



# ABSTRACT BOOK

## Contents

Oral.....	<b>Fel! Bokmärket är inte definierat.</b>
1. Orthognathic surgery .....	4
Cost analysis of Orthognathic Surgery: Outpatient Care versus Inpatient Care.....	4
Three-Dimensional Accuracy and Stability of PSI in Orthognathic Surgery: A Systematic Review and a Meta-Analysis.....	5
2. Reconstruction .....	6
Surgical approach for Jacob's disease (osteochondroma of coronoid process) .....	6
Surgical Treatment with DO for congenital maxillomandibular syngnathia: A case report .....	7
3. Temporomandibular joint surgery .....	8
Extra cellular matrix proteins in disc displacement of the temporomandibular joint.....	8
Frey's syndrome as an uncommon complication to alloplastic reconstruction of the temporomandibular joint.....	9
Interpositional arthroplasty with cartilage allograft in the treatment of temporomandibular joint arthrosis.....	10
Presence of microbial DNA in synovial fluid from TMJ in patients with internal derangements, chronic inflammatory arthritis or osteoarthritis .....	11
TEMPOROMANDIBULAR JOINT DISCECTOMY. A LONG-TERM RETROSPECTIVE FOLLOW-UP.....	12
4. Dentoalveolar surgery .....	13
Horizontal GBR with bovine bone mineral alone or in combination with bone in edentulous atrophic maxilla. A randomized controlled trial.....	13
Severe infections after tooth removal: a retrospective cohort study.....	14
Other .....	15
A new approach to correct Hanging columella in Rhinoplasty: Auto columellar graft.....	15
Biocompatibility of 3D printed photopolymere BioClear to be used in guided bone augmentation	16
Crohn's Disease and Fracture Risk Assessment with FRAX.....	17
Dental Treatment Needs of Patients Diagnosed with Head and Neck Cancer .....	18
Influencing Factors on Strategies for Prevention and Treatment of Medication-Related Osteonecrosis of the Jaw .....	19
Knowledge of the general population in Mecklenburg-Western Pomerania (Baltic sea coast) on the subject of head and neck cancer .....	21
Medication-related osteonecrosis of the jaws caused by high dose antiresorptive treatment. ..	22
New classification system for osteoradionecrosis of the jaws .....	23
Preliminary data from the COOP II-study – exploring oral and general health among older people in need of acute care .....	24

Relevance of bacterial cultivation in treatment of severe odontogenic infections - A retrospective cross-sectional study .....	25
Poster .....	26
2. Reconstruction .....	26
Nose resection and reconstruction with rib cartilage, paramedian forehead and pericranium flaps: rare case of metastatic endometrioid adenocarcinoma .....	26
4. Dentoalveolar surgery .....	27
Comparison of the effect of lornoxicam and etodolac on postoperative sequels following lower third molar surgery: A randomized clinical study .....	27
Does overweight influence postoperative morbidity and complications after surgical removal of mandibular third molars? .....	28
5. Trauma surgery .....	29
Incidentally diagnosed air gun pellet lodged in the maxilla.....	29
Other .....	30
A Case Report of Hyperparathyroidism-Jaw Tumor Syndrome, clinical presentation with multiple ossifying fibromas of the jaws, and genetic analysis .....	30
Awareness and Training in the Prevention and Treatment of Medication-Related Osteonecrosis of the Jaw - An Online Survey Among Students .....	31
Management of Invasive Maxillary Sinus Aspergillosis with Minimal Surgical Intervention: A Case Report .....	32

# ORAL

## 1. Orthognathic surgery

### Cost analysis of Orthognathic Surgery: Outpatient Care versus Inpatient Care

1. Orthognathic surgery

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**Background:** With limited healthcare resources it is important to provide care at right level and form of care.

**Aim:** This study aimed to evaluate whether selected single jaw orthognathic surgery in outpatient care (OPC) generates lower healthcare costs than in inpatient care (IPC).

**Material and methods:** With a study base of 165 patients, 107 in OPC and 58 in IPC, the costs of surgically assisted maxillary expansion (SARME), Le Fort 1 osteotomy (LF1), and bilateral sagittal split osteotomy (BSSO) were calculated.

Additionally, costs for revisits, emergency visits, emergency phone calls, re-operations, and plate removal during the first 12 months postoperatively were recorded.

**Results:** The total mean costs of the different operations including revisits, emergency visits and phone calls were 34.2% - 48.8% lower in OPC than IPC 12 months postoperatively.

Lower operation costs for LF1 ( $P = 0.009$ ) in OPC and for SARME ( $P = 0.007$ ) in IPC.

Lower anesthesia costs for LF1 ( $P = < 0.001$ ) and BSSO ( $P = < 0.001$ ) in OPC and fewer revisits ( $P = 0.001$ ) and lower costs ( $P = 0.002$ ) after LF1 in OPC compared to IPC.

No significant differences were found regarding emergency visits, emergency phone calls, re-operations, and plate removal.

**Conclusion:** This study shows that operation of selected single jaw orthognathic surgery in OPC is associated with lower healthcare costs compared to IPC.

# Three-Dimensional Accuracy and Stability of PSI in Orthognathic Surgery: A Systematic Review and a Meta-Analysis

1. Orthognathic surgery

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**Background:** Titanium patient-specific osteosynthes is increasingly utilized in orthognathic surgery for precise positioning and fixation, potentially reducing operation time. However, their individual design increases operative costs. Literature comparing patient-specific osteosynthesis to computer-aided design/computer-aided manufacturing interocclusal wafers lacks controlled trials for precise recommendations. Assessing patient-specific osteosynthes' accuracy and stability in orthognathic surgery via standardized three dimensional methods remains crucial.

