ORIGINAL ARTICLE

Evaluation of the faciomaxillary injuries by computer tomography in traumatic patients at a tertiary care center

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Abstract

Aims & Objectives: The present study is undertaken to find out the incidence of the various facio-maxillary injuries in patients who present with trauma at Father Muller Medical College Hospital.
Study Design: it is retrospective discriptive study
Place, time duration: it is carried out at Father Muller Medical College Hospital, kankanady, Mangalore, Karnataka India. Duration January 2013 to August 2015
Methodology: all cases of road traffic accident from January 2013 to August 2015 who were admitted to Father Muller Medical College Hospital were included in the study.
Results: during the above study 587 patient were admitted, in which 515 had no findings in relation to the maxillofacial skeleton; of 72 patients who had presented with positive findings the data was analyzed and out of all facial injuries the zygomatic complex is the most commonly involved structure.
Conclusion: In our study, of the injuries facial skeleton, zygomatic complex is the most commonly involved structure. Adolescents and adult males are mostly involved in trauma of which road traffic accidents are the most common cause of injury.

Keywords : Maxillo facial, trauma, computer tomography, le fort fracture, MDCT (multidetector computed tomography)

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Introduction

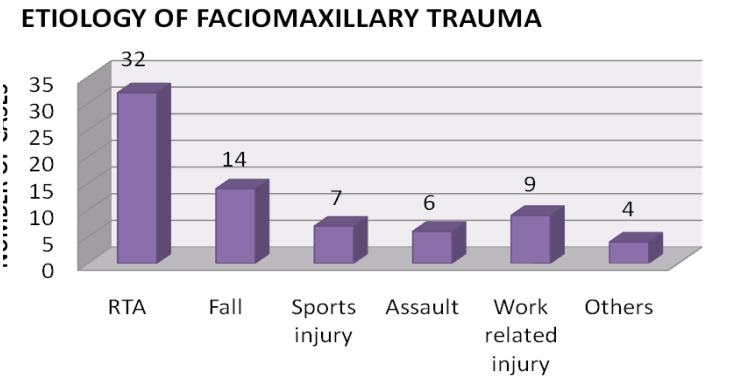
In the present era with the increase in the vehicular accidents the incidence of trauma related injury has risen in the past decade. The face is person recognition and any deviation from the normal occurrence does do a lot of mental distress to the humans. In trauma unless very severe the facial injuries most often go un-noticed. With the advances in the field of trauma care, introduction of damage control surgery the mortality of polytrauma cases has been reduced drastically. In trauma cases the imaging of the head is done routinely, but no much importance is given to the facial architecture. If the extents of bony injuries in the maxillofacial region are not assessed properly, such patients present late with the resultant complications. In view of the above it was decides to study the to evaluate the calvarial and facio-maxillary injuries by MDCT in patients who present with trauma at our centre.

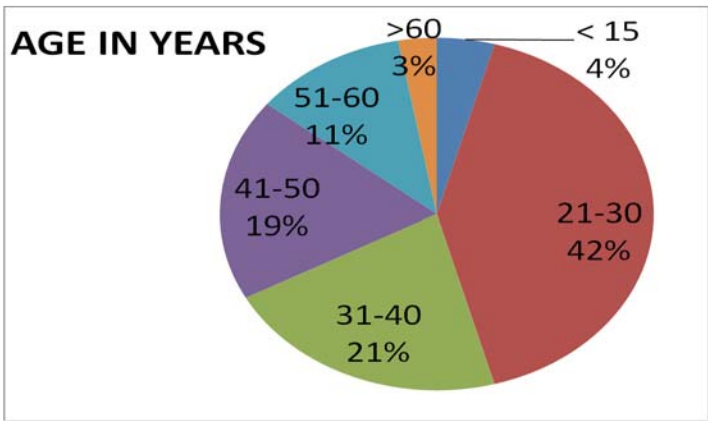
Aims and objectives:To describe frequency and types of fractures in patients with maxillofacial trauma evaluated by multidetector computed tomography

