UNIVERSITY OF MEDICINE AND PHARMACY IASI, ROMÂNIA
FACULTATY OF DENTAL MEDICINE

DOCTORAL THESIS

CONSIDERATIONS ON SURGICAL TREATMENT VERSUS CONSERVATIVE TREATMENT IN PERIAPICALY PROCESSES OF MOLARS

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6. RESEARCH METHODOLOGY

6.1. Motivation for choosing the theme
In endodontic pathology, chronic apical periodontitis is a significant frequency and therefore approach the research topic proves its usefulness. Given the high percentage of chronic periapical pathology, we believe that the importance of our research results from the fact that the establishment of diagnostic criteria and therapeutic alternatives, we can get keeping the tooth on the arch for a long time. The loss odonto-periodontal units are changes in the stomatognathic system components, regardless of the cause or magnitude of edentulous. They produce such morphological and functional changes whose magnitude is difficult to predict, given the various factors that may arise in this complex process. Given that apical periodontitis, pulp gangrene complications, is one of the thorniest problems of endodontic therapy, we found it necessary to update certain aspects of diagnosis and adequate therapy instituted for the best chance of maintaining the arch of the molars - M1, M2, M3, pulp and periapical affected. Fair treatment in chronic apical periodontitis, individualized for each clinical case, conservative or surgical restoration allows morpho-functional integrity of the stomatognathic system. Progress in modern dentistry aimed at prevention and curative methods have failed to eliminate the periapical pathology, especially for molars. Therefore we believe that choosing the theme of study in the doctoral thesis is a real theoretical and practical importance.

6.2. Purpose and objectives
MAIN PURPOSE of our research was to establish clinical-statistical means, a therapeutic conduct computerized conservative or radical type, clinical and justified the dentist and dental surgeon to cellular periapical lesions. The main objectives in my PhD thesis are:
☐ Establishing the incidence, type periapical pathology and therapeutic variant chosen for the patients examined in Oral Surgery and Maxillofacial Surgery (Outpatient)
☐ Highlighting the incidence, type and variant periapical pathology therapeutic choice for patients examined in the dental office CMI Dr. Anca Ignat, Suceava
☐ Comparative analysis of data, in conjunction with the parameters sex, age, place of origin
☐ Highlighting the factors involved in determining the therapeutic decision in patients with chronic apical periodontitis
☐ Presentation of conservative treatment phases of chronic apical periodontitis and to demonstrate the effectiveness of conservative endodontic therapy
☐ Comparative analysis of clinical and radiological diagnosis versus initial surgery in patients with chronic apical periodontitis we observed failure of conservative treatment
☐ Making computer software "EndoDent for recording parameters of interest, clinical and radiological images stored at different points in time, generation of statistical reports and the platform" EndoNet, collaborative framework for physicians to address certain clinical cases. As part of our doctoral thesis I watched the final goal of the research objective analysis of the factors involved in choosing methods of treatment for periapical lesions to result in a certified clinical and guide, very helpful both in practice dentist and the dento-alveolar surgeon.
In conclusion, we believe that there are sufficient reasons for choosing this subject for his doctoral thesis in order to shape the direction of diagnosis and treatment for chronic apical periodontitis custom molars

6.3. Working methodology
In order to achieve goals in my doctoral thesis, we conducted a study on a representative sample consisting of 9721 human patients treated in the Department of Oral and Maxillo-Facial Surgery (Outpatient), the University Clinic of the Faculty of Dental Science and of 884 patients treated in the office staff for a period of three years, 01/01/2009 to 12/31/2010. Human approach in the study sample, we conducted a two-pronged:

• Clinical-Statistical
• SEI

Clinically speaking, we performed a selection of cases compared with the reach of patients randomized during the study.

☐ statistical survey was made possible by collaboration with the Laboratory of Computer Science and Theoretical Chemistry, Faculty of Chemistry, University "Alexandru Ioan Cuza", Iasi, which allowed us a very accurate interpretation of results from clinical trial and also a pertinent analysis of the correlations between the type periapical pathology and therapeutic options.

☐ An important element of our research is the realization of a computer software specialist called EndoDent "and a platform" EndoNet "used for:

• Management of cases studied in a database application specifically designed to help us "EndoDent"
• Create a collaborative framework for doctors by P2P protocols by networking clients (platform "EndoNet")
• Development of statistics published by users on the platform where "EndoNet" results available within the application client EndoDent "
• Cost-benefit analysis of the implementation platform "EndoNet" in dental offices.

The novelty of our study is the updating issue for molar periapical pathology, particularly frequent in practice dentist and dental surgeon cellular, outlining the criteria for establishing that conservative and surgical therapeutic behavior and implementation platform "EndoNet" in the dentist's work.

6.4.Database
Demonstration of a hypothesis requires the application of statistical calculations and the use of specialized computer programs for the correct interpretation of the data and conclusions to be drawn by specific methods. Medical Statistics aims to research their health phenomena by a method partly own, partly common with other sciences, but applied in a specific logic needs to know their own (TUDOREL, STANCU 1995). Being a science methodological study of collective phenomena and processes of nature and society on the basis of their scientific observation, collection and processing of detailed statistical information to formulate and explain laws, regularities and regularities that govern them (SPIRCU, Gipsy 1997).

A key element is the determination accuracy of sample size, so the number of cases to be studied. It is made up of representative if a sufficient number of cases so that results can be conclusive for the whole community of origin. The choice of an optimum number of cases is important in terms of eliminating or reducing errors (Sackett 1991, M. CART, CART V 2005).
In our research we have pursued several statistical purposes:
1. Fixing object, scope and assumptions of the study, based on more complete documentation
2. Choosing research methods and processing of information obtained
3. Conducting research and record the information obtained in research and information storage on different media
4. Control of statistical data and processing results in research
5. Coding of information and disclosure for analysis by statistical tables, the system of statistical indicators, presentation graphics
6. Analysis and synthesis and evaluation study, using mathematical analysis.

