Implant details

Reason for revision as listed by the surgeon: Peri-Prosthetic Fracture

Explanted prosthesis: PS DePuy PFC (D∑GVF) TKR

Implantation side: Right

Implantation date: Unknown

Explantation date: 06/02/2023

Implantation duration: Unknown

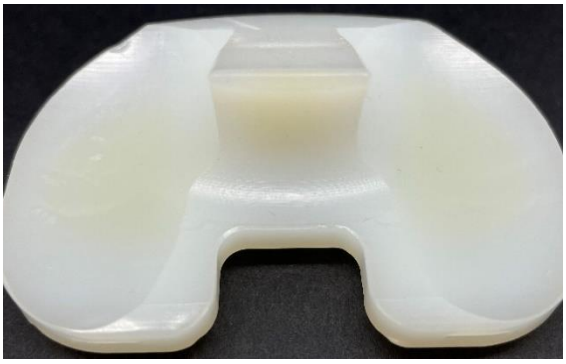
Femoral component (CoCr alloy)

The femoral cement mantle was stable. There were no clinically relevant abnormalities identified on macroscopic inspection of the bearing surface.

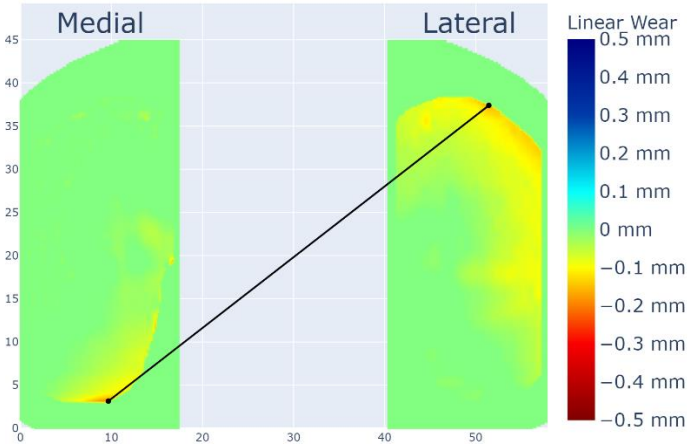
Tibial insert

Bearing surface

There was widespread damage, including striations, pitting and scratching, on the medial and lateral condyles. There was yellow discolouration of the central condylar regions and the posterior aspect of the tibial post. Retrieval damage was identified on the bearing surface, anterior aspect of the component and on the posterior aspect of the tibial post.



Coordinate Measuring Machine (CMM) analysis



	Medial	Lateral	Total
Volumetric Wear (mm^3)	5.23	18.31	23.54

The angle between the centre of the medial and lateral wear scars was 39° (39° internal rotation).

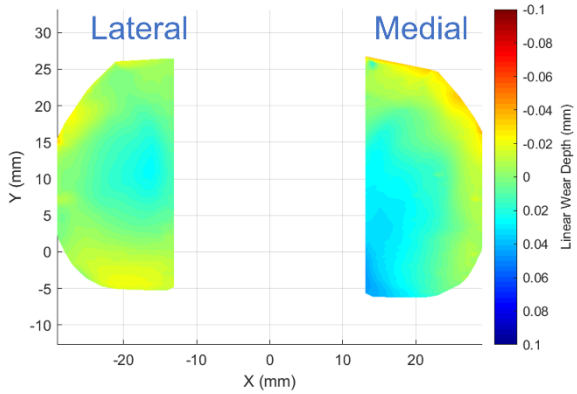
The volumetric wear rate for the polyethylene insert could not be calculated as the implantation date was unknown. The median volumetric wear rate of the polyethylene inserts of contemporary TKRs received at ExplantLab is 9 mm^3/year.

Tibial insert

Backside surface

There was widespread pitting and yellow discolouration identified. Retrieval damage was identified on the insert locking mechanism.

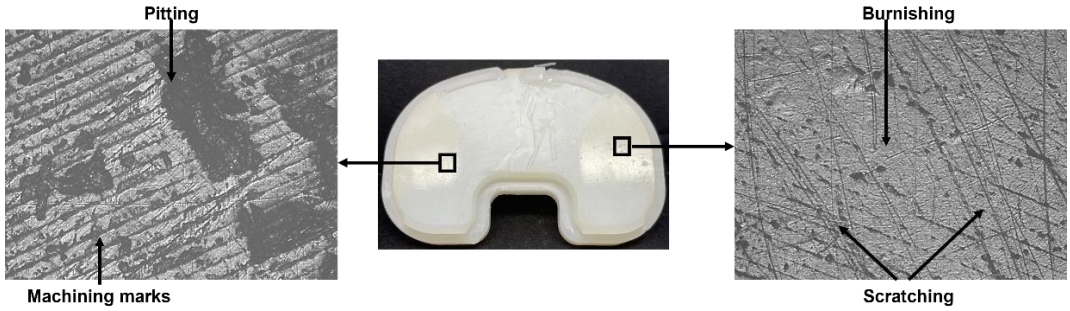
Coordinate Measuring Machine (CMM) analysis



	Lateral	Medial
Planar Deviation (µm)	49	75

Microscopic Analysis

Microscopic analysis confirmed the presence of pitting, scratching, and burnishing.

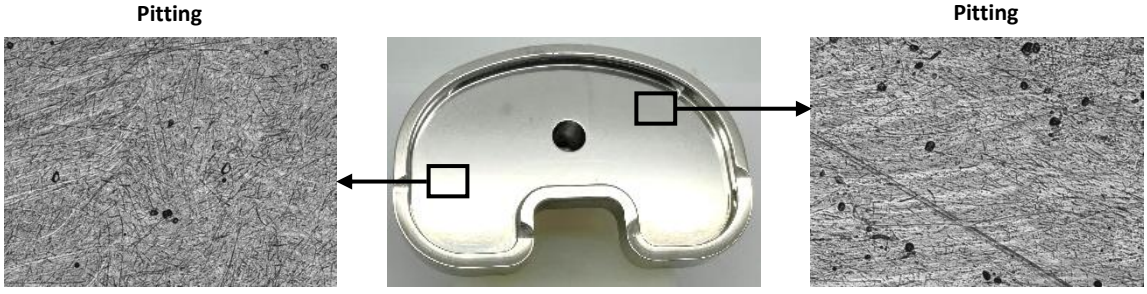


Tibial tray (CoCr alloy)

There were no clinically relevant abnormalities identified on macroscopic inspection of the superior surface. There was minimal retained cement on the inferior surface but no surface changes consistent with tray instability. Retrieval damage was identified on the superior and inferior surfaces.

Microscopic Analysis

Microscopic analysis identified a small number of pits.



Summary

Low total volumetric wear from the bearing surface.

The volumetric wear rate for the polyethylene insert could not be calculated as the implantation date was unknown. The median volumetric wear rate of the polyethylene inserts of contemporary TKRs received at ExplantLab is 9 mm^3/year.

There was limited damage at the tray/insert interface, not likely to be clinically significant.

No obvious signs of implant dysfunction which may have contributed to the periprosthetic fracture.