

The Importance of Radiography Before Denture Therapy: Report of Two Cases

Protez Yapımı Öncesi Radyografik Değerlendirmenin Önemi: İki Olgu Sunumu

ABSTRACT

The use of X-rays is an integral part of clinical dentistry and radiographs are often referred to as the clinician's main diagnostic aid. Radiographs should be taken only when a clear diagnostic need exists for the information the radiograph may provide. They often are the first method used to screen edentulous or partially edentulous patients before denture therapy. However, routine radiographic examination of these patients is being questioned because of the cumulative effects and cost of radiation exposure. This report presents two cases that were not examined radiologically prior to denture construction. In present cases, although one patient has worn complete denture and the other has had bridges, 19 impacted teeth were observed totally in panoramic examinations. In conclusion, even a patient had worn denture or bridges; radiographic examination should be made before renew prostheses when patient did not give a definitive history about his/her radiological condition.

Key words: Tooth, Impaction, Radiography.

ÖZ

X-ışınları klinik diş hekimliğinin önemli bir parçasıdır ve radyografiler ana tanıda klinisyenlere yardımcıdır. Radyografiler ancak kesin tanı için bilgi sağlayacaksa alınmalıdır. Genelde parsiyel ve total hastalarda protez yapımı öncesi radyografiler kullanılır. Bununla birlikte, bu hastalarda radyografilerin rutin kullanımı radyasyon dozu, kümülatif etki ve maliyet açısından tartışmalıdır. Bu çalışmada, protez yapımı öncesi radyografik değerlendirme yapılmamış iki olgu sunulmaktadır. Biri total protez ve diğeri sabit protez kullanan iki olguda alınan panoramik radyografilerde çenelerde toplam 19 adet dişin gömülü olduğu belirlenmiştir. Sonuç olarak, önceden hareketli veya sabit protez kullanan ve radyolojik durumları ile ilgili kesin bilgi alınamayan hastalarda, protezlerinin yenilenme aşamasında radyografik inceleme yapılması gereklidir.

Anahtar sözcükler: Diş, Gömüklük, Radyografi.

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INTRODUCTION

The use of X-rays is an integral part of clinical dentistry, with some form of radiographic examination necessary on the majority of patients. As a result, radiographs are often referred to as the clinician's main diagnostic aid. Periapical radiography describes intraoral techniques designed to show individual teeth and the tissues around the apices (1). It demonstrates

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good detail but its coverage is limited (2). Panoramic radiography is the most useful technique for diagnostic problems requiring broad coverage of the jaws. Panoramic radiography is a radiologic technique for producing a single image of the facial structures that includes both the maxillary and mandibular dental arches and their supporting structures (3). The technique is relatively simple and the radiation dose is relatively low (1).

Radiographs should be taken only when a clear diagnostic need exists for the information the radiograph may provide (3). They often are the first method used to screen edentulous or partially edentulous patients before denture therapy. However, routine radiographic examination of these patients is being questioned because of the cumulative effects and cost of radiation exposure (4). In the UK, the 2004 Selection Criteria in Dental Radiography booklet specially states that 'panoramic radiographs should only be taken in the presence of

specific clinical signs and symptoms,' and goes on to say that 'there is no justification for review panoramic radiography at arbitrary intervals' (1).

This report presents two cases that were not examined radiologically prior to denture construction.

CASE REPORT

Case 1

A 55-year-old male was referred to the clinic complaining of a painful swelling on the posterior side of the right mandible. He was fully edentulous in both arches and had worn his new complete dentures two months ago. The medical history of the patient was unremarkable and there was no reported history of orofacial trauma or syndrome. Extraoral examination revealed no abnormalities. On intraoral examination, a painful swelling of the right mandibular posterior mucosa was

