

CASE REPORT

MRS-TITAN Maximum

Introduction and problem

The United Nations has declared the period from 2021 to 2030 as the Decade of Healthy Aging¹. This initiative highlights the significance of increasing life expectancy. As the demographic shift defined as the aging of the population progresses, the number of acetabular fractures due to geriatric trauma is increasing accordingly. Compared with the 1980s and 1990s, acetabular fractures in patients over the age of 60 more than doubled around the turn of the millennium².

Treatment of the geriatric acetabular fracture focuses on restoring hip function and achieving a stable construct that permits early mobilization with weight bearing so as to decrease the risk of postoperative complications and mortality. The choice of therapy reflects the evaluation of patient-specific factors such as joint stability, bone quality, and general health. When placing a revision cup, achieving stable fixation in the region of the fractured acetabulum is essential for a good long-term result³.

Diagnosis

A 94-year-old male patient suffered a fracture of the right acetabulum as a result of a fall in the home environment. Prior to the fall he had been mobile using a cane and a wheeled walker. The patient was diagnosed with a typical geriatric fracture of the anterior column with a posterior hemitransverse fracture according to the Letournel and Judet classification system⁴. The combination of anterior column fracture and posterior hemitransverse fracture is often the result of low-energy trauma and occurs significantly more often in elderly patients than in younger ones⁵.

Diagnostic imaging studies included standard radiographs and computed tomography (Figs. 1a and b). It was decided that the surgical reconstruction would be performed in a single session (single shot surgery) using the MRS-TITAN Maximum cementless modular revision cup (PETER BREHM GmbH, Fig. 2) to achieve a stable weight-bearing construct.

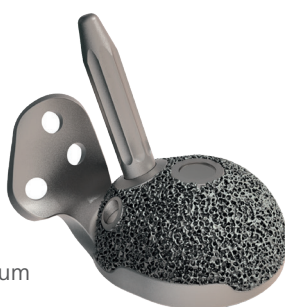


Fig. 2:
MRS-TITAN Maximum
with iliac peg

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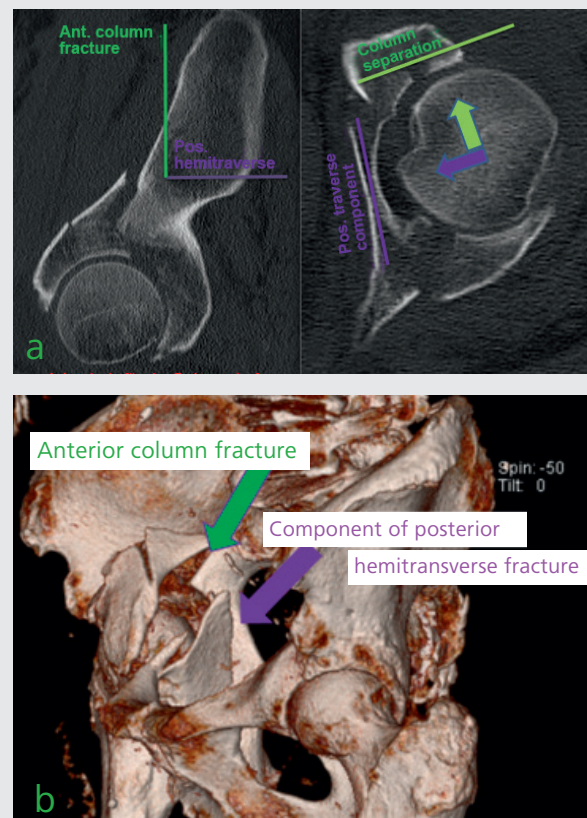


Fig. 1: 94-year-old male trauma patient. Situation in the right hip with a fracture of the anterior column and a posterior hemitransverse fracture (a) on the two-dimensional tomographic image and (b) in the three-dimensional reconstruction.

