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Nonsurgical treatment of complete ruptures of the Achilles tendon

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At the Elisabeth Hospital of Haarlem in the period 1984–1988, 33 patients with a complete rupture of the Achilles tendon were treated with immobilization with a plaster cast. The protocol for the nonsurgical treatment was established by Lea and Smith in 1968: 4 weeks in a cast in the equinus position without weight bearing, 4 weeks' walking cast at 95–100°, 4 weeks' raised heel (2 cm) and physical therapy, and a 6 months' ban on sports.

Of the 33 patients, 29 could be followed up (mean duration follow-up 22 months). There were 22 males and 7 females; 1 male had bilateral ruptures. Twenty-four ruptures were sustained during athletic activities. The patients' mean age was 46 years. Twenty-six ruptures healed without problems. Complications occurred in 2 cases; owing to the cast treatment, a peroneal paresis developed in a male aged 82 years, and a severe infection occurred beneath the cast in a female aged 65 years. In addition, a rerupture occurred in 2 cases after inadequate observation of the protocol. In 1 patient the cast was removed too early, and in 1 other patient a rerupture occurred due to resumption of athletic activities 3 months after the primary lesion. The nonsurgical treatment meets the expressed requirements provided the protocol is observed correctly. Accordingly, the possibilities for nonsurgical treatment deserve more attention.

The influence of the clinical and radiographic tibiofemoral angle on the alignment of the PCA knee prosthesis

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In a multicenter study, 119 total knee prostheses were checked retrospectively. Follow-up periods ranged from 2 to 6 years. The postoperative clinical tibiofemoral angle was measured. Radiographs of the entire leg in the erect posture were made of all the patients. In these radiographs, the tibiofemoral angle was measured and the mechanical weight-bearing axis of the leg was drawn in. Subsequently, the distance of this axis from the center of the knee was measured. The relation of the clinical and radiographic tibiofemoral angles to the alignment of the PCA knee prosthesis was studied. If the mechanical weight-bearing axis was positioned more than 1 cm medially or laterally of the center of the knee, this was defined as malalignment. This was found to be present in 55 percent of the cases. Possible causes of this poor result are insufficient preoperative planning, inadequate instrumentarium, surgical errors. The difference between the clinical and radiographic tibiofemoral angles was the factor that exerted the most influence on the alignment of the prosthesis. In nearly 50 percent of the cases, the difference between the clinical and radiographic tibiofemoral angles was more than 2°. In these cases, the alignment was found to be significantly worse. The importance of preoperative erect leg radiographs combined with measuring of the clinical tibiofemoral angle is emphasized.

Scintigraphic detection of inflammatory foci by means of Indium-111-labeled polyclonal human gammaglobulin

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The diagnosis of infections of the locomotor apparatus may be difficult, especially if there is prosthetic or osteosynthetic material in situ or if a recurrent low-grade osteomyelitis is involved. Scintigraphy with In-111-IgG may be useful in the assessment of these conditions. In 76

patients routine triphasic skeletal scintigraphy was carried out. In addition, scintigrams were made 4, 24, and 48 hours after intravenous administration of 75 MBq In-111-IgG. The results were verified with the aid of cultures of surgical or puncture material, and radiographic and clinical findings. The results are summarized in the table (several locations in 1 patient are listed separately).

	n	Correct +	Correct −	False +	False −
Chronic osteomyelitis	38	25	11	1	1
Total knee prosthesis	5	3	1	1	0
Total hip prosthesis	21	5	12	3	1
Acute osteomyelitis/ Spondylodiscitis	5	5	5	0	0
Arthritis	7	5	0	2	0
Soft-tissue infections	2	2	0	0	0

Sensitivity for infection was 96 percent, specificity for bacterial infections 69 percent, and specificity for inflammatory processes in general 94 percent.

It is concluded that In-111-IgG scintigraphy is a reliable method for detection of infections of the locomotor apparatus. However, raised In-111-IgG accumulation is also observed in sterile inflammatory processes (such as, recent fractures, hematoma/hemorrhage, sterile synovitis, or necrosis). In-111-IgG is a high-quality radiopharmacon that, moreover, compared with labeled leukocytes can be prepared rapidly and relatively simply.

Functional analysis of patients with a tibial rotation plasty

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Tibial rotation plasty (TRP) performed after ample resection of the tumor is a limb-saving intervention and an alternative to thigh amputation in patients with a primary malignant bone tumor of the distal femur. After 180° rotation of the tibia and fixation to the femur, the ankle is at the level of the contralateral knee and can function as a knee. Four males and 4 females (7.5 to 22 years) were examined after 13–53 months' follow-up. On the conveyor belt at a speed of 3 km/h, foot contacts, knee flexion angles, and EMG were recorded simultaneously. The EMG recordings were made of plantar and dorsal flexors of both feet and of the musculus biceps femoris and musculus rectus femoris of the normal leg. Muscle force was scored on a scale of 0–5. Enneking's scheme was used for function scoring.

Results: The symmetry ratio of the step time was 1.09. In thigh-amputation patients, it was 1.24–1.35. TRP flexion was in good accordance with the normal side. EMG of the musculus gastrocnemius showed very good agreement with the EMG of the musculus rectus femoris on the normal side. In addition, the rotated musculus tibialis anterior displayed EMG similarity to both the musculus gastrocnemius and the musculus biceps femoris on the normal side. Functional assessment produced one excellent and 7 good scores. In view of the good functional results, tibial rotation plasty appears to be a genuine alternative to thigh amputation.

