

Quality of CT projection. The parameters of devices versus threat of radiation

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Introduction: The computer tomography becomes increasingly popular diagnostic implement in dental surgery. By and large this procedure is executed routinely if implantological treatment is planned. However, extensive radiation doses emitted by computer tomographs, may be dangerous for patient's life. The knowledge of safe and effective radiation level as well as devices, producers of which constantly strive for reducing doses concurrently with high quality of CT projection, makes the usage of this kind of visualization rational and liable.

Aim: The aim of the study is to stipulate a safe radiation level as well as comparison of technical data of various CT brands.

Material and methods: The researchers analyzed technical data of 5 computer tomographs. Effective dosage, field of view (FOV) and exposure time were assumed. Computer tomographs produced by Kodak, Sirona (Galileos Comfort, Galileos Compact), i-Cat, NewTom were compared. Minimal radiation doses that guarantee high standard of CT vizualization were stipulated.

Results: The median doses of radiation during CT procedure are: min. 68 microSv for FOV (15 x 15 x 15 cm³) and min. 30 microSv for FOV (12 x 7 cm³). The dose depends on time of exposition. The acceptable dose for general public (people with occupational hazard were not taken into account) is 1 mSv/year over natural background radiation. If natural background radiation is not pitched some datum point should be setted. It is 2.4 mSv/year in Poland.

Conclusion: The cognescence of minimal radiation doses that guarantee high standard of CT vizualization makes the usage of computer tomo- graphs rational. Minimal FOV should be chosen in order to reduce the dose of radiation. The radiation emmited during CT screening (FOV 15 x 15 x 15 cm²) ammounts for 3% of dose that people are vulnerable to in natural environment through the whole year in Poland. Maximal amount of CT screenings (FOV 15 x 15 x 15 cm³) during one year is 14 (about 1 mSV).

Anatomy or pathology? Atypical appearance of the alveolar recess of the maxillary sinus: case report

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Introduction: The Maxillary sinus is pyramidal in shape and located in the body of the maxilla. Maxillary sinus has five recesses: alveolar, frontal, infra-orbital, palatal and a zygomatic one. Maxillary sinus can pose a diagnostic dilemma radiographically because of its anatomical variation which can mimic a periapical pathosis.

Aim: This Case report deals with one such diagnostic problem, where a maxillary sinus was interpreted in an intraoral periapical radiograph and orthopantomogram.

Material and methods: 30-year-old woman reported to the Department of Dental Surgery in 2009 for consultation and possible treatment of changes in the sinus near the maxillary teeth 25 and 26. The endodontic treatment of the teeth 25 and 26 was incomplete. Focused X-ray picture of the 25-26 area and orthopantomogram pointed out the existence of an osteosclerotic oval change, which was asymmetrical to the right side of the patient and connected to the roots of teeth. A puncture has been performed with the needle and syringe of the 25.26 teeth area to aspirate the content inside the cyst. The puncture was unsuccessful. The patient was directed to CBCT examination for final identification.

Results: CBCT of the maxillary sinus was performed. The picture reveals that sinus was properly pneumatized. The bone septum that is present in the left maxillary sinus appears as a cyst on the OPG image.

Conclusion: This case report shows that in some clinical cases it is worth to use the most modern methods of imaging in order to confirm or exclude the pathological changes.

Assessment of the efficiency of music therapy during the dental surgery

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Introduction: Music therapy is a therapeutic art known from the ancient times. It is widely used as a supplement for the operating and remedial treatment in medicine as well as for special

pedagogy. Music therapy puts the patient's mind in the state of relaxation, simultaneously increasing the secretion of endorphins — the natural anesthetic substance for human body.

Aim: To assess the efficiency of music therapy used in oral surgery.