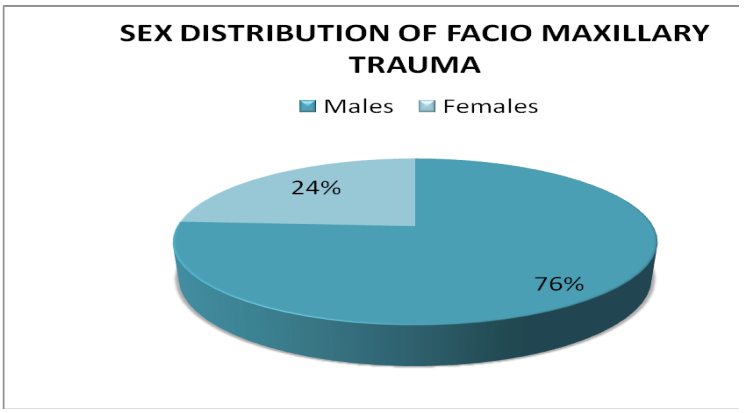
Method of data collection: All patients were admitted from January 2013 to August 2015 with the history of trauma and MDCT of the brain to rule out trauma related abnormality of the facial skeletal at Father Muller Medical College were included in the study. All these patinet had Head CT, 16 Slice – MDCT Machine. Lateral Scanno-

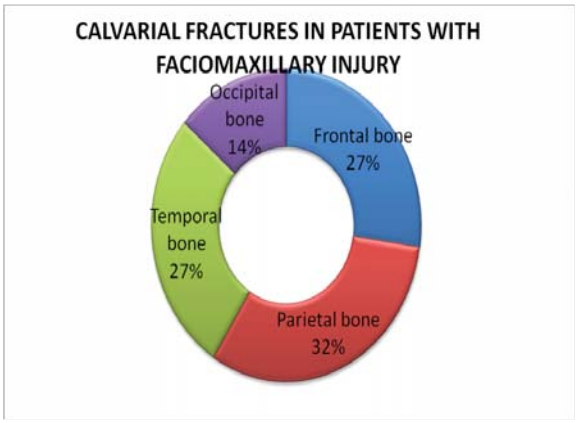
gram Retrospective reconstruction maximum intensity projection, obtained was analyzed with respect to age, sex of patient, etiology of the injury, location and nature of fractures and associated intracranial injuries.

Results & Observations:









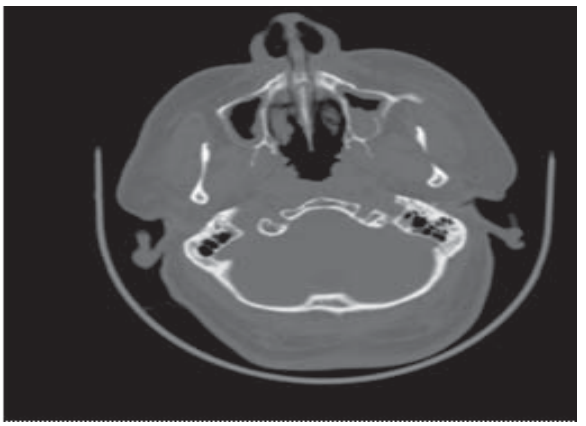


Fig.6: *left maxillary fracture*

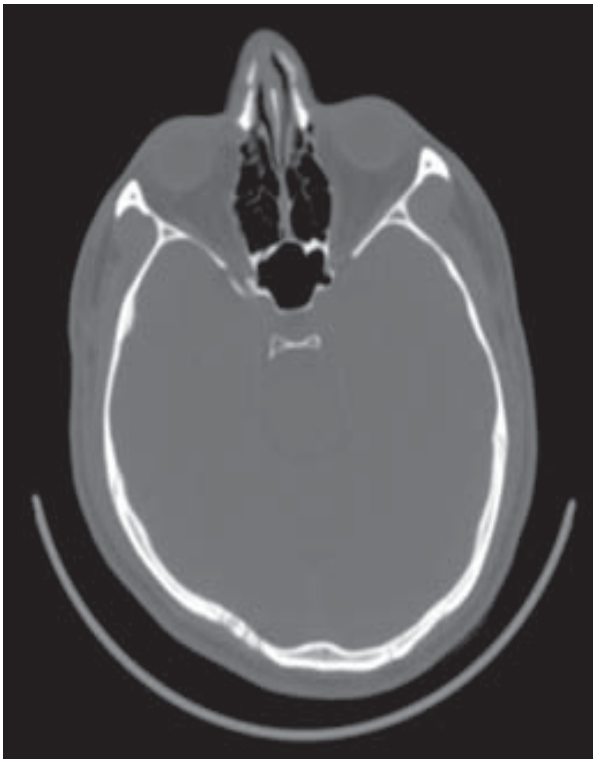
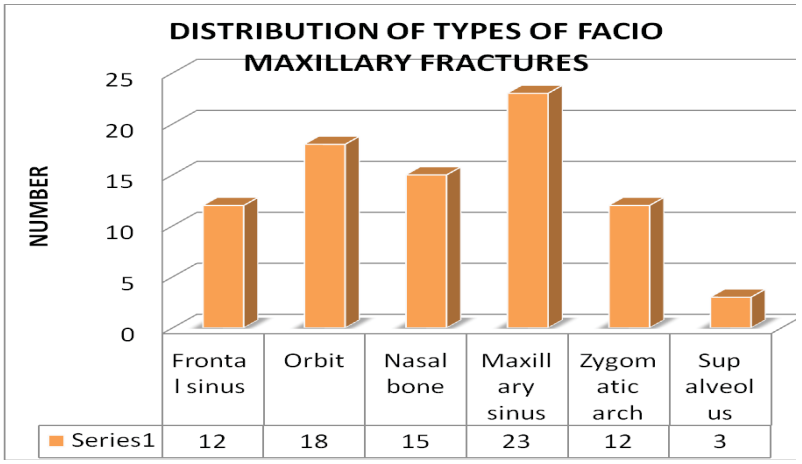


