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Traumatological application of 3D printed model of injured pelvis: A case reportFrancesca Giovannini¹ and Battiato C²¹Università Politecnica delle Marche, Italy²Ospedale Mazzoni, Italy

Introduction: Three-Dimensional (3D) reconstruction and rapid prototyping starting from Computed Tomography (CT) are promising technologies that can facilitate preoperative programming and intraoperative implementation, thus obtaining better results in complex fractures. Moreover, it is possible not only to simulate CAD reductions but also to design customized plates. In the case that we treated, a plate was made of two pieces (like a puzzle-plate) in order to be able to position a first plate without removing the reduction instruments and the second plate after the partial synthesis obtained to complete it.

Materials & Methods: We decided to use this method to increase the evaluation of the personality of the lesion and to obtain a custom synthesis tool made in a case of diastasis of the pubic symphysis.

Results: The solid model (3D printed model) allowed accurate preoperative planning, facilitating the surgical approach and the production of a custom-made plate.

Conclusion: The method described has been extremely useful in the surgical treatment of the diastasis of pubic symphysis.

Discussion: We reduced surgical time thanks to the perfect knowledge of the structure of the lesion, the reduction manoeuvres and the presence of a custom-made plate. In addition, soft tissue damage, blood loss, risk of infection and use of ionizing radiation were reduced if compared to a case approached by the standard method.

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