Material and methods: Ten patients from the Department of the Oral Surgery MUW, who presented for the extraction of at least two molars of similar degree of surgical complexity were examined. Five patients had music played during the first extraction, while another five had that test conducted during second procedure. In both cases patients were asked to assess their general feelings connected with the procedure by means of prepared marking scale. its range began from 1 — the lowest to 5 — the highest, assessing patients feelings connected with the procedure.

Results: Research carried out on this group of patients revealed that the music therapy method increased general feelings as assessed by the patients on prepared marking scale by at least one point up.

Conclusion: On the basis of this investigation it can be concluded that music therapy improves general feelings of well-being connected to procedure.

Proceeding in patients treated protractedly with acetylsalicylic acid drugs during dental surgery procedures

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Introduction: A significant group of patients which is treated at the Department of Dental Surgery at the Medical University of Warsaw takes antiplatelet drugs chronially. One of the most popular antiplatelet drugs in Poland is ACARD. -This antiplatelet drug is a member of a class of pharmaceuticals that decreases platelet aggregation in one hour after single dose of 75 mg. The effect of this drug lasts for 4-7 days — the same time as the platelet cells live. Antiplatelet drugs have application in prophylaxis of many diseases as for example prevention of cardiovascular disease.

Aim: 1. On basis of literature was established in what sickness units putting away Acard is unconditionally contraindicated on period of extraction of tooth and small dental surgery procedures. 2. On what level are the patients who are taking Acard as a prophylactic drug endangered by bleeding after the procedure of tooth extraction and possibilities to minimize this danger.

Material and methods: In the research two groups of patients subjected to extraction of teeth or small dental surgery procedures, were included 1.15 patients who put away Acard on three days before procedure and two days after procedure, 2.15 patients who continued the intake of

Acard during procedure. Bleeding several minutes after procedure was subjectively estimated and in some cases, laboratory tests were carried out. Correlation of laboratory results and clinical image — length of primary bleeding— was accomplished. If necessary, the use of spongostan and/or sewing of wound was performed.

Results: As well in 15 patients who put away Acard on three days before procedure and two days after procedure as well as in 15 patients who continued the intake of Acard during procedure no severe differences in intense, bleeding time or the need of sewing were certifiable.

Conclusion: In some cases, withdrawing anti-platelet drugs even for a short period of time for example for the time of procedure, can be the cause of serious complications that could endanger a life. The way to proceed before and after a treatment has to be settled in each case individually, based on subjective and medical examination, laboratory research and if necessary consultation with physicians of other specialities.

Evaluation of acrylic splint usage in hypertrophied soft tissue removal procedures

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Introduction: Hypertrophied soft tissues of maxilla and mandible, especially attaching the alveolar process, may occur to be the great limitation for the proper and functional restoration of masticatory system. They are characteristic for the third type of Supple's denture bearing area classification, and are supposed to be removed before the prosthetic treatment. To achieve the best retention for future prostheses, after the removal of changes, for simultaneous deepening of vestibule, the acrylic splints are being used. They are meant to maintain the desirable shape of prosthesis area during the healing process.

Aim: Reveal of advantages in acrylic splint usage in hypertrophied soft tissue removal procedures. Observation of vestibule deepening and wound healing after the surgery.

Material and methods: The research contained the group of ten patients with the recognized hypertrophied soft tissue, among patients attending to the Department of Dental Surgery. Five of them had been treated with the use of acrylic splint, five without —two with sewed up triiodomethane drain fixed with stitches, three only with stitches. Before the surgery, diagnostic models had been made in hard gypsum due to impressions taken with the use of alginate mass. According to the performed method, models had been lighten up to create the acrylic splint, or actual denture build up to prevent after surgical soft tissue hyperplasia. We did also took care of

control visits: week, month and three months after the surgery, and further patients prosthetic treatment.

Results: The use of acrylic splint after resection of mucosal folds prevents occurring shallows in the vestibule due to surgical treatment and as a result maintains better retention for the future prostheses. Due to mild impact on the wounds and maximum extension of the plate, an immediate formation of the future prosthetic area is possible and better adaptation before the placement of new dentures.