**Aim:** This systematic review aimed to determine the accuracy/stability of patient-specific osteosynthesis in orthognathic surgery according to three-dimensional outcome analysis and in comparison to conventional osteosynthesis and computer-aided designed and manufactured splints or wafers.

**Material and methods:** The PRISMA guidelines were followed and six academic databases and Google Scholar were searched. Records reporting 3D accuracy/stability measurements of bony segments fixated with PSI were included. Non-randomized studies were assessed for risk of bias using the methodological index for non-randomized studies. Randomized studies were assessed using the Cochrane Collaboration's tool for assessing the risk of bias in randomized trials. Where permitted by the resemblance and homogeneity of the study design and measured outcomes of the records, a meta-analysis was conducted.

**Results:** Of 485 initial records, 21 met the eligibility (566 subjects), nine of which also qualified for a meta-analysis (164 subjects). Six studies had a high risk of bias (29%), and the rest were of low or moderate risk. Procedures comprised either single-piece or segmental Le Fort I and/or mandibular osteotomy and/or genioplasty. The stratified meta-analysis including 115 subjects with single-piece Le Fort I PSI showed that the largest absolute mean deviations were 0.5 mm antero-posteriorly and 0.65 in pitch. PSIs were up to 0.85 mm and 2.35° more accurate than conventional osteosynthesis with splint or wafer ( $p < 0.0001$ ). However, the clinical relevance of the improved accuracy has not been shown.

**Conclusion:** Single-piece Le Fort I osteotomy outcomes are accurate in 3D when compared to the planned movements, falling within the clinically acceptable thresholds of 2 mm and 4°. The literature on PSI for multi-piece Le Fort I, mandibular osteotomies and genioplasty procedure is characterized by high methodological heterogeneity and a lack of randomized controlled trials. The literature is lacking on the 3D stability of bony segments fixated with PSI.

## 2. Reconstruction

### Surgical approach for Jacob's disease (osteochondroma of coronoid process)

2. Reconstruction

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**Background:** The coronoid process is a beaklike process in the ramus of the mandible. Jacob's disease is a rare phenomenon in which an osteochondroma of coronoid process interferes with mandibular rotation and lateral excursion and hence leads to restricted mouth opening (RMO).

**Aim:** The aim of this case report is to explain the renovation that was made through surgical procedure of our case. Through conventional surgeries, the bulge that is caused by the lesion is removed and therefore the healing of the bony defect is delayed. We preserved the bone at the site as well as overcoming the bulge made by the osteochondroma of the coronoid process.

**Material and methods:** After taking CT and workup, patient went through a 4 hour surgery. A hemicoronal approach was made to access the osteochondroma attached to the coronoid process. When the process was cut, the bulge that it had made in the zygomatic bone was also removed in the shape of a circular lid which is seen in the images.

The point is that the removed zygomatic bone was not thrown away but was manipulated and some crossing lines were made to make the piece more flexible, then was put in its place upside down( the bony bulge was reversed). This was done for the sake of preservation of the bone and acceleration of healing.

**Results:** The patient was able to open her mouth efficiently after the surgery(MMO: 35) and the bulge was managed with no sensory disturbance.

**Conclusion:** Preserving structures adjacent to pathologic lesions are always a challenge for the surgeon. In our case the bony bulge that was made into the zygom as a result of the pathologic lesion was aesthetically removed but the whole bone was preserved with a new technique to accelerate bone healing.

## **Surgical Treatment with DO for congenital maxillomandibular syngnathia: A case report**

### 2. Reconstruction

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**Background:** Maxillomandibular fusion (syngnathia) is a rare anomaly of craniofacial area . It can happen as either fibrous (synechia) or bony (synostosis) fusion of jaws or fusion of mandible to zygoma, tuberosity, hard palate and temporal bone. ia). Davis reported the first case of synechia.

**Aim:** A 3 week old male baby was presented in NICU section giving reports of inability to open his mouth since birth. he weighed 2.7 kg and the parents were blood-relative(cousins) .It was their third child. Other childs were healthy.

Examinations revealed that the baby did not suffer from other anomalies.

Intra-oral clinical and Ct scan examinations revealed complete maxillomandibular fusion at occlusal level. There existed a buccal vestibule which could be retracted. Micrognathia of mandible was another complication as well. feeding was operated by NG tube and respiration was performed with the help of tracheostomy. The aim of this case report is to explain the whole workup and surgical process with the help of DO instrument for overcoming the bony fusion of maxillomandibular region.

**Material and methods:** A submandibular approach was made to access the bony fusion. Then a cut was made just at the occlusal level , followed by osteotomy of the same line to separate maxillary and mandibular segments as well as separating the coronoid and the zygomatic arch. The separation was performed successfully and a relative MMO of 20 Mm was achieved.A DO device was previously designed for accelerating the mandibular growth which was placed at mandibular body region of both sides to help with mandibular advancement and keep the airway open.

**Results:** The separation was performed successfully and a relative MMO of 20 Mm was achieved. Repetitive maxilla and mandible movements were indicative of no ankylosis of TMJ or other fusions.

**Conclusion:** The aetiology of maxillomandibular syngnathia is still unclear. Using a Distraction osteogenesis device as well as surgical process can help with better results of the surgery and accelerating mandibular growth as well as keeping the airway open.

### 3. Temporomandibular joint surgery

#### Extra cellular matrix proteins in disc displacement of the temporomandibular joint

3. Temporomandibular joint surgery

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**Background:** Disc displacement (DD) of the temporomandibular joint (TMJ) has been found in between 20-30 % of the population, often without significant associated problems. There are two subgroups of DD, with or without reduction (DDwR, DDwoR), and when symptomatic, patients often have a long history of local pain and disability. For better understanding of the disorders, deepened descriptions are called upon which include registry studies on demographic data, histology, immunohistochemistry, and protein content analysis, amongst others.

