UNIVERSITY OF MEDICINE AND PHARMACY CRAIOVA

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ABSTRACT

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IMPACT OF PATHOLOGY PERIAPICAL RADIOLOGY

CONTENTS

INTRODUCTION

Radiological examination is the main method of exploration in dentistry, especially in endodontics where radioloigic appearance of periapical status, determining the scope and periapical pathology prevlența particularly important in choosing appropriate therapy.
Radiography has a role in assessing parodontium apical changes of bone density, structure evaluation periapical trabeculae, especially in evaluating the progression or resolution of periapical inflammation. However periapical radiography can not detect lesions early, for it is necessary to alter the bone mineral content of about 30%.

KNOWLEDGE

CHAPTER I

Apical Periodontitis - etiology and pathogenesis

Periapical disease is the consequence of inflammatory disease type pulp necrosis , also entered in the etiology of apical periodontitis and iatrogenic causes , such as excessive use of dental instruments or errors during root canal treatment .
There are different classifications of literature that address periapical disease etiology, pathology and clinical manifestations . Latest studies mention a classification system that distinguishes between inflamed pulp , pulp necrosis and degenerative diseases .

CHAPTER II

Apical periodontitis - clinical anatomical shapes

II.2 Acute apical periodontitis

The apical periodontal acute osteitis , depending determining factor may be organized as follows:

- a continuation of acute serous and purulent pulpitelor total ;
- are a complication of simple pulp gangrene ;
- acute rebound due to a chronic apical periodontitis ;

• can be installed on a periodontal severance as a result of a direct assault on its traumatic nature , chemical , toxic (69,125,127) .

Acute apical parodontitis represented by an inflammatory process is a whole that can be caught in its various stages of clinical development and can be classified as :

• Acute apical periodontitis redness (as abortifacient) ;

• Acute apical periodontitis exudative serous (diffuse) ;

purulent exudative acute apical periodontitis (circumscribed) .

II.3 chronic apical periodontitis

Chronic apical periodontitis lesions are localized to the apical periodontium , namely osteitis lesions are manifested in particular by necrosis and resorption processes acting under the influence of several factors. Necrosis and destructive processes occurring under the action of a tissue granulation tissue reaction representing interests apical alveolar bone and root apex .

CHAPTER III

Radio-imaging methods of investigation apical pathology

III.1.Conventional Radiology

In terms radiololologic , emphasizing the teeth and tough coronal and root layers is possible due to differential absorption of X-rays determined by the density of the various structures that make up the enamel mineral cementum and dentin (1126) .

The complexity of dental structures can be highlighted in detail , certain finesse , such as horizontal striations coronary aberrant tubules or apical delta , remain radiological expressionless (13,86,111,148) .

Panoramic radiography

Radiogenic tube runs intraoral and offers panoramic views of the jaw or jaw conducted so requires two separate exposures resulting in two distinct images , one across the jaw and mandible . Images contain information about the skeletal and the dentoparodontal .

III.2 CT scan

The CT scan periodontal pathology plays an important role in identifying bone changes secondary to inflammatory processes in the root apex (18,101,102,129) . Also this imaging technique correctly highlights aspects of acute and chronic complications of locoregional or

distant . Thus we can identify abscesses and extension specifying anatomical structures involved in the infection, complications away , more rare, epidural abscess or cerebral type is identified with the help CT .

The pathology of periodontitis CBCT is used to evaluate the possibility of obtaining quantitative information on periodontal bone in 3D acquisitions , MeOD proves its superiority in terms of the early stages of periapical and periodontal lesions .

PERSONAL CONTRIBUTIONS

CHAPTER I

The aim , objectives and research motivation

The purpose of this study is to assess the point of view of the radio- acute and chronic apical lesions , consistent with the clinical aspects .

Specific objectives to be achieved are:

- clinical diagnosis of dental disease apical given thorough medical history of the patient;
- interpretation of patient -specific dental radiographs ;
- interpretation CT examinations of cases that has become the diagnostic method ;
- comparative analysis of radiographic imaging and computed tomography in terms of their use as diagnostics certain apical dental pathology .

