In patients with severe acetabular deficiency due to rheumatic arthritis (RA), the mid-term result of THA including a bone graft in the acetabular bed were analyzed.

A total of 32 patients with 40 joints, comprising of 30 females and 2 males, were reviewed in this study. These patients had severe acetabular deficiency and were receiving THA for RA, including a bone graft in the acetabular bed. The average age at surgery was 58.3 years and the average follow-up period was 6.2 years. These patients had suffered from RA for 21 years on an average. The acetabular bed was filled with the chip bone and covered with the slice bone, followed by strong pressurization of the implanted bone and fixation of the cup with a screw. The patients were evaluated clinically using the Harris hip score, and radiologically using the Gruen radiographic analysis and the Sotelo-Garza and Charnley classification.

In the clinical evaluation using score, the mean score improved from 39.7 preoperatively to 82.3 postoperatively. An improvement in pain, walking ability, ROM and ADL were observed. In the radiological evaluation using the Gruen analysis, more radiolucent lines tended to appear in the zone 1, of which none was progressive or indicated loosening. On the femoral side, more partially radiolucent lines of 1 mm or less tended to appear in the zone 4, of which none indicated osteolysis or loosening. The mean thickness of acetabular bed improved from 4.3 mm preoperatively to 13.5 mm postoperatively. During the follow-up period, no collapse of the implanted bone, dislocation of the cup or loosening was observed.

Treatment with the bone graft method using slice bone and chip bone are used for acetabular deficiency in rheumatic hip joint in our department, this methods is considered to be an effective treatment, because it has provided a good initial fixation of cup and a good graft survival.
Introduction
Severe acetabular bone stock loss compromises the outcome in primary and revision total hip arthroplasty. This acetabular deficiency occurs very often in Rheumatoid Arthritis. In 1979 a biologic method was introduced with tightly impacted cancellous allograft in combination with a cemented polyethylene cup for acetabular reconstruction. With this technique it is possible to replace the loss of bone and restore hip function with a standard implant. Because of the poor long term results and our own experience with large solid grafts we started in 1998 to use the impaction grafting in primary and revision hip replacements in Osteoarthritis and Rheumatoid Arthritis.

Materials and Methods
Between 1998 and 2001 35 acetabular reconstructions were performed in 29 patients with rheumatoid arthritis. 3 Patients were lost to follow up. 24 primary and 11 Revision Arthroplasties were performed. The average age was 55(22-73). 29 female, 6 male.

8 Patients had additional dysplasia.

We had cavitary, segmental and also combined defects. Femoral head autografts were used in all primaries, allografts were used in revision surgery. Firstly the peripheral and central segmental defects were close with a metal mesh, so that only a cavitary defect remained. The cavity was filled with bone chips which were impacted layer by layer. To stabilize these reconstruction cement was used in direct contact with the graft.

In the Merle d’ Aubigne Score an improvement in pain, walking ability and function were observed. We had 1 case of aseptic loosening, in a 73 year old female.

After 10 month the grafts were incorporated.

Our results are short term results- compared to the international literature (Rosenberg et al.) Nevertheless we can confirm the technique can be used with good results in cases with severe acetabular defects due to rheumatoid arthritis.
Cementless Total Hip Arthroplasty with Morselized Bone Grafting in Acetabular Protrusion of Rheumatoid Arthritis

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Introduction
Since 1981, we have used various types of the total hip prosthesis for the reconstruction of the acetabular protrusion in rheumatoid arthritis. The cemented Charnley prosthesis was used during the initial 8 years, and we experienced loosening of the cemented acetabular socket in some cases. The bipolar femoral head prosthesis, which started to be used from 1984, was one of the cementless prosthesis. And it showed high frequency of proximal migration of outerhead. The threaded socket also showed frequent loosening. To overcome these problems, we started to utilize a new method from 1988. This method included packing morselized bone grafts into the acetabulum and fix them using a porous coated socket and screws. This study describes the results of cementless total hip arthroplasty (THA) for the acetabular protrusion in rheumatoid arthritis with this method.