**Aim:** This prospective cohort-study aimed at detecting differences between DDwR and DDwoR on an extracellular matrix protein level.

**Material and methods:** Patients with DDwR and DDwoR were included in the study when surgery was indicated. The patients had to be 18 years or older, no earlier TMJ surgery, and independently decide on consent to participate. A small biopsy from the posterior disc attachment was harvested and analysed for the concentrations of 23 different ECM proteins. Several patient-specific variables were collected pre- and postoperative.

**Results:** A total of 67 patients was included, mostly women (55/12, W/M). DDwR ( $n=20$ ) was compared to DDwoR ( $n=47$ ). In the statistical analysis adjusted for age, sex, trauma, and duration of symptoms, 10/23 proteins had significant concentration differences due to diagnosis: ADAMTS-13, aggrecan, collagen IVa1, lumican, MMP-7, MMP-10, NCAM-1, tenascin C, TIMP-2, TIMP-3. MMP-9 and syndecan-4 showed significant concentration differences correlated to sex.

**Conclusion:** The detected protein differences correlated to diagnosis might be attributed to severity of inflammation and degeneration, which needs further investigation. Since the female predominance still is unexplained the proteins showing difference due to sex might be promising biomarkers in development of DD. To intervene with identified key proteins in an early stage of TMJ DD might reduce pain and disability and prevent surgery.



## **Frey's syndrome as an uncommon complication to alloplastic reconstruction of the temporomandibular joint**

3. Temporomandibular joint surgery

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**Background:** Frey's syndrome characterized with gustatory flushing, sweating and increased temperature in the preauricular skin is a well-described complication to parotid surgery and mandibular trauma but has not received much attention in relation to alloplastic reconstruction of the temporomandibular joint.

**Aim:** This study aims to describe Frey's Syndrome as a complication to alloplastic reconstruction of the temporomandibular joint.

**Material and methods:** Between 2007 and 2019 209 patients were treated with a total of 298 alloplastic reconstructions of the temporomandibular joint at Department of Maxillofacial Surgery, Odense University Hospital, Denmark. Patients had yearly follow-up for up to 10 years postoperatively with reported pain scores (VAS), maximal interincisal mouth opening and adverse effects. All patient files were evaluated and all patients with reported gustatory sweating in concordance with Frey's syndrome were identified for further description and analysis. Included patient files were reread and data collected regarding previous surgical procedures, onset of symptoms, treatment of Frey's syndrome, referrals and eventual time of cessation of symptoms.

**Results:** 7 patients (1 male, 6 females; mean age  $41,9 \pm 26,9$ ) with a total of 8 TMJ alloplastic prostheses had reported symptoms indicating Frey's syndrome. Onset of symptoms varied from 12-55 months (mean  $31 \pm 18$  postoperatively). 3 patients coped well with the symptoms without any treatment. 3 patients were referred to ENT for treatment with Botulinum toxin injections. Of these 1 patient rejected treatment and 2 patients received treatment with Botulinum toxin injections up to 8 years after TMJ alloplastic surgery.

**Conclusion:** Frey's syndrome is a uncommon complication to TMJ alloplastic surgery with a incidence of 3,3% in the current study. The onset of symptoms is found to be months after the surgical procedure. Repeated Botulinum toxin injections can be a solution, but half of the patients in current study had no interest in further treatment, indicating the overall impact of symptoms of Frey's syndrome to be limited.

## Interpositional arthroplasty with cartilage allograft in the treatment of temporomandibular joint arthrosis

3. Temporomandibular joint surgery

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**Background:** Temporomandibular joint (TMJ) osteoarthritis is a degenerative joint disease that results in an altered joint structure and subsequent loss of articular cartilage tissue, leading to pain, reduced jaw range of motion, and crepitation during function. Arthrosis predominantly affects women and older adults; however, young individuals occasionally develop joint disorders. The development of osteoarthritis is preceded by a history of anterior disc displacement. The treatment of TMJ arthrosis has varied significantly over the years, with different conservative and surgical techniques proposed. Discectomy is a technique to increase range of motion and reduce pain of active TMJ arthrosis. The technique has been performed with and without interpositional grafting, though no previous study has reported the use of allogenic cartilage.

**Aim:** To evaluate the effect of arthroplasty using interpositional cartilage allografts in patients with temporomandibular joint (TMJ) arthrosis.

**Material and methods:** This retrospective study included patients treated consecutively between 2007 and 2013 using discectomy and interpositional grafting with lyophilised costal cartilage allograft (Tutoplast) sheets. TMJ pain based on the visual analogue scale (VAS), maximal interincisal opening (MIO), joint tenderness to palpation, crepitus from the affected joint, and postoperative complications were assessed.

**Results:** Arthroplasty was performed on 37 joints among 34 patients (28 women; mean age: 54 years); 24 joints underwent simultaneous condyle shaving. At final follow-up (three [n=37] or five [n = 21] years), we observed reduced mean VAS (from 7.6 to 0.9;  $P < .001$ ) increased mean MIO (from 32.5 to 41.1 mm;  $P < .001$ ), number of joints with capsule tenderness (from 30 to 3;  $P < .001$ ), and percentage of joints with crepitus (from 97% to 75%;  $P = 0.008$ ). One joint required reoperation because of interposed cartilage fragmentation. No permanent facial nerve injury or malocclusion occurred after treatment.

**Conclusion:** Interpositional arthroplasty is a relatively simple, moderately invasive, and effective surgical treatment for TMJ arthrosis with few complications. However, long-term outcomes of this treatment, specifically beyond three to five years postoperatively, remain unknown.

## Presence of microbial DNA in synovial fluid from TMJ in patients with internal derangements, chronic inflammatory arthritis or osteoarthritis

3. Temporomandibular joint surgery

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**Background:** Internal derangement, chronic inflammatory arthritis or osteoarthritis of the temporomandibular joint (TMJ), are common. The etiology of these conditions is not fully explained. Bacterial presence in the TMJ causing low grade inflammatory reaction has been suggested as one of many contributing factors to TMJ pathology.