Conclusion: The treatment of patients with hypertrophical changes requires two—stage procedure — surgical and prosthodontic, which aims at rehabilitation of stomatognathic system and provides the patient with new prostheses in the future. The key aspect of this procedure is the application of acrylic splint after the surgical part. Only with the use of this particular element, proper and fast postoperative wound healing and restoration of complete prosthetic area can be achieved.

Application of collagen in dental surgery

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Introduction: Collagen is a protein commonly occurring in the human body, highly immune to stretching, whose structure is diversified depending on the performed function and the place of occurrence. Well-purified animal collagen is one of least immunogenic biological materials and it is finding a wide application in dental surgery.

Aim: To present methods of collagen application in surgeries and to review materials in which they are applied.

Material and methods: 1. Guided tissue regeneration (Barrier membranes — highly purified collagenous fibrils, RTR Cones — calcium tri-phosphate granules covered with collagenous fibres matrix). 2. Dressing wounds after extraction (Intra-alveolar sponge — resorbable haemostatic dressings, collagenous sponge with garamicin — prevention of dry sockets). 3. Surgical treatment of periodontitis 4. Scar-minimizing suturing technique (katgut — resorbable surgical threads). 5. Experimental methods of creating connective tissue attachment. 6. Producing the connective tissue on the palate as donor place in treatment of alveolar recessions. 7. Supplying the place of the grafting of the autogenous bone.

Results: On the basis of literature and available materials the following has been demonstrated: 1. collagen is a biocompatible and non-allergenic material, characterized by durability and resistance; 2. collagen's function is to provide foundation for regenerating tissues; 3. collagen maintains its integrity in contact with blood, and also inhibits bacterial colonization.

Conclusion: Thanks to these properties collagen and collagen-containing materials are playing a significant role in the surgical treatment of tissues within the stomatognathic system. Therefore, it is applied more and more often and finds more applications.

Evaluation of the influence of the 2% solution of Norepinephrine containing anesthetic usage on the frequency of after surgical complications development

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Introduction: Norepinephrine is the widest known and used vasoconstrictor substance preventing increase of bleeding during and after the surgery. Its addition in anaesthesia provides more comfortable conditions for operator and patient due to the blood loss reduction. Simultaneously may cause the distortion of thrombus development, which provides physiological protection against bacterial contamination and the alveolus bone mechanical injuries. Lack or suppression of thrombus development enlarges the possibility of complications after surgery, widely known as the "dry alveolus syndrome".

Aim: Evaluation of the influence of anaesthesia with and without the 2% Norepinephrine solution on "dry alveolus syndrome" development.

Material and methods: Data had been based on the charts of patients treated in Department of Dental Surgery in years 2009-2010. Only simple extractions had been taken under consideration. Local application of antibiotics and anti-inflammatory medication had been the recognition determinant, qualifying case as a complication in wound healing. Type of anaesthesia had been taken under consideration, furthermore determinants such as sex, age and groups of teeth after removal of which "dry alveolus syndrome" had occurred.

Results: Complications after surgery affects approximately 10% of patients, equally men and women, mostly after the extractions of single root teeth. 85% of them had been treated with the usage of the 2% solution of Norepinephrine anesthetic, 15% of them without.

Conclusion: Anaesthesia containing 2% solution of Norepinephrine favors the evoke of after surgical complications, widely known as a "dry alveolus syndrome".

Removal of the wisdom tooth — the most frequent reasons for the procedure

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Introduction: The particular anatomy, location in the oral cavity and many cases of impaction cause the fact that third molars are potentially the reasons for pathological changes such as: suppurative inflammation (pericoronitis, abscess, phlegmon), cysts, neoplasms, maxillary-occlusal disturbances, fractures or myoarthropathy. In most instances they have no physiological function in a masticatory system. Therefore the list of indications for the removal of wisdom teeth is extensive and this procedure is the single most commonly performed operation by oral and maxillofacial surgeons.

