

ON TREATMENT OF OSTEOCHONDROSIS OF THE SPINE BY SPINAL FUSION

BY

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Osteochondrosis of the spine is characterised radiographically by diminution of the height of one or more intervertebral discs, exostosis formation, sclerosis of the vertebral surfaces in contact with the intervertebral discs, retroposition, and in its early stages also by *Knuttson's* vacuum phenomenon.

The present series comprises 100 cases from the Orthopaedic Hospital admitted to the Orthopaedic Hospital, Copenhagen between 1936 and 1946. Only 8 of these cases were treated by spinal fusion.

A modification of *Albee's* method has been used. A thin, elastic bone graft, 6 to 10 cm. long is taken from the tibia, and inserted in the space left when the spinous process has been removed close to the arch. Bone chips taken from spongy bone are placed round the graft. After the operation the patient is laid in a plaster bed and kept there for 3 months. At the end of this period he is fitted with a strong supporting jacket, which is worn for between 6 and 12 months.

All the 8 cases in whom fusion was done, had been treated previously with physiotherapy and conservative orthopaedic treatment. (Plaster jacket, supporting jacket, novocain block).

The patients were: a mechanic, aged 22; a navy, aged 31; a furniture remover, aged 36; and 5 women, aged 27, 32, 33, 35, and 39 respectively and all engaged in house work.

All had marked symptoms and radiographic signs. All complained of pain in the back, localised to the lumbar spine. In 4 cases the pain was so severe that the patients were unable to work. One case (with retroposition) had paraesthesiae.

No case had particularly marked physical signs: there were mild deformities of the spine (kyphosis, scoliosis, straight spine), slight restriction of the mobility in the lumbar region, and infiltrations in the muscles of the back. The patellar reflexes were absent in one case with retroposition.

The radiographic changes were those usually seen in these cases. In all, the height of the L5-S1 and in 2 cases also of the L4-L5 disc, was diminished. All had sclerosis of the vertebral surfaces in contact with the discs. Exostosis formation was seen in 3 cases and retroposition in 2.

Our indications for operation were very rigid, and operation was only resorted to in the most severe cases. In 4 cases the indication was inability to work, in 3, pains so distressing that the patients asked for operation, and in 1 case, retroposition associated with paraesthesiae and absent reflexes.

6 of the patients were symptom-free when followed-up 2 to 6 years after operation. The bone grafts were firmly fused. The osteochondrosis was unchanged. Apart from slightly reduced mobility in the lumbar region the examination revealed nothing of note.

One further case was improved. This was the navy, aged 31 years, who had been unable to work before the operation. After operation he could work, but had lumbar pain, and had to rest for a great part of his off-time. Also his back was rather stiff in the morning. The bone graft was fused. There was no change in the osteochondrosis. There was some limitation of movement in the lumbar spine and there were infiltrations in the muscles of the back.

The furniture remover, aged 36, on the other hand, showed no improvement at the follow-up examination. He had returned to work after the operation, but after 6 months his symptoms recurred and the pain was again severe. Control radiography showed fusion of the bone graft without evidence of fracture. The osteochondrosis was unchanged. There was slightly reduced mobility in the lumbar spine. The muscles of the back were definitely tender.

It is not possible to draw any definite conclusions on the

value of spinal fusion from such a small number of cases. We do believe, however, that fusion is a form of treatment which ought to be used more than has been the practice in this country.

SUMMARY

Out of 100 cases of osteochondrosis of the spine treated in at 1. dpt. of the Orthopaedic Hospital in Copenhagen, only 8 were treated by spinal fusion. A modification of Albee's method was used. All 8 cases (5 women) had marked clinical and radiographic signs. The indications for operation were very rigid. The patients were follow-up for 2 to 6 years after operation. 6 were symptomfree; 1 was improved and 1 was unchanged.

RESUME

Sur 100 cas d'ostéochondrose de la colonne vertébrale soignés dans le 1^{er} Service de l'Hôpital Orthopédique de Copenhague, 8 seulement ont été traités par fusion spinale. La méthode d'Albee modifiée a été utilisée. Les indications pour l'opération ont été très sévères. Les malades ont été suivis entre 2 et 6 ans après l'intervention chirurgicale. Chez 6 aucun symptôme ne s'est manifesté; 1 cas a été amélioré et 1 est resté inchangé.

ZUSAMMENFASSUNG

Von 100 im Orthopädischen Krankenhaus zu Kopenhagen behandelten Fällen wurden nur 8 mit Spondylodese behandelt. Die Operationsmethode bestand in einer Modifikation der Albee'schen Methode. In allen 8 Fällen (5 Frauen) waren ausgesprochene klinische und röntgenologische Symptome vorhanden. Die Indikationen waren sehr streng. Die Patienten wurden 2—6 Jahre nach der Operation untersucht. In 6 Fällen waren die Patienten symptomfrei. In 1 Falle war der Zustand gebessert und in 1 Falle unverändert.

DISCUSSION

Friberg, Berntsen, Bentzon, Novotny, Hasner.