



Utilization of Orthopantomograms in Dental Radiology

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Abstract

Orthopantomogram is a radiographic technique that improves the possibility of early detection of dental anomalies.

This study was representing a base line diagnostic information which obtained from each patient utilizes orthopantomogram in x-ray clinic at hospital of Surgeries Specialization (ALshaheed Addnan previously).

Data was collected from randomly chosen 696 dentate patients who were radiographed for different reasons. The age range was between 5-45years.

Results revealed that, the main reason for taking orthopantomograms was to investigate different orthodontic problems (41.4%), then impacted teeth (25%), facial fractures due to trauma (13.7%), mixed dentition development (11.5%), and finally periodontal diseases (8.3%). High percentage of patients was in range of age group between (5-15) (51.1%).

This study focuses on the importance of using orthopantomograms as a most indispensable method on achieving complete diagnostic information.

Keywords: orthopantomograms, dental anomalies.

Introduction

There have been a number of comprehensive clinical reviews for orthopantomogram, since its introduction in 1959. it has become generally accepted as a convenient method of readily gauging the general dental health of patients, at the same time, screening areas of the jaw that not covered by intra-oral techniques for previously undetected pathologic process.⁽¹⁾

Orthopantomograms can be very useful to demonstrate the presence or absence of teeth, foreign bodies, fractures and so forth. They could be of value to the general practitioner or oral surgeon who has a large emergency service clientele, also people often resist the intra-oral survey might be

more willing to accept less time – consuming orthopantomogram.⁽²⁾

This study was design to find out base line information for the reasons of utilization orthopantomogram in general dental practice.

Materials and methods

696 consecutive dentate patients presenting to the department of dental radiology at hospital of Surgeries Specialization (ALshaheed Addnan previously).for preliminary assessment of their oral health status and treatment planning, were examined.

All patients had undergone a thorough clinical examination prior to having orthopantomograms taken as part of their initial assessment. The age of patients ranged between 5-45 years. They were categorized according to

their referral diagnostic need as illustrated in table (1).

Results and Discussion

Table (1), and figure (1) show the distribution and percentage of orthopantomograms utilized for 696 patients.

Orthodontic problems constituted (41.4%) of all radiographs performed, while impacted teeth were the next (25%), then facial fractures due to trauma (13.7%), mixed of dentition development (11.5%), and finally periodontal diseases (8.3%).

It was found that orthodontic problems are the main common reason for utilization orthopantomogram (41.4%). This is because it permits the orthodontist to call upon his specialized knowledge and apply it. It gives him a panoramic vista of the entire developing stomatognathic system, and allow to decide when he can best institute treatment of developing deformity ⁽³⁾; Also it was found that, the percentage for utilization this radiographic view in detection of impaction was (25%), and for investigation of tooth development, especially for mixed dentition analysis was (11.5%), since orthopantomogram can be very useful for specific diagnosis of impaction and early evaluation of dental anomalies. ⁽⁴⁾

Also this view can used to investigate periodontal disease, although the reported percentage in the present study was low (8.3%), because the assessment of chronic periodontitis from orthopantomogram will tend to underestimate bone loss. In fact it is related to the tendency of orthopantomogram to underestimate the distance between cemento –enamel junction and alveolar bone and this is due to the presence of craters in the alveolar bone which do not show on such radiographic view. ⁽⁵⁾

Bjorn ⁽⁶⁾, considered that, difficulties in locating the cemento-enamel junction on this view resulted in un acceptable levels of immeasurability if the measurement method employed required identification of such landmark. That's why, direct measurement of bone loss in chronic periodontitis during periodontal surgery is being considered. However, this view is superior to conventional intra oral view in investigating early horizontal bone loss in chronic periodontitis, these findings are in accordance with results of other reported studies done by Kaimenyi, and Ashley ⁽⁷⁾, Wuehrmann and Manson – Hing ⁽⁸⁾.

Figure (2) illustrated that the commonest age group attended the Department of dental Radiology for taking orthopantomograms was between (5-15) years (51.1%).

The high percentage could be attributed to the fact that, at this range of age children have mixed dentition, with different dental problems which need investigation radiographically in order to reach final diagnosis, our result was in agreement with other research reported by Wuehrmann, and Manson – Hing ⁽⁸⁾.

In conclusion, it seems reasonable to state that orthopantomogram has been shown to provide us diagnostic information important in general dental practice for detection and evaluation of different pathological problems.

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Table (1): Distribution and percentage of diagnostic needs for orthopantomograms of 696 patients

Diagnostic needs	No. of edentulous patients	Percentage
Orthodontic problems	288	41.4
Impacted teeth	174	25.0
Fractures	96	13.7
Mixed dentition development	80	11.5
Periodontal diseases	58	8.3