Aim: The aim of the work was to establish the most frequent causes for the procedure of third molar removal.

Material and methods: The examined group consisted of 76 patients reported to the Department of Oral Surgery, Medical University of Warsaw, undergoing the procedure of third molar removal. For the research clinical observation was applied, a special questionnaire was prepared and filled in by every patient before the surgery. It contained the following information: age, sex, reason for the visit (if the patient was referred by GDP/specialist or it was its own initiative) and the vast list of possible accompanying symptoms. It included also the situation when the tooth was asymptomatic. Afterwards statistics were made including location of the tooth (mandible/maxilla) and presence or lack of retention in bone.

Results: According to obtained data, females pre-dominated in the examined group. In most patients extracted tooth was located in the mandible and was impacted. The age of the patients ranges from 18 to 60. Most patients were referred by their GDP and from the group of specialists — orthodontists dominated. The most frequent symptoms were connected with inflammatory processes and pain in tooth area, followed by neuralgic pain and headaches. The next cause for the procedure reported by the patients was anterior teeth crowding.

Conclusion: Taking under consideration the vast list of symptoms accompanying third molars, especially impacted ones, it should be pointed that preventive dentistry recommend to extract potentially causal teeth before pathological changes occurs. Delaying the procedure of wisdom tooth removal to the moment of symptoms occurrence, increase the risk of intra- and postoperative complications.

Comparison of Initial Stability of Various A.B. Dental Devices Implant System

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Introduction: The variety of implant shapes is a result of the lack of agreement among researchers on the issue of an ideal shape. Some believe that the bone should be primarily influenced by perpendicular forces (relative to the ground) and only minimally influenced by diagonal impact forces. The screw implants were designed according to this theory. Other researchers prefer cylinder implants. They believe that wedging through the diagonal impact force acting on the surface of impact between the bone and the implant allows for greater stability. Recently, both theories have been combined together, which resulted in creation of cone—shaped screw and spiral implants. These innovative implants seem to be, at the moment, the best solution which makes it possible to perform implantation immediately upon removal of a tooth, even in the case of patients with complicated anatomy.

Aim: The purpose of this research is to compare the stability of the A.B. Dental Devices implants depending on their parameters

Material and methods: The study was based on screw implants, the parameters of which are presented in the attached table:

The implantation was performed on the scapula extricated from a swine. The MRI was performed on the bone in order to estimate its density as well as the thickness of the cortical bone. The implants were inserted in places previously marked by the markers made of gutta-percha. The imbedding for the implants was prepared with the use of cylindrical drills, which length was determined by the length of the implants:

- for the (D 3.75 mm platform, the drill was (3): 2 mm

—> 2.8 mm —> 3.2 mm,

- for the (23 4.5 mm platform, the drill was (0): 2 mm

—> 2.8 mm —> 3.2 mm —> 3.65 mm,

- for the (2) 6.0 mm platform, the drill was (2): 2 mm

—> 2.8 mm —> 3.2 mm —> 3.65 mm —> 4.3 mm,

—> 5.2 mm.

All drilling was performed using the same physiodispenser with the speed of 800 drills per minute.

External cooling was used. During the installation of the implants, the turning moment was measured with the dynamometric key. Upon installation, each implant was tested with Periotest to mark its initial stability. Then the implants were pulled out and necessary pulling force was measured. The results were brought to average for each group of implants and analyzed statistically.

Results: The research allowed establishing correlation between physical parameters of the implants and their initial stability in each group. Correlation between the force of implant stretching and the length of the implant for implants cradles' prepared in different ways, each measurement for the implants of 3.75 mm in diameter. Correlation between the force of implant stretching and the length of the implant for implants cradles' prepared in different ways, each measurement for the implants of 4.2 mm in diameter. Correlation between the force of implant stretching and the length of the implant for implants cradles' prepared in different ways, each measurement for the implants of 6 mm in diameter. 1. The force in the stretching test ($p < 0.05$) is determined by: the length and the diameter of the implants, the thickness and the density of the compact bone, the way of the implants cradles preparation. 2. The primary stabilization was not higher than -6 for any investigated implants and is significantly determined by the diameter of the implants ($p < 0.05$). 3. The torque in each investigation was over 50 Ncm.