CHAPTER II

Material and Methods

Subjects

We studied 172 subjects, 78 women and 94 men , aged between 21 and 72 years . In selecting patients we considered the clinical diagnosis and initial radiographic appearance of the disease . All patients were Radiographs retro , panoramic radiographs and a total of 52 subjects were performed by CT scan examination .

CHAPTER III

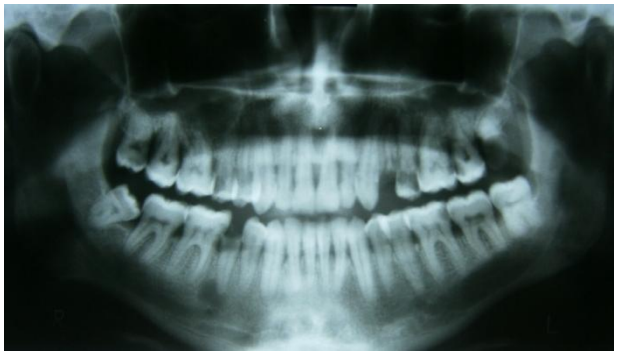
The results and their interpretation

III . 2 . Radiological aspects

Based on statistical analysis of batch still present clinical cases , accompanied by suggestive radiological images , as each pathology and discussions on the respective diseases .

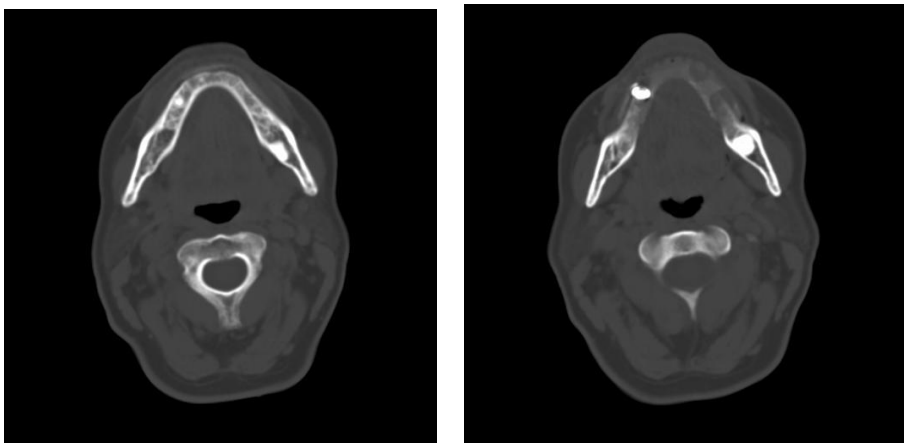
The first case is of a patient of 29 years reveals that clinical examination of the root residues 24,

28 and 45. Panoramic radiograph shows the apical reaction of 24 , the presence of carious lesions without clinical expression of coronary location 15,25 , location cervical- root 26, 27 and proximal 26. The periradicular area is highlighted by 45 circumscribe high transparency area diffuse heterogeneous development showing predominantly to the distal edge of the tooth and also are seen intermittently dense peripheral ring , which suggests the existence of a radicular cyst become infected , because of peripheral ring limestone and diffuse heterogeneous appearance cystic content . Therapy included extractions both the 45 's and 24 's level , given the extensive destruction of the roots , followed by targeted therapies extractions per lesion basis . At a later time , and extraction was carried out by 28 .



III. 3. CT scan issues

To establish a correct diagnosis in terms of imaging is necessary a careful analysis of dynamic images, taking into account the anatomical particularities of the region concerned, details of which can be assessed by observing successive images. In this sense we present the following images to view the mandible, the presence of root apex of 43, without identification of contralateral bone structure changes, but the following image shows the presence of two zones of net bone resorption density contoured cystic corresponding teeth 33 and 35



No 65 Fig Axial section CT, bone window - the cystic formations of 33 and 35

CHAPTER IV
Discussions

IV . 1 . Statistical analysis of the study group

The study group comprises a total of 94 men and 78 women , representing a homogeneous preferable to any statistical study . There is however a slight difference of 15 subjects in favor of males , which all fall in the literature (10,32,75,115 ,) .