In this research we used the statistical processing of the application "EndoDent" specially created by us in this goal.
Also, we applied specific tests for various types of data to correlate and compare the various parameters:
- specific correlation tests for quantitative variables and for qualitative variables - Pearson Chi square, Fisher, Spearman, Kendall or Gamma
- tests comparing mean values of a parameter, corresponding to several groups of data - ANOVA test, Scheff, Spjotvol / Stoline.
We analyzed the main parameters of interest and established conclusions based on their values. Reference parameter calculated in the test (p) is the level of significance of the test, which I compared with p = 0.05 corresponding to a confidence of 95%. P value is significant if calculat <0.05.

6.5. Studied groups
MAIN PURPOSE of our research was to establish clinical-statistical means, information, therapeutic conduct or radical conservative type, clinical and justified the dentist and dental surgeon to cellular periapical lesions of molars.
The scope of our research study aimed at analyzing chronic apical periodontitis M1, M2, M3, in conjunction with the following items: diagnosis - conservative or surgical treatment plan - causes of failures.
In order to achieve goals in my doctoral thesis, we conducted a study on a representative sample consisting of 9721 human patients treated in the Department of Oral and Maxillo-Facial Surgery (Outpatient), the University Clinic of the Faculty of Dental Science and of 884 patients treated in the office staff for a period of three years, 01/01/2009 to 12/31/2010.
From the clinical point of view I made a selection of cases compared with the reach of patients randomized during the study.
We observed very high frequency of periapical pathology. As of the 9721 patients treated in Department of Oral Surgery and Maxillofacial Surgery (Outpatient), 3352 had periapical pathology (45%) patients in the acute form 1890 and 4479 patients in the chronic form.
Of the 884 patients treated in the office staff, 218 patients (20%) had periapical pathology, 233 patients (28%) in the acute form and 433 patients (72%) in the chronic form.

The first stage of research, namely the statistical study we organized the following items:
Of the 9721 patients who were randomly selected in relation to their addressing of periapical pathology we diagnosed an 45% (Fig. 42).

Of the patients with periapical pathology, 66% were presented in acute phase and 34% were diagnosed with chronic apical periodontitis (Fig. 43).

Patients who presented in acute phase in the Ambulatory Surgery Clinic of Oral and Maxillofacial Surgery Iasi were diagnosed (Fig. 44):
- acute suppurative apical periodontitis stage I, II ........... 78.6%
- abscesses and necrotizing periosseal ........................................ 14.4%
- periapical cysts suppurated ........................................ 2%
- lodges of superficial or deep abscesses and necrotizing ........ 5%

Patients who presented in chronic phase in the Ambulatory Surgery Clinic of Oral and Maxillofacial Surgery Iasi were diagnosed (Fig. 45):
- chronic periapical osteitis ........................................ 54.4%
- periapical granuloma ............................................... 38.4%
- Cyst peripical ................................................ 9.2%

Analyzing group 884 patients treated in the office personally have found the presence of periapical pathology in 177 patients (20%) - fig.46.

Of the 177 patients treated with periapical disease in the office staff, 50 patients (28%) were presented as acute and 127 patients (72%) in the chronic form (fig.47).

The 50 patients (28%) who presented in acute phase in private practice have been diagnosed with (fig.48):
- acute suppurative apical periodontitis stage I, II ....... 63.7%
- abscesses and necrotizing periosseal .......................... 33.3%
- lodges of superficial abscesses and necrotizing .............. 3%

The 127 patients (72%) who presented in chronic phase in the dental office staff have been diagnosed with (fig.49):
- chronic periapical osteitis ....................................... 55.3%
- periapical granuloma .......................................... 31.7%
- Cyst peripical .................................................. 13%

Clinico-statistical studies we have conducted following both conservative therapy-related variables and those related to surgery.

7. PERSONAL RESEARCH ON THE IMPLEMENTATION OF THE PLATFORM "ENDONET" TO FACILITATE
DATA MANAGEMENT AND EXCHANGE OF INFORMATION BETWEEN DENTISTRY AND SURGERY PRACTITIONERS

With current company-specific technological progress, computers and easy access to the Internet have revolutionized the possibilities for communication, information. In medicine in general and dentistry in particular we use various computer applications and electronic services to update their knowledge to communicate more simply, in order to exchange experience and sometimes significant distances despite the inevitable lack of time. The resulting benefits are significant and therefore we thought it useful to focus our research on this topic.

7.1. Considerations on the role of their software "EndoDent and its implementation platform" EndoNet "in the dental office

This chapter of my PhD thesis aims at promoting the main goal of a software application "EndoDent" and a computing platform "EndoNet" to streamline the use of computers and especially the Internet. So I intend to familiarize physicians stimulate the possibilities and benefits of using this program.

The computer has become an important component of medical activity, allowing the Information Society of XXI century global communication and rapid access to information. This access to information via the Internet and the ability to analyze large volumes of computer data, are significant advantages in their generalization by providing a larger number of doctors and medical institutions. Therefore, there is growing interest in electronic applications via the Internet.

7.2. Cost-benefit analysis for implementation platform "EndoNet" and "application EndoDent"

We believe that implementation platform "EndoNet" in the dentist's work can find multiple uses, having applicability in both research addressed, that is in endodontics - chirurgie dento-alveolar, as in other areas of dentistry.

Cost Analysis
1. Domestic investment required:
   • Hardware and Software
   • electronic data transfer
   • Human Resources
2. The costs of creating the platform "EndoNet"
   • Hardware and software
   • Design and Programming
   • Database integration - application software EndoDent "
3. Administration and Maintenance
   • Technical Support
   • Updates
   • Security
   • Information and promotion
   • Supporting access to Internet.

Benefit analysis
Many of the benefits of computing platforms like this are difficult to predict, but it is felt necessary that some of them:
1. Benefits for doctors and institutions that medical / dental:
- Reducing the cost of providing the information through the exchange of files
- it easier collaboration between dentist and dental surgeon alveolar
- access to specially created forum for debates on medical topics.

2. Benefits for patients
- ability to benefit from therapeutic fair solution, in agreement with clinical and laboratory data resulting from the collaboration between several specialists
- Facilitate consultation appointments for the dental surgeon and that alveolar surgery.

To determine the impact of our project to establish detailed objectives, milestones and time-specific criteria. Adjustment and continuous improvement, even at the suggestion of users, leading to efficient platform "EndoNet.

We believe that an important role is to monitor the use and stimulating platform widening group of users.

We encourage the use of Internet and computer as this can cause the development of new services to expand the scope of work indirectly.

