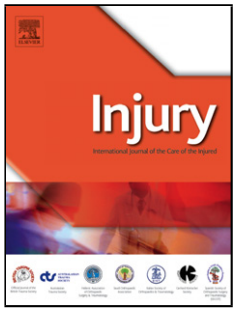

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PII: S0020-1383(16)30753-7
DOI: http://dx.doi.org/doi:10.1016/j.injury.2016.11.015
Reference: JINJ 6986

To appear in: *Injury, Int. J. Care Injured*

Accepted date: 16-11-2016

Please cite this article as: Giannetti Silvio, Bizzotto Nicola, Stancati Andrea, Santucci Attilio.MINIMALLY INVASIVE FIXATION IN TIBIAL PLATEAU FRACTURES USING AN PRE-OPERATIVE AND INTRA-OPERATIVE REAL SIZE 3D PRINTING.*Injury* http://dx.doi.org/10.1016/j.injury.2016.11.015

MINIMALLY INVASIVE FIXATION IN TIBIAL PLATEAU FRACTURES USING AN PRE-OPERATIVE AND INTRA-OPERATIVE REAL SIZE 3D PRINTING.

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ABSTRACT

The purpose of our study was to compare the outcome after minimally invasive reconstruction and internal fixation with and without the use of pre- and intra-operative real size 3D printing for patients with displaced tibial plateau fractures (TPFs). We prospectively followed up 40 consecutive adult patients with closed TPF who underwent surgical treatment of reconstruction of the tibial plateau with the use of minimally invasive fixation. Sixteen patients (group 1) were operated using a pre-operative and intra-operative real size 3D-model, while 24 patients (group 2) were operated without 3D-model printing, but using only pre-operative and intra-operative 3D Tc-scan images. The mean operating time was 148.2±15.9 minutes for group 1 and 174.5±22.2 minutes for group 2 ($p=0.041$). In addition, the mean intraoperative blood loss was less in group 1 (520 mL) than in group 2 (546 mL) ($p = 0.534$). After discharge, all patients were followed up at 6 weeks, 12 weeks, 6 months, 1 year and then every year post surgically and radiographic evaluation was carried out each time using clinical and radiological Rasmussen's score, with no significant differences