Muskuloskelettaler Arbeitskreis Hämophilie

JG|U UNIVERSITÄTSmedizin. MAINZ

Orthopädische Klinik und Poliklinik

Total Knee Replacement in patients with Hemophilia
A follow-up of 30 patients

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Introduction

- Recurrent joint bleeding causes a chronic synovitis
- A chronic synovitis and the local effects of blood, expecially iron, cause a degeneration of the cartilage
- Severe Hemophilia results in secondary arthrosis
- Secondary arthrosis caused by Hemophilia is often along with a severe deformity of the affected joints, instability of the ligaments, axial malalignement and a reduction in range of motion with contractures
- Reports in literatur on joint replacements in people with hemophilia are controversial
- Some authors report on an increased risk of infection an early loosening, especially in patients with an HIV-disease

Objectives

- The purpose of this study was to evaluate our results after total knee arthroplasty. The focus of this study was laid on function of the joint, mobility of the patient, loosening of the implant and infection of the joint.

Methods

- Period of time: 1987-2005
- 30 patients with moderate and severe hemophilia
- Total knee replacement either with constrained or non-constrained prothesis
- Radiological and clinical evaluation
- Applied scores:
  - Petterson-Score
  - Knee Society Score
  - Knee Society Roentgenographic Score
  - Arnold and Hilgartner Score

Fig. 1: severe arthrosis of the knee with ankylosis and deviation of the mechanical axis

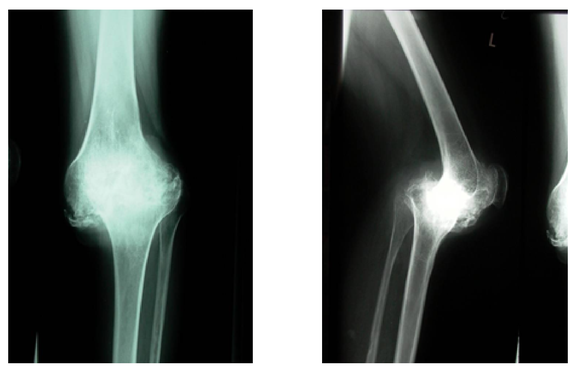
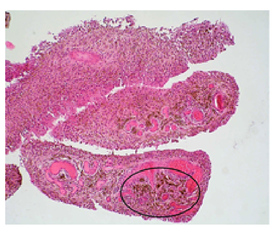
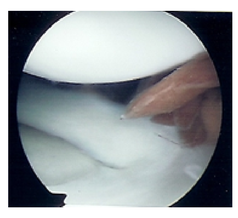


Fig. 2: severe arthrosis of the knee with subluxation, fixed flexion contracture and secondary bone loss





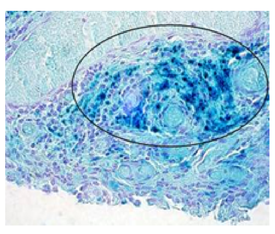


Fig. 3: typical findings of the synovia during arthroscopy of the knee joint in a patient with severe hemophilia and repetitive bleeding; the cartilage is no affected yet

Fig. 4: Synovia with cytoplasmatic embedment of hemosiderin

Results:

Mean age at time of surgery:	43.2 (27-66) years of age
Mean age at time of examination:	51.6 (30-82) years of age
Mean follow-up:	7.1 (2-20) years

Hemophilia:

Hemophilia A:	n = 30
Hemophila B:	n = 0
Inhibitors:	N = 4

HIV:
n = 2
2 with neg. virus load

Perioperative blood loss:
1264 ± 550 ml
Red blood cell concentrate: 2.3 ± 0.8
Platelate concentrate: 1.75 ± 0.96

