

Is Cone Beam Computed Tomography Suggested for Wisdom Tooth Extraction?

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Dear editor,

Particularly about preoperative evaluation and treatment planning for wisdom tooth extractions, Cone Beam Computed Tomography (CBCT) has revolutionized the dental field. With regard to patient care and treatment outcomes, this Letter to the Editor aims to provide readers with a comprehensive understanding of the benefits and limitations of using CBCT during wisdom tooth extraction procedures. With its ability to provide precise treatment planning and improved visualization for a wide range of dental procedures, CBCT has become a valuable imaging modality in dentistry these days. Improved visibility of the teeth and surrounding structures is possible with CBCT imaging, which produces finely detailed three-dimensional images that enable a thorough assessment of tooth impaction, root morphology, and proximity to important structures. In addition to reducing the possibility of issues during the extraction process, this comprehensive visualization helps with precise treatment planning. Moreover, two-dimensional radiographs may not show anatomical variations that are revealed by CBCT imaging, providing a more complete picture of the patient's oral anatomy [1,2]. Apart from its function in extracting wisdom teeth, CBCT has wider uses in oral surgery, such as orthographic planning, endodontic evaluation, temporomandibular joint assessment, and dental implant planning [3,4]. Even though CBCT has many benefits, it is vital to take into account any potential drawbacks and radiation exposure related to this imaging technique. Though CBCT is a safer alternative for imaging in dentistry and usually requires a lower radiation dose than traditional medical CT scans, it is still better to avoid in patients with a history of cancer, so there must be a trade-off. Roeder et al. suggested that CBCT scans ought to be reserved for wisdom tooth extractions involving high risk [5]. According to a meta-analysis, patients' prognosis is

unaffected by having CBCT images, and it does not lower their risk of suffering nerve injuries [6]. The care and results of dental treatments have been greatly impacted by the use of CBCT. CBCT plays a part in enhancing patient satisfaction, treatment planning, and diagnostic accuracy. In the end, both patients and practitioners have benefited from the ability to see dental structures in three dimensions, which has led to more accurate and effective treatments [7]. The 3-dimensional relationship between the mandibular third molar and the mandibular canal can be better understood with the help of CBCT. It can therefore be applied to surgical procedure planning and risk assessment [8]. According to a pilot study conducted by Ghaeminia and colleagues, comparative study between CBCT and panoramic radiography in 2011 revealed that the former helps with better risk assessment and, consequently, more appropriate surgical planning [9]. When it comes to anticipating inferior alveolar nerve exposure, CBCT performs better than panoramic radiography, per a meta-analysis [10]. To sum up, CBCT has greatly enhanced the preoperative evaluation and treatment planning for wisdom tooth extractions. Improved patient outcomes and a lower risk of complications during extraction procedures have been made possible by its improved visualization, precise treatment planning, and decreased radiation exposure. CBCT is required when extracting impacted wisdom teeth because the dentist needs to view all of the jaw's arteries and nerves to ensure that none of them will be damaged during the procedure. To prevent making surgical incisions on the incorrect side of the jaw (tongue side vs. cheek side), it is also useful to know where the impacted teeth are located in the jaw so that in complicated cases, CBCT helps more in which wisdom teeth should be checked for the presence of bone cortex in the lingual area, which can only be done by CBCT scan, even though the likelihood of this occurring is lower in cases of erupted wisdom teeth. This is because wisdom teeth are

located close to important structures like the inferior alveolar nerve, the pterygomandibular space in the mandibular (lower jaw), and the maxillary wisdom teeth are adjacent to the maxillary sinus.

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