

# Extensive Subtrochanteric Shortening Osteotomy Enables the Conversion of a Long Lasting Resection Arthroplasty to a Total Hip Replacement

**Subtrochanterická osteotomie s velkým zkratem umožňuje konverzi resekční artroplastiky na TEP kyčelního kloubu po delší době**

**S. KESSLER**

Ortopedic Department, Sindelfingen District Hospital, Sindelfingen, Germany

## SUMMARY

This case report presents the results of a conversion hip arthroplasty after a long lasting Girdlestone situation of 15 years in combination with an extensive shortening of the leg of 7.2 centimeters. An extensive subtrochanteric shortening osteotomy of 3.5 centimeters was necessary to restore leg length and the rotational centre of the hip.

Functional outcome was excellent within the long run and a restoration of the independence of the patient was achieved.

## INTRODUCTION

Resektion arthroplasty of the hip joint according to Girdlestone is a surgical procedure which is predominantly performed to treat septic arthritis of the hip joint or infected total hip replacements (8). However persisting resection arthroplasty results in a considerable alteration of hip function with instability and increasing shortening of the extremity, which often makes orthotics necessary (3,7). Furthermore patients complain of persisting pain restricting several shapes of their lives. Especially younger patients do not accept this situation as the definite outcome. Conversion to a total hip replacement is desired (2,8).

## DESCRIPTION OF THE RESPECTIVE CASE

A 37-year old man presented with a long lasting Girdlestone situation of his left hip which was performed 15 years ago because of recurrent septic coxitis (figure 1). He asked for conversion to a total hip replacement because of constant moderate pain and unacceptable restriction in daily activities. He was mobilised with one French crutch and a shoe elevation. On physical examination we found a shortening of the affected extremity of 7.2 centimetres.

After critical consenting of the patient, the operation was performed under maximal relaxation in general anesthesia. Apart from an extensive debridement, a complete muscle release (with the exception of the insertion of the gluteus medius muscle and the psoas tendon) in combination with an extensive subtrochanteric shortening osteotomy of 3.5 centimeters was necessary to restore the leg length and the rotational centre of the hip. A revision stem implant was used,

which provides rotational stability by longitudinal ribs and anchors methaphyseal and diaphyseal (figure 2).

Postoperatively no weight-bearing for six weeks and for further four weeks only partial weight-bearing with 30 kilograms was allowed. The osteotomy united within 6 months. 1.5-years after operation the man finally presented in outpatient clinic. He reported to be completely pain free and mobilised without any support (figure 3). Meanwhile he was engaged and plans to establish a family were on their way.



*Figure 1. Pelvic X-ray of a 37 year old male patient with Girdlestone arthroplasty since 15 years and a shortening of the affected limb of 7.2 centimeters*



Figure 2. X-ray of the same patient one day after surgery showing a restored leg length after extensive subtrochanteric shortening osteotomy



Figure 3. Pelvic X-ray 1.5 years after conversion of the hip into a total hip replacement. The subtrochanteric osteotomy is completely united.

## DISCUSSION

Conversion of a Girdlestone situation into a total hip replacement is a demanding surgical procedure (1). Difficulties and complications can arise depending on the duration of resection arthroplasty and the degree of shortening. However, when surgery is successful, patients' satisfaction and hip function is high (4,5,6).

In this case, shortening of more than 7 centimetres in combination with a long lasting resection arthroplasty 15 years ago made the decision to converse into a hip arthroplasty critical. Only extensive subtrochanteric shortening osteotomy and muscle release allowed anatomical implantation of the prosthesis ending up in excellent functional results and a restoration of independence of the patient.

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Dr. S. Kessler,  
Orthopedic Department, Sindelfingen District Hospital,  
Arthur-Gruber Strasse 70,  
71065 Sindelfingen  
Germany  
Phone: +49-7031-982481  
Fax: +49-7031-982493  
E-mail: s.kessler@kh-sindelfingen.de

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