8. A PERSONAL RESEARCH ON THE PATHOGENESIS PERIAPICAL M3 vs. 1.2 MOLAR AND CORRELATIONS WITH THERAPEUTIC INDICATIONS

Structure of current oral pathology, dental disease morbidity in high and new forms require reconsideration of approach, new strategies in the field of dental care and oral health promotion programs.

For optimal development of society as a whole, both in highly developed countries and in those developing countries is paramount objectives underlying the promotion of healthy human medicine.

In recent decades, worldwide effervescence in dentistry, synthesized in shares and the World Health Organization documents and publications, shows that the development of new concepts in oro-dental health care, focusing on prevention and dispensarizării idea, has become an absolute necessity for all mankind.

The major objective of prospecting impose conditions oro-dental health of the population in relation to living and working conditions, while the detection of pathogens and risk factors in developing the most suitable health programs.

Dentistry contemporary as complex searches and evaluations, has redefined its objectives and priorities, choosing to protect and promote oral health at the population level by avoiding risk and improve quality of life.

In this context, conservative attitude towards the molars and in particular of wisdom teeth is taken increasingly into question, especially in recent years. Modern orientation but must be adapted as far as possible without exaggeration, but motivated by well-defined indications.

Paradoxically, the development of new therapeutic techniques conservative, reduce and even eliminate the loss of tooth decay and periodontal disease led to a significant decrease in utility wisdom tooth.

In this respect, there are practical dilemma for dental practitioners: "There are risks of owning a molar of a wisdom tooth above the benefits resulting from its inclusion in the teeth"?
The answer to this question is provided by a mosaic of situations and conditions:

- Molars associated morbidity (especially those with anatomical reports risky wisdom tooth) that continue to affect patients, the costs of resolving these problems dento-periodontal pathology is quite high
- Educational reasons, economic, psychological and emotional accessibility, the patient avoids long to address the dentist, which in the case of molars and wisdom tooth is fatal by the delay detection and prevention "pathological attack"

Opposite the role and usefulness exists between dental specialties, controversies which unfortunately do not benefit the image of this tooth
- The existence of such controversy, but each of them scientifically, leads the trend sites, attitudes and concepts that are sometimes mistaken as a purposeful killing and unfortunately irreversible premature molars

The main purpose of this part of our research was to assess attitudes across the dentist wisdom tooth extraction on the incidence of third molars. I also tried to evaluate the role that the dentist gives him the wisdom tooth and molar compared with a 2 molar.

Finally we found it extremely important to establish the role it plays in preserving or sacrifice dentist wisdom tooth and also in shaping attitudes towards this patient's tooth.

Our research objectives proposed in this chapter have pursued the following aspects:
- Wisdom tooth extraction study dictated the incidence of dental pathology, third molar periodontal pathology compared with one two molar
- Caries-susceptibility prevalence assessment indices across from wisdom tooth extraction in the sense to avoid it
- Evaluation and determining the border between the medical and dental practitioner dental surgeon or oral-maxillo-facial opposite therapeutic approach to be adopted before the wisdom tooth pathology and to the indication of extraction.

Collecting and analyzing data by testing specific information provided by WHO Investigation File, helped us to draw some conclusions relevant, scientifically sound, opposite the most common causes of dental practice for a molar tooth is sacrificed.

With the penetration through mucous environment. The incidence of caries in its level is quite high because of the position, the bag pericoronare, leading all the functionality without retaining clamps and plate adhesion.
- Other predisposing factors that contribute to an increased caries-susceptibility wisdom tooth are:
  - A period of third molar eruption to the occlusal plane reaches is highly variable and long natural autocurățiri ensure that the benefits are canceled
  - A complicated coronary morphology (convex accented grooves and additional cracks) and fissure pattern, is variable and often occlusal plaque retention
  - Occlusal fissures as a "hourglass" or "bottle neck" whose foundation is represented only by dentin, promote faster progress in the extension of the wisdom tooth decay
  - One due to space restrictions, wisdom teeth usually position abnormalities (mesio-bucco or infrapoziție) what is the usual means of oral hygiene to be ineffective even the most conscientious patients

Because of the many causes of dental caries and complications favoring her arguments that dental caries is the first indication of the wisdom tooth extraction:
- Attack on third molar caries is caused by the absence of measures to maintain oral hygiene
Most patients do not have the correct technique of brushing and low living still not allowed to buy expensive properties pasta combat proven in carious attack.

Type diet, rich in sugar and carbohydrate diet, has a strong influence in inducing carious pathology, which in the wisdom tooth is the most optimal conditions for action. Changing the diet may be a measure to prevent dental caries.

Wisdom teeth have the highest percentage of absence (extraction) compared to molars caries one two.

Wisdom teeth have the highest percentage of absence through dental-periodontal diseases.

I also could identify and certifying the influence of third molars in inducing the pathology of several major external factors related to the patient and dental practitioner doctor.

Domination pathology wisdom tooth wisdom tooth extraction involved in the pathology that arises from its superficial treatment with asymptomatic during its existence shows an understatement, compounded by a neglect of the proper approach to the issue fully erupted wisdom tooth.

Believe peciali
ti general dentistry, unlike oro-dental surgeons should play pivotal role in decisions to retain or killing of a wisdom tooth. Dentists are by definition "primary contact" with patients and provide them with more means of intervention to change attitudes first patient opposite the importance of wisdom tooth.

As we demonstrated in our study, although last wisdom tooth appears on the arch is one of the most frequent extracted teeth. If the decision to slaughter the wisdom tooth is mostly the responsibility of the dentist, certified clinical diagnostic and radiological examinations amplified performance and preventing postoperative complications, sometimes dramatic strict liability surgeons are dental and oro-maxillo-facial.

Indication the shooting of a molar tooth is a complex act that although oral and maxillofacial surgeon's responsibility facial attitude stems from the patient and his doctor dentist opposite the usefulness of the wisdom tooth in the dental equation.

9. PERSONAL RESEARCH ON CONSERVATIVE THERAPEUTIC INDICATION FOR PATIENTS WITH A MOLAR CHRONIC APICAL PERIODONTITIS

Treatment of chronic apical periodontitis be conservative or surgical, aims at maintaining the arch of teeth, biological conservative approach, specific modern dentistry (DE Bont 2003).

