

Evaluation of a Bilateral Condyle Fracture by CBCT

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CASE STUDY

The traditional scan for the diagnosis of a mandibular fracture is at least a scan showing two views at correct angles to each other. A panoramic radiograph and a reverse Towne's view are adequate scanning protocols for this purpose – fractures can easily be missed with one view only.¹

Despite the increasing use of Cone Beam Computed Tomography (CBCT), this technique has so far received little attention for the assessment of maxillofacial injuries², particularly concerning mandibular fractures. As to mandibular fractures it has been stated that CBCT is superior to panoramic radiography in diagnoses of condylar and coronoid fractures as well as to fractures of the anterior part of the mandible. This statement owes to the fact that, due to superimposition, the area is difficult to visualize.^{3 and 4}

Some authors have demonstrated that CBCT is superior to conventional radiographs in detecting fracture lines at patients with a maxillofacial trauma and have published more detailed information about fractures, especially of the mandible.^{2 and 3}

In the following case report of a bilateral condylar fracture, both diagnostic techniques, panoramic radiography and CBCT, were used for evaluation.

Case report

A 20-year-old, healthy male patient showed up in the clinic suffering from a severe trauma of a traffic accident. The clinical examination showed a swelling over the temporomandibular joint region and an open bite, deviating to the left. The manual palpation of the named region was very painful, the fragments were mobile and the sliding of the fragments generated crepitation. As a first diagnostic step, a panoramic radiograph was acquired (SCANORA® 3Dx panoramic mode, Tuusula, Finland), showing fracture lines at both condylar processes of the TMJ (Fig. 1).

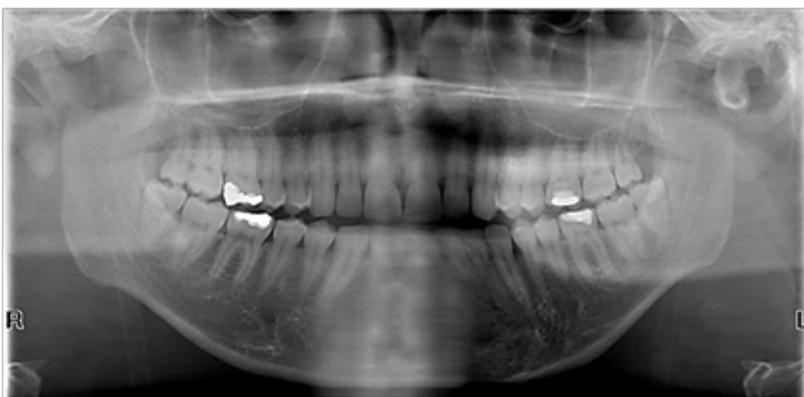
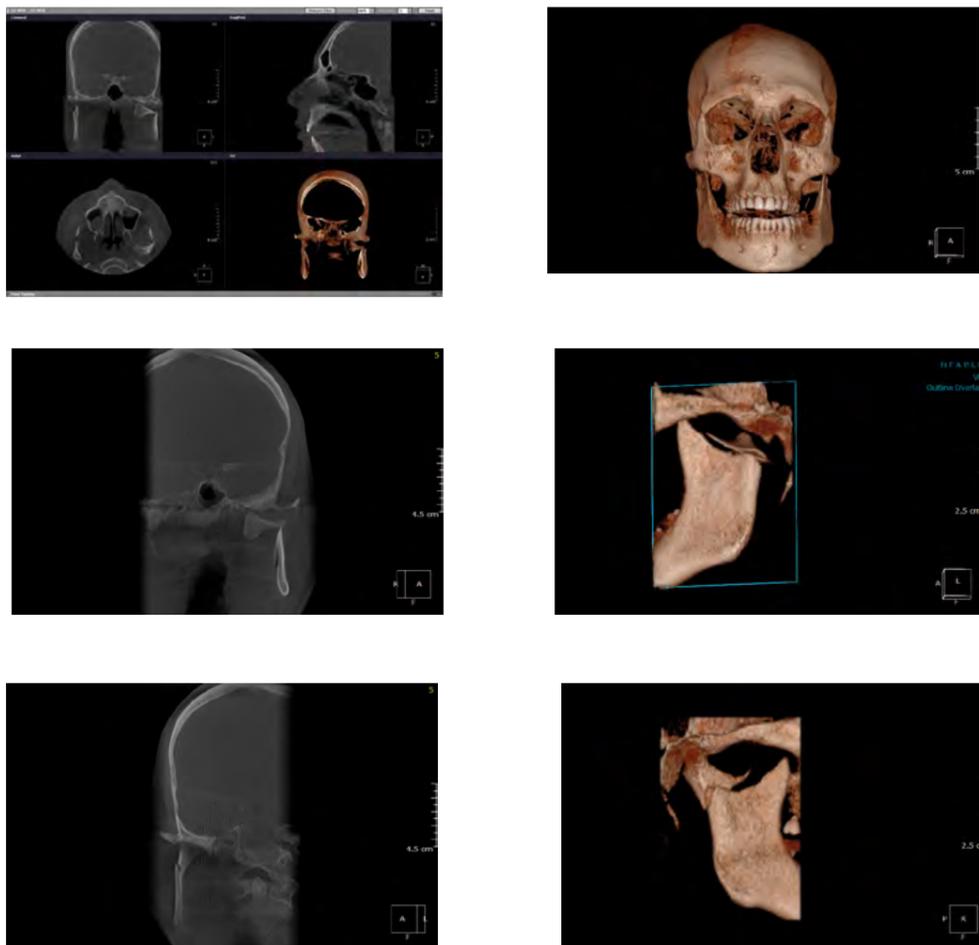


Fig. 1 Panoramic radiograph.

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The panoramic radiograph did not clearly show a huge displacement of the fragments in relation to the mandible body causing severe malocclusion.

Subsequently a CBCT was acquired, SCANORA® 3Dx (SOREDEX, Finland), clearly visualized a bilateral condylar fracture with a medial inclination of the left condyle and a severe malocclusion. (Fig. 2- 8)



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Fig. 2-8 Bilateral condyle fracture, inclination of the left condyle, malocclusion.

The best treatment for condylar fractures is controversial.⁶ There are two main options, closed reduction or open reduction and fixation. Both protocols offer advantages and disadvantages, which must be evaluated from case to case and according to the patient's compliance.

Referring to the panoramic radiograph, a conservative, closed reduction treatment protocol was scheduled, but the CBCT reevaluation changed this protocol to the other option: open reduction, manual repositioning and fixation of the fragments in a correct occlusal and condylar relation.

Conclusion

The present case report proves that CBCT provides important, additional information concerning mandibular condyle fractures, compared to conventional imaging. In those indications, CBCT technology can be recommended as an alternative diagnostic tool to conventional radiography.

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