

Bone remodeling characteristics of a short-stemmed total hip replacement

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摘要

Abstract

Bone remodeling of a metaphyseal fixed femoral stem, Mayo Conservative Hip (Zimmer International, Warsaw, Ind), was characterized by the dual-energy x-ray absorptiometry and a mathematical remodeling model. The mean age of the patient was 50.8 years, and the mean follow-up was 5.7 years. As anticipated, bony structure underwent significant remodeling after the short-stemmed femoral arthroplasty with resorption proximally and ingrowth distally/laterally. Theoretical prediction further suggested that the remodeling was largely regulated by the mechanical loading distribution pattern determined by implant design.