Poster Nr.

SINART ™

A new Retrograde Femoral Nail with Rendez-vous aiming technic

H. Gerngroß[1], B. Friemert[1], L. Claes[2]

1) Department of Surgery, Military hospital Ulm - Germany
2) Institute of Orthopaedic Research and Biomechanics, University of Ulm - Germany

Problem:

Besides numerous advantages, retrograde nailing of the femur shows also disadvantages.

These are:

- *Difficult proximal interlocking with partly extended x-ray exposure time*
- *Remaining chondral defect in the knee joint, especially after nail explantation*
- *2. arthrotomie for nail extraction*

Solution:

Rendez-vous maneuver for the mounting of a prox. aiming device

Result:

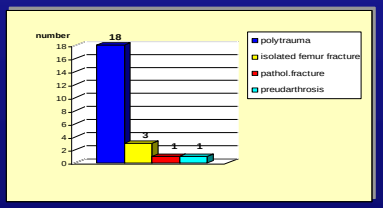
- Reduction of the x-ray exposure time by additional proximal aiming device (1)
- Explantation via Trochanter major (antegrade) (2)
- Replantation of an osteochondral cylinder after nail implantation and therefore reduction of the chondral defect (3)

Materials and Methods:

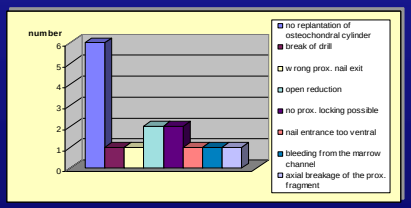
So far 66 femur fractures were treated with this system. After 1 year the results of 23 patients could be evaluated. The intraoperative data of the implantation were recorded. A clinical/radiological re-examination was performed on the day of dismission as well as 6-12-26-52 weeks post op. Recorded were: type of fracture, fracturhealing, knee joint symptoms, femur length determination, determination of axis deviation, torsion failure determination, Leunert-Score, Tegner-Score.

Results:

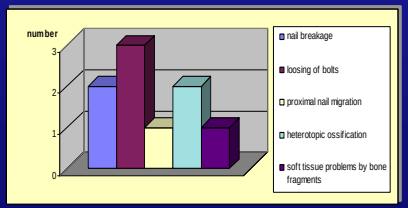
The average age at surgery was 34.1 years (age 18 through 85). 18 patients were treated primarily with a Fixateur externe. After an average of 9.2 days (3-26) a treatment switch to the Sinart™ – Marknagel was performed. These were mostly cases of type B fractures by AO classification. Six patients had an open fracture (I° n=1, II° n= 3, III° n= 1, classification according to Gustilo and Anderson). The pain level was determined by means of the Visual Analogue Scale (values ranged from 1 – 10). The VAS values in the area of the knee joint had been an average of 1.5 (0-8), in the area of the fracture they were at 0.5 (0-9). The mobility of the knee was at 122° (100-145), whereas one female patient showed a extension deficit of 10° (distale # with antekurvation). An anterior pain syndrom of the knee could not be diagnosed. There was no case of a hematoma. Hence in the first 23 cases, after a maximum of 12 month, there were no significant knee joint discomforts due to traumatisation of the knee joint caused by the implantation of the nail. There was no infection or disturbance of wound healing. The breaking of one nail by delayed union made it necessary to exchange the implant to a larger reamed nail. A second case of nail breaking resulted from an incorrect indication. It was a subtrochantal fracture, which was treated after explantation with a Gamma nail. In the case of a female patient with osteoporosis there was movement of the nail within the proximal femur. Except for one case (see above) the healing of the fracture showed no abnormal course. One female patient showed a shortening of the leg of 2 cm, in the case of 4 patients there was an outer rotation angle deviation diagnosed of 5° or 10° respectively. The Leunert-Score shows an average value of 89 (68-97), the Tegner-Score a value of 4.4 (3-7).



patients distribution



intraoperativ problems/difficulties



postoperative problems/difficulties

Conclusion:

The new SINART™-retrograde femur nail turned out to be an easy and less complicated implantable nail. It combines the advantages of the retrograde implantation with the advantages of the antegrade explantation. Due to the replantation of the osteochondral cylinder the inner knee damage can be reduced.