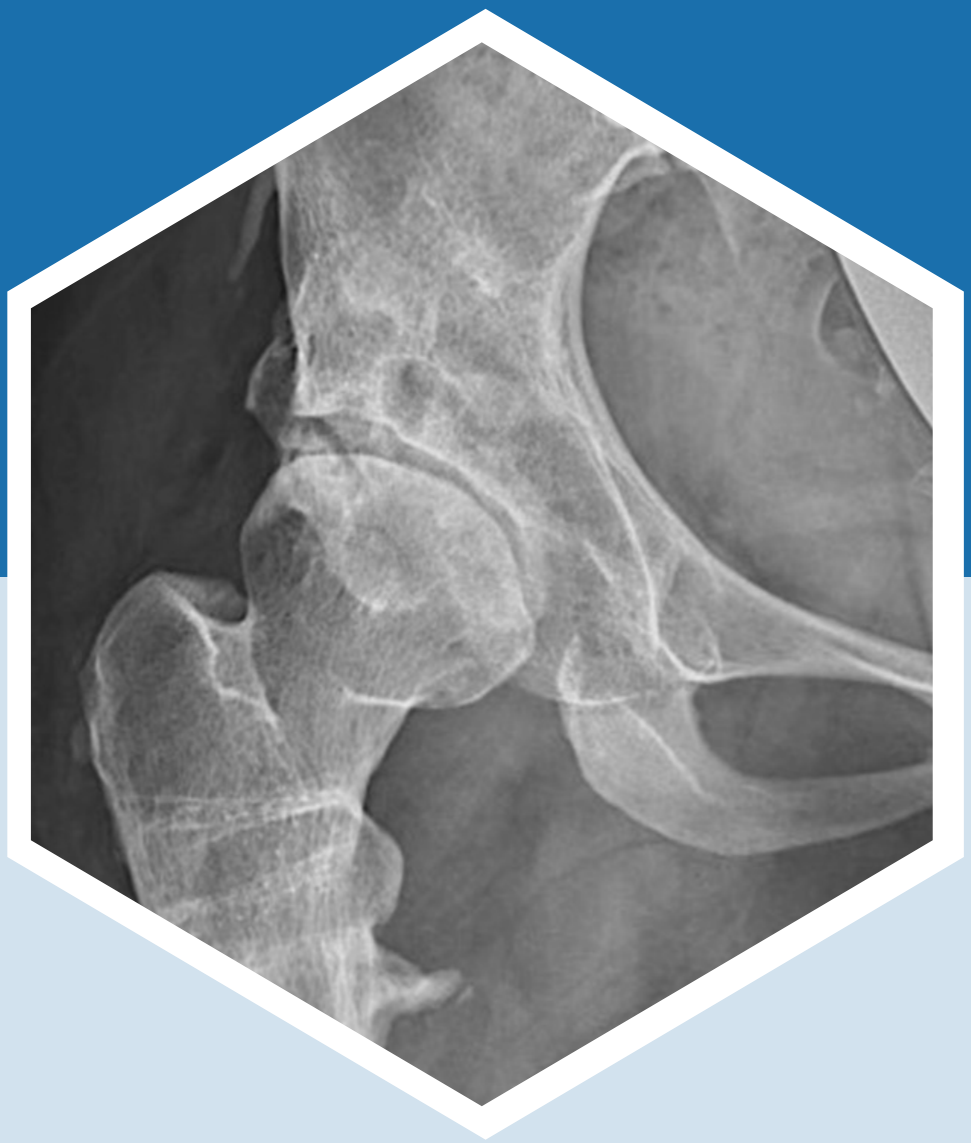
Anton Suriyakumar
Case report from the Evangelical Hospital in Dierdorf/Selters

www.endo-base.com

25-year-old Ukrainian patient with dysplastic coxarthrosis



Patient history and clinical results

Ms. M is 25 years old and fled Ukraine for Germany before the war started. At the age of 12 she had surgery on her right hip to treat hip dysplasia. Over the course of her life she has had a further 7 operations on her right hip. Despite the surgeries to reposition the hip, arthrosis of the right hip joint has developed over the years. The patient was reliant on painkillers and a walking stick in her early years.

The patient presented to us and asked about a joint replacement. From a clinical perspective there is a difference in leg length of approximately 2.5 cm. There is a shortening and antalgic gait on the right side - no Trendelenburg sign. She has several scars from previous operations in the region of her right hip. Some of the muscles were damaged and atrophied as a result of the previous operations.

