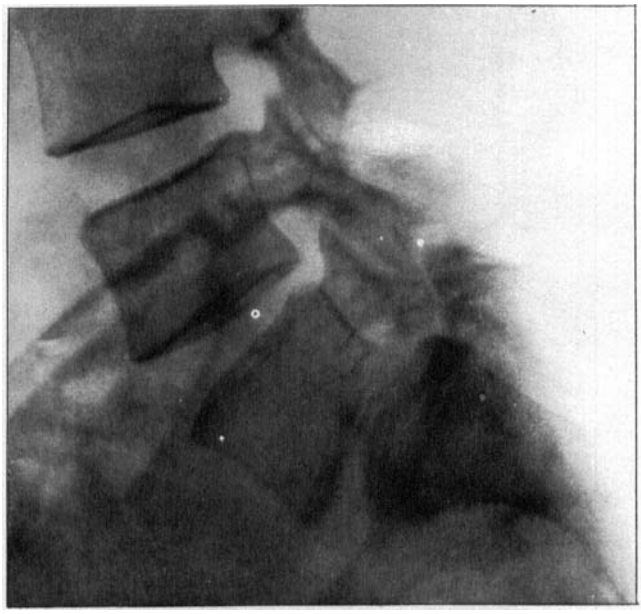

Fig. 1.
Spondylolysis of LV with slipping of the vertebral body.

cular sclerosis was seen. Teeth: No radiculodental cysts. *Laboratory studies.*—E.S.R. 78 mm./1 hour. ASL 210 units (border value). Agglutination of sensitized sheep blood cells 20 (neg.). Urinary sediment: a few white blood cells. Heller's test was negative. Culture of the urine after prostatic massage gave abundant growth of staphylococcus aureus and enterococci and alphastreptococci. Three consecutive throat swabs gave no growth of betastreptococci. *Ophthalmologic examination* showed hyperopia with presbyopia. No other findings of interest were made.

The patient was treated with chloromycetin and the urine became free from bacteria. He also received injections of gold salt, acetylsalicylic acid, vitamins B and C, roentgen irradiation of the thoracic and lumbar spine, bath, massage and physical exercises and was supplied with a supporting jacket. Two and a half months later the patient was better and was sent home. The E.S.R. was then 16 mm./1 hour.

He was re-admitted in September 1954 because of pain in lower back and hips, as well as swelling and stiffness of right knee, left ankle, toes of the left foot and fingers of the left hand. He again received radiotherapy and physical therapy and improved. The E.S.R. was normal throughout his stay in hospital.

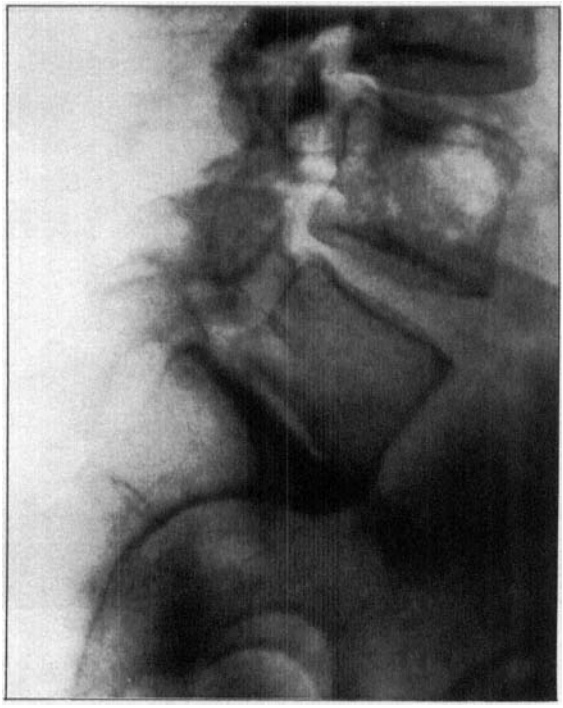

Fig. 2.
The defect in the arch is almost completely overbridged four and a half years later.

