LINK® Case Report 02 2012

CASE STUDIES AND NEWS FROM THE WORLD OF ARTHROPLASTY

A case study by Prof. Dr. med. Bernd Füchtmeier, Medical Director at the Department of Traumatology, Orthopedics and Sports Medicine at Barmherzige Brüder Regensburg hospital, Germany. He specializes in joint replacement surgery as well as complicated revision surgery and septic joint surgery.

Proximal tibial replacement with LINK® Endo-Model®–M

Case study

72-year-old man with a periprosthetic tibial fracture (type B) and infected pseudarthrosis

Case history:
In 2009 the patient underwent surgery to implant a knee surface replacement which he coped with extremely well. In May 2011, the patient fell and suffered a periprosthetic tibial fracture which was treated with external osteosynthesis. The patient subsequently suffered osteosynthesis failure and a secondary dislocation of the fracture **(fig. 1 and 2).** Three months later both the osteosynthesis and the prosthesis additionally became infected The patient had no relevant pre-existing conditions.

Explantation of the knee joint prosthesis:
During the course of the intervention, extensive osteitis of the proximal tibia was established. Furthermore, the bone was completely denuded and devitalized and, as such, rehabilitation was no longer an option. Due to the major knee joint prosthesis infection, the knee joint prosthesis was explanted and the osteosynthesis plate was removed **(fig. 3 and 4).** In addition, a temporary arthrodesis was performed and the patient was treated with antibiotics.

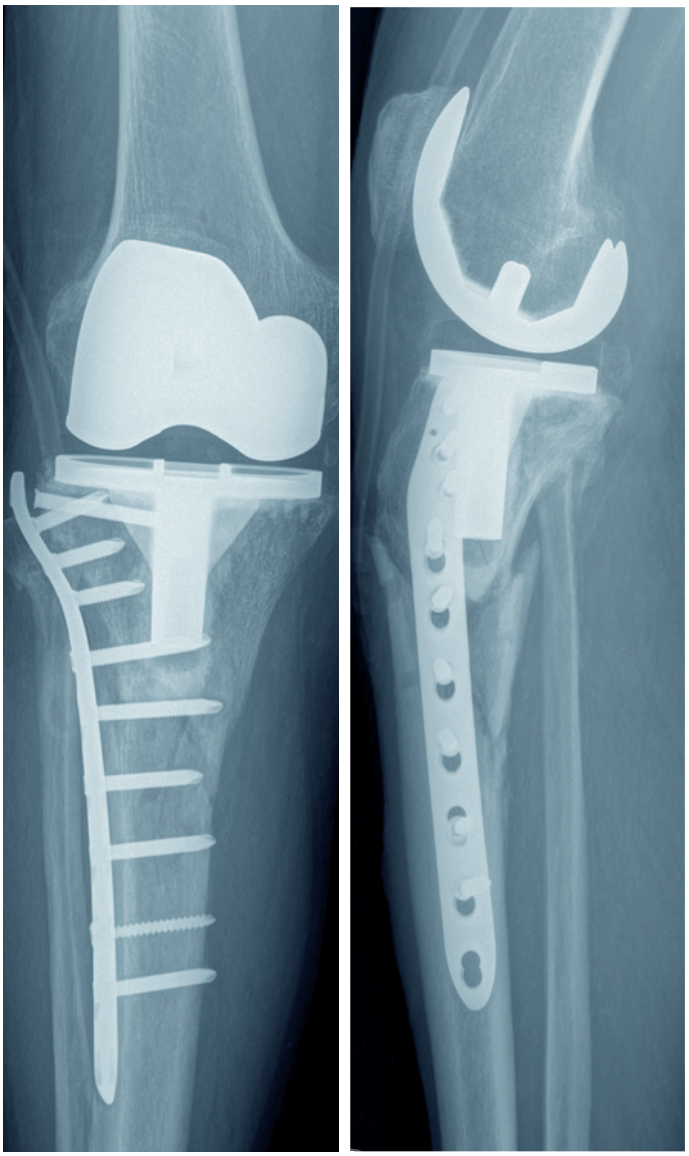


Fig. 1 and 2: Knee surface replacement in situ since 2009; on the right periprosthetic tibial fracture following a fall which was treated with osteosynthesis

Several revisions then followed over the course of twelve weeks. The treatment options were explained to the patient.

A decision was made in favor of a proximal tibial replacement:
It was essentially evident that the oestitic tibia could not be preserved. A knee joint arthrodesis was thus initially considered (implant arthrodesis) as the extensor mechanism on the tibial side no longer had an attachment point. The patient was understandably very hostile to this approach and, instead, opted for the considerably more risky option of an endoprosthetic replacement.

Working closely with the company LINK, a detailed surgical plan was drawn up which was followed to the letter during the intervention on July 14, 2011.

Implantation of the tibial replacement and modular knee joint prosthesis:
The infected proximal tibia was resected over a length of 15 cm. The defect was replaced with a modular LINK® Endo-Model® – M (proximal tibial module with a block and three spacers as well as a 280 mm cemented stem). On the femoral side, a modular knee LINK® Endo-Model® – M with a 120 mm stem was implanted using the cemented technique – **also see fig. 5 and 6**. The extensor mechanism was refixed with both FiberWire sutures and a McLaughlin cerclage on the proximal tibial section. In order to ensure good and secure soft tissue covering, a free latissimus dorsi flap was placed pretibially on the large soft tissue defect which healed without any complications.