Based on the principles of Schilder cited by Berman (2003) as follows: debridement, shaping and filling canalar canals, endodontic treatment techniques and materials were varied as research on the results of the short, medium and long term.

Main purpose of this segment of our research is the establishment of conservative treatment algorithm of chronic apical periodontitis.

The objectives in this chapter were:

- Presentation of conservative treatment phases of chronic apical periodontitis
- Demonstration eficacitatii conservative endodontic therapy
- Some conclusions of practical, applicable in the work of dentist and dental surgeon for diagnosis and cellular therapeutic approach for chronic apical periodontitis.

In order to achieve goals in my doctoral thesis, we conducted a study on a representative sample consisting of 9721 human patients treated in the Department of Oral and Maxillo-
Facial Surgery (Outpatient), the University Clinic of the Faculty of Dental Science and of 884 patients treated in the office staff for a period of three years, 01/01/2009 to 12/31/2010. From the clinical point of view I made a selection of cases compared with the reach of patients randomized during the study. We observed very high frequency of periapical pathology. As of the 9721 patients treated in Department of Oral Surgery and Maxillofacial Surgery (Outpatient), 3352 had periapical pathology (45%) patients in the acute form 1890 and 4479 patients in the chronic form. Clinico-statistical studies we have conducted following conservative therapy-related variables.

Depending on the type of periapical lesion, the reactivity of the patient we applied an appropriate therapy. So after draining the oral cavity by scaling, professional grooming, health education, mining debris and filling interim stranded root caries activity we initiated endodontic therapy. After the creation of access, we performed lavage with antiseptic solutions (2.5% sodium hypochlorite) and I removed all debris and necrotic pulp dentin or altered for 43 patients we dezotoburat root canals in endodontic treatments for 15 older patients.

Mechanical treatment we performed using endodontic micromotor in combination with manual method. I created and performed access lavage with 2.5% sodium hypochlorite to remove the infected debris. With those of Miller and Kerr have catheterised channels of different sizes. We used retro-dental radiographs and alveolar-apex locator to determine working length IPEX. Determination of canal length requires notions of dental morphology, a well developed sense of touch practitioner, and appropriate use of radiological examination in effect, commonly associated with measurements made using the apex-locator (CERTOSIMO, Milos 1999, Gutmann, LEONARD 1995, Hendrick 1994 SHANMUGARAJ, NIVEDHA 2007 VACHEY, LEMAGNEN, GRISLAIN 2003). Because electronic apex-locators are useful in increasing the accuracy of determining the apical foramen, we have combined the X-ray method in determining the length of lucru.KUTTLER (1955) and Green (1956) showed that the apex coincides with the anatomical foramen up to 50% of cases. This limits the usefulness of X-rays, even if they are performed correctly and supports the association apex-locator (PRATTEN, McDonald 1996). Apex-electronic locators are used in practice for over 30 years to determine the root apex position in the preparation and blocking proper channels. The power of the root canal is described briefly as an impedance consisting of a resistor in parallel with a capacitor (WEIGER, JOHN, GEIGLE 1999). It occurs between two electrodes impedance measurement: on the rim electrode (hook) and on endodontic needle (pin connected to endodontic needle). When a needle is inserted into the root canal endodontic, electrical resistance decreases and capacity increases as the needle approaches the apex (KIM, Lee 2004).

I enlarged the root canal dentin by healthy throughout the channel length by apicală.O important step in the conservative treatment of chronic apical periodontitis is a manual or mechanical removal of the altered dentin walls through which the canal debridement and removal of the dentin completely altered the initial portion of the channel and then crown the apex (KIM 2004). I associated endodontic micromotor technology and use textbooks because it incorporates leading technology needed to fulfill the requirements of modern endodontic treatment using nickel-titanium endodontic needles (Ni- Ti). Nickel-titanium alloy at high temperature is flexible so that the friction arising between the needle and the canal, increasing elasticity and flexibility of the needle, reducing its chances of breakage during operations. Access channel with a curved or difficult trail is much easier. I scraped the walls of the canal linking the alternative lavage with antiseptic solutions: 2.5% sodium
hypochlorite, chlorhexidine 0.2%, 3% hydrogen peroxide to avoid pushing sawdust dentin periapical area. Sodium hypochlorite 2.5% microbial kill germs and organic debris. The alkaline and antibacterial effect in higher concentrations (5%) is irritating. Apical area remained untouched until I finished scraping the walls of the canal dentin, and between those of different sizes use I made of the irrigation channels with antiseptic solution to remove sawdust from infected dentin. I sterilized the channels through medication.


If secretion still remained for seven patients have temporary root filling with paste applied Walkhoff iodoform, with a slight overshoot of the apex of an abscess to avoid medication. For those patients with initial abundant secretion, we performed endodontic drainage followed by drug treatment. After the first dressing with antiseptic, four patients had limited or no discharge, and 13 had persistent discharge and the second I applied antiseptic dressing. For secretion of 5 patients was reduced considerably, and I applied for 8 patients Walkhoff iodoform paste.

We then applied temporary filling with calcium hydroxide for 10-14 days, because it has an optimal antiseptic and promotes healing of periapical osteolytic lesions (FOREMAN, BARNES 1990). Afterwards I changed the dressing endocanalar every 30 days for 6 months and have evaluated the evolution of periapical lesions radiographically.

We found a favorable outcome in 83 cases. For 16 patients the lesion characteristics retained, while 12 patients had recurrent acute exacerbation of periapical process. If evolution was favorable periapical lesion, we blocked sealed permanently with Forfenan canal and gutta-percha cones and performed X-ray control.

Then I restored coronary teeth treated by fillings physiognomy, inlays or apparatus gnatoprotetice conjunct. We monitored the patient clinically and radiologically during treatment and after its completion, to observe the evolution of periapical lesion. If conservative treatment failure, we recommended surgical treatment: endodontic treatment or extraction methods dental auxiliaries. These patients were directed to the Ambulatory Surgery Clinic OMF Iasi, where I performed surgery.

10. PERSONAL RESEARCH ON THERAPEUTIC INDICATION FOR SURGICAL PATIENTS WITH A MOLAR CHRONIC APICAL PERIODONTITIS
Our study will continue to make a comparison between the results of conservative therapy and surgical pathology induced by chronic apical periodontitis and to determine whether there is a practical limit to the period of observation to determine if the failure or success as therapeutic.