Conclusion: 1. Installation torque, primary stabilization and stretching force values provide good mechanical stability for A8. dental spiral implants. 2. Usage of the conical drills or gradual preparation of the implants' cradle allow to achieve better mechanical stability for A.B. dental spiral implants, especially for the short ones.

Treatment of faciocervical type of the actinomycosis in a patient with an allergy to penicillin. Case report

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Introduction: Actinomycosis is an infectious disease caused by the gram positive anaerobic bacteria from the Actinomyces species. Infection most often develops following tooth extraction or as a result of the injury in the face or the neck region. The characteristic symptom of actinomycosis is swelling with accompanying reddening, occurrence of hard tumours with purulent foci which in the further stage of illness form fistulas. Next, granulation around the lesion becomes fibrotic resulting in scar formation.

Aim: To present the case of a female patient with an allergy to penicillin who was clinically treated for actinomycosis.

Material and methods: A 50-year-old female patient presented at the Department of oral Surgery for the extraction of roots of a tooth 36 with gangrenous pulp. Medical history revealed allergy to lignocaine, penicillin, as well as painkillers. Following allergy tests, marcain was chosen as the anaesthetic agent. The roots of a tooth 36 were removed. After ten days postoperatively, the patient reported swelling of the left cheek painful to the touch. Clinical manifestations included reddening, hard swelling with increased temperature. In infiltration anaesthesia the swelling was lanced, pus was obtained. Sample was sent for histopathological examination. The next day hard swelling persisted. Under anaesthesia the tooth 38 was extracted. The patient was referred to the allergist for tests on clindamicin, cephalosporin, claitromicin, metronidazol prior to histopathological examination results, treatment was continued for ten days and consisted of irrigation of the abscess and redressing. Diagnosis: actinomycosis. The patient was referred to the hospital for infectious diseases where the patient was started on an antibiotic — doxycycline.

Results: The suggested algorithm of treatment in the case of this patient produced the desired effect and resulted in recovery.

Conclusion: Surgical treatment of the lesion and the administration of doxycycline led to effective healing of the patient. The fistula closed.

The comparison between the sutures used in dental surgery

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Introduction: To the basic ways of dressing different wounds obtained due to surgical treatment processes putting sutures, is one of the most common procedure. For this purpose it is usually used different types of sutures, having varied thickness, flexibility, structure and mechanical strength manufactured by many international industries.

Aim: The comparison between different types of stitches made by various manufacturers was the main aim of the subject.

Material and methods: The research was carried out by using 2.0 and 30 stitches. We checked 7 types of sutures, manufactured by different industries: Dexon, Safil, Mersilk, Seide, Mopylen, Amfil M, Dafilon. The research was performed in Plock department of Politechnika Warszawska. The experiment was carried out by means of the special measuring instrument named

“VEB Thuringer Industrierwerk Rauenstein”. Endurance tests were made in standart conditions (1013 hPa, 23°C, standard humidity, velocity of the head 100 mm/min).

Results: The research revealed, that the most durable suture to damage was Safil 2.0 (B.Braun) made of poliglotic acid, that critical point of stretch obtained 10.2 dN = 102 N. The suture that stretching force obtained the lowest value during the measurement was Mopylen 3.0 (Resorba) made of polipropylen, which got 1.8 dN = 18 N. in the group of poliamid stitches (Amfil M and Dafilon), the best mechanical stretching strength revealed Amfil M 2.0 — 74 N, 3.0 — 42 N.

