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Importance of radiographs in edentulous patients

Suresh K. Sachdeva[1,*], Mohsin M. Tak[2], Avinash L. Kashid[3], Purnendu Rout[4]

[1,4]Reader, [2]Associate Professor, [3]Assistant Professor, [1,2,4]Dept. of Oral Medicine & Radiology, [3]Dept. of Dentistry, [1]Surendera Dental College and Research Institute, Sri Ganganagar, Rajasthan, [2]Government Dental College, Srinagar, Jammu & Kashmir, [3]Swami Ramanand Teerth Government Medical College & Hospital, Ambajogai, Maharashtra, [4]Kalinga Institute of Dental Sciences, KIIT University, Bhubaneswar, Odisha, India

***Corresponding Author:**
Email: drsureshsachdeva7184@gmail.com

Abstract
Panoramic radiographs are often used to screen edentulous patients before complete denture fabrication. However routine use of OPG (Orthopantomogram) of edentulous patients is being questioned because of the cumulative effects and cost of radiation exposure. However, the recent studies have shown that the pre-treatment radiographic examination of edentulous patients is critical in the treatment planning, as it has revealed significant findings, which are not visible clinically.

Keywords: Edentulous, Orthopantomogram, Impacted, Teeth.

A 76-years old male patient reported to the department with a chief complaint of pain in r lower arch and instability of lower denture on right side, since last 1 week. History revealed that the patient underwent full mouth extraction 2-years back followed by fabrication of complete maxillary and mandibular denture. Patient's medical, family and personal was unremarkable. On clinical examination, the maxillary and mandibular arches were completely edentulous, except the tip of tooth like structure was seen in the region of mandibular right first premolar (Figure 1). On examination of the maxillary and mandibular complete dentures, no abnormality like sharp edge, attrition of artificial teeth etc were found. Patient was advised orthopantomogram (OPG) to see whether it is complete tooth or potion of tooth, which remained unnoticed. Also to rule out any other impacted teeth, root pieces or any other bony pathology. OPG revealed impacted right and left mandibular impacted first premolar. The right mandibular first premolar was suspected as its tip of cusp was visible clinically, but the left mandibular first premolar was reveled on OPG, along with ruling out any other root pieced, impacted molars and bony pathology (Fig. 2). After this thorough confirmation, patient was referred for extraction of both the impacted teeth and for prosthetic rehabilitation.

Panoramic radiographs often used to screen edentulous patients before complete denture fabrication. However, routine use of OPG of edentulous patients is being questioned because of the cumulative effects and cost of radiation exposure.[1] In the past, studies have been done to see their usefulness in screening edentulous patient for positive radiographic finding in edentulous patient with OPG. The most frequent findings observed were retained root tips, impacted teeth, periapical bony pathologies including radiolucent and radiopaque, soft tissue calcifications and foreign bodies. The frequency of positive radiographic findings in these studies ranged from 42.5% to 68.3%.[1,2] Previous studies has not recommended routine pretreatment radiography for routine screening of edentulous patients. However, in the recent studies have shown that the pretreatment radiographic examination of edentulous patient is critical in the treatment planning, as it has revealed significant findings, which are not visible clinically. These studies have shown that radiographic examination highly useful in to know the approximation to vital anatomical landmarks like location of mental foramen, mandibular canal, and maxillary sinus from alveolar crest, height of alveolar bone remaining after extraction along with the additional finding reported by previous studies.[3,4] Even recently few cases of odontogenic pathology like odontogenic keratocyst, have been reported on radiographic examination of edentulous patient, further substantiating the need for pretreatment radiographic screening of edentulous patient.[5] So hereby, with this incidental radiographic discovery of impacted teeth in a complete denture wearer, we would like to urge the general dental practitioner and prosthodontist dealing with diagnosis and treatment planning of edentulous patient to advise routine screening and radiographic examination of edentulous patient, to prevent missed finding, and untoward complication and financial burden to the patient.

Fig. 1: Intra oral photograph showing tip of erupting right mandibular first premolar

Fig. 2: Orthopantomogram (OPG) confirming the clinical finding of right mandibular first premolar. Also impacted mandibular first premolar is visible on left side

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