



Cone Beam Computed Tomography- Radiological Interpretation and Reporting

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Abstract

Radiological Interpretation and detail reporting of the CBCT scan is the most important responsibility of the Oral and Maxillofacial Radiologist. The main aim is to provide an accurate interpretation of images to facilitate the diagnosis process. Radiological interpretation and reporting is the patient's record. The main aim of this article is to provide guidelines on how to report a CBCT scan.

Keywords: CBCT interpretation, CBCT reporting

Introduction

Cone Beam Computed Tomography has been available to dentists since the last 1990s and has experienced massive surge in popularity over recent years. As new equipment has been developed with ever more advanced imaging capabilities, CBCT has come to represent the acceptable standards for 3-dimensional hard tissue imaging in DMFR. Radiological interpretation and detailed reporting of the CBCT scans forms the most important responsibility of the oral and maxillofacial radiologist. In order to achieve proficiency in accurate interpretation and reporting, the oral and maxillofacial radiologist must have adequate knowledge of the working of CBCT machine and expertise in using software provided, thorough knowledge of sectional anatomy and anatomical variations of maxillofacial complex and excellent knowledge about the pathologies manifested in the region under study. No CBCT scan should be dispatched without a report written and authenticated by a qualified Oral Medicine and Radiology specialist. These reports are an important component of the imaging framework and a fundamental part of the patient's clinical records. This article will provide guidelines on how to interpret and report CBCT scan

CBCT SCAN : INTERPRETATION

Interpretation of CBCT images is the most important responsibility of the Oral and Maxillofacial radiologist. To achieve the desired expertise in CBCT interpretation, the beginners as well as established radiologists should undergo specialized training, should understand about CBCT functions and images and must also undergo CDE programs

REPORTING OF CBCT SCAN

The purpose of structured reporting is to communicate with the patient and other practitioners. It is a written record of diagnostic information

COMPONENTS OF CBCT REPORT

Demographics : The radiology report should be a pre-printed form. It must include patient's full name, age/sex, date of exposure, name of referring doctor etc. The report must be written and dated on the day that the radiographs are exposed and processed. Signature of the radiologist and date of report must appear on the report

Relevant clinical information as provided by the prescribing dentist

Body of Report : Procedures and material. The report should include a description of the studies and procedures

Findings : Appropriate anatomic, pathologic and radiologic terminology should be used to describe findings

Clinical Issues : The report should address or answer any specific clinical questions. If there are factors that prevent answering of the clinical question, this should be stated explicitly

Impression/Conclusion/Diagnosis : Each CBCT scan should contain an 'impression' section. A precise diagnosis should be given when possible, differential diagnoses should be mentioned.

Final Report

The final report is the definitive means of communicating to the referring doctor. The report should be proof-read to minimize typographical errors, accidentally detected words and confusing statements. Abbreviations or acronyms should be avoided. The final report should be completed in accordance with appropriate standards requirements. Electronic or rubber-stamp signature devices, instead of written signature are acceptable. A copy of final report should accompany the relevant images to other health care professionals. A copy of the final report should be archived by the imaging facility as a part of the patient's dental record (paper or electronic) and be retrievable for future reference.

Aide Memoir Of Key Features To Report With Common Indications

Key Features

Referer

Name, job title, address for report to be sent

Patient Details

Name, DOB, address

Clinical Details

History, relevant medical history, relevant dental history, previous imaging, reason for scan, specific questions the referrer wants to be answered.

Radiography Log

kV, mA, exposure time, scan protocol, operator grade, comments

Report

Anatomical region of the scan, teeth erupted and visible in the scan volume, teeth unerupted

Endodontic | Implant | Periodontology | Lower Third Molars | Orthodontics

Endodontics

Coronal status and presence or position of posts

No. of root canals and natural curvatures

RC configurations, presence of invaginations

Presence and quality of existing root filling, perforations

Periapical/peri-radicular bone status

Root resorption- location /nature

Relationship and effect on anatomical structures

Implant

Teeth present/missing/retained

Radiographic stent present

Height and width of bone

Quality of bone

Relationship and effect on surrounding structures

Any adjacent dentoalveolar pathology

Periodontology

Root form and relationship

Furcation, craters and bony defects

Relationship and effect on surrounding structures

Lower Third Molars

Impaction and crown and follicle status

Root number, shape, position, curvature etc

Relationship and effect on surrounding structures

Caries, resorption in distal aspect of second molars

Surrounding trabecular pattern of bone

Orthodontics

Position/impaction of canine or other ectopic teeth

Follicle status of ectopic teeth

Resorption of adjacent teeth

Angulation and position of unerupted teeth

Apical status of unerupted teeth

Supernumerary and odontoma assessment

Relationship and effect on surrounding structures

Radiological Description of any pathology followed by diagnosis/differential diagnoses

Peripheral Findings particularly if relevant to treatment plan or needs further management

Impression/Conclusion : Concise summary and answers to any questions asked

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