

User Case Abstract

A clear view: better identification with digital X-ray

The article describes the use of the Orthophos SL 2D in dental diagnostics and treatment planning and how the clinician uses the X-ray device in his practice. Based on a case history, it illustrates how a fibroma is unexpectedly discovered as an incidental finding from a detailed sharp digital OPG.

Methods

In 2016, the author purchased the Orthophos SL 2D for his dental practice to further optimize dental diagnostics and treatment planning with the aid of state-of-the-art X-ray technology. A decision was taken in favor of the Orthophos SL in the 2D version as this incorporates two innovative technologies: the Direct Conversion Sensor and the Sharp Layer Method. The Direct Conversion Sensor (DCS) converts X-rays directly into electrical signals, which leads to optimized image information. The Sharp Layer (SL) method generates several thousand views during a single run and automatically adapts the panorama curve to the individual anatomical characteristics of the patient. Together, both technologies provide a razor-sharp and contrast-rich image quality, whilst keeping the radiation dose low. Radiation can be reduced even further by suppressing the mandible and maxilla depending on the indication, making a quadrant selection or choosing the Quick Mode.

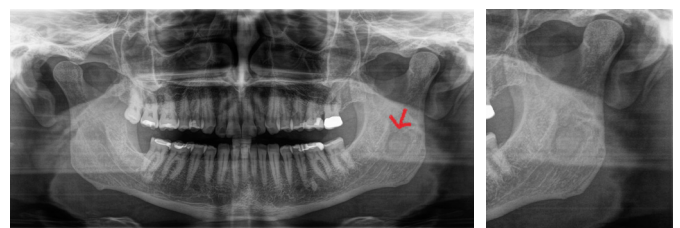
A further criterion for the author for purchasing the Orthophos SL was its compatibility with existing systems. As the author had worked with the Orthophos DS until now, he could transfer the database and import all the images from the previous version of the Sidexis software into the new version. This was important as, for example, X-rays of children must be kept for ten years following their 18th birthday, and also because the database of the author was connected to the accounting program.



Figs. 1a and b: No anomalies can be detected alio loco on the OPG dated 20 June 2011. In fact, all one sees is dense mist.



Figs. 2a and b: Also on the OPG dated 15 June 2015, the colleague had not detected the finding, which I can fully understand. The dark circle is the entry of the nerve which supplies the lower lip, in other words, a normal structure. There is something lighter inside, which should probably be denser bone, but which can hardly be recognized here.



Figs. 3a and b: The OPG image of the current clinical situation, generated with the Orthophos SL, shows a fibroma (red arrow).

Result

As the author stayed with a Dentsply Sirona system with the Orthophos SL, he had no difficulties with duplicate patient files and generated images. Furthermore, the user interface offers the following advantages: if one opens a patient file, the generated X-rays are shown at a glance in chronological order. One can therefore quickly see how the patient's oral and dental situation has changed. The processes have remained the same, but the high-resolution images contain more image information, so the transmission takes a few seconds. Other advantages include improved diagnosis and lower radiation exposure due to the option of targeting individual quadrants for X-rays. The structures and details are better defined, which already proves useful during everyday diagnoses, for example, detecting caries in the status nascendi.

Case history

A 49-year-old patient with deep bite presented in the practice to have his teeth straightened. In X-rays from prior treating clinicians, the first OPG image (dated 20 June 2011) showed no anomalies (Figs. 1a and b), the second OPG (dated 15 June 2015) showed a somewhat lighter patch, which could be indicative of higher bone density (Figs. 2a and b). To provide a precise orthodontic initial diagnosis, an OPG of the current clinical situation was taken with the Orthophos SL. The image showed a fibroma: the light structures in the dark nerve entry zone can be distinguished clearly (Figs. 3a and b). The subsequent DVT indicated a suspected ossifying fibroma. From a differential diagnostic point of view, a cementing fibroma, cementoblastoma or osteoblastoma had to be excluded. Histological clarification was indicated.

Summary

The better visibility of structures and details on the brilliant images taken with the Orthophos SL already prove useful in everyday diagnoses, for example, in the detection of caries in the status nascendi. Somewhat rarer are unexpected discoveries such as a fibroma, which would not have been possible with older equipment without DCS. A dentist should place value on offering his patients state-of-the-art technology and thus the best possible diagnostic procedures. X-ray images of this quality can save patients from considerable sequelae and may even save lives.



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Original paper published in:
ZMK 2017;33(6):2-4

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