Materials and methods
Sixty-one cementless THAs with use of porous coated acetabular socket were performed in 50 patients who had sever protruded acetabulum due to rheumatoid arthritis. The average follow-up period was 9 years and 5 months (range, 5 to 13 years). A Mallory/Head prosthesis with porous coated socket was used in 43 hips and other types in 18 hips. In all operated hips, autogenous morselized bones were grafted on the thin acetabular wall.

Results
The clinical improvement in pain was the most apparent. X-ray findings of the grafted bone in the acetabulum showed a homogenous pattern in most cases (90.2%) at 6 months after the operation. A radiolucent zone at a non-weight-bearing area between the grafted bone and socket was seen in 20 hips (32.7%) for 3 years after the operation, and it gradually disappeared and changed to a sclerotic zone. Collapse and/or absorption of the grafted bone were noted in 3 hips of the patients with severe osteoporosis and high disease activity.

Discussion
There are several technical key points to succeed THA in patients with rheumatoid arthritis. The first is the selection of the acetabular socket. The second is the method of bone grafting, and the third is the size and the shape of grafted bones. We have used various types of prosthesis for the protruded acetabulum so far, and it was considered that the bipolar and threaded types are not acceptable because of their high frequency of proximal migration and loosening. The mass and/or block bone should not be used, because they are liable to fall into collapse. It is safely recommended to use slice or morselized bones to lead the grafts to early survival and remodelling caused by tight and close contacts.

Conclusion
THA with the use of morselized bone grafting into the acetabulum and a fixation with a porous coated socket and screws is a simple and useful procedure for treating protruded acetabulum in rheumatoid arthritis.

Keywords
Rheumatoid arthritis, Total hip arthroplasty, Morselized bone grafting, Porous coated socket

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Ergebnisse mit der CLS-Spotorno® Spreizpfanne bei Patienten mit Rheumatoider Arthritis

W. Miehlke, M. Müller, T. Guggi, U. Munzinger

Einleitung:
Aus diesem Grund haben wir 1989 begonnen, nicht zementierte Pfannen einzusetzen.

Material und Methodik:

Resultate:
Beide Implantate wiesen bei der radiologischen Kontrolle in der superioren Zone (Zone I nach Delee u. Charnley) einen Lockerungssäum auf.

Schlussfolgerung:
Systemic Steroids, but Not Intra-Articular Steroids Cause Femoral Head Necroses in Children with Juvenile Rheumatoid Arthritis

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Objective:
To study whether intra-articular triamcinolone hexacetonide (iaTH) for the treatment of coxitis in patients with juvenile rheumatoid arthritis (JRA) causes femoral head necroses (FHN).

Methods:
Fifty consecutive patients with JRA and coxitis were studied prospectively. Forty-eight children received iaTH in sixty-seven arthritic hips. The remaining two children exhibited three cases of femoral head necrosis at the initial assessment and were only followed; both were receiving long-term systemic steroids (LTSS). After a minimum of two years, the study was concluded with a final evaluation including MRI.

Results:
In thirty-nine of sixty-seven hip joints (58%), remission of the coxitis for a period of two years was obtained through a single administration of iaTH, another twelve hip joints went into remission after repeated TH injections (total remission rate = 76%). We observed two cases of femoral head necrosis (FHN) following iaTH. Both children were receiving LTSS. During the period between onset of JRA and screening assessment for this study, the children exhibited 2.4 cases of FHN per 100 patient years vs. 1.5 cases of FHN per 100 patient years between iaTH treatment and final follow-up. All five observed cases of FHN occurred among the twenty children who received LTSS, whereas no necrosis occurred in the thirty children who did not receive systemic corticosteroids (P = 0.009 Fisher’s Exact Test).

Conclusions:
IaTH for juvenile rheumatoid coxitis was an effective treatment which did not increase the rate of FHN. Systemic steroids, however, (or their co-variable, severity of JRA) do increase the risk of FHN in JRA.

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