

Three Dimensional Computed Tomography in Maxillofacial Trauma

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Abstract

Three-dimensional CT (3D-CT) is an extremely useful adjunct to routine CT scanning for the evaluation of maxillofacial bony injuries .3D-CT is a surface renders which by means of a special computer software program assimilates axial/coronal images to produce a three-dimensional/volume image .Fifteen male patients who sustained serious maxillofacial injuries were examined by plain X-ray and panoramic)PR (radiographs followed by transaxial CT scanning and 3D-reconstruction .3D-CT images proved to be more superior in depiction of fracture roof, floor and medial orbital walls as well as fracture nose .On the contrary it proved to be less informative compared to other modalities in fractures lateral orbital wall, posterior maxillary wall sinus as well as mandibular fractures .3D-CT images provide the surgeon with an excellent depiction of the relationship between various fracture fragments in an infinite variety of perceptives which is an invaluable aid to preoperative surgical planning.

Introduction

THE ever-increasing incidence of motor vehicles accidents and sport-court injuries has resulted in a rising incidence of facial injuries in the recent decade.

When facial fracture is suspected on clinical grounds, early diagnosis and treatment become of extreme importance .The radiologist plays a critical role in the detection and evaluation of these injuries.

Before 1973, routine radiographic series including Water's, Caldwell, postero-anterior .submento-vertical and lateral views were the cornerstone upon which the

radiologist depended for assessment of such critical injuries.

Unlike conventional radiographs, CT provides tomographic two dimensional actions, thus eliminating super imposition of the complex anatomic structures of the skull and facial bones.

The 3D image reconstruction of the axial CT sections had been studied by many authors]1-4 .[However, few had been interested in the field of facial trauma.

In this study, we try to evaluate the impact of 3D-CT scan on the diagnosis and management of critical facial injuries.