Lowest possible radiation exposure in paediatric dentistry: The 3D Low Dose Mode

By Dentsply Sirona

In paediatric dentistry, clinicians need to pay special attention to the doses of radiation that are exposed to young patients. The following case study shows both the importance of 3D imaging to complete diagnosis while demonstrating that this can be achieved using the Low Dose Mode of the Orthophos SL 2D/3D X-ray unit.

Methods

In this case, the author took an initial two-dimensional panoramic image using the Orthophos SL 2D/3D hybrid X-ray unit. Due to an incidental finding and the suspicion of an additional problem requiring treatment, a 3D image was taken using the hybrid unit’s Low Dose Mode.

Results

I suspected that tooth 26 suffered from inflammation of the root tip. In order to confirm the diagnosis, the practice took a DVT but in Low Dose Mode with the Orthophos unit. By using a 3D image, it was clear that the mesial root of tooth 26 was indeed inflamed and infected. The 3D image also helped to show the positional relationship of tooth 38 to the mandibular canal and the inter-radicular position of tooth 28. It also showed that the roots of teeth 38 and 48 were in the process of breaking down and that tooth 28 was displaced.

Case Study

A young patient presented with lower jaw symptoms. Tooth 38 had a difficult arrangement (Dentizio diff. ciliae). A traditional panoramic image was taken using the practice’s Orthophos SL 2D/3D hybrid X-ray unit. The initial imaging showed several problems including that the mandibular canal was covering the root of tooth 38. It also showed that the roots of teeth 38 and 48 were in the process of breaking down and that tooth 28 was displaced.

The study, titled “Mandibular movement monitoring may help improve oral sleep apnoea devices,” commented Martinot.

Summary

In this case, 3D imaging in Low Dose Mode delivered a high enough quality image to make a full diagnosis of the patient’s symptoms in order to develop a complete treatment plan. Low Dose Mode offers a reduction of radiation of up to 85 percent in comparison with traditional 3D imaging which is a benefit particularly in paediatric dentistry as children are more vulnerable to radiation induced cancer.

Mandibular movement monitoring may help improve oral sleep apnoea devices

By Dental Tribune International

The image confirms the suspicion of apical irritations of the mesial root.

A new study has shown that mandibular movement monitoring can be used to assess the efficacy of oral devices to treat obstructive sleep apnoea (OSA). (Photograph: tommaso79/Shutterstock)

The first signs of osteolysis are recognisable.

Positional relationship of tooth 38 to the mandibular canal.

The first signs of osteolysis are recognisable.

The image confirms the suspicion of apical irritations of the mesial root.

The generated panorama image shows the displacement of tooth 28.

According to the transversal slice image (TSI) of the Low Dose scan the displaced tooth 28 shows no signs of its roots being infected.

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