Forced mobilisation under anesthesia
N = 2

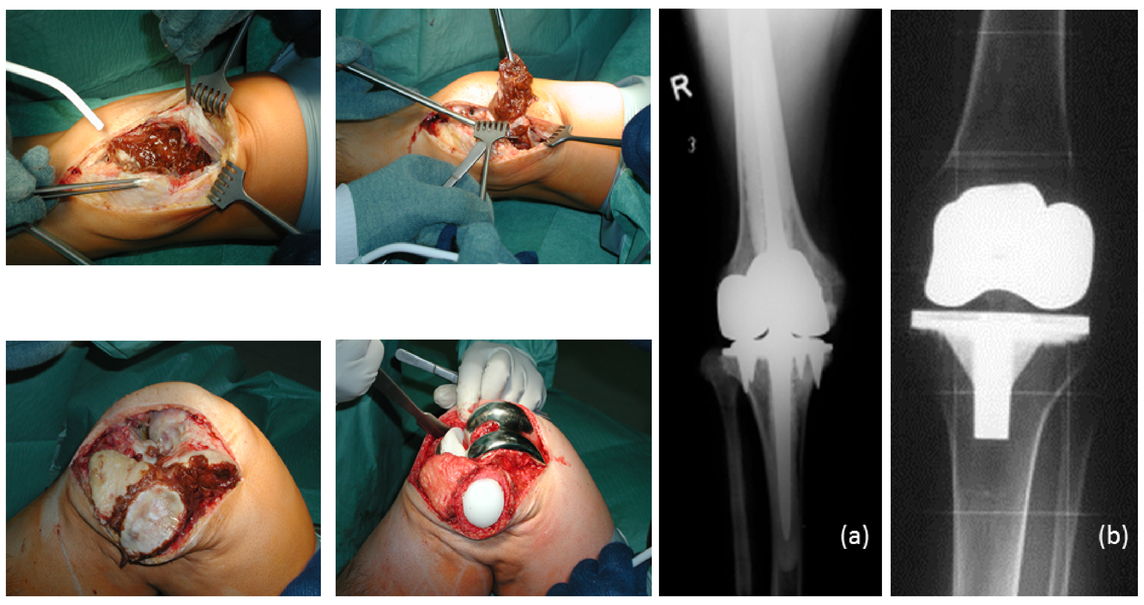


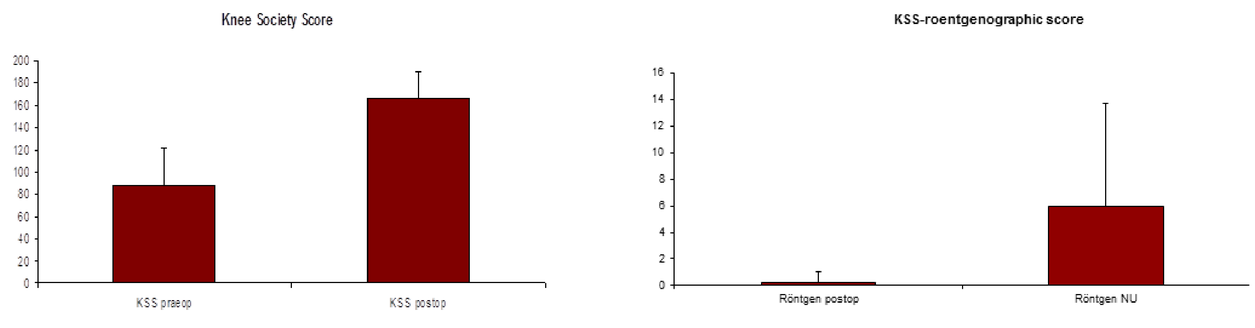
Fig. 5: perioperative view during implantation of a non-constrained total knee prothesis; notice the severe synovitis

Fig. 6: postoperative results after total knee replacement;
(a) constrained, (b) non-constrained

Radiological and functional results:

Arnold and Hildgartner – Score preoperative:	4,17 (+/- 0,59)
Petterson-Score preoperative:	9 +/- 2,29
KSS preoperative:	88,17 +/- 33,58 Punkte
KSS postoperative:	166,67 +/- 22,73 Punkte
KSS-roentgenographic score postoperative:	0,2 +/- 0,81
KSS-roentgenographic score follow-up:	6 +/- 7,66

→ one loosening of the implants after 11 years with subsequent revision



Discussion

The mean age was significant younger compared to a non-hemophilic population with primary arthrosis of the knee
Significant improvement of function, mobility and quality of life
Adequate perioperative risk
In our patients, we did not see an increased risk of perioperative infection or septic or aseptic loosening
Preexisting shortening and scaring muscles, tendons and ligaments influence postoperative results
Compared to a non-hemophilic population, the range of motion of the knee joints at the time of follow-up was worse

Literature

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