Summary & Conclusion

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Three-dimensional reconstruction computed tomography is a new addition to conventional CT in diagnosis of maxillofacial trauma. This work was designed to evaluate the role of spiral-computed tomography and three-dimensional reconstruction in the assessment of maxillofacial trauma.

This work included a review of the surgical and CT anatomy of maxillofacial region, physical principles and technique of spiral and 3D CT reconstruction of the face, types, radiological features, complications of maxillofacial fractures and some cases representing different types of fractures.

In *conclusion*: the maxillofacial complex is liable to trauma and fractures. Spiral 2D CT has the potential to overcome the limitation of standard radiography in the preoperative assessment of such fractures. 2D CT has some limitations when applied to analysis of 3D complex anatomy of maxillofacial bones, also the non-displaced fractures and fractures orientation in the exact plane of CT section could not be seen in 2D images. The three- dimensional reconstruction is a well-established imaging modality in maxillofacial trauma. It provides the clinician with a life like manner images for the maxillofacial fractures as a preoperative diagnostic assessment. It plays an important role in evaluating traumatic abnormalities. It greatly enhances diagnostic speed and accuracy; the interpretation of the 3D films takes less than the half of the time needed for 2D images.

The three-dimensional reconstruction provides superior definition of length, course and number of fractures as well as spatial relationship to the surrounding bones. It successfully detects the degree of depression, the shape of the depressed segment and deformity caused by such depression. It also detects the degree of comminution, number of fragments and state of the surrounding bones.

The two-dimensional and the three-dimensional CT imaging techniques are complementary. The three-dimensional CT can not replace or substitute the two-dimensional one. The three-dimensional reconstruction should be routinely used in every case of maxillofacial trauma.