**Aim:** The aim was to elucidate if microbial DNA can be found in synovial fluid from the TMJ in patients with TMJ pathology and relate this to diagnose, outcome and presence of inflammatory cytokines.

**Material and methods:** The study population were patients (n=67) planned for TMJ surgery due to internal derangements, osteoarthritis, or chronic inflammatory arthritis. Synovial fluid samples were collected under sterile conditions using the push-and pull method. The aspirated volume of the synovial fluid in the washing solution was calculated by adding vitamin B12 to the injected saline solution. The data analysis of the 16S sequencing were performed using the automated cloud-based EPI2ME workflows (Oxford Nanopore Technologies).

**Results:** Analyses were preceded by defining sensitivity level and putative background contamination. The preliminary results show that DNA from 53 different bacterial species were detected in 76% (n = 51) of the synovial samples. Based on species, the possible origin of these bacteria are skin microflora, oral microbiota or microorganisms from the surrounding environment. The most common bacteria were Staphylococcus (n=15), streptococcus (n=15) and Cutibacterium (n=10).

**Conclusion:** The results could indicate that the hypothesis of a low-grade inflammation driven by microorganisms is a possible part of the pathogenesis of the investigated disorders.

## Temporomandibular joint discectomy. A long-term retrospective follow-up.

3. Temporomandibular joint surgery

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**Background:** Temporomandibular disorder (TMD) is an umbrella term for diseases that cause pain or/and dysfunction in the temporomandibular joint (TMJ). TMD underlies a large portion of nondental pain in the orofacial area. The most common non-invasive treatments for TMD are counseling, physiotherapy, occlusal splints, and over-the-counter medications. Additional treatment options include intramuscular and intra-articular injections with corticosteroids or botulinum toxin. If pain or dysfunction persists despite conservative treatment and significantly affects daily life, surgical procedures should be considered.

Several short-term studies, with follow-up periods from 6 months to 5 years, have shown successful results of discectomy, with success rates of ~85% but few studies have addressed outcomes at 10–30 years after and there is a need for greater understanding of long-term outcomes after TMJ discectomies.

**Aim:** The aim of this study was to retrospectively evaluate the long-term outcome of 64 patients after temporomandibular joint (TMJ) discectomy performed between 1989 and 1998 at Umeå University Hospital.

**Material and methods:** A questionnaire evaluated pre- and postoperative symptoms, postoperative complications, patient's general pain and subjective opinion about the outcome of the surgery.

**Results:** The results were based on 47 patients (40 women/7 men). Seventeen patients were excluded since they had deceased, moved abroad, denied participation or no available patient information. Forty-one (87 %) patients were satisfied with the results and five (11 %) were unsatisfied, one (2 %) patient did not answer the question. The results showed a significant long-term improvement of locking, clicking/crepitation and pain when chewing or opening the jaw ( $p = 0.001$ ). The prevalence of headaches had decreased significantly at follow-up ( $p = 0.001$ ). Reported impaired jaw opening capacity showed no significant improvement ( $p = 0.08$ ). Of the 47 patients, 19 (40%) had demanded additional treatment after the discectomy and six (13%) had re-surgery of the joint.

**Conclusion:** The results from this retrospective long-term follow-up, indicates that TMJ discectomy had a high success rate since a majority of the treated patients were satisfied with the postoperative results. Discectomy is thus an effective surgical intervention for patients with disabling TMJ pain and dysfunction when conservative interventions have not been successful.

## 4. Dentoalveolar surgery

### Horizontal GBR with bovine bone mineral alone or in combination with bone in edentulous atrophic maxilla. A randomized controlled trial

4. Dentoalveolar surgery

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**Background:** For the reconstruction of edentulous jaws, iliac bone graft has commonly been used due to the large amount of graft material needed. However, this approach requires a second donor site with additional morbidity, extended operation time, complex surgical skills, and higher costs. A previous randomized controlled trial augmented totally and partially edentulous jaws according to the horizontal guided bone regeneration (GBR) principles, with two different ratios of deproteinized bovine bone mineral (DBBM) and particulated autogenous bone (PAB) (60:40 and 90:10). This study reported no clinical differences between the two graft compositions. To expand on these findings, the present study aimed to investigate the effect of removing PAB from the graft, i.e., 100:0 DBBM:PAB compared with the previously investigated ratio of 90:10 DBBM:PAB.

**Aim:** To assess the implant survival, marginal bone loss, radiological, histological and patient reported outcome after horizontal GBR with DBBM alone or in combination with PAB in edentulous patients.

**Material and methods:** Eighteen edentulous patients with an alveolar ridge of  $\leq 4$  mm were included in this split-mouth randomized controlled trial. Horizontal GBR with a graft composition of 100% DBBM on one side and 90% DBBM and 10% PAB on the other side were conducted in all patients. Cone beam computed tomography (CBCT) was obtained preoperatively, immediately postoperative and after 10 months of healing. Width and volumetric changes of the alveolar process were measured on CBCT. Implants were placed after 10 months of graft healing where biopsies were obtained for histomorphometrical evaluation.

Intraoral x-rays were obtained at baseline and every year after prosthetic loading.

Patient reported outcome measures (PROM) were evaluated by oral health impact profile questionnaires.

**Results:** The gained width were 4.9 mm (100:0) and 4.5 mm (90:10).

The mean volumetric reductions were 32.8% (100:0) and 38.2% (90:10). Histomorphometry revealed that mean percentages of bone were 50.8% (100:0) and 46.4% (90:10)

No significant differences were evident between the two graft compositions in any evaluated parameters.

Results regarding implant survival, marginal bone loss and PROM will be presented.

