

BILATERAL TREATMENT OF DYSPLASIA COXARTHROSIS USING A MODULAR REVISION CUP

Medical history

A 69-year-old female patient presented to the clinic on 1st June 2023 with increasing, immobilising symptoms in both hip joints. The patient had undergone several operations in childhood for bilateral dysplasia coxarthrosis, most recently at the age of 12. She had coped well over the past decades. However, her symptoms had been increasing for several months, so that the patient was largely confined to a wheelchair due to pain.

Diagnosis

The clinical examination revealed an extension/flexion of 0/20/90° on the left hip side. The right side of the hip had a flexion contracture of approx. 30°, with a flexion range of approx. 80°. Rotation and abduction were cancelled on both sides. Due to the flexion contracture, the leg length could not be tested. Peripheral blood circulation, motor function and sensitivity were intact.

Preoperative imaging diagnostics of the hip and pelvis revealed a defect situation for the left acetabulum with type II cavitory defects (Fig. 1) and for the right acetabulum with combined type III cavitory and segmental defects (Fig. 2) in accordance with the AAOS classification. According to the Paprosky classification of defects, the left acetabulum showed a type IIa defect, while the right acetabulum showed a type IIc defect. The bilateral dysplasia coxarthrosis was classified as type II according to the Crowe and Hartofilakidis classification. Due to the different anatomical conditions and bony

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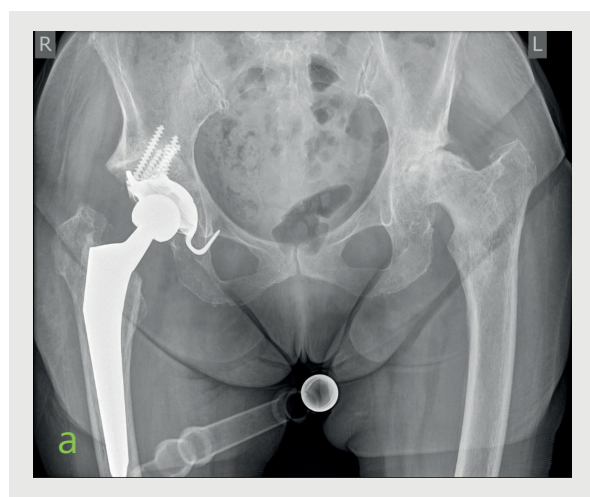


Fig. 1 Pelvic overview a.p. with preoperative situation on the left and after treatment on the right (a) and Lauenstein projection on the left (b)

defect situations in both native acetabular cups, the indication for a stable cup restoration with the cementless modular revision cup MRS-TITAN Comfort (Fig. 3, PETER BREHM GmbH, Weisendorf) was made. The special feature of the revision cup is that it can be customised to the specific bony conditions.

The aim of the treatment was to quickly restore joint function by means of a load-stable surgical treatment. A cemented restoration was selected on the stem side, which ensures full weight-bearing despite the significantly reduced bone quality.

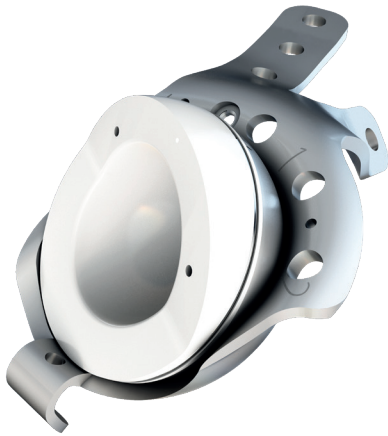


Fig. 3 MRS-TITAN Comfort

Treatment and postoperative course

A bilateral surgical treatment was performed according to the preoperative planning. The procedure was performed in the lateral position and was free of complications. The patient was treated with the cementless modular revision cup MRS-TITAN Comfort and a polyethylene insert. A cemented restoration was selected on the stem side.

Initially, the right hip side was treated according to the preoperative planning (Fig. 4). On 12th June 2023, the MRS-TITAN Comfort revision cup (size 52, without straps, with caudal hook, dysplasia insert 20°) was implanted. Postoperative mobilisation was performed on forearm crutches with full weight-bearing. The postoperative X-ray control (Fig. 5) confirmed the correct implant position with stable joint conditions.