Postoperative healing:
Over the course of the postoperative period, the patient continued to take antibiotics. In the first three weeks after the operation, mobility was limited to a maximum of 30°, after a further three weeks up to a maximum of 60° and, as of the sixth week, the knee could be moved through 90°. The patient was able to walk without crutches eight weeks after the intervention. Furthermore, he was able to actively extend his leg against resistance and also climb upstairs with minimal assistance – **also see fig. 10, 11 and 12.**

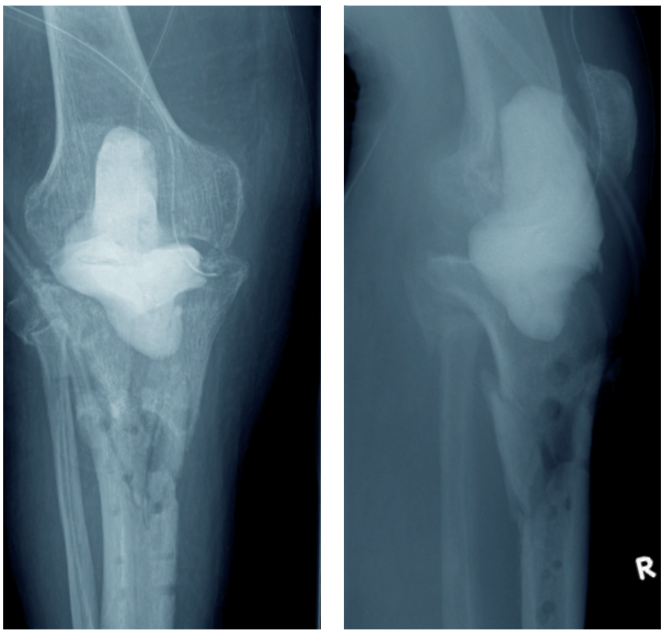


Fig. 3 and 4: State following explantation of the knee joint prosthesis and removal of the osteosynthesis plate; extensive osteitis of the proximal tibia

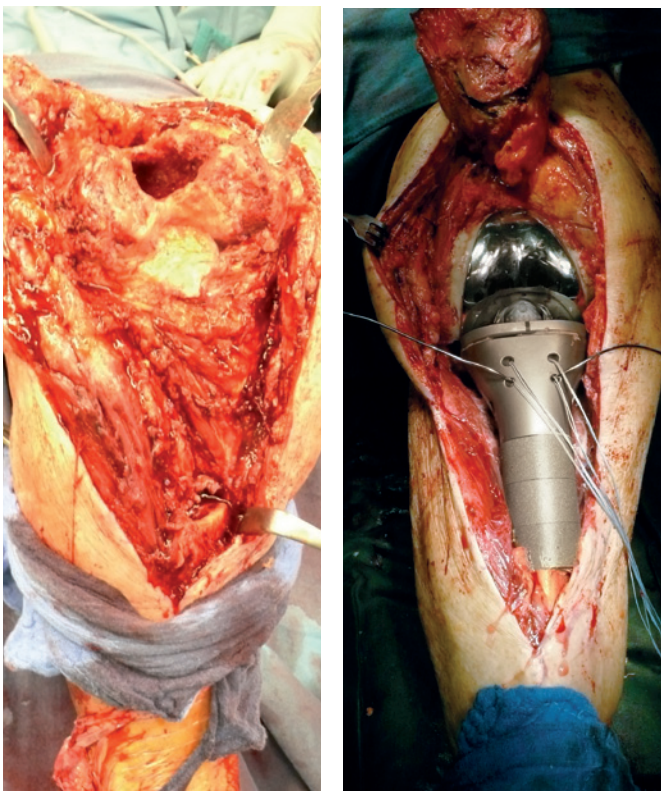
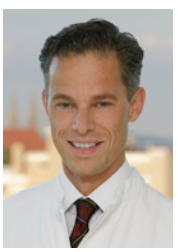


Fig. 5 and 6: State after proximal partial tibial resection (left); LINK® Endo-Model® – M with proximal tibial segment and three stem segments in situ (right)

Fig. 7 and 8: LINK® Endo-Model® – M with proximal tibial segment and three stem segments in situ

Fig. 9: Postoperative healing without complications

Fig. 10, 11 and 12: Eight weeks after the intervention, the patient was able to walk without crutches, actively extend his leg against resistance and walk upstairs with minimal assistance



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Product features:

LINK® Endo-Model® – M: The modular knee joint prosthesis system with segmental bone replacement components (for primary and revision surgery).

The modular intracondylar total knee joint prosthesis, Endo-Model® – M, is an addition to the Endo-Model® knee prosthesis. This solution comes into its own in the case of revision and if insertion of an unicondylar or total surface replacement prosthesis is no longer indicated due to deformities and joint instability.

Observance of biomechanical loading and anchoring principles and the many years of experience gained from the use of proven implant components ensure a maximum degree of system security and, with this, the best possible prospects for surgical success. Since the system is modular in design, physicians are able to react flexibly to the situations which arise during surgery.

There are two types of modular prosthesis stems for cemented and cementless implantations, in lengths of 50 to 280 mm. Special femoral and tibial segments are available for reconstruction of the anatomical joint line. The high modularity of the Endo-Model® – M enables partial bone replacement in the proximal and distal femur in small stages.

LINK® Endo-Model® – M:

- Hinge joint or rotational knee joint with mounted pivot within the physiological area
- Stable position during extension
- Constructively generated, elastic rotational force transmission (overrun brake) for preservation of the anchorage
- Favorable dimensions for bone preservation: only 14 mm resection in the tibia-femur joint plane

**Left/right: LINK® Endo-Model® – M;
Middle: Proximal tibial segment with stem segments**

Publication details

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