Dentsply Sirona

User Case Abstract

Also for DVT: perfect positioning of patients

The article explains how patients can be positioned and stabilized perfectly for X-rays with the aid of bite blocks. This is illustrated using the digital hybrid X-ray equipment of the Orthophos series by Dentsply Sirona.

Methods

The author explains optimal patient positioning for X-rays as an important prerequisite for good image quality. Deviations from the ideal patient position can be compensated in part by digital data processing in modern equipment however, the correction options do have physical and technological limits. In order to position the patient correctly and retain him/her in the position, the author uses a flexible occlusal bite block (Dentsply Sirona) as an aid offered for the Orthophos. A flexible bite block is able to register the occlusal pla-

ne digitally in space and thus show the user the most suitable setting on the operating display via optical feedback during patient positioning. By using a broader foam bite base, the patient is stabilized horizontally so that edentulous or partially anterior edentulous patients can benefit. On the Orthophos SL device, Dentsply Sirona also offers a large LED display which can be used in combination with the occlusal bite block to check the patient position from a distance and thus ensure that the setting remains unchanged until triggering the image.

Patients should also be optimally positioned for DVT. The Dentsply Sirona bite blocks can be of use here.

The universal bite block offers seven holding positions to give greater freedom of variation in X-rays in the maxillary and paranasal sinus region.

When using the occlusal bite block, the angle of inclination of the bite plate is transmitted to the X-ray device. Displays on the touchscreen for setting the height of the device and the automatic stop function support the clinician in patient positioning.

Result

Patient positioning is of greater importance in volume tomography. As artefacts are formed due to the principle (e.g. metal artefacts), a variety of artefact types are created along the projection axis of the conical or pyramidal X-ray beam in DVT, which can be corrected subsequently in terms of strength, but not with regard to their position. In the case of incorrectly positioned patients it can happen that possible artefacts are „projected" via the osseous sections to be evaluated, which makes diagnostics difficult or even impossible.

A further important aspect of correct patient positioning applies with regard to the desired „Field of View" (FOV). In order to keep the exposure of the patient to X-ray beams as low as possible, the Orthophos devices allow adapting the volume size to the specific issue involved with simultaneous adaptation of the FOV. For this situation, Dentsply Sirona offers a universal bite block for both OPG/DVT hybrids, with which the selected volume can be positioned flexibly and freely to a large extent in the region of the midface and the mandible. The devices are proficient in actuator-supported horizontal displacement of the FOV which allows a highly flexible selection of the region to be examined in conjunction with the fine screening of the height-adjustable universal bite block. This has the big advantage for the clinician, that he/she can record face and jaw regions which could normally not be imaged in a rigid central volume or could only be captured with a very large field of view, which would then automatically trigger a higher radiation dose.

Summary

The optimal patient positioning for X-rays is an important prerequisite for good image quality and anamnesis. Patients can be retained correctly in their position with the aid of occlusal bite blocks.

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