Fig.7: *Fracture left nasal bone*



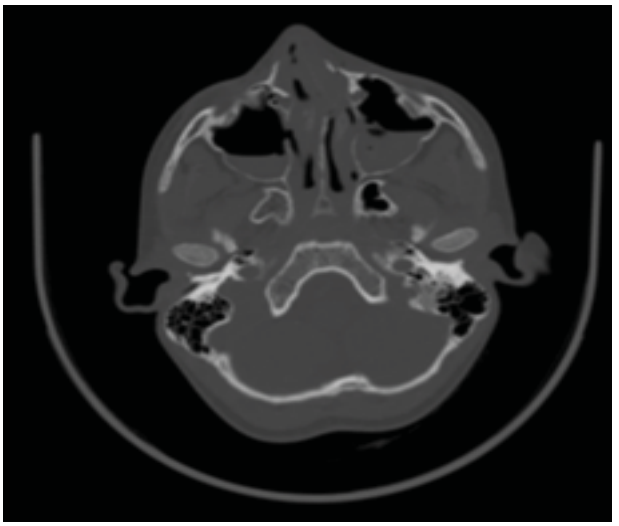


Fig.8: *Fracture left maxillary process*

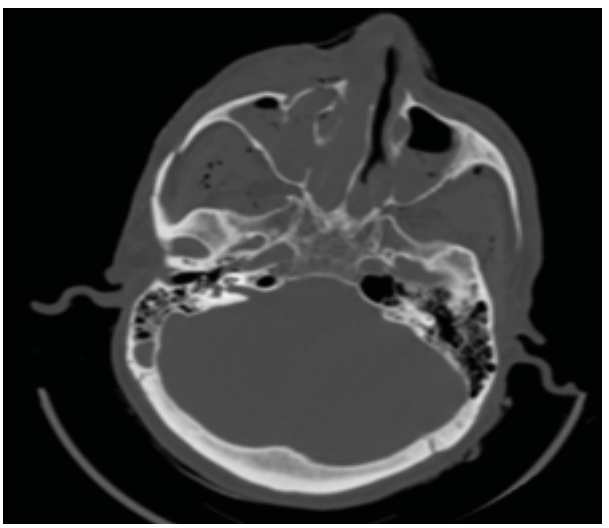


Fig.9: *Fracture right zygomatic arch*

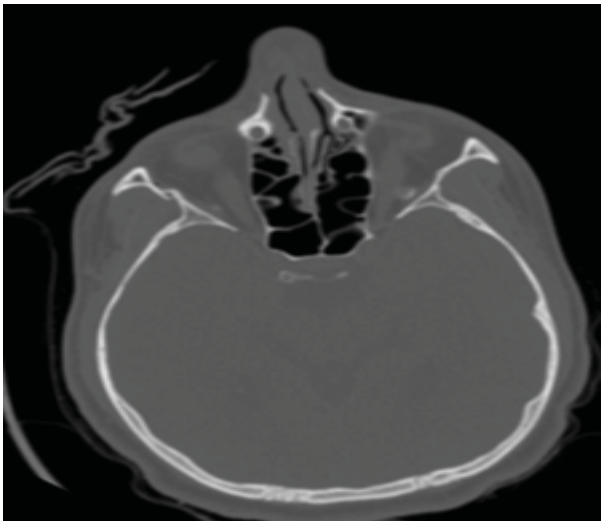


Fig.10: *Fracture lateral wall of the right orbit*

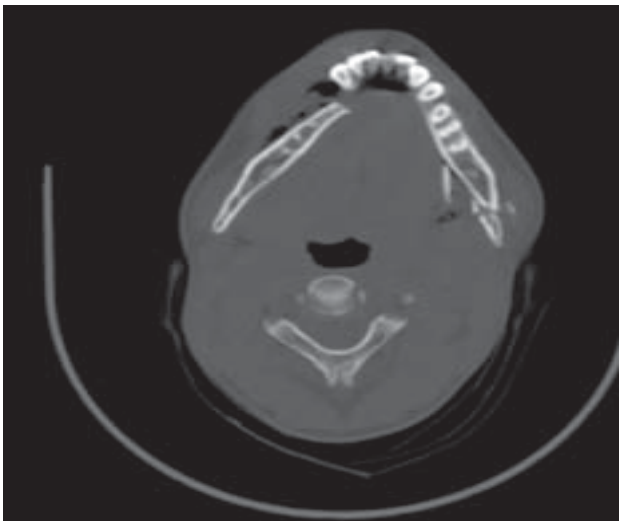


Fig.11: *Fracture body of mandible*

Discussion:

Fractures of the middle part of the face are very common injury associated with vehicle accidents, falls, assaults, and other blunt trauma.[1,2] Maxillofacial injuries account for a significant amount of emergency consultations and CT is the most effective imaging attributed to the speed and reliability. Computed tomography has become the imaging standard of reference in evaluating these injuries in order to determine which patients will require surgical intervention

for their bony injuries.[3,4,5] MDCT provides excellent spatial resolution, which makes possible multiplanar reconstructions and three dimensional volumes rendering contributing to enhanced diagnostic ability and surgical planning.[6] In a study by Agarwal et.al of 28 patients included in the study the mean age was 39.25 years (SD ± 13.1533, range 10–65). Majority of the patients (92.9%) were male and young adults and the most common cause of injuries were road traffic accidents. They concluded that in an acutely injured patient the CT scan provides the most effective, safe and reasonably rapid diagnosis of the complex pattern of multiple fractures of facial skeleton along with soft tissue injuries these findings are comparable with our study.[7]

In a study by Salonen et al[8] it was concluded that MDCT is very useful in detecting the non-displaced fractures .they also showed that MDCT is very useful in detecting complex injuries in facial trauma in terms of the morphological analysis.[8] Moustafa A. Kader and co-workers studied 30 patients to study the role of multi detector computerized tomography in evaluation of maxillofacial fractures. It was found that in the descending order the bones to be fractured were the nasal bone, followed by maxillary bone, zygomatic bone, mandibular bone, and the pterygoid plates.