**Conclusion:** There were no additional effects of adding PAB to DBBM regarding bone formation, width changes or volumetric changes in edentulous patients after 10 months of graft healing.

## Severe infections after tooth removal: a retrospective cohort study

4. Dentoalveolar surgery

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**Background:** Infectious complications after tooth removal are usually confined to the extraction site and can be managed by debridement, sequestrectomy, or antibiotics. Though rarely, these infections may spread to adjacent tissues and spaces to a degree where hospitalization is needed for incision and drainage in general anesthesia and intravenous antibiotics.

**Aim:** To characterize patients hospitalized with severe odontogenic infection after a tooth removal in terms of general health, dental status, and history of dental treatment.

**Material and methods:** From a cohort of 384 patients hospitalized with odontogenic infection at the Department of Oral & Maxillofacial Surgery, Copenhagen University Hospital, Denmark, during the period 2013 through 2019, all patients who underwent tooth removal immediately before hospitalization were potentially eligible for the study. Medical records from their hospitalization were reviewed, and dental records were retrieved and reviewed for information on their course of treatment preceding admission.

**Results:** A total of 109 patients were included in the study. The majority (84%) of patients were above 25 years and the mean age were 43 years. The extracted teeth were most often surgically removed, and indications for extraction were predominantly a pathological condition in the dental or surrounding tissues. Only one patient had prophylactic antibiotics administered before surgical removal of the tooth. Sixty-three patients (58%) had a mandibular third molar (M3inf) removed before hospitalization and distoangular position was the most common amongst the M3inf removed (36%). In addition, the patients who had a M3inf removed before the hospitalization were significantly younger ( $P = 0.006$ ) and had no comorbidities ( $P = 0.002$ ) compared to those who had any other tooth removed.

**Conclusion:** Patients developing severe infections after a tooth removal, necessitating hospitalization, are characterized by extraction of the M3inf, presence of dental or surrounding tissue pathologies, and absence of prophylactic antibiotics during the procedure. Those hospitalized after M3inf removal are typically aged  $\geq 25$  years. Within the limitations of this study, surgeons should be aware of the timely removal of M3inf.

## Other

### **A new approach to correct Hanging columella in Rhinoplasty: Auto columellar graft**

Other

**Moosa Mahmoodi**<sup>1</sup>

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#### **Background:**

Hanging columella may happen due to several reasons.

The main reason is overly long nasal septum. The second reason might be the excessive width of the membranous septum and another cause might be the anatomical form of medial crus which is bent downward.

The traditional approach to correct the hanging columella is trimming the caudal septum which has its own disadvantages. Firstly, the hanging columella may be too excessive and too much trimming deteriorates the divergence of the medial crus.

If you trim too much of the caudal septum, suturing gets difficult as well,

And since the cartilage is weak it gets folded and downward tip rotation happens.

**Aim:** The aim of this new approach is to overcome the aesthetic problems made by the previous traditional approach of columellar trimming.

**Material and methods:** We have applied a new effective technique to correct the hanging columella on several rhinoplasty cases: The auto columellar graft technique. This approach indicates Hatching and folding the caudal septum laterally and then fixing it with simple sutures.

This procedure easily secures the strength of medial crus and preserves the 3d shape of columella, whereas the trimming approach deteriorates the divergence of the crus.

In some cases medial crus is not in straight shape, and auto columellar graft has visible benefits to straighten the medial crus as well.

**Results:** This approach has been applied in several rhinoplasty cases in our surgical department and has been shown to be more effective with better aesthetic results rather than conventional caudal septum trimming for treating hanging columella cases.

**Conclusion:** Using innovative approaches for face surgeries result in better outcomes and auto columellar graft for hanging columella in rhinoplasty is one of them.

## Biocompatibility of 3D printed photopolymere BioClear to be used in guided bone augmentation

Other

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**Background:** Three-dimensional (3D) printing, also known as additive manufacturing, enables the fabrication of patient-specific implants, which could be used to produce a barrier for guided bone regeneration. While the potential benefits of 3D printed materials in medical applications are substantial, ensuring their safety and biocompatibility. One crucial aspect to consider is the cytotoxicity of 3D printed materials, as their interaction with living cells and tissues can significantly influence their clinical effectiveness and patient outcomes.

**Aim:** The aim for this study was to evaluate a commercially available 3d printing resin (BioClear polymer) designed for biomaterial use. Furthermore the second aim was to describe a method to evaluate the bio compatibility of this material.

**Material and methods:** The samples required for cytotoxicity tests were produced using Vat photo polymerization. The components are built by solidifying the liquid photopolymer in a vat through selective exposure to ultraviolet (UV) rays, then washed in concentrated isopropanol to remove excess resin and further cured in a UV chamber to achieve consolidation.

To analyse if BioClear polymer had effect on cell proliferation, human hepatocellular carcinoma cells, and human epithelial breast adenocarcinoma cells were plated and growing in addition of 3 printed BioClear pucks. The exposed and control cells were counted the 4 following days. Elisa-kits were then used to analyse the cells.

In addition zebrafish fertilized eggs, were exposed to BioClear polymer. Embryonic development and hatching rate were followed for 6 days

**Results:** All zebrafish hatched in all treatments. No embryonic disorders could be observed in connection with embryonic development.

The cell lines showed significantly lower metabolic activity compared to the control cells ( $p < 0.05$ ) indicates that monomers remain in the polymer.

**Conclusion:** Our study highlights the importance of carefully monitoring the 3D printing process and checking for contaminants such as residual monomers to ensure the biocompatibility of 3D printed materials. Although 3D printing technology has great potential in medical research and practice, significant progress must be made in manufacturing technology and material development to achieve high biocompatibility and safety. A standardized test could include zebrafish embryo analysis and at least one cell to material contact test.



