

CRANIOROFCIAL TRAUMA - RADIODIAGNOSIS

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ABSTRACT

Clinical examination of Craniorofacial injuries are often limited in patients with trauma to the head and neck region due to obscuration by overlying edema, hematoma, hemorrhage, and soft-tissue injury. Craniorofacial injuries require accurate and prompt diagnosis for management. For Proper clinical examination and treatment plan, high resolution radiographs are always essential which will indirectly contribute to render a good medical care to the patients.

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"RADIOGRAPHS ARE LIKE ROAD MAPS FOR MEDICAL HEALTH CARE SPECIALIST"

Clinical examination of Craniorofacial injuries are often limited in patients with trauma to the head and neck region due to obscuration by overlying edema, hematoma, hemorrhage, and soft-tissue injury. Craniorofacial injuries require accurate and prompt diagnosis for management. Unlike the conventional scans which were used before giving minimal/poor radiological information high-resolution computed tomography (CT) scan and three-dimensional CT scan offer valuable information for complete and thorough evaluation of the craniorofacial fractures.[1, 2,3] In this article, we discuss the imaging techniques which are available for Craniorofacial trauma and the need for it. Largest number of admissions in hospitals is due to craniorofacial fractures. Morbidity results when initial diagnosis and management are inaccurate, delayed, and suboptimal. High-resolution CT



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imaging have replaced conventional radiography for the proper evaluation of craniofacial trauma because of its widespread availability, affordable costs and fast imaging capability.[4,5] CT can also be with less hazardous positioning of injured trauma patients to prevent further damage to the injured organs. Presently, the requirement of a preliminary 4-film screening series of radiographs is questioned. A single 30degrees occipitomental view and postero anterior view of skull can determine accurately which patients should have CT scanning. Axial and coronal CT scan sections at 3/4 mm slice thicknesses are essential for complete evaluation of the craniorofacial structures. Direct coronal CT scanning is preferred, but if not feasible due to cervical spine injury, thin-section axial helical scans should be performed that allow for reformations in the coronal plane with optimal resolution. [5,6]

A study undertaken recently in cadaver heads showed high sensitivity and specificity for identifying clinically significant craniorofacial fractures on reformatted images in trauma patients. We suggests that reformatted coronal images may be able to replace dedicated direct coronal craniorofacial scanning that are precluded in many trauma patients due to suspected or associated cervical spine injury.[3, 6, 7]

Three-dimensional (3D) CT imaging is useful as an adjunct to high-resolution thin-section CT and allows clinicians to visualize the number of fracture fragments and their relationship to one another. [2] Three-dimensional images has favored significantly in the evaluation of severe craniorofacial trauma in 29% of patients. These images appear superior in localization of complex fractures involving multiple planes, in the evaluation of fracture displacement and

dislocation, and in the proper assessment of facial symmetry. Also, 3D imaging is essential for fabrication of bone grafts used in complex Craniorofacial reconstructions. However, this does not supplant two-dimensional (2D) imaging for detection of craniorofacial fractures, especially for the deeply involved facial structures. [8-10] The role of Magnetic Resonance Imaging in the evaluation of craniorofacial trauma is limited but may provide complementary information in special circumstances, such as orbital trauma of posterior floor, associated traumatic aneurysms, carotico-cavernous sinus fistula, etc. Therefore to have a proper clinical examination and treatment plan, high resolution radiographs are always essential which will indirectly contribute to render a good medical care to the patients.

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