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TOWARDS PATIENT SPECIFIC PLATE IMPLANTS FOR THE HUMAN LONG BONES: A DISTAL HUMERUS EXAMPLE

Mohammed Mizal Rashid, Karim Husain, Nikola Vitković, Miodrag Manić, Jelena Milovanović, Slađana Petrović

Abstract. Plate implants are the most used internal fixators for the surgical treatments of the bone fractures. They come in different sizes in order to adjust anatomic differences between different bones. The application of these implants for the treatment of the specific bone may initiate a problem, because of differences in the size and shape between the bone and the plate implant. In order to improve patient healing and recovery process patient -specific plate implants can be used. In this paper authors provide short review of the plate implants and supporting material (pins, wires and screws) and present new method which enables creation of the geometrical model of the personalized plate implant for distal humerus. Focus of the method is on the technique for creation of the parametric contact surface model between bone and the plate. Plate implants created by presented method and fabricated by additive technologies could have great use in orthopaedic surgery.

Key words: CAD, orthopaedic, fixator, plate, parametric models, MAF

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