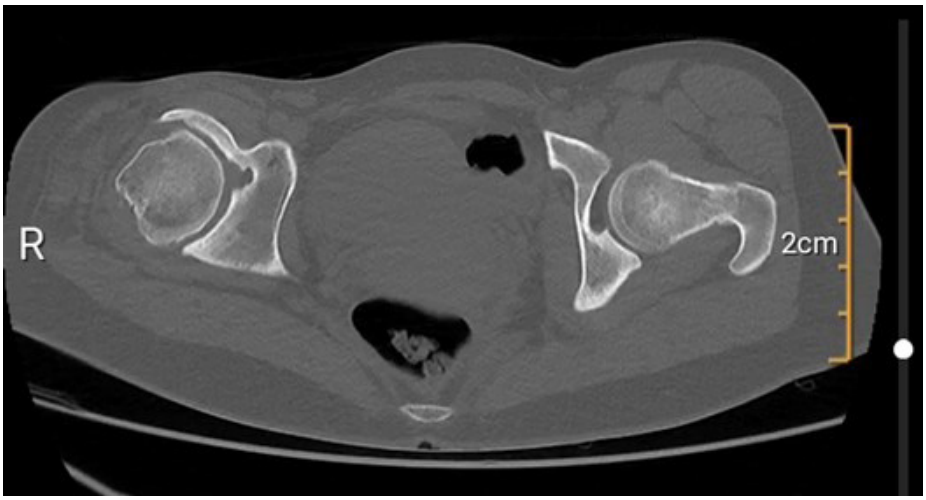
Imaging

The x-ray images brought in showed advanced dysplastic coxarthrosis with rounding of the femoral head, lateralization of the center of rotation of the hip, and a large cyst in the acetabulum. There is significant sclerosis of the femoral medullary canal in the region of the proximal femur following an intertrochanteric changeover.

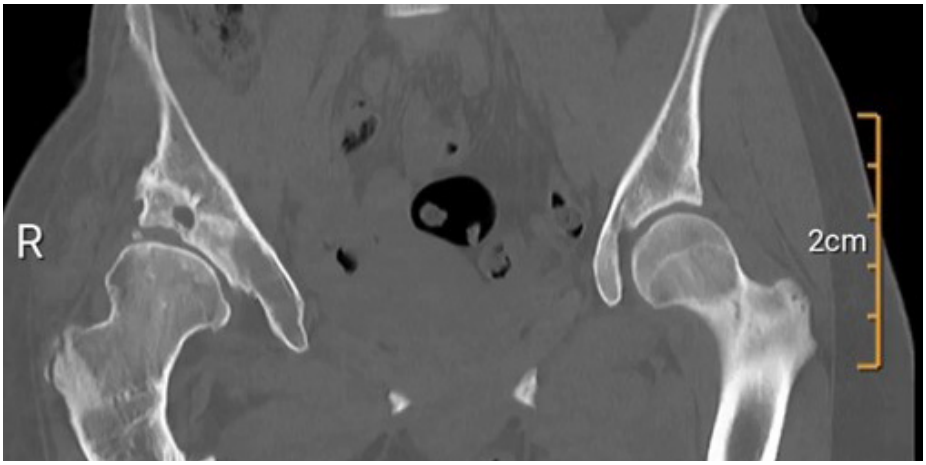
Fig. 1: *preoperative x-ray of the right-hand side of the hip*

Fig. 2: preoperative x-ray of the right-hand side of the hip

A CT was carried out before surgery to assess the extent of the dysplasia and to make a decision on an access route.
The CT showed advanced dysplasia:



- a lack of femoral head covering
- loss of bone on the ventral column of the acetabulum and
- a large cyst on the cranial acetabular rim.
- The CT also shows significant atrophy of the muscles in the right hip.



The *bone stock* on the right hip was analyzed in precise detail before the surgery.

Fig. 3 and 4: CT - preoperative images

Fig. 5: CT showing the bone in MIP mode

Planning

Due to the poor muscle status, the decision was made to access the hip via an anterior, minimally invasive access route.

The surgery was planned in detail using digital planning software: reconstruction of the leg length, the center of rotation of the hip, and the offset. A cement-free, press-fit cup and a short shaft were selected as implants.