Conclusion: Stitches made of the some material, but produced by different manufactures have various stretching force. Polyfilament stitches appeared to be more breaking resistant in comparison with monofilament ones.

Enucleation of a residual cyst with GBR and PRP. Case report

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Introduction: The residual cyst is formed when a radicular cyst is incompletely enucleated during tooth extraction. The radicular cyst constitutes 80% of all cysts in the oral cavity, while the resulting residual cyst — 7%. The radicular cysts is most likely to develop from epithelial rest cells of Malassez in the periapical granuloma of a tooth with necrotic pulp. It contains an amber-coloured liquid that opalesces as it comprises cholesterol crystals. Prior to growth phase, the liquid becomes hypertonic, which attracts water from surrounding tissues and causes the cyst to grow. Its epithelium induces bone resorption, to which the human body responds with bone formation on the outer surface of the alveolar process.

Aim: The aim of the paper is to present a clinical case of enculeation of a residual cyst and application of guided bone regeneration in order to restore bone tissue.

Material and methods: A patient, aged 65, has come to the Department of Dental Surgery at MUW with a referral from a dentist for consultation and possible treatment. The patient has reported pain in the mandibular body region on the right side. Clinical examination has detected fluctuation in the oral vestibule on the right side in the mandibular body region. The radiograph showed an osteolytic focus with an osteosclerotic border in the body of the mandible on the right side with a diameter of 2 cm. The patient’s history revealed an extraction of tooth 44 2 years earlier. Enucleation of the cyst and guided bone regeneration with use of a tricalcium-phosphate—based preparation — R.T.R. Septodont — have been performed under local anasthaesia. The material has

been covered with a Resodent resorbable membrane. The enucleated cyst has undergone histopathologic examination, which has shown a cyst in the state of chronic inflammation lined with stratified squamous epithelium, which suggests a residual cyst.

Results: The bone substitute material has filled the osseous cavity formed by the cyst to a satisfactory degree. An orthpanthomograph taken after 4 months has shown resorption of the material and formation of new bone tissue in its place. The height of the alveolar part of the mandible has been maintained.

Conclusion: Positive treatment outcome in many cases can be achieved by means of traditional surgical methods, but application of resorbable bone substitute materials enabled restoration of the alveolar bone and maintaining its height. This is of great importance in restoring dentition with endosseous implants.

Evaluation of Hydroxyzine premedication on patient's anxiety level during a surgical extraction of impacted third molar

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Introduction: Surgical tooth extraction triggers many reactions among patients. Anxiety and stress are manifested by psychological and physiological symptoms. Negative sensations can be diminished by administration of anxiolytics.

Aim: Presentation and comparison of patients' feelings during surgical extractions of impacted third molar with and without use of hydroxyzine.

Material and methods: In Department of Dental Surgery at Medical University of Warsaw was performed 20 procedures of extraction of impacted third molar in 10 patients (2 procedures each) The patients who participated in the study had a similarly located impacted third molars. Both procedures were performed in the same conditions by the same operator. Durations and potential level of negative emotions were comparable. First procedure was performed without administration of anxiolytic, and the second one was premedicated with hydroxyzine. Before and after extraction patient was asked to fill out a survey about his/her subjective feeling about procedure. Beside that assistant recorded his observations on patient's reaction, signs and symptoms during procedure.

Results: In all cases a premedication with hydroxyzine showed a decrease in patient's level of stress during the operation. There were no objective stress symptoms like: tachycardia, excessive

sweating, and skin paleness. Patients' subjective feelings expressed in the surveys were less unpleasant.

Conclusion: A pharmacological premedication with hydroxyzine made a significant difference for both: patient and doctor. Lesser stressed patient with no anxiety signs and symptoms showed to improve overall performance of complicated and pro longed operation related to removal of third molar. It was easier for the patient to cope with inconvenience related with the operation and its prolonged duration. It affects final effect of doctor's work and increases the quantity of satisfied patients.