## Crohn's Disease and Fracture Risk Assessment with FRAX

Other

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**Background:** In previous studies, it was demonstrated that patients with Crohn's disease exhibit sparser trabecular bone in dental X-rays compared to controls. In this study, we employed FRAX, i.e., fracture prediction over the next 10 years using clinical variables such as age, weight, height, smoking, corticosteroid use, prior fractures, and maternal fracture history.

**Aim:** The present case–control study aimed to test the use of FRAX without BMD for fracture risk assessment in relatively young persons and to evaluate possible differences in FRAX scores between CD subjects and sex and age-matched controls

**Material and methods:** Sixty-three individuals with an established CD diagnosis treated at the Clinic of Medicine, NÄL, Trollhättan, Sweden were asked to participate in the study. Forty-nine CD subjects (33 women and 16 men) consented to participate, allowed extraction of information from their medical files and completed medical questionnaires.

An age- and sex-matched control group of 49 subjects was selected from a public dental clinic in the same geographical area.

Both CD and control subjects completed a questionnaire regarding medication, lifestyle factors, smoking, height, weight, calcium intake, medical history, fractures, and whether their mother had sustained a fracture. The FRAX tool for Sweden was used for calculating the 10-year probability of “major fractures”. Major fragility fractures are low-impact fractures such as those of the wrist, arm, spine, and hip, not jaws, fingers, or toes.

**Results:** Twenty-eight previous fractures were reported, including both osteoporotic and non-osteoporotic fractures. Nineteen fractures were found in CD subjects and 9 fractures in controls ( $P < 0.05$ ).

More women (18%) than men (3%,  $P = 0.04$ ) had sustained fracture. More CD subjects but not significantly more, had sustained a fracture than the subjects in the control group ( $P = 0.14$ ).

In the control group, fracture was significantly correlated with having a mother having sustained a fracture ( $r = 0.48$ ,  $P < 0.001$ ) and with height ( $r = 0.30$ ,  $P < 0.04$ )

**Conclusion:** The CD group had a significantly higher FRAX score and significantly more fractures, but the proportion of CD subjects with a fracture was not significantly higher than that of controls. FRAX score  $> 15\%$ , without BMD measurements, was a useful fracture predictor also in this relatively young sample.

## Dental Treatment Needs of Patients Diagnosed with Head and Neck Cancer

Other

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**Background:** Head and neck cancer represents a significant global burden within the domain of oncology, ranking as the sixth most prevalent type worldwide, with osteonecrosis emerging as a frequent complication after chemo or radiotherapy during cancer treatment. The incidence of osteonecrosis is increasing rapidly, and poor oral and dental health stands out as a prominent contributing factor to its progression.

**Aim:** To evaluate dental treatment needs in patients diagnosed with head and neck cancer treated at Vilnius University Hospital Zalgiris clinic from 2015 to 2019. To assess the occurrence of medication-induced osteonecrosis during the 2019-2023 period.

**Material and methods:** A retrospective analysis of the medical records of 284 patients was performed, and information about 152 patients was included in the statistical analyses. Patients' general data (age, sex, and diagnosis) was collected, and patient dental status was assessed using orthopantomograms (OPG). Specific indices were calculated, facilitating the determination of individualized dental treatment needs. Moreover, the occurrence of medication-induced osteonecrosis over five years was assessed.

**Results:** All patients diagnosed with head and neck cancer had high dental treatment needs. Compared to younger than 62-year-old patients, there were significantly higher endodontic treatment needs and more teeth lost in older patients. Increased age, need for extractions, and need for periodontal treatments were all associated with lower levels of remaining dentition in patients diagnosed with a different type of head and neck cancers. There were 134 cases of osteonecrosis during the last five years, with a minimum of 12 and a maximum of 44 cases per year.

**Conclusion:** The overall high dental treatment needs were found in head and neck cancer patients. A full mouth examination and dental treatment planning should be performed for each patient diagnosed with head and neck malignancy. An interdisciplinary approach is needed to serve cancer patients better. Oral and maxillofacial surgeons, as well as other specialists, should keep in mind that the initial step in the patient management algorithm for head and neck cancer should be dental consultation, followed by urgent necessary dental treatments to be provided before surgery and radiotherapy or chemotherapy to avoid possible medication triggered osteonecrosis of the jaws.

## Influencing Factors on Strategies for Prevention and Treatment of Medication-Related Osteonecrosis of the Jaw

Other

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**Background:** Medication-related osteonecrosis of the jaw is still a relatively new diagnosis, having been described for the first time in 2003. Many doctors and dentists practicing today had already completed their training in 2003, so medication-related osteonecrosis of the jaw was not part of their studies. In addition, medication-related osteonecrosis of the jaw is a condition that is treated by dentists and maxillofacial surgeons, while the causative medication is prescribed by other specialists who have received little or no training in dental and oral medicine.

**Aim:** The aim of this study was to evaluate sociodemographic and training-related influences on the perception, prevention and treatment of medication-related osteonecrosis.

**Material and methods:** We set up an adaptive online questionnaire with 89 questions in 6 categories on the platform of a commercial online survey provider. The survey was completely anonymous. European data protection guidelines were implemented. Ethical approval was obtained.

A QR-Code to link the survey was created and incorporated into lectures between October 2022 and April 2023 and distributed on papercards at conferences. Standardized mails with a link to the survey were created. Between May 2023 and January 2024, about 14.000 emails were sent to publicly accessible email addresses of associations, practices, clinics, relevant hospital departments and their employees. Relevant specialties included dentistry, oral and maxillofacial surgery, ENT, gynecology, urology, oncology, endocrinology, rheumatology, orthopedics, dermatology, ophthalmology, general medicine and geriatrics. The Pearson chi-square test was used to examine differences. Connections were described using Cramer's V.

