

題名:Fracture surface analysis of the implant with fatigue failure

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摘要:We report and analyze the causes of a fracture in a proximally modular, distally tapered fluted MP stem in a 48-year-old woman (168 cm, 67 kg) with severe proximal bone deficiency. Evidence of fatigue failure with striations initiated laterally was observed in the laser etching of the tensile aspect of the prosthesis. However, metallurgical analysis suggested that laser engraving did not alter the microstructure of the stem. Stress due to the absence of proximal femoral bone support may have been sufficiently high to put this particular stem at risk for fatigue fracture. This important complication should be addressed when choosing this therapeutic option in cases with substantial proximal femoral bone loss. Strut allograft support should be recommended in such cases.