Mechanical Failure of a Modular Knee Arthrodesis

Gloria Shoshana Coden, Zachary Berliner, Ayesha Abdeen, Eric Louis Smith

Introduction

Modular knee arthrodesis is an alternative to above-knee amputation for limb salvage after failed revision total knee arthroplasty. Although knee arthrodesis is meant to be a permanent solution, mechanical failure of the modular component of the arthrodesis rarely occurs. This video presents a case of mechanical failure of a modular knee arthrodesis at a modular junction and a technique for exchanging the components.

Case Presentation

The case presentation of a 77-year-old man who underwent left knee fusion with a modular knee arthrodesis system 8.5 years ago for multiple failed revision total knee arthroplasty procedures because of persistent periprosthetic infection, causing loss of the extensor mechanism and severe bone and soft-tissue loss, is reviewed. The patient presented emergently after hearing a snapping sound in his left knee when attempting to stand from a chair. Radiographs demonstrated mechanical failure at the neck of the proximal diaphyseal connector of the modular knee arthrodesis. The patient underwent successful revision of the modular components of the left knee arthrodesis. The patient was able to bear weight the day of surgery with the use of a knee immobilizer and a rolling walker.

Discussion

Knee arthrodesis is a viable alternative to above-knee amputation in patients not amenable to revision total knee arthroplasty. Knee arthrodesis allows for retainment of the extremity and early postoperative ambulation. Although the modular component of these systems allows for better restoration of leg length, the modular components provide multiple points for possible failure. Therefore, surgeons should be aware of the possibility of mechanical implant failure of the knee arthrodesis, even many years postoperatively, and understand techniques to replace these components, if indicated.