All they believe may be an indication of the theoretical model, implementation and evaluation of the success of surgery salutary for keeping the arch of teeth with periapical pathology such as endodontic

Following the concerns of both current practice and during training ground for PhD, I set goals:

- Assembly documentary material to integrate disparate data from literature
- Periapical pathology study of endodontic origin, determining the role and place of surgery in the comprehensive program of rehabilitation, treatment and functional and structural recovery of the teeth with gangrene.

To achieve the goal of our research, have been nominated the following objectives:

- Develop a fully computerized, general treatment and recovery include:
  - Diagnosis correlated with the evolutionary stage
  - General and specific objectives of each clinical case
  - Conservative therapy goals and motivation
  - Surgical therapy goals and motivation
  - Study of casuistry as a basis for statistical data processing
  - Determining pathogenic factors of basic risk triggering periapical pathology
  - Specify diagnosis and differential diagnosis of certainty
  - Clear demonstration of therapeutic effect of surgical methods ajutatere endodontics
  - Significant shortening of the period of treatment and decrease the cost of treatment.

The presence of severe osteitis process, affecting cortical bone, requires attention to the removal of granulation tissue formation and other pathological vestibular tab short erosion could mean the presence in the state of the sinus wall for example. On the other hand, the presence of a bony labyrinth panels trepanării integrity question, which must be made to the protocol described above, in order not to cause bone necrosis and to enable the development of pathogenic flora.

Also, the state of cortical bone must take into account the measures it will take surgery. A process of chronic, low-activity, can be eradicated mechanically, an active process that destroyed the cortical bone, may require antibiotic therapy to prevent the establishment of a septic complications.

1. The first strand of our research aimed to analyze the opposite attitude indication for conservative therapy in terms of a specialist in general dentistry endodontist versus specialist versus oral surgeon.

The need for such surgery apicoectomy is probably a consequence of failure of conservative treatment, a technical mistakes, or the convenience of the practitioner, who prefers to resort to surgery to tempt even before conservative treatment.

A set of 75 retro-intraoral dental radiographs of alveolar periapical patients referred for surgery by doctors in Iasi county's dental network, we collected over a period of three months.
In general, radiographs have been recommended by your network. Radiographs were assessed independently by an oro-maxillo-facial surgeon, an endodontist and a general practice dentist (specialist) aiming at:

- probable cause inflammation and periapical radio-transparent
- tooth type for which the intervention
- existence and size of radio-transparent apical
- The possibility of access coronary
- ability to recover root fillings
- The possibility of nonsurgical endodontic treatment

In our study, based on radiographic examination, were considered as real indications for periapical surgery 40-65% of cases, others may be resolved without surgery. In general endodontic considered more acceptable to many teeth as a restatement than the surgeon general or FMO. This suggests that specialization and experience greatly influence the therapeutic decision.

First observations in our study were made solely on the basis of analyzing of X-rays while the signs and symptoms and clinical signs may have influenced the therapeutic decision. However it is unlikely that many teeth were deemed suitable for reprocessing to be referred for endodontic surgery because of pain or swelling only. Probably in many cases specialist therapist who recommended surgery endodontic retreatment may be considered a difficult case, laborious, costly and extremely time consuming.

It is, however, the ethically questionable whether this reasoning is valid when the recommended surgical procedure.

Since the main cause of inflammation is likely periapical endodontic surgery may be considered as first choice, because debridează canal, as does endodontic therapy. Never periapical surgery should be performed before conventional ductal performed nonsurgical treatment.

2. What the second direction of our research aimed at demonstrating eficacitatăţii conservative endodontic therapy.

Pathology of patients included the full range of periapical disease that took as its starting point a condition in which the endodontic microbial flora is very strongly represented, namely pulp gangrene.

Thus the study group that was comprised of:

- 72 cases that had periapical granulomas and 47 including 25 epithelial connective
- 49 cases of chronic periapical abscesses showed transparent image neconturat type radio osteitis
- 15 cases had small periapical cysts, according to X-ray exam performed before surgery.

3. What is the third strand of our research aimed correlation of clinical and radiographic results after endodontic surgery, in a way that can be used radiographic criteria for evaluating periapical healing.

The material used in the current study was composed of 120 cases which have undergone periapical surgery.

4. What did the sixth direction of our study concerned 114 patients who responded to the invitation to come to check after periapical surgery. I was selected representative cases, whose radiographs were digitized using a scanner specifically for radiological films. Based on these radiographs were made relative measurements of bone density.
The purpose of this study was to determine, by means of computerized bone density in the area of resection and to assess, in conjunction with clinical data, the success of healing. 228 were evaluated radiographically cliches, from 114 patients. Calculating machine used was compatible PC equipped with an AMD Athlon 2200 MHz, 256 MB RAM, 40GB HDD. Was operating environment of Windows XP Professional, Service Pack 2. For comparative analysis of the degree of impairment loss of bone integrity, we used radiographic exam using the computer program ACD See ver 6.0. With its help you could measure the variation of brightness in different areas of dental radiographs alveolo retro apical resection cases. This variable corresponds BONE DENSITY there between a directly proportional relationship, as compared to being able to track the degree of bone destruction or bone marrow and healthy recovery. Measurements were made in the resected apex, including both the apex and the surrounding bone, were then compared with values measured in areas rated as healthy to the naked eye.

5. As a useful way to evaluate a surgical method is to study the cause of the failure, for this segment of our research was to identify possible causes of failure after endodontic surgery. Clinical and radiographic material for the study consisted of 89 cases considered failure (28 with an uncertain observation period of 4 years or more and 41 unsatisfactory), the initial cases studied.