**Results:** 400 entirely and 38 partially completed questionnaires could be used for evaluation. Professional groups and disciplines showed different approaches to the targeted anamnesis collection, prevention and therapy concepts. The concepts also differed according to the type and location of the medical facility, professional experience and further training on the subject of medication-related osteonecrosis. Cramer's V showed associations between some of these factors and patient care.

**Conclusion:** The results provide insight into the different care approaches. On this basis, training and educational concepts could be adapted to specific target groups in order to improve patient care. Since there

were differences between the specialist areas, good interdisciplinary collaboration is important for good patient care.

## Knowledge of the general population in Mecklenburg-Western Pomerania (Baltic sea coast) on the subject of head and neck cancer

Other

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**Background:** Cancers of the oral cavity rank among the most common cancers with high prevalence in the rural province Mecklenburg-Western Pomerania close by the Baltic Sea. Tumors are often diagnosed at an advanced stage associated with poor prognosis.

**Aim:** Since long-term survival rates have not improved substantially over the last decades, the focus must be put on prevention and early diagnosis. For the success of public awareness campaigns, it is essential to have detailed information on the level of public knowledge.

**Material and methods:** As part of a month of action by the self-help network "Kopf-Hals-M.U.N.D.-Krebs", a random sample of the general population in Mecklenburg-Western Pomerania was questioned on the topic of "head and neck cancer". The interview-style survey included recording of socio-demographic data and questions regarding risk factors, symptoms of oral cancer and the use of preventive medical/dental check-ups.

**Results:** In June 2023, dental and medical students interviewed 302 people (122 men and 176 women) in different public locations of Mecklenburg-Western Pomerania. 54% of the respondents had never heard of oral cancer before. There was an almost equal distribution in the 5-year-interval age groups. Findings revealed that older age did not correlate with better knowledge about oral cancer. Nicotine (95,36%) and alcohol (68,21%) were the most frequently mentioned risk factors, other risk factors were less known. Less than half of the respondents make use of regular examinations of the oral mucosa.

**Conclusion:** In contrast to the high incidence of oral cancer in Mecklenburg-Western Pomerania, a relatively low awareness for this tumor entity was found in the general population of the province. Results of the survey show, that for the success of future awareness campaigns, it will be essential to address all age groups with a special focus laid on specific risk factors and early symptoms of the disease. The relevance of regular check-ups of the oral cavity should be highlighted as well.

The survey provides essential information for the planning of awareness campaigns on oral cancer in Mecklenburg-Western Pomerania, but might also provide valuable information for other rural areas in Europe with socioeconomic disparities and deficiencies in infrastructure.

## Medication-related osteonecrosis of the jaws caused by high dose antiresorptive treatment.

Other

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**Background:** Since 2005, Copenhagen ONJ Cohort consecutive registered patients with medication-related osteonecrosis of the jaws (MRONJ) referred to the Department of Oral and Maxillofacial Surgery, Rigshospitalet.

**Aim:** Present demographic data, treatment, and outcome of patients diagnosed with MRONJ due to high dose antiresorptive treatment (HDAR) from 2005 to 2023.

**Material and methods:** Retrospective cohort study based on data from the Copenhagen ONJ Cohort.

**Results:** The cohort consists of 823 patients, of which 437 (53%) were due to HDAR. 243 (56%) women and 194 (44%) men, 107 (24%) smokers and 60 (14%) diagnosed with diabetes. The average age was 69,2 (SD±10,4 range 35-92).

Patients received HDAR due to; breast cancer (197, 45.1%), prostate cancer (118, 27%), multiple myeloma (90, 20.6%). Six patients had multiple cancer diagnoses; breast cancer and multiple myeloma (2, 0.4%), prostate cancer and multiple myeloma (4, 0.9%), while 26 (5.9%) were treated for other cancers. 20 (4.6%) patients were diagnosed with osteoporosis. 307 (71%) patients received chemotherapy and 254 (58%) anti-hormone treatment.

The most frequently administered AR included denosumab (249 patients, 120 mg/4 week), zoledronic acid (194 patients, 4 mg/4 week), ibandronic acid (46 patients, 50 mg/day), and pamidronic acid (33 patients, 90 mg/4 week), some patients changed treatment regime. The mean treatment duration before MRONJ onset was 24.8 months (SD±20.8, range 1-112) for denosumab and 23.2 months (SD±18, range 1-87) for zoledronic acid.

Tooth extraction, (211, 49%), was the most common initiating factor, followed by spontaneous occurring, (118, 28%). MRONJ predominantly affected the mandible, 270 cases (62%), while 25 cases (6%) involved both jaws.

Overall, 344 patients (79%) underwent surgical treatment, with 73% and 89% undergoing surgery in the periods 2005-2019 and 2020-2023. Block resection was frequent performed (314 cases, 89%). At 3 months follow-up, 76% of patients was cured, with 72% and 90% being cured in the respective periods.

**Conclusion:** Experience have evolved over time, leading to enhanced treatment options. Consequently, there has been a shift in the balance between conservative and surgical treatment in favor for surgical treatment based on improved outcomes. Given the complexity of MRONJ, treatment decisions should be made on individual basis.

## New classification system for osteoradionecrosis of the jaws

Other

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**Background:** Osteoradionecrosis (ORN) of the jaws is a well-known, serious complication following radiotherapy (RT). Evaluating treatment outcomes and disease progression is challenging without a universally accepted international classification and staging system. Several classification systems have been proposed over the past 30-40 years. However, there is no single classification system that sufficiently addresses the complexity of this disease.

**Aim:** To present an overview of the previous published classification and staging system for osteoradionecrosis of the jaws (ORN) and propose a new universally classification and staging system for ORN.

