

Incidental Findings in the Maxillofacial Region Detected on Cone Beam Computed Tomography

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Abstract : In the field of dentistry, there are many conditions which warrant the requirement of three-dimensional imaging that can aid in diagnosis and therapeutic management. Cone beam computed tomography (CBCT) is considered highly accurate in producing a three-dimensional image of an object and provides a complete insight of various findings in the captured volume. But, most of the clinicians focus primarily on the teeth and jaws and numerous unanticipated clinically significant incidental findings may be missed out. Rapid integration of CBCT into the practice of dentistry has led to the detection of various incidental findings. However, the prevalence of these incidental findings is still unknown. Thus, the study aimed to discern the reason for referral and to identify incidental findings on the referred CBCT scans. Patient's demographic data such as age and gender was noted. CBCT scans of multiple fields of views (FOV) were considered. The referral for CBCT scans was broadly classified into two major categories: diagnostic scan and treatment planning scan. Any finding on the CBCT volumes, other than the area of concern was recorded as incidental finding which was noted under airway, developmental, pathological, endodontics, TMJ, bone, soft tissue calcifications and others. Few of the incidental findings noted under airway were deviated nasal septum, nasal turbinate hypertrophy, mucosal thickening and pneumatization of sinus. Developmental incidental findings included dilaceration, impaction, pulp stone and gubernacular canal. Resorption of teeth and periapical pathologies were noted under pathological incidental findings. Root fracture along with over and under obturation was noted under endodontics. Incidental findings under TMJ were flattening, erosion and bifid condyle. Enostosis and exostosis were noted under bone lesions. Tonsilloolith, sialolith and calcified styloid ligament were noted under soft tissue calcifications. Incidental findings under others included foreign body, fused C1- C2 vertebrae, nutrient canals, and pneumatocyst. Maxillofacial radiologists should be aware of possible incidental findings and should be vigilant about comprehensively evaluating the entire captured volume, which can help in early diagnosis of any potential pathologies that may go undetected. Interpretation of CBCT is truly an art and with the experience, we can unravel the secrets hidden in the grey shades of the radiographic image.

Keywords : cone beam computed tomography, incidental findings, maxillofacial region, radiologist

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