CONCLUSIONS

1. Treatment of chronic apical periodontitis be conservative or surgical, aims at maintaining the arch of teeth, biological conservative approach, the dominant feature of modern dentistry.
2. Given the high percentage of chronic periapical pathology, it seems highly topical theme, the importance of our research resulting from the fact that the establishment of diagnostic criteria and therapeutic alternatives, we can get keeping the tooth on the arch for a long time.
3. The main goal of our research was to determine by clinical and statistical, computer, therapeutic conduct or radical conservative type of dentist and dental surgeon to cellular custom molar periapical lesions.
4. Apical periodontitis endodontic infection is a consequence of which is formed on the necrotic pulp tissue either prior to or concurrently with microbial invasion. It acts as a host defense response to micro-organisms in root canaliclar system.
5. Necrotic pulp is a selective habitat for microorganisms such as cocci, bacilli, spirochetes, filamentous bacteria. Any microorganism that infects the root canal has the potential to initiate periapical inflammation and virulence and pathogenicity of individual species vary considerably.
6. The equation of disease diagnostics pulp / periapical, extra-and intraoral examination is a first step defining a patient approach.
7. Diagnostic tests must equip standardized methods of stimulation in terms of duration, degree and mode of application.
8. Radiographic examination is used in endodontics main additional examination to determine the correct diagnosis, treatment indications for treatment planning and follow-up periapical healing.
9. Choice of chronic apical periodontitis therapy throughout the entire body is closely correlated with its reactivity and dependent on it, taking into account local factors and general order.

10. In choosing the method of treatment for chronic apical periodontitis and other factors involved other than the patient's general condition and clinical and laboratory data obtained for tooth: sex, age, place of origin, the examining physician specialty etc..

11. With specific statistical tests (ANOVA, Fischer, Chi-square) applied to data collected from the human sample studied we wanted to establish a correlation between the examining physician specialty and proposed therapeutic option for chronic apical periodontitis. Correlation test shows that treatment option is conservative or surgical specialty related to the examining doctor, specialist dento-alveolar surgery and general dentistry doctor.

12. We have highlighted the fact that practitioners dental alveolar surgery frequently indicate radical treatment option for physicians to general dentistry. So, specialty medical examiner is an important factor in choosing therapeutic conduct, by means of the level of significance $p$ value = 0.0031 chi-square is 7.4361, higher than 3.84 and therefore the distribution of cases is significant conclusion.

13. Applying correlation tests have demonstrated the relationship between coronary incorrect or no recovery restore coronary and conservative endodontic treatment failure.

14. Applying the tests, we correlated the homogeneity of root fillings and that compliance with the working length with conservative endodontic treatment failure.

15. In case of failure of conservative treatment, we recommended surgical treatment: endodontic treatment methods helpful - apical resection or tooth extraction.

16. Severity of the lesion may influence therapeutic decision and therefore the correct diagnosis of periapical pathology is very important. For example, if periapical cysts, conservative therapy is most often limited results indicate surgical

17. An objective of the thesis is to promote a software application "EndoDent" and a computing platform "EndoNet" to streamline the use of computers and especially the Internet. So I intend to familiarize physicians stimulate the possibilities and benefits of using this program.

18. The computer allows more efficient activity dentist by preparing individual patient records, storage of clinical and radiological images, which will be available for a subsequent comparative analysis example, the schedule, the development of statistical reports, emails etc..

19. For proper structuring of the data obtained by our research, we considered essential to their applications to enable accurate data storage and management. We have developed a computer program called "EndoDent" stand-alone application (it can run independently of the platform "EndoNet) which enables the management of information on cases dealt with by the user.

20. Computer program developed by us is easy to use, allows recording and storage parameters of interest clinical and radiologic images at different points in time, can generate statistical reports and connectivity platform "EndoNet, ensure exchange of data between concurrent users of the platform.

21. If the platform provides connectivity "EndoNet" client application "EndoDent allows the simultaneous exchange of data between users of the platform. Thus, a dentist may present a case which it considers significant or may consult with colleagues, produce statistics on the parameters you want.
22. Platform "EndoNet" is a collaborative framework for doctors through P2P protocols and consists of at least one server that manages access to the platform and allows customers interconnection. Access to the platform shall be based on a user account created on demand.

23. After connections are made directly via the client EndoDent, the user can select from a list of registered cases and can save the database when you wish to make public, through the platform "EndoNet. In disseminating information through the platform is respected privacy of patients.

24. We believe that implementation platform "EndoNet" in the dentist's work can find multiple uses, having applicability in both research addressed, that is in endodontics - chirurugie dento-alveolar, as in other areas of dentistry.

25. To determine the impact of our project to establish detailed objectives, milestones and time-specific criteria. Adjustment and continuous improvement, even at the suggestion of users, leading to efficient platform "EndoNet.

26. We believe that an important role is to monitor the use and stimulating platform widening group of users. We encourage the use of Internet and computer as this can cause the development of new services to expand the scope of work indirectly.

27. Our theme PhD provides an update on the treatment of chronic apical periodontitis, thus constituting a source of information particularly useful in the practice of dentistry and dental alveolar surgery.

28. Whenever pathology periapical endodontic treatment remain under a properly considered by endodontic surgery - in this case apical resection, can remove the apical and periapical disease outbreak, such conditions being created to help with pathological periapical tissue restructuring complete. Apical resection is to avoid the causal tooth extraction, while maintaining the most favorable situation for future dentures.

29. Apical resection is surgery that removes the root portion apexiană with pathological elements around him. It aims to remove the apical and periapical disease outbreak, to enable accurate root canal fillings.

30. Viewed from the standpoint of preserving the teeth, apical resection is a valuable method to avoid early edentulous, it is actually considered a surgical method that helps conservative endodontic therapy. The operation is saving when other conservative methods of treatment have not produced periapical lesions heal.

31. Need for surgery is probably the consequence of a failure of conservative treatment, a technical mistakes, or the convenience of the practitioner, who prefers to resort to surgery to tempt even before conservative treatment.

32. Of all patients, which were indications for apical resection, the proportion of women is much higher than that of men, which is justifiable on the one hand by an inherent fear that the labor operation itself, fear higher in men (as it may seem paradoxically), and secondly the concern of women increased oro-dental health.

33. An increasing number of cases indicated for apical resection is around the age of 20 and 40 years, on the other hand, it is noted that the Third age was an exception with regard to indications apicoectomy and young ages not receive this intervention.

34. In terms of case law related to apicoectomy of Ambulatory Surgery Clinic Oral and Maxillofacial Surgery, the diagnoses were coming by far most of periapical osteitis generic term used for periapical radiotransparentele, especially by general practice physicians, followed by cysts and granulomas.