**Material and methods:** An electronic search was conducted using MeSH terms, 'osteoradionecrosis' and 'classification', and free text words, 'stage', 'staging', 'ORN', 'classification'. A total of 2053 manuscripts were identified, of which 21 articles were included, reviewed, and analysed by all authors.

**Results:** A total of 21 different classification and staging systems were identified. Objective findings such as presence of exposed bone and/or fistula, as well as radiological evidence of pathological fracture, were the three most used factors in the existing classification and staging systems (57,1 %, 38 %, 47,6 %). Nine classifications and stagings (42,9%) were treatment dependent. Thirteen out of the 21 (61,9%) classification and staging systems only describing changes in the mandible, and only one describing changes in the maxilla. None of the published classification systems included subjective signs such as sensibility disturbances or objective signs as radiological findings like dental pathology.

**Conclusion:** There is no standardised classification and staging system that covers the complexity of ORN. There is a demanding need for a new classification and staging system that enables the monitoring of disease progression, evaluate treatment outcome, and facilitates the comparison of different treatment approaches. We propose of a new classification system to address the unmet needs.

## Preliminary data from the COOP II-study – exploring oral and general health among older people in need of acute care

Other

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**Background:** Polypharmacy, frailty, and dry mouth are associated with negative health outcomes among older people.

**Aim:** The COOP II-study (*Cooperation for better treatment of polypharmacy in the community*) is funded by South-Eastern Norway Regional Health Authorities and consists of:

1. A cross-sectional study of older patients' ( $\geq 70$  years) general and oral health
2. A randomized clinical trial evaluating effect of medication reviews for older patients ( $\geq 70$  years) using  $\geq 6$  medications, ongoing and not reported here

**Material and methods:** The study was conducted at Oslo municipal in-patient acute care unit. The unit provides 24-hour health care services in short-term stays and was initially established to reduce the pressure on hospital beds. Included patients were  $\geq 70$  years and gave written informed consent.

General health and medication use were evaluated by the medical team. Polypharmacy was defined as using  $\geq 6$  regular medications. Frailty, a state of impaired physiologic reserve and decreased resistance to stressors, was defined as  $\geq 5$  on the Rockwood Clinical Frailty Scale (CFS).

Oral health was evaluated by dentists. Xerostomia was examined with the Summated Xerostomia Inventory (SXI). Objective signs of dry mouth were assessed using the Clinical Oral Dryness Score (CODS) and unstimulated whole saliva (UWS). Patients' dentitions were characterized by number of missing teeth (MT) and posterior occluding teeth (OT).

**Results:** In the cross-sectional part (data collected Jan-Sep 2023,  $n=382$ , median age 84), polypharmacy was observed in 282 (74%) participants, and the median number of regular medications was 7 (0-18).

Frailty was categorized in 210 (55%) participants.

Median SXI score was 7 (range 5-15), median CODS was 3 (0-10) and median UWS was 0.12 ml/min (0-1.24). Hyposalivation was diagnosed in 163 (56%) participants. The median number of MT was 4 (0-28) and OT was 6 (0-8). Patients with hyposalivation had significantly higher SXI scores and CODS.

Frailty was associated with significantly elevated SXI scores, number of MT and regular medications, and reduced number of OT.

Patients with polypharmacy had significantly higher SXI and CFS scores.

**Conclusion:** In this interprofessional study, polypharmacy, frailty, reduced dentition and dry mouth were prevalent, and our findings highlight the interconnectedness of oral and general health in this population. Further analyses are ongoing.



## Relevance of bacterial cultivation in treatment of severe odontogenic infections - A retrospective cross-sectional study

Other

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**Background:** Patients hospitalized with severe odontogenic infections (SOI) are treated with empirical antibiotics. Patients are usually discharged before the results of bacterial cultivation and resistance testing (C+R) are known.

**Aim:** The present study aimed to evaluate if C+R of patients hospitalized with SOI contributed to the choice of treatment. We wanted to know the characteristics of patients in whom the results of the cultivation were used in treatment planning. In this study, we tested the hypothesis that microbiological analysis rarely influences the choice of treatment, such as a change in antibiotic.

**Material and methods:** All patients hospitalized with an odontogenic infection at the Department of Oral & Maxillofacial Surgery, Copenhagen University Hospital, Denmark, during the period 2013 through 2019 were where included in this study. Exclusion criteria: Non-odontogenic infection or missing medical records.

Data on microbiological testing, antibiotic susceptibility, medical history, and hospital treatment were extracted from patient medical records. Data was analyzed using Chi-square tests and analysis of variance.

**Results:** 384 patients were eligible for inclusion in the analysis, out of which microbiological cultivation was performed in 233 (60.6%) of these patients. *Streptococcus* was found as the predominant genus with identification in 37.7% of samples. Resistance testing showed that out of the cultivated bacteria, 25% were resistant to penicillin, and 12% to cefuroxime. Of the group of patients, 12.2% had antibiotic regimen changed during hospitalization with 1.8 % having it changed based on the microbiological samples. These patients were significantly older with a mean age 68 years (<0.001), had a significantly higher c-reactive protein (CRP) value at first day of hospitalization with mean 252 mg/L (<0.001), more often underwent two times surgery in general anesthesia, and had a significantly longer hospital stay mean 14 days (<0.001).

**Conclusion:** Systematic C+R was rarely used to target antibiotic treatment in patients hospitalized with SOI. To optimize the use of hospital resources, it may be considered consistently to perform cultivation in older patients > 60 years, with higher CRP values, and should be considered in all patients who undergo surgery twice. The high prevalence of penicillin resistance should raise awareness of the necessity for the restrictive use of antibiotics in the primary sector.

# POSTERS

## Reconstruction

### **Nose resection and reconstruction with rib cartilage, paramedian forehead and pericranium flaps: rare case of metastatic endometrioid adenocarcinoma**

2. Reconstruction

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**Background:** Nasal reconstruction presents significant