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The treatment with external fixation of femoral shaft fractures in children (3 to 6 years)

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In the period 1992–1996, 11 children (mean age 4.1 years) and 12 femoral shaft fractures received primary treatment with external fixation. Nine of these children were available for follow-up.

Results: Duration of follow-up was 20 months. Mean duration of hospitalization was 8.4 days. The external fixation was left in situ for an average of 39 days. There were no functional abnormalities. Mean difference in leg length, given anatomical repositioning of the fracture, amounted to +0.21 cm.

The deviation of rotation measured with MRI amounted to 10.0° on average, seven times an exorotation (mean 12.7°) and twice, an endorotation (mean 1.5°).

Complications: two superficial pin hole infections.

Conclusion: External fixation is a good option in the primary treatment of femoral shaft fractures.

Posttraumatic sternoclavicular dislocation—a surgical treatment

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Dislocation of the sternoclavicular articulation is a rare condition, which mostly occurs after a direct or indirect impact on the arm or shoulder girdle. Only 4% of all dislocations of the shoulder girdle occur in the sternoclavicular articulation.

Treatment has so far been controversial because of the high morbidity, the proportion of complications and the poor long-term results.

Since 1992, a newly developed technique of plastic repair (Gardeniers) has been applied, with use of a PDS loop and reconstruction of the intra-articular disc.

The six patients operated on are all free of symptoms and once again completely capable of their occupational or athletic activities. Mean follow-up was 2 (0.5–4.5) years.

The outside-to-inside technique for the suturing of menisci—indications and results

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The outside-to-inside technique is a simple method of suturing menisci. The present study was carried out to determine for which indications the technique can be used.

Method: 51 patients were analysed after suturing of a meniscus, with the aid of a second arthroscopy, arthrography, MR imaging or a combination. 41 medial and 10 lateral menisci were sutured. The mean clinical follow-up amounted to 15 (3–80) months.

Results: 23 menisci (45%) recovered completely. Partial repair was observed in 16 patients (32%) (15 medial, 1 lateral). No recovery was obtained in 12 patients (23%).

It was interesting to note that in all patients with a rupture extending from the posterior to the central part of the medial meniscus who showed partial recovery, it was always the posterior portion of the meniscus that had not recovered completely. Also, incomplete repair of the central portion of these menisci was seen in 5 patients. 8 of 10 lesions in the lateral compartment recovered completely.

Conclusions: In ruptures in the posterior portion of the medial meniscus, the outside-to-inside technique gave mediocre results. On the other hand, this technique is currently the treatment of choice for ruptures of the central and anterior portions of the medial meniscus and all ruptures of the lateral meniscus.

Quality of life after resection of a malignant bone tumour—a comparative study of the rotation plasty, thigh amputation and hip exarticulation

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The Van Nes-Borggreve rotation plasty gives good functional results. The psychic results are a matter of debate. This inspired a quality of life study in which we compared the rotation plasty (n=33) with its alternatives: thigh amputation (n=13) and exarticulation of the hip (n=6).

Method: Internationally standardized quality of life measuring instruments (including SF-36) with prosthesis-specific questions. Questionnaires sent to all patients over 15 years of age with a follow-up of at least 1 year (mean 6.3 years).

Results: Response in all three groups over 95%. No systematic or significant differences in socio-demographic characteristics, follow-up, stage of disease or complications. The rotation plasty is better from the physical point of view, and gives rise to fewer prosthesis-specific problems. There were no differences between patients of the three groups with regard to self-image, vitality, or social and emotional functioning. Findings similar to those in normal contemporaries. Few patients considered themselves unattractive (4/33, 2/13 and 2/6, respectively) or experienced sexual problems (two, one and one, respectively). 31 out of 33 patients with a rotation plasty judged their quality of life to be satisfactory to excellent. (No significant difference with the other groups).

Conclusion: Patients with a rotation plasty report a good quality of life in the short and medium terms. Psychosocial functioning is satisfactory and similar to that of patients with a thigh amputation or hip exarticulation.

Complications of medial femoral neck fractures treated with screw osteosynthesis

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The treatment of medial fractures of the femoral neck remains a matter of controversy.

In our hospital between 1989 and 1995, osteosynthesis was carried out in 166 patients with medial femoral neck fractures, using 3 AO screws according to the three-point fixation principle.

The screw osteosynthesis failed in 40 patients (8 men and 32 women, mean age 77 years); this group was analysed in detail.