[9] In another study stated that the most common isolated fracture site was the nasal bone followed by the mandible.[10] In another study 17 facio-maxillary surgical trainees were evaluated for the difference in clinical examination and radiological skills in detecting facial trauma and they concluded that in contrast to their subjective assessment of the clinical examination, a strong preference for 3D over all other techniques and for CT over radiographs.[11] Brasileiro et al.[12] in their study stated that the mandiblular fracture was more commoner than the zygomatic complex and the nasal bones, similar was the finding in the study by Bataineh.[13]

Conclusion:

Computed tomography is the imaging standard for evaluating facio-maxillary injuries and should be considered in facial trauma so that the appropriate intervention planned in order to reduce or prevent the long term morbidity.

Role and contribution of Authors:

Dr Elroy Saldanha, Assistant Professor, Department of General Surgery, Fr. Muller Medical College Hospital, Kankanady, Mangalore – 575002. Karnataka, India, conceive the idea and wrote the initial write up.

Dr Reshmina C.C. D'Souza, Assistant Professor, Department of General Surgery, Fr. Muller Medical College Hospital, Kankanady, Mangalore – 575002. Karnataka, India, help in collecting data and write up of discussion.

Dr Rithesh Joseph D'Cunha, Senior Resident,Department of Anaesthesiology, Fr. Muller Medical College Hospital, Kankanady, Mangalore – 575002. Karnataka, India, collected the data and references .

Dr Omprakash A R, Resident, Department of Radiodiagnosis, Fr. Muller Medical College Hospital, Kankanady, Mangalore – 575002. Karnataka, India, helped the prinicpal author in writing the introduction, collecting the data and references.

Conflict of Interest: None

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