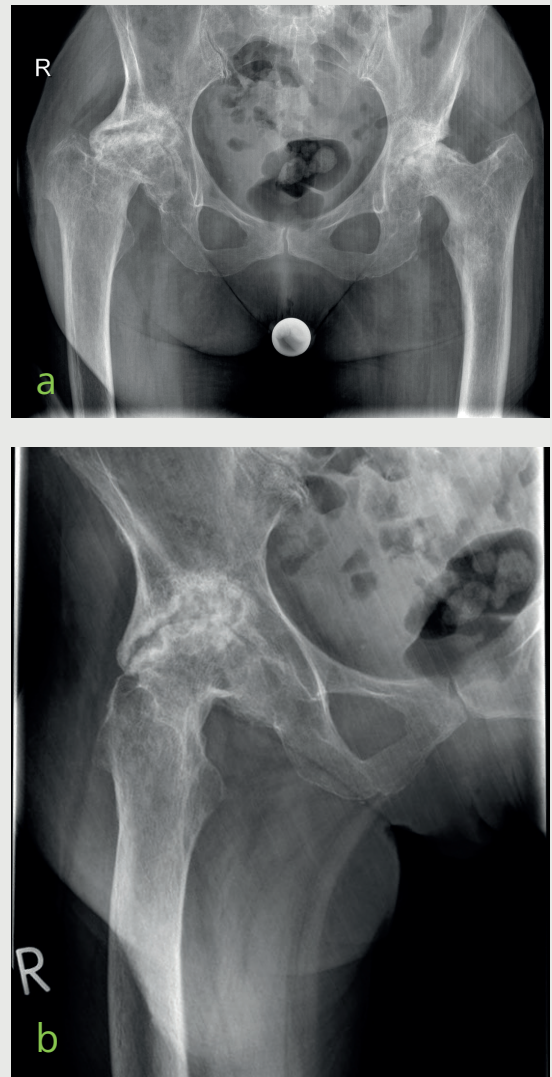


Fig. 2 Preoperative situation right hip, pelvic overview a.p. (a) and Lauenstein projection (b)

The patient was discharged to geriatric rehabilitation on 20th June 2023.

After completion of geriatric rehabilitation on 10th July 2023, the mobility of the right hip joint in flexion/extension was 80°/5°/- (compared to 75°/10°/- on the left) and in abduction on the right at 30° (compared to 25° on the left). The patient was able to walk and climb stairs safely and with good coordination. With the rollator, the patient was able to walk up to 200 m indoors and up to 500 m outdoors when accompanied. Climbing stairs was possible by holding on to the handrail over 20 steps with an approach step. In the DEMMI mobility test, the patient scored 62 out of 100 points, whereas the test when the patient was admitted to our clinic had only scored 44 out of 100 points.

The left hip side was treated 28 days later, on 11th July 2023, with the MRS-TITAN Comfort (size 48, strap 45 mm, caudal hook, dysplasia insert 20°, cementless, augment cranial A with screw 14 mm thick, bone screws 6 mm, four strap screws 6 mm) (Fig. 6). The postoperative radiograph confirmed the correct implant position (Fig. 7).

The patient transferred from inpatient treatment to geriatric rehabilitation on 18th July 2023. After discharge from rehabilitation on 8th August 2023, the patient was able to walk up to 200 m indoors and up to 400 m outdoors without a rollator if accompanied. Climbing stairs was possible over two floors with a handrail. Short distances in the room were covered with forearm crutches.

