

Severe instability despite a constrained knee prosthesis with central stabilizer

A case report

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We report on the clinical failure of a constrained total condylar knee with a central stabilizer in a revision case. The knee was very unstable, with a valgus

deviation of more than 45°. At surgery, the instability was normalized, but the valgus deviation recurred during the first year.

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Case report

A 64-year-old woman was operated on with a Kinematic prosthesis because of gonarthrosis. Pre-operatively, the mechanical axis deviated in 22° valgus and there was an extension lag of 20°. The post-operative alignment was normal with an 8° valgus hip-knee-ankle angle. At 3-year follow-up she complained of instability with more than 45° valgus on weight bearing. The range of motion was 0–80°. A stabilizing knee orthosis gave no relief and the knee was revised with an Insall-Burstein CCK II (Total Condylar type III) prosthesis with a central stabilizer which was supposed to compensate for the insufficient collateral ligaments.

During the operation a lateral release and duplication of the vastus medialis over the joint capsule was done to correct the lateralization of the completely dislocated patella. The knee was well balanced after the revision arthroplasty and soft tissue procedures.

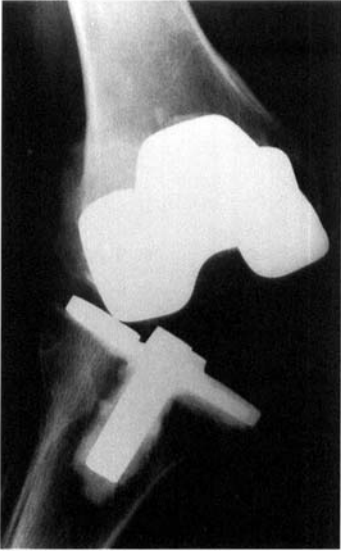
Despite this, there was a slight tendency to valgus instability on standing. The patient received a stabilizing orthosis in order to protect the arthroplasty and the soft tissue procedure. 2 months postoperatively there was a 10° valgus instability and the range of motion was 0°–50°. A special rigid orthosis was fitted. After 1 year, the instability had increased to 45° valgus in the standing position. The range of motion was 0°–60°. At the 2-year follow-up, the findings were the same. The patient was satisfied with the outcome. Radiographs showed an unchanged prosthetic position. Supine radiographs showed a valgus of 12° and, on standing, 25° valgus. The patella was subluxated. It was not possible to realign the knee with different orthoses.

The patient was followed with radiostereometry (RSA) which demonstrated a high grade and continuous migration with a maximal total point motion of 1.5 mm, 2.9 mm, and 4.3 mm at the 3-month, 1- and 2-year follow-ups, respectively.

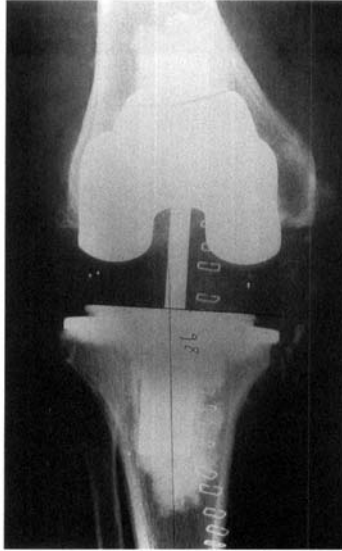
Discussion

Various total condylar knees with central stabilizers have been used successfully to reconstruct unstable knees without functional collateral ligaments. The clinical results have been good in selected cases and the use of these types of prostheses seems to increase. One case, however, has been reported, with breakage of the central stabilizer (McPherson et al. 1993). Sculco (1993) described a failure in a case with complete absence of the medial collateral ligament.

The Insall-Burstein CCK II knee with central stabilizer was designed for knees with insufficient collateral ligaments. The surgical technique is more demanding since the implant offers little tolerance for rotational malposition. In our case, this type of implant did not solve the patient's severe instability problem and we prefer not to use these types of prostheses in very unstable situations. From a material point of view there is an increased risk of material failure in the future, although the central stabilizer for the moment is intact. The bone-cement interface will be subjected to increased mechanical forces. The migration pattern, as measured by RSA, was large and showed the tibial component was at risk of mechanical loosening (Ryd et al. 1993). This type of prosthesis should be reserved for special situations



Weight bearing before the revision operation, showing a severe valgus knee with a Kinematic prosthesis.



Postoperatively.



Weight bearing at the 2-year follow-up with a specially made orthosis.



Weight bearing without the orthosis.

only and is best suited to aged and low-demand patients. In our patients hinged prostheses or an arthrodesis may be useful alternatives.

Acknowledgement

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References

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