Graphical representation of the distribution by sex and age group shows that the number of men is consistently higher than the female , except for the age group over 60 years where the number of subjects is approximately equal .

In terms of the topography of the affected teeth are more subjects with multiple injuries dental and maxillary teeth also are more affected than the mandible . Differences in bone structure explains more often affected maxillary teeth , known as spongy and compact bone characteristics of the mandible and maxilla , the purpose of a thinnest compact and spongy bone of a better represented in the maxilla .

IV . 2 . Analysis of radiological aspects

Radiographic diagnosis of apical periodontitis is based on deviation from normal anatomical aspects of root . The phenomena of bone resorption and bone remodeling in response to the inflammatory process are key elements of the changes that are visible on the radiograph .

Periodontal ligament , lamina hard, and cancellous and cortical bone can all be affected root apical periodontitis .

Healing

The healing period for chronic periodontitis treated variable , studies showing that signs of healing occur during the first year of treatment, and complete restoration proposed standard is four years (30,46,70,136) . In the present study monitoring the maximum was three years old, and radiographic aspects show a complete bone healing after conservative treatment for bone cyst .

IV.3. CT scan

The cases analyzed in the previous chapter in terms of computed tomography can be observed accurately identify pathological change the root and periradicular easily view or osteolytic inflammatory reactions and cellular processes . If chronic periodontal disease by CT scan is observed in the early stages periodontal space widening minimum osteolytic response around root apex . In later stages cortical bone is well looked both axial section and the reconstructed images are identified cortical plate erosions easy .

CT scan is highlighted also by the possible existence of multiple root canals , a phenomenon that can lead to treatment failure because radiographs can display a 3D image of anatomically . Thus, if these channels have parallel paths in buco -lingual plane , radiographic image shows overlapping elements , but the CT scan all these aspects are anatomical variants can be easily detected.

V.4. The importance of radiological examination periapical pathology

Radiography is the method of laboratory diagnosis of periapical diseases certainty and panoramic radiography has become the most popular method of investigation due to high quality images , reduced radiation dose and ease of carrying (45,78,133 , 142). As extraoral panoramic radiography method is more comfortable for the patient and allows vertical alignment of structures much better than intraoral periapical radiogrfiilor . However the method can underestimate periapical lesions , in regard to which specific studies comparing the sensitivity and specificity of two types of X-rays, study stating lesion detection rate of 60-83 % on panoramic radiography for most types of teeth , and for mandibular incisors and canines sensitivity of the method decreases to 29% (3,12,19,90,110) .

In the present study we used both retro panoramic radiographs and radiographs and careful analysis of the images was a greater sensitivity regarding intraoral radiographs , both in diagnosis and in monitoring their injuries .

In chronic clinical forms radiological examination is significant because the long-term development of the pathological process consists morphologically defined lesions . Hence the possibility of a systematic various diagnostic anatomo-clinics whose certainty is based on radiologic criteria .

Not least has the upper hand radiographs in establishing a correct diagnosis through low cost and ease of the method.

Conclusions

1. The radiographs are consistent with subjective and objective clinical appearance of patients and especially are consistent with the clinical stage of development of lesions in time.

2 . Radiological image certainly differentiate between reactions periapical granulomas and cystic formations .

3 . Radiography is particularly important in assessing the effectiveness and accuracy by performing X-ray treatment of stroke in certain well-established therapy.

4 . In cases pursued evolving treatment was conservative and surgical type and evolution of cases was evaluated by successive radiographic examination revealed healing phenomena specific to a period of three years.

5. CT scan examinations have established with certainty the origin of odontogenic cystic formations mandibular and maxillary bone .

6 . Radiography is and remains the method paraclinical diagnostic certainty by ease of periapical disease and low cost of the method , but also complex and detailed information you provide radiographic film .

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