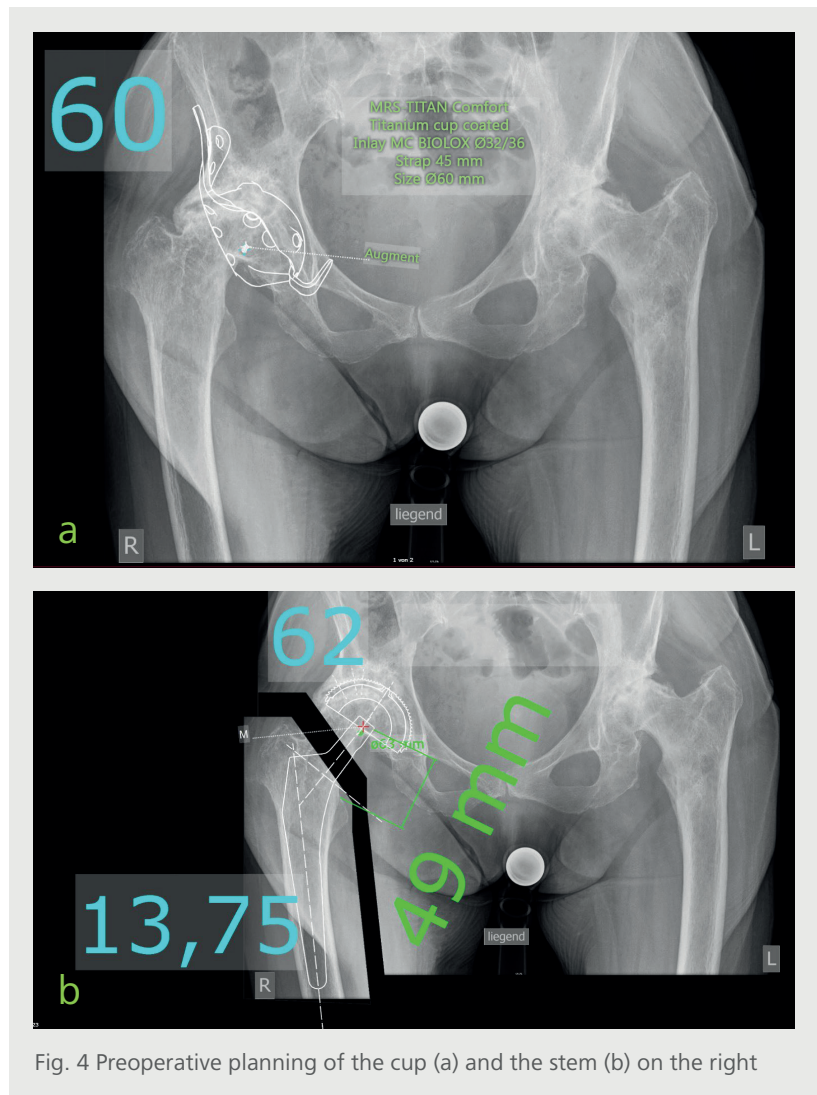


Fig. 4 Preoperative planning of the cup (a) and the stem (b) on the right

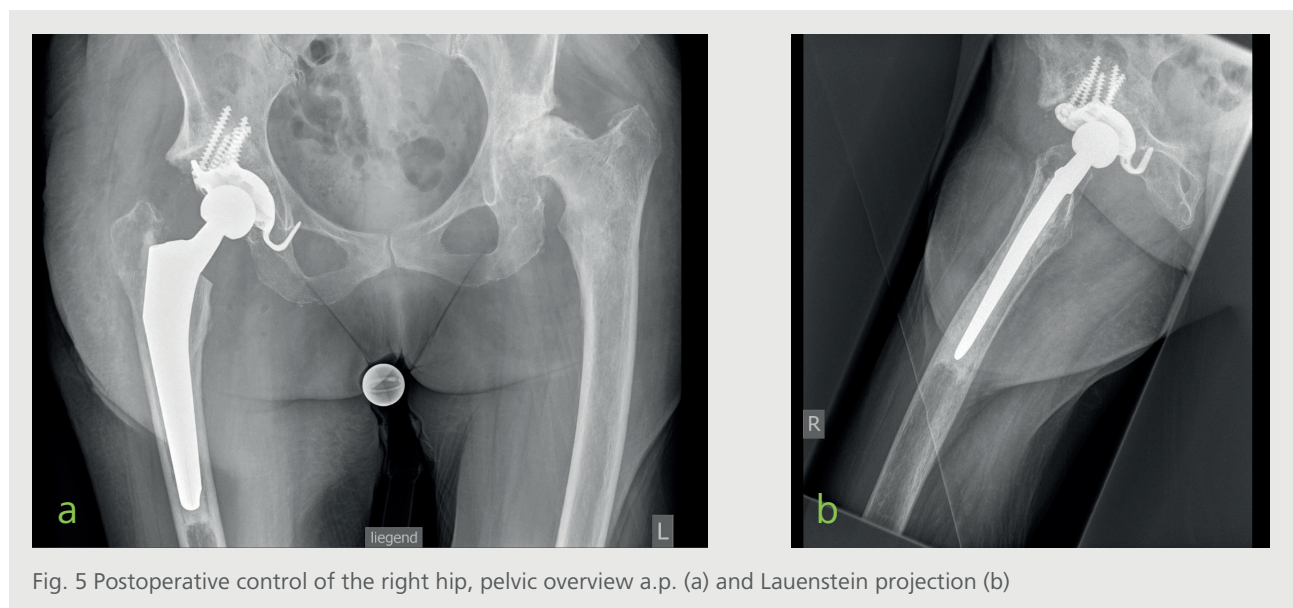


Fig. 5 Postoperative control of the right hip, pelvic overview a.p. (a) and Lauenstein projection (b)

Result

The variability of the cementless modular revision cup MRS-TITAN Comfort enabled step-by-step individual adaptation to the different anatomical requirements of both native acetabular cups and thus ensured the successful bilateral, load-stable treatment of dysplasia coxarthrosis.