35. The interventions of Oral Surgery and Maxillofacial Surgery, the diagnosis that represents the overwhelming majority of apical resection is indicated in chronic periapical osteitis. This diagnosis is followed at a distance of granulomas and cysts, as dental disease. Other diagnoses are very few, exceptions being practical.
36. General practice dentist who meets an endodontic problem that can not be according to our surgical treatment techniques will usually send the patient to the surgeon oral / maxillo-facial surgery periapicală. Cauzele are the most common chronic periapical inflammation, visible radiograph as a radiolucent, in combination with a root canal, with access restricted coronal.

37. From the perspective endodontic periapical surgery is indicated only when trying to achieve a good quality treatment, but could not be completed, or if there was not healing after treatment.

38. A set of 75 radiographs of patients referred for surgery by doctors periapical dental network of Suceava county, were collected over a period of three months. In general, radiographs have been recommended by your network. Radiographs were assessed independently by an OMF surgeon, an endodontist and a general practice dentist (specialist).

39. Assessing the available radiographs, observers believed that the real indication for endodontic surgery only 40-65% of the cases submitted. remainder retreated possible endodontic

40. Significant. Endodontics and general practice doctor, considered feasible reprocessing, more frequently, compared with the oral surgeon. have no influence on tooth position reasoning

41. The pathogenesis of apical resection indications fall undoubtedly, less favorable conditions of endodontic therapy "by the book" such as compliance and aseptic antiseptic required endodontic intervention.

42. There is however a very high prevalence of chronic periapical osteitis. In these cases, not even tempted endodontic therapy, either for convenience or financial reasons (materials and medicinal substances that could treat this condition by endodontic being expensive), and jump to the indication of apical resection.

43. In general endodontic considered more acceptable to many teeth as a restatement than the surgeon general or FMO. This suggests that specialization and experience greatly influence the therapeutic decision.

44. A substantial percentage of cases sent for endodontic surgery were considered to be unfounded, which confirms the assumption that patients with endodontic problems were referred for surgical treatment more often than necessary, according to data provided by radiological examination. In our study, based on radiographic examination, were considered as real indications for periapical surgery 40-65% of cases, others may be resolved without surgery.

45. Although the success rate of non-surgical endodontic re-treatment is lower than in de novo treatment, there may be other factors affecting the decision to refer cases which appear suitable for reprocessing.

46. Probably in many cases, the doctor who recommended surgery endodontic retreatment may be considered a difficult and time consuming procedure. It is, however, the ethically questionable whether this reasoning is valid when the recommended surgical procedure.

47. Since the main cause of inflammation is likely periapical endodontic surgery may be considered for election, because canal debridează. endodontic therapy is as

48. Never periapical surgery should be performed before conventional ductal performed nonsurgical treatment. In practice the multiple reasons, this interpretation is not always true
because of factors such as cost, type of health insurance, operator skill and treatment duration may play a role.

49. Based on the biological principle which prevails in the general practice of medicine and dentistry in particular, I wanted to evaluate a number of therapeutic methods in chronic apical periodontitis is possible to determine whether conservative treatment and periapical healing, as an alternative to radical surgical treatment.

50. The lot on which the study included a total of 72 cases that presented including 25 periapical granulomas and 47 conjunctive epithelial, 49 cases of chronic periapical abscesses showed transparent radio image type neconturată osteitis, 15 cases had small periapical cysts as examination conducted preoperator. Manoperele Rx regimens were made after a standard protocol that included operator and medication based canalar calcium hydroxide.

51. Follow-up over a period of 6-12 months of cases studied showed attenuation / loss of radiolucent periapical periapical process depending on the size and reactivity of the body. Watching the evolution of cases we found that chemo-mechanical instrumentation of root canals should be complete in the first session, part handling by altering the balance in favor of pathogenic bacterial flora which may favor the development of periapical inflammation.

52. Whenever periapical pathology has persisted, in a properly considered as endodontic treatment, apical resection was recommended for removal of apical and periapical disease outbreak, and to create conditions for the healing of periapical pathological processes. The material used in the study evaluating the healing after apical resection was made up of 120 cases which have undergone periapical surgery

53. A total 114 cases have been pursued throughout the period of observation of 93 were deemed successful (91.2%) and 9 (8.8%) were considered failures, after the observation period. On the basis of clinical, radiographic assessment related to made the following classification of apical healing after apical resection, where the minimum observation period of one year:
Group 1 - Complete Healing - 85 cases
Group 2 - Incomplete healing (scar tissue) - 15 cases
Group 3 - Healing uncertain - 5
Group 4 - unsatisfactory healing (failure) - 4

54. Healing that occurs after resection of apical periodontale include repair of all components: cement, desmodontal ligament, bone. Healing with fibrous scar tissue usually shows a flaw in cortical bone. Ankylosis may be a way to heal scarring. Periodontal tissues adjacent to root can be blocked without inflammatory changes with different degrees of inflammation. In some cases it may cause epithelial proliferation in periapical soft tissue covering the surface roots. It is possible that periapical bone marrow until the scar to be replaced by fibrous tissue.

55. Result usual procedures in endodontic surgery is assessed by clinical and radiographic measures. Because, clinically, a chronic periapical inflammation is often without symptoms, only a clinical evaluation of healing is of limited value, while X-rays, on the other hand, may reflect changes in histological periapical region.
56. In post-surgery healing periapical appreciation, two factors can complicate the interpretation of radiographs. First, the usual presence of fibrous scar tissue in the periapical surgery, in contrast to the conservative endodontic therapy prevents radiographic interpretation. Second, an oblique line section of root is not possible to demonstrate any change in the tissue adjacent to the radiographic root fillings.

57. In the assessment of healing after apical resection, radiographic criteria used to assess parameters involved such as the periodontal space width or thinning, presence and width of lamina dura and periodontal space marking the edge of compact bone or thinning, the thickness of the sides of the lamina take periodontium, contour thinning, thinning arrangement in relation to the apex, extending as thinning of the periodontal space, apical thinning the bone structure, bone structure periferică lamina hard or thinning, root resorption (replacement or inflammatory), thinning size compared with previous X-rays taken after operation.