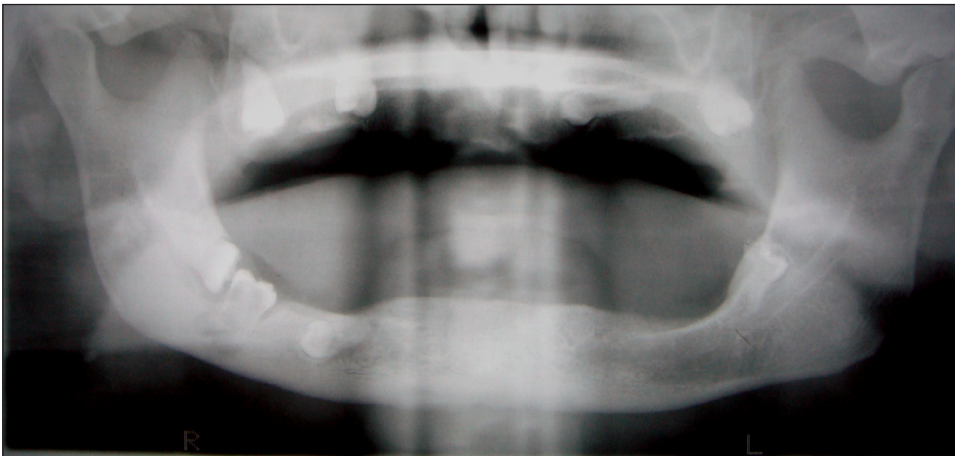


Figure 1: Panoramic radiograph showing eight impacted teeth, four in the maxilla and four in the mandible.



Figure 2: Panoramic radiograph showing eleven impacted teeth, five in the maxilla and six in the mandible.

present. Panoramic radiography revealed eight impacted teeth, four in the maxilla and four in the mandible (Figure 1). The maxillary impacted teeth were 15, 18, 25, 28, and the mandibular impacted teeth were 38, 45, 47, 48. The patient was enrolled for extraction of impacted teeth. Teeth 47 and 48 were extracted but the patient declined extraction of the other impacted teeth as they were asymptomatic.

Case 2

A 51-year-old male was referred to the clinic for extraction of his erupted tooth on the left posterior maxilla. His medical history was significant for diabetes mellitus. There was no reported history of orofacial trauma or syndrome. Extraoral examination revealed no abnormalities. On intraoral examination, eruption of a tooth was observed on the left posterior maxilla. The patient had bridges constructed approximately four years ago in the maxilla and mandible. Panoramic radiography revealed eleven impacted teeth, five in the maxilla and six in the mandible (Figure 2). The maxillary impacted teeth were 13, 18, 23, 27, 28, and the mandibular impacted teeth were 33, 35, 38, 43, 45, 48. The patient was enrolled for extraction of impacted teeth and for routine treatment procedures of his caries.

DISCUSSION

Radiographic examination of the jaws should be performed before construction of single or complete dentures (2,5). This examination records pathological changes that might not be detected during clinical examination. Panoramic radiographs are most useful clinically for diagnostic problems requiring broad coverage of the jaws (3). However, to minimize unnecessary exposure of the patient to radiation and to lessen costs, panoramic radiographic examination has been suggested to perform selectively for edentulous/partially edentulous patients who need a new set of dentures (6).

Previous studies demonstrated that radiographic screening of all edentulous patients is indicated because of the considerable percentage of impacted teeth, retained root fragments and other positive findings (4,5,7,8). Factors known to be associated with impaction of teeth include local infections, trauma, overlying cysts or tumors, systemic disorders, diseases and syndromes. Lack of eruption and rotation of tooth buds might cause multiple impactions (9,10). In our cases, medical and family history and extraoral examination were not

suggestive of any syndrome or metabolic disorders. The usual treatment choices of impacted teeth are long term observation, orthodontic eruption and surgical removal (9). Patients should be informed about the presence of impacted tooth where it is decided not to be extracted (11). However, impacted tooth should be removed in the presence of infection, nonrestorable carious lesions, cysts, tumors or destruction of adjacent tooth and bone (9). In our cases, both patients were informed about their impacted teeth and enrolled for extraction of teeth caused clinical problem

Panoramic radiographic examination provides significant information to the dentist and before denture therapy. However, routine use of panoramic radiographs of patients wearing complete dentures and are asking for new dentures should be discouraged (6,12,13). In present cases, although one patient has worn complete denture and the other has had bridges, 19 impacted teeth were observed totally in panoramic examinations. Additionally, patients were uninformed about the presence of these teeth. Therefore, even a patient had worn denture or bridges before, panoramic radiography might be necessary for construction of renewal dentures. Along the patient history and clinical examination, it is important to learn additional information whether the patient had radiographic examination before his/her first prosthetic construction or not.

In conclusion, even a patient had worn denture or bridges; before renew denture radiographic examination should be made when patient did not give a definitive history about his/her radiological condition.

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