There were no perioperative or implant-associated complications. The last follow-up examination on 18th July 2023 showed an unchanged anatomically correct fit of the implants and no abnormalities.

Bilateral arthroplasty with the cementless modular revision cup MRS-TITAN Comfort led to a good functional result and proved to be a suitable and reliable treatment option.

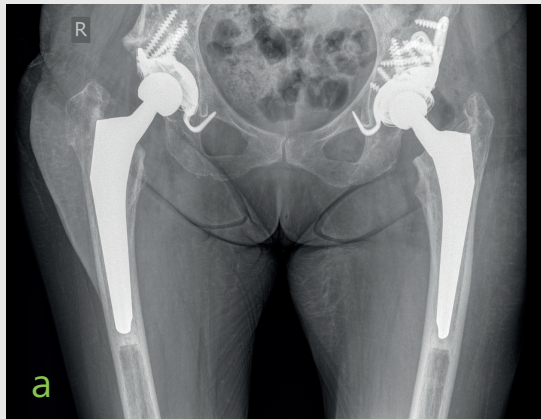


Fig. 7 Postoperative pelvic overview a.p., correct implant position left and right (a), Lauenstein projection on the left (b)

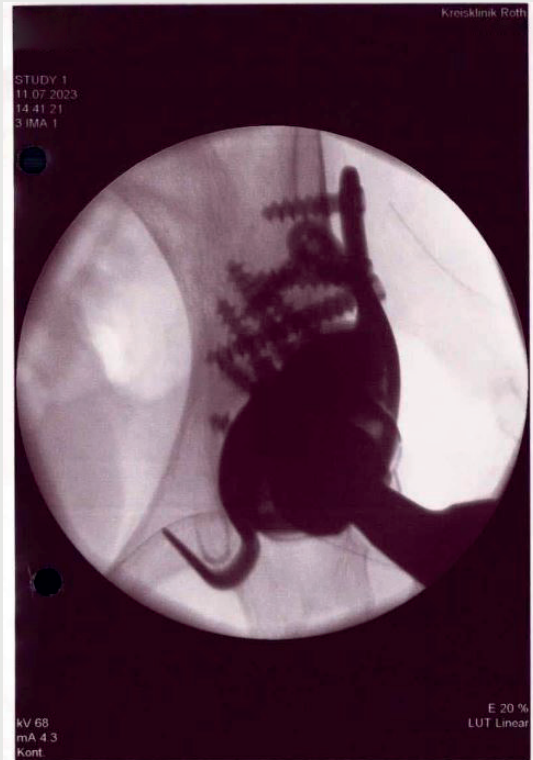


Fig. 6 Intraoperative X-ray control of the implant position on the left

Image sources

Fig. 1, 2, 4 to 7 Roth District Hospital

Fig. 3 PETER BREHM GmbH