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Incidental findings on Cone Beam CT examinations

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Abstract

Cone Beam Computed Tomography (CBCT) is a radiographic imaging technique that is rapidly expanding in the field of dental diagnosis. A significant benefit of CBCT is that the dose to the patient is smaller compared to medical CT. However, it is also much higher than for conventional dental imaging modalities like intraoral and panoramic radiographs. Several evidence based guidelines have been published in the last few years to support the justification of CBCT (e.g. by the FDA in the USA and the EC in Europe).

It is a crucial principle of these guidelines that the operator or clinician who applies CBCT is required to interpret the complete volume that is visualized and thus was exposed to radiation. This includes not just to structures related to the diagnostic question that leading to the request of the CBCT images. It also refers to other structures shown shown in the reconstructions. As a consequence, the user of CBCT must have knowledge of the complete anatomy and relevant pathology that is visible in the head and neck region. In a rather large number of CBCT examinations pathology is present that was not expected beforehand. These conditions are called incidental findings (Ifs) and the clinician who is using CBCT is also required to report these conditions. Several studies indicate that the frequency of Ifs is on average 1,5 Ifs/scan. In this presentation several examples of extra- and intracranial Ifs will be presented, and their relevance for a responsible interpretation of the volume shown by CBCT.

Biography

Paul van der Stelt graduated as DDS in 1974 and has obtained his PhD in 1979 from Vrije University, Amsterdam. He was appointed chairman of the department of Oral and Maxillofacial Radiology in 1982 and became professor in 1986. He was president of the International Association of Dental and Maxillofacial Radiology in 2007-2009 and was Honorary Secretary of the European Academy of Dento-Maxillofacial Radiology from 2004 until 2010. He has published more than 150 papers in peer reviewed journals and is serving as editorial board member on several scientific dental journals.