He afterwards returned to work. In the beginning he did only light jobs, but later resumed heavy work again. In 1955 and 1956 he had no back trouble and could carry on with his work as usual, except for a short period, when he was admitted to hospital because of inflammation of the renal pelvis. In March 1957 he had exposed himself to the cold and back pain returned. He was admitted to hospital. After 3 months in hospital he was again able to return to his work, but in November 1957 pain recurred in the lower back and right shoulder. In January 1958 he was admitted to the Orthopaedic Department, Lund. On admission the spine was of normal appearance, there was no increased thoracic kyphosis. The thoracic and lumbar spine was stiff and the range of motion of the cervical spine was markedly limited. He was tender to palpation over the spinal processes and there was increased tonus of the musculature of the back. *Roentgen examination.*—Thoracic and lumbar spine: Compared with previous examinations the reactive changes in the thoracic spine were now somewhat more pronounced. In the lumbar

spine a bridging of bone was seen between the fifth lumbar vertebra and the sacrum, and the sclerosis around the small joints had increased. The defect in the arch of L V was overbridged so that the defect could now hardly be discerned (Fig. 2). Cervical spine: the anterior dens joint showed considerable arthrosis deformans changes. Around the disc between C II and C III were moderate spondylosis deformans changes. No other signs of a pathologic condition were observed. Pelvis: ossification of sacro-iliac joints had advanced.

The patient received physical therapy, roentgen irradiation of the thoracic spine as well as Butazolidin and Cortal. He was sent home two months later as improved.

DISCUSSION

The case is of interest by the observation that previous defects in the vertebral arch had been almost completely overbridged by tissue, which could hardly be distinguished roentgenologically from surrounding bone.

The etiology of spondylolisthesis in this case is debatable. Trauma can be excluded because a trauma sufficient to fracture the interarticular portions of the arch must be severe and the patient denied any such trauma. The patient's history and the roentgen findings ruled out septic infections and metastases with consequent rarefaction of the arch and slipping. One might imagine the possibility of a loosening of the tissue of the arch in the initial phase of Bechterew's disease with softening and anterior slipping of the vertebral body. But if this were so, spondylolisthesis would surely be more common in Bechterew's disease. It is most likely that spondylolysis in this case, as in most other cases, is congenital.

In spondylolysis, calcification, cartilage or tissue fragments with bone structure have been described in the tissue bridging the bone defect. *Schmorl & Junghanns* have described a case of spondylolisthesis, in which the interarticular portion of the arch was thickened and in which the spongiosa design was irregular, which was regarded by the authors as healed spondylolysis. On the basis of a personal case, *Neugebauer* also believes that bone healing can occur in congenital spondylolysis. *Schinz* et al. also described a case in which the spondylolysis space was "vollständig verknöchert". *Friberg* has not observed such fusion, but he does not deny that it may occur.

The fusion in the present case may be related to the co-existent Bechterew's disease. As known, joint changes as well as osteitis and periosteal reactions occur in this disease. In addition, fibrous tissue in the

region of the affected parts of the skeleton undergoes ossification. Since the defect in the arch is filled with fibrous tissue, it is tempting to assume that after the initial inflammatory phase, repair with bone formation produced fusion.

SUMMARY

A case with spondylolisthesis of L V and Bechterew's disease is described. About four and a half years after spondylolisthesis has been diagnosed, fusion had occurred and the defect in the arch was hardly discernible in the roentgenogram. This fusion is ascribed to co-existent Bechterew's disease.

RESUME

Un cas de spondylolisthèse de la 5ème vertèbre lombaire et de maladie de Bechterew sont décrits.

Environ quatre ans et demi après que la spondylolisthèse a été diagnostiquée, la fusion s'est opérée et la défectuosité de l'arc était difficilement discernable sur le roentgenogramme. La fusion est attribuée à la maladie de Bechterew co-existante.

ZUSAMMENFASSUNG

Ein Fall von Spondylolisthesis des 5. Lendenwirbels und Bechterewscher Erkrankung wird beschrieben. Ungefähr vier und einhalb Jahre nachdem die Spondylolisthese diagnostiziert worden war, war eine Verschmelzung eingetreten und der Defekt im Wirbelbogen war röntgenologisch kaum mehr sichtbar. Die Verschmelzung wird der gleichzeitig bestehenden Bechterew Erkrankung zugeschrieben.

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