58. Complete healing group included 85 cases, we encountered a re-formation of the periodontal space, which means that the last batter must be continuous around the apex. Periodontal space width in the apical region was enlarged to twice the normal to the parties included around the root. He tolerated a small defect in the lamina last (maximum 1mm2) close radăcini. Cavitatea root resection area was filled with bone marrow, although this may not have the same bone structure as radiocapacitate and uninvolved.

59. In the group with incomplete healing (15 cases) where there is thinning, compared with post-operative X-rays, may have decreased in size or have remained stationary. Often the bone structure could not recognize thinning. Peripherals thinning was often asymmetrical and demarcated by a rim of compact bone. The link between periodontal space was thinning and angular shape. Bone thinning around the show is a well defined structure or trabeculaţie large areas with radiolucent areas.

60. In cases in which the regeneration of bone, the lamina take form around the apex, isolating a thinning in the bone. When inflammation was present, the transition to the periodontal space was funnel-shaped thinning, thinning is often circular contour.

61. Group was uncertain healing cases with a certain degree of bone regeneration, so that the original rarefaction appeared to be low compared with post-operative radiographs or during the evaluation period. Thinning size generally have a width of two times higher than normal periodontal space.

62. Unsatisfactory healing (failure): Radiographic signs of this group were the same as those of uncertain healing, except that in this case, rarefaction was either enlarged or unchanged in comparison with post-operative radiograph.

63. Regarding the correlation between clinical symptoms and radiographic criteria for evaluation of healing, during the evaluation of the 114 patients, 27 goals and 33 showed symptoms of subjective symptoms after they were followed more than a year after surgery. Both subjective and objective symptoms were concentrated in poor healing group. Of the 19 cases with subjective symptoms in groups with complete and incomplete healing, 11 showed sensitivity to the tooth or Apical region. Eight cases had periodic symptoms vague and difficult to define.
64. Radiographic criteria described are able to diagnose the presence of scar tissue with 90% safety. The presence of scar tissue has clinical importance, as long as it is not sore. Radiographic variable - a funnel-shaped enlargement of the periodontal space thinning - seems to indicate the presence of inflammation. Prolonged period of healing for some cases may result from the observation that there was an apparent regeneration of bone throughout the evaluation period.

65. Bone healing problem is major surgery because the bone will depend on the condition that the functional value of the tooth or even, ultimately, success or failure of intervention. Methods and techniques more or less modern, properly executed, bringing more quality and hence bone wound healing processes of bone.

66. The quality of bone healing was found to depend very much on: the quality of the incision and take off, complete removal of pathological tissue, suturing quality, health status patientului.Nu quite surprising is that a properly executed intervention has a high chance of success regardless of tooth surgery and sex of the patient.

67. In this context the importance of quality radiographs should be emphasized. In the present study, usually only one presentation was available for each result. If radiographs of various projections would be made available, it could get, no doubt more accurate interpretation.

68. For evaluation by computerized means of periapical healing after resection of selected cases were representative, whose radiographs were digitized using a special scanner for X-ray films. 228 were evaluated radiographically cliches on which measurements were made relative bone density and to evaluate, in conjunction with clinical data, the success of healing.

69. Calculating machine used was compatible PC equipped with an AMD Athlon 2200 MHz, 256 MB RAM, 40GB HDD.

70. Was operating environment of Windows XP Professional, Service Pack 2. For comparative analysis of the degree of impairment loss of bone integrity, we used radiografic exam using the computer program ACD See ver 6.0.

71. With its help we could measure changes in brightness in different areas of dental radiographs alveolo retro apical resection cases. This variable corresponds to bone density and there between a directly proportional relationship, as compared to being able to track the degree of bone destruction or bone marrow and healthy recovery.

72. Measurements were made in the resected apex, including both the apex and the surrounding bone, were then compared with values measured in areas rated as healthy to the naked eye.

73. Radical surgery is a therapy method, and because of its outstanding mpicațiilor, it is desirable to have objective pursued in as many situations. However, there are a number of cases have shown radiological bone healing in 80%, which is basically an inflammatory
process is ongoing - the infectious tissue regeneration is inadequate. The assumptions mentioned as a source of bone healing as expected, the second seems to raise more special.

75. As a useful way to evaluate a surgical method is to study the cause of the failure, we tried to identify the possible causes of failure after surgical endodontic sense in which we evaluated 89 cases regarded as failure (28 with an uncertain period of observation of 4 years or more and 41 unsatisfactory), the initial cases studied. Histological study also consisted of nine parts operators obtained from cases considered uncertain healing / unsatisfactory, due to the need for reintervention.

76. The cases followed a long period after surgery may indicate complications that may have no connection with surgical endodontic therapy: root fracture, formation of periodontal pockets, percolating root fillings, or a mechanical punching devices for applying corono root-root.

77. Among the causes of failure attributable to surgical technique may also be included an inadequate surgical technique or insufficient knowledge of root anomalies. The discoveries made in our research shows that insufficient cleaning and fillings are the most common incorrect root causes of periapical inflammatory resorption.

78. It can be concluded that the role of blocking insufficient roots in periapical inflammation, apparently due, above all, this remains of necrotic tissue, infected or not, the space between walls and root fillings canalului. In three cases where the cyst was diagnosed during surgery, a biopsy showed the cyst reformation. Apparently, something was left of the cyst epithelium during surgery init. This emphasizes the importance of properly removing the cyst lining lining

79. Apicoectomy failures occur and if not met its indications and not properly evaluate all the elements for successful intervention (tooth, bone support, the patient's general condition).

80. Another cause of failure is a contraindication for performing apicoectomy failure under general conditions that will expose or complications will allow bone repair and recovery of morphofunctional restructuring of the tooth.

81. The most frequent causes of failures are apicoectomy incomplete resection leaving insufficient sectioning apex portions canaliculi and cement infected necrotic complete resection without removal of apex, root resection leaving a stretched too short, simple partial thickness section of root or root damage neighboring teeth.

82. The Department of Oral and Maxillofacial Surgery-Outpatient Surgery - Science in the apical resection is a routine intervention, taking into account factors exposed in addition to several inflammatory complications were resolved either by antibiotics or by draining and then Mesaros cavity postoperative healing by granulation by secondary all teeth that were made apicoectomy received normal morpho-functional recovery.

83. Apical resection is a valuable technique for keeping units on the arch of Odonto-periodontal compromised otherwise morphologically and functionally