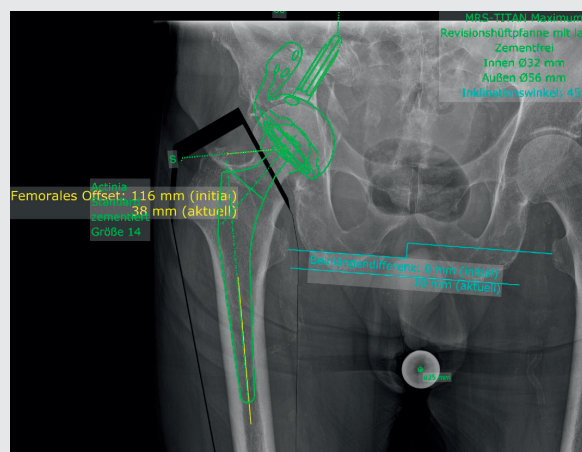


Fig. 3 Preoperative planning

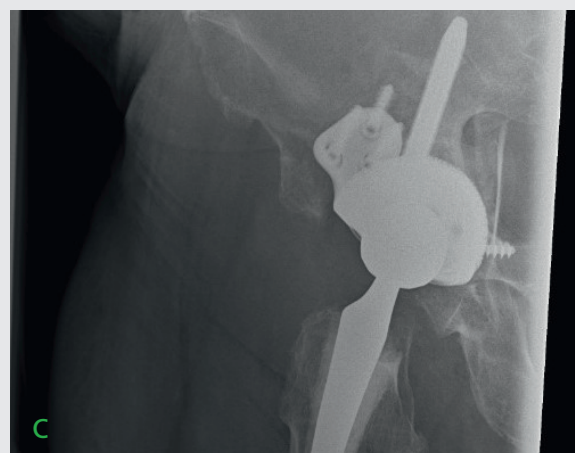
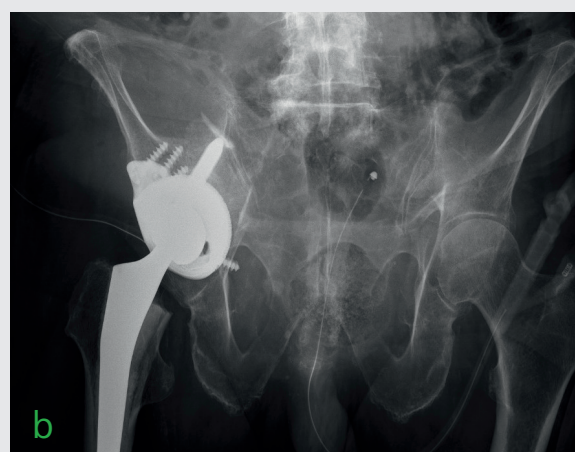
Treatment

The operation was performed according to the preoperative planning (Fig. 3). The MRS-TITAN Maximum cementless modular revision cup (diameter 56 mm, iliac peg 70 mm) was placed via a lateral approach.

No additional internal fixation was required to achieve implant stability. A cemented stem was placed.

Result

Total joint arthroplasty proved to be a suitable therapeutic concept for managing the acetabular fracture in this case. Very good stability was achieved with the MRS-TITAN Maximum revision cup with strap screw fixation and an iliac peg (Figs. 4a-c). Additional internal fixation was not required. No perioperative or implant-related complications occurred. Secondary complications due to immobilization were thus successfully avoided. The patient was mobilized with full weight bearing with a wheeled walker immediately postoperatively and was released to rehabilitation. During rehabilitation he developed gastrointestinal bleeding which delayed the rehabilitation measures. The elderly patient is free of symptoms. He sits in a wheelchair and can stand up and walk with the aid of a physical therapist.



Figs. 4a-c: Imaging studies after placement of the MRS-TITAN Maximum revision cup (with strap, screw fixation, and iliac peg) showing consolidated fractures.

References

- ¹ WHO <https://www.who.int/initiatives/decade-of-healthy-ageing>
- ² Ferguson TA, Patel R, Bhandari M, et al. Fractures of the acetabulum in patients aged 60 years and older: an epidemiological and radiological study. J Bone Joint Surg Br. 2010 Feb; 92(2):250-7. doi: 10.1302/0301-620X.92B2.22488. PMID: 20130318
- ³ Rommens PM. Stellenwert der Endoprothetik nach Acetabulumfraktur. Trauma Berufskrank 2017;19(Suppl2):S184-S191
- ⁴ Letournel E, Judet R. Fractures of the Acetabulum, Springer Berlin Heidelberg New York, 1981
- ⁵ Böcker W, Gosch M, Kammerlander C, et al. Alterstraumatologie, Thieme-Verlag 2019

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