

Finite element study regarding the influence of the cement mantle thickness on the stress distribution in a cemented hip joint

Studiul cu elemente finite a influenței grosimii mantalei de ciment asupra distribuției tensiunilor într-o articulație de șold cimentată

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Abstract

This work presents a finite element model of a total hip replacement using cement bonding. The thickness of the cement mantle was varied among three thicknesses (1 mm, 2 mm, 3 mm). Results showed that the lowest stresses appear at 3 mm thickness and that at the distal end of the cement mantle stress concentrators are formed.

Keywords

Cement mantle, hip joint, finite element method, stress.