OPERATIVE TREATMENT OF CONGENITAL SCOLIOSIS: INDICATIONS AND RESULTS

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Congenital vertebral anomalies can be divided into: a) anomalies resulting from segmentation defects, b) anomalies in vertebral morphology, and c) mixed forms.

Anterior segmentation defects, which lead to kyphosis, are less common than lateral segmentation defects. The unilateral unsegmented bar leads to severe scoliosis. This form is always progressive.

Since 75 percent of patients with congenital scoliosis show progressive curvature, operative therapy is often unavoidable. Forty-one such patients are discussed. Treatment consisted of spondylodesis in situ in 7, Harrington spondylodesis in 18, Dwyer spondylodesis in 6, and vertebral resection in 10 patients. Progression after spondylodesis in situ often necessitates secondary Harrington spondylodesis.

Primary Harrington spondylodesis led to a correction of 38 percent. No postoperative complications were observed.

Dwyer spondylodesis, indicated in severe lorida-scoliosis, led to a correction of 53 percent. Pleural leak developed as a postoperative complication in one patient.

Although most authors are reluctant to perform vertebral resection, this technique was applied at our department, more specifically in the treatment of lumbar unilateral unsegmented bar. Permanent correction was achieved in a considerable percentage of cases. The postoperative course was uneventful in all cases.

OPEN REDUCTION FOR RELAPSE OF OPERATIVELY TREATED CONGENITAL HIP DISLOCATION

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Relapse of operatively treated congenital hip dislocation can only be treated by secondary open reduction. Technical problems in these re-interventions are discussed.

Redislocation can occur when primary open reduction has failed to achieve a concentric position of the femoral head in the acetabulum or when concentric reduction has been achieved without adequate stabilization. The most common cause, however, is unsuccessful primary open reduction.

Secondary open reduction for redislocation was performed in 16 patients (3 boys and 13 girls) during the period 1968–1973. The follow-up period averaged 10½ years (8–17 years). The results of a follow-up study were:

1. The development of 11 hip-joints was disturbed due to necrosis of the femoral head.
2. The leg treated was 2 cm or more shorter than the contralateral leg in 5 patients.
3. In later stages, 20 corrective operations were performed on 12 patients to correct valgus or varus deformities of the hip-joint or to correct a difference in leg length.
4. Only 3 patients showed undisturbed function at follow-up.

The conclusion is that the risk of functional and anatomical abnormalities in the hip-joint is substantially greater after secondary open reduction for redislocation than after successful primary open reduction.
AN ALTERNATIVE TO FIBULAR OSTEOOTMY IN ABDUCTING TIBIAL HEAD OSTEOOTMY

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The literature always mentions the necessity of fibular osteotomy in abducting tibial head osteotomy. The various techniques of fibular osteotomy have the following disadvantages: a) an additional operation, b) risk of lesion of the peroneal nerve, c) risk of haematoma, 4) postoperative pain at the level of the fibular osteotomy.

In the past 18 months we have performed an alternative operation only rarely mentioned in the literature: division of the proximal tibio-fibular joint capsula, after which the necessary abducting correction can be achieved without difficulty.

After this alternative operation a lesion of the peroneal nerve can hardly occur, instability of the collateral ligament (if any) is not progressive, and dislocation of the fibular head does not occur. No complaints or complications developed in 15 patients treated by this operation.

Division of the tibio-fibular joint capsula instead or fibular osteotomy in tibial head osteotomy simplifies the total procedure, requires less time and causes fewer complications.

PARTIAL ARTHRODESIS OF THE WRIST

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Partial arthrodesis of the wrist can be considered in the treatment of painful lunatomalacia, pseudarthrosis of the scaphoid bone and posttraumatic radio-carpal osteoarthritis. Three types of arthrodesis were studied in cadavers.

Arthrodesis between radius and scaphoid bone left 40 percent of flexion and 61 percent of abduction intact.

Arthrodesis between radius, scaphoid and lunate bone left 36 percent of flexion and 59 percent of abduction intact.

Arthrodesis between scaphoid, capitate and lunate bone left 59 percent of flexion and 61 percent of abduction intact.

THE TREATMENT OF LUNATOMALACIA: SHORTENING OF THE RADIUS OR EXTENSION OF THE ULNA

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The results of radius-shortening osteotomy in 20 patients with lunatomalacia are compared with those of ulna-extending osteotomy in 15 patients. The follow-up period was 5 years. Apart from subjective data, objective findings such as strength, wrist function and radiological results were compared.

In both groups some 75 percent of the patients were subjectively satisfied or very satisfied with the result. Both groups showed unmistakable objective improvement in strength as well as in wrist function. Radiography generally revealed hardly any recovery of the lunate bone. Fracture union after a transverse distal radius-shortening osteotomy with plate-and-screw fixation took 3 months; after a Z-shaped ulna-extending osteotomy with plate-and-screw fixation it took 4.4 months. Pseudarthrosis occurred in one case after the former and in three cases after the latter operation. The former procedure was followed by functional after-treatment, and the latter by immobilization in a plaster cast.

THE TIBIAL PLATEAU

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(Published in the J. Bone Joint Surg. 1982, 64-B, 336.)

THE TREATMENT OF FRACTURES OF THE TIBIAL PLATEAU: A COMPARATIVE FOLLOW-UP STUDY

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The study concerned two groups of patients with fractures of the tibial plateau (types II, III, V and VI according to Schatzker 1979, with tibial plateau impressions in excess of 0.5 cm), treated at two different hospitals during the period 1972 through 1979.

In Amsterdam these fractures were treated by the AO principle: exercise-stable osteosynthesis, usually with the aid of a supporting plate and cancellous bone graft (24 patients). Treatment in the Hague was by calcaneal wire traction with the leg on an exercise splint (20 patients).
In 14 cases, moreover, the impressed plateau was elevated and supported with an amount of cancellous bone or a cortical bone chip (Jonasch 1965). Moreover, a so-called Web screw was used in most cases.

Clinical and radiological results were classified according to Hohl and Luck (1956). The minimal follow-up period was 1 year.

In Amsterdam, clinical results were good or excellent in 60, fair in 20 and poor in 20 percent of cases; the corresponding figures in The Hague were 80, 10 and 10 percent, respectively. The figures for the radiological results were 76, 12 and 12 percent in Amsterdam, and 80, 15 and 5 percent in The Hague. The differences were not significant. The rate of infection was 24 percent in Amsterdam; no infections occurred in The Hague.

The conclusion is that the results obtained by traction, if necessary with elevation of the impressed plateau, do not differ significantly from those obtained by extensive osteosynthesis. Traction, moreover, is safer (no wound infections).

TRICEPS-BICEPS RECONSTRUCTION

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The triceps tendon was transposed to the insertion of the biceps tendon in order to restore active flexion of the elbow. This procedure was performed in three patients who, for various reasons, showed dysfunction of the biceps muscle with intact function of the triceps.

After the operation, active flexion against resistance was restored from zero to an average of 80 grammes, with a strength of 3-4 on the Lovett scale.

In two of the three cases, humeroscapular arthrodesis was performed in addition in view of paralysis of the humeroscapular musculature.

The orthopaedic literature hardly mentions the above procedure, which in the authors' opinion can be a valuable contribution to restoration of elbow function in selected cases.