Surgical treatment of trochanteric bursitis

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A retrospective study was made of the results of surgical treatment of trochanteric bursitis refractory to conservative treatment. The operations were performed in the period 1971–1986 in 99 patients (104 hips). The operation consisted of the release of the iliotibial tract by means of a crucial incision at the level of the greater trochanter. In addition, the bursa was excised. Eighty-four patients (89 hips) were followed up. Forty-three of the 89 hips were free from pain, and 60 of the 84 patients were satisfied with the result of the surgical treatment.

Results of treatment of thoracic and lumbar vertebral fractures

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In this hospital between April 1987 and August 1989, 25 patients with low-thoracic and 49 patients with lumbar vertebral fractures were treated. Twelve of them (5 females and 7 males) underwent an operation with a Dick fixateur interne. The indication for operation was an unstable fracture or a ventral wedge in excess of 20° with possibly a wedge in the frontal plane. Classified according to Denis, 10 fractures were of the burst type. In 4 patients, major loss of spinal cord function was an additional ground for stabilization. In addition to fixation of the vertebrae above and below and reduction of the kyphotic wedge, a spongiosaplasty of the fractured vertebral body was carried out via the pedicles. Also, a posterior spondylodesis was performed over three vertebrae. The spinal column was immobilized for 3 months by means of a removable plastic trunk corset. The mean follow-up period was 17 (6–30) months. The preoperative kyphotic angles (of the fractured vertebra itself and of the vertebrae above and below it) on

the lateral radiograph averaged 18°, which was reduced to 8° after the operation. However, in 6 patients the reduced kyphotic angle subsequently increased again. As regards complications, in 1 case an infection necessitated removal of material after 5 months. The reduction did not deteriorate. In 2 patients, the pedicle screws broke. In 1 patient, the vertebral fracture failed to consolidate, which led to migration of the screws through the locking plate. In these 3 patients, there is progressive kyphosis.

Conclusions: Treatment of unstable vertebral fractures with the Dick fixateur interne permits reposition with early mobilization. Accurate after-treatment and follow-up appear necessary owing to a fairly high incidence of complications after application of this technique.

Continuous perfusion of the subacromial space with a local anesthetic after arthroscopic operations

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Chronic shoulder disorders are often caused by pathologic alterations in the subacromial space. Arthroscopic resection of the coracoacromial ligaments with Neer acromioplasty is quite feasible nowadays. A problem, however, is the postoperative pain which interferes with the rehabilitation phase. Systemic drug treatment and analgesia by means of cervical epidural catheter cause side effects and complications. We have therefore developed a method of our own for analgesia after a subacromial arthroscopic intervention.

Material and method: Since 1 October 1988 in 30 patients after an arthroscopic operation in the subacromial space, a fine catheter was introduced into the subacromial space via the lateral arthroscopy portal. This catheter was then connected to a perfusor permitting continuous postoperative administration of bupivacain in different concentrations (0.125–0.375 percent, 4–8 mL/h) depending on the intensity of the pain. Also, if necessary, before each physical therapy session a bolus (0.250 percent, 5 mL) could be administered.

Results: In none of the patients was additional analgesia with a drug from the morphine group necessary during the bupivacain treatment, not even during the sessions of physical therapy. Passive mobility up to 180° was possible in 28 patients. No systemic side effects or complications were observed.

Conclusion: Continuous subacromial perfusion with a local anesthetic is to be preferred to systemic drug treatment or cervical epidural analgesia after arthroscopic interventions in the subacromial space.

Extending osteotomy of the proximal phalanx in hallux rigidus

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Since 1977, moderately severe hallux rigidus responding insufficiently to conservative treatment is treated by extending osteotomy of the proximal phalanx of the great toe as an alternative to arthrodesis of the MTP I joint. A total of 39 operations in 31 patients could be followed up with a mean duration of 4 years (1–9 years). Results were good in 72 percent; the patients were satisfied. In 28 percent, results were only mediocre or poor; the patients were not satisfied.

The causes were: 7x no alleviation of the symptoms, 2x aggravation of the symptoms due to progression of the arthrosis, in 1 case leading to a Swanson prosthesis elsewhere. In 1 case, a pseudarthrosis necessitated reoperation.

Conclusion: Extending osteomy is a simple procedure with few complications and good results in most cases.

Arthroscopic meniscopexy

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For several years now it has been possible to suture a ruptured meniscus of the knee joint by means of arthroscopy. There are inside-out and outside-in techniques, both of them giving good results according to the literature.

Since 1986, we have been using Henning's inside-out technique for arthroscopic suturing of ruptures in the vascular zone of the meniscus. Twenty-six patients with 26 ruptured menisci were followed up with a minimal duration of 1 year. Ruptures in the medial meniscus were involved 20 times, ruptures in the lateral meniscus, 6 times. Twelve knees were stable, 14 unstable. Four knees were stabilized during the arthroscopic meniscopexy.

Results: Five reruptures occurred, all in the sutured rupture; partial resection of the meniscus was performed four times; and once the meniscus was sutured anew. Arthroscopic checking was carried out three times and proved good fixation of the meniscus. No complications occurred during or after the operations.