Original Article

EVALUATION OF MICROMOUVEMENT IN THE BIOMECHANICAL CONTEXT OF BONE SHAFT FRACTURE HEALING IN ELASTIC VERSUS RIGID FIXATIONS

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Abstract

Fixation of long bone fractures, especially in the middle part, requires respect to some biomechanical conditions. Flexible fixation from the biological point of view it seems to be the method of choice. So as an experimental support of our good clinical results we started on Video Image Correlation investigation of mechanical condition, to determine the corresponding individual displacements and strains of different method of fixation. The obtained results offered several important and useful biomechanical conclusions.

Keywords: *strain, rigid fixation, flexible fixation*

Rezumat

Fixarea internă a fracturilor diafizare ale oaselor lungi necesită respectarea unor condiții biomecanice specifice. Din punctul de vedere al mediului biologic particular porțiunii medii diafizare, fixarea elastică pare să fie metoda de elecție. Pentru confirmarea rezultatelor bune clinice ale fixării elastice centromedulare, am investigat printr-o metodă modernă experimentală (Video Image Correlation) deplasările specifice ce apar în focarul de fractură fixat cu implanturi în condiții diferite de rigiditate. Rezultatele experimentale oferă posibilitatea unor concluzii practice importante privind comportamentul biomecanic al diferitelor mijloace de fixare ale fracturilor.

Cuvinte-cheie: *deformare specifică, fixare rigidă, fixare elastică*

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