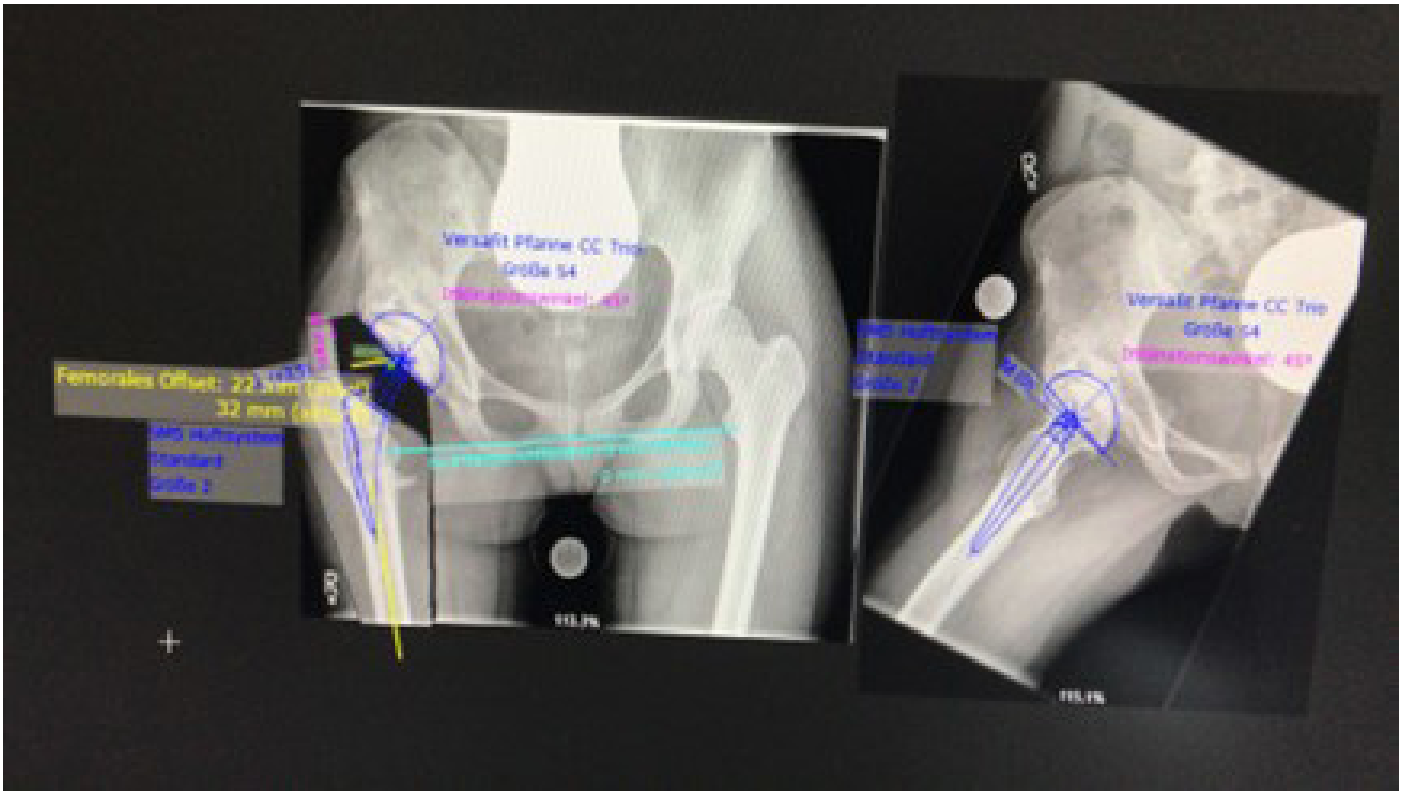


Fig. 6: MediCAD planning by Hectec GmbH

Operation

Surgery is carried out with the patient in a supine position and with the assistance of an AMIS leg holder. The severe dysplasia was confirmed during surgery. A cement-free cup was able to be inserted by means of controlled milling.

The cup was anchored tightly to the bone, so no additional screwing was necessary. The cyst was filled with autologous cancellous bone from the femoral head. A cement-free short shaft coated with HA (hydroxyapatite) was also able to be implanted (SMS shaft by Medacta). No drainage was inserted. No muscles had been damaged at the end of the operation.

Outcome of the operation

There were no problems mobilizing the patient. The control x-ray carried out after the operation showed clinical and radiological evidence of the proper position of the prosthesis components and a balanced leg length.

Conclusion

Despite the severe dysplasia, endoprosthetic treatment was able to be provided in the form of minimally invasive access (AMIS). As a result, the muscles that the patient still had were able to be spared. This is particularly important for speedy rehabilitation and for the stability of the hip joint. Good preparation and precise planning of the surgery were the key to success.

Author: Anton Suriyakumar, Attending Physician in Trauma and Orthopedic Surgery at the Evangelical Hospital of Dierdorf/Selters