Results: 96% of the patients had a dislocated fracture (Garden 3 or 4) and 70% were over 75 years of age. The

cause of failure was redislocation in 22 patients, pseudarthrosis in ten and necrosis of the femoral head in eight patients.

In the redislocation group, over 50% of the patients showed insufficient repositioning and mediocre osteosynthesis, while in the pseudarthrosis and head necrosis groups repositioning was mostly good and osteosynthesis fair. All patients were subjected to reoperation; a head-neck prosthesis was implanted 26 times, a total hip prosthesis was implanted 13 times and in one, osteotomy was performed using a DHS (dynamic hip screw).

Conclusion: A relatively large proportion (24%) of reoperations after osteosynthesis of medial femoral neck fractures were analysed; the findings prompted some degree of adjustment of the management of the treatment of medial femoral neck fractures, taking into account the nature of the fracture, the patient's age and mobility and the degree of repositioning obtained during the operation.

The role of MRI and nuclear scintigraphy in infections of the locomotor system

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This study was carried out to investigate the diagnostic value of MRI and nuclear scintigraphy in infections of the locomotor system.

104 MRIs and 102 bone scans of patients suspected of an infection were reassessed retrospectively by two radiologists and two nuclear medicine specialists, respectively (blind and independently of one another). The diagnosis of reference was established by an orthopaedic surgeon.

The results show that a bone scan is useful in particular for the exclusion of an infection, especially in acute infections in bone not previously operated upon. MRI, on the other hand, is to be preferred for confirmation of a strong suspicion of infection, and its exact location.

The 'Madura foot'—an innocuous mycosis of the foot?

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Familiarity with the 'Madura foot' currently appears to be of importance in the Netherlands, also. The clinical aspects are indurated tumefaction, multiple fistulas from which granular pus is discharged and localization in the foot.

Case reports: Patient A was seen with multiple discharging fistulas on the foot. Radiographic findings were cystic clear spots. Patho-anatomic examination revealed granules with hyphae. A *Phialophora cyanescens* was typed. In spite

of treatment with itraconazole, progressive osseous destruction necessitated amputation.

In patient B, with a similar picture, fungus culturing and histology revealed an *Actinomyces madurae*. Drug treatment rendered amputation unnecessary.

Conclusions: Histology is of greater diagnostic value than cultures. Treatment should comprise a combination of antimycotics and antibiotics.

Acetabular reconstruction with impacted bone chips in primary total hip arthroplasty with a follow-up of 10–17 years

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Acetabular defects in primary total hip arthroplasties (THA) can be filled up with impacted bone chips.

Patients and method: 45 patients (49 hips) with a minimal follow-up of 10 (10.0–17.5) years; mean follow-up 12.4 years, were studied. The indications for THA had been primary osteoarthritis (40%), secondary osteoarthritis (35%) and rheumatoid arthritis (25%). Autologous bone was used in 46 and homologous bone in 3 cases. The numbers of revisions were taken into account, the Harris Hip Scores (HHS) were determined and the roentgenograms of the acetabula were assessed.

Results: 4 revisions had been carried out: 1 case of septic loosening after 1.5 years and 3 of aseptic loosening (after 7, 12 and 17 years, respectively). There were no preoperative HHSs, the HHS after a minimum of 10 years' follow-up was 86 (60–110). Radiographic failure was present in 3 patients.

Conclusion: As the proportion of revisions for aseptic loosening was 6% after an average follow-up of 12.4 years, this is a good option in bone defects.

A 7–10 year study of 332 Zweymüller uncemented total hip replacements

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A retrospective multicenter study where the results were obtained by independent physicians.

Material and methods: 68 patients (70 hips) were lost to follow-up. 234 Patients (250 hips) were available for clinical

evaluation. Average age was 64 (24–94) years.

Results: The average postoperative Harris Hip Score was 81 (40–100). 12 reoperations were necessary; 4 because of aseptic loosening of the cup and 1 because of aseptic loosening of the stem. There were no radiological signs of loosening of the stem. At the time of evaluation, 6% of the patients reported mild to moderate pain. 2 patients reported a period of mid-thigh pain.

Conclusion: The 7–10 year follow-up results of the uncemented Zweymüller (Allopro, Winterthur, Switzerland) total hip replacement are encouraging.

Transarticular C1–C2 screw spondylodesis according to Magerl

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Atlanto-axial spondylodesis according to Magerl affords multidirectional stability which permits the patient's immediate mobilization. 15 patients were operated on in a prospective study between November 1993 and April 1997. Mean age was 60 years. Indications were rheumatism (4), osteoarthritis (1), fractures of the dens axis (9) and posttraumatic instability C1–C2 (1). Neurological condition was normal to slightly abnormal.

Methods: The 3.5 cortical titanium screws (AO-Synthes) were screwed in bilaterally under radiographic control through the base of arch C2 through the articular facet C1–C2 down into the lateral mass of C1. If possible, a posterior spondylodesis was prepared using autologous bone.

Aftertreatment included a hard neck collar until radiographic consolidation. Twice a halo rest was used because of severe osteoporosis.

Results: Mean duration of observation was 1 year and 2 months. Uncomplicated radiographic consolidation occurred after 5 months in 13 cases. Pain abated and the neurological condition improved in all patients. Half the patients were entirely free of symptoms. Rotation was restricted to approximately 30°.

Complications were root lesion C1 once, and wound infection at pelvic donor site once.

Late complications were broken screws twice, and consolidation spondylodesis in unchanged position.

Conclusion: Transarticular screw fixation of C1–C2 according to Magerl in a group of 15 patients proved to be a reliable method which for various indications resulted in good spondylodesis. No major complications occurred.

First experiences with intramedullary hip screws (IMHS, gamma nail, Russel–Taylor nail) in unstable proximal femur fractures

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Intramedullary screws were inserted for repair of inter- and subtrochanteric femoral fractures in the period from May 1994 to January 1997 in 48 patients (average age 76 years, 11 men and 37 women). 35 patients had an unstable and 2 a stable fracture. There were 8 patients with a pathological proximal femoral fracture and 5 imminent fractures.

70% of the patients were operated on within 24 hours. The long nails gave rise to perioperative problems. Over half the patients were mobilized with weight bearing. The median hospital stay was 16 days (mean 17.5) and half the patients on discharge could go directly home. Consolidation occurred after an average of 18 weeks. In approximately half the patients, the mobility level at the last follow-up equalled the preoperative level.

The intramedullary hip screws constitute an additional asset for the treatment of unstable proximal femoral fractures.

Pelvic instability—a solvable problem?—first experiences with surgical treatment

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Pelvic instability causes disabling symptoms, with inability to walk and dependence on a wheelchair. It occurs mostly after childbirth, but sometimes it is due to an accident. The diagnosis is based largely on history-taking and physical examination. Characteristic features are pronounced weakness of the abductor and flexor muscles on the hip.

In cooperation with the Spine & Joint Centre of Rotterdam a number of patients were selected with severely disabling symptoms of long standing. All 7 were women (22–64 years); 5 after childbirth, 2 after accidents. The surgical technique applied consists of double plate osteosynthesis of the symphysis and (bilateral) stabilization of the sacroiliac joint with screws introduced percutaneously. The results were excellent in four cases, with complete disappearance of the symptoms and good in two cases with only minor residual symptoms (follow-up 3–11 months). In one case, the osteosynthesis broke out over the symphysis; re-osteosynthesis was performed with additional external fixation; the results for the time being are poor. So far, no other complications have been observed, especially no iatrogenic nerve lesions.

The results look good but critical long-term evaluation is necessary. Caution in optimism is therefore indicated.

Carpal tunnel syndrome as an occupational disease in orthopedic surgeons

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Much has by now been written about the carpal tunnel syndrome as an occupational disease. Highly diverse occupations such as metal worker, greengrocer, dentist and housewife have been studied and reported. On the other hand, occurrence of the carpal tunnel syndrome in medical specialists, and in orthopedic surgeons in particular, has not yet been described anywhere. We know from experience that CTS does occur in orthopedic surgeons and the impression is gained that it is more frequent in this group than among the population in general.

Material: Questionnaires were sent to all (476) orthopedic surgeons in the Netherlands with questions intended to gain insight into the number of orthopedic surgeons with CTS symptoms and any precipitating factors. Also, pressure measurements were performed in a test setup to determine local compression by cuffs and gloves.

Results: 394 of the 476 orthopedic surgeons (83%) responded. Of this group, 15% (n=59) reported experiencing CTS symptoms. 33 of the 59 mentioned as precipitating factors some operation-related factor such as forceps grip, operations of long duration and tight cuffs of surgical gowns.

Conclusion: CTS appears to occur more frequently among orthopedic surgeons than among the population in general. Various causative factors will be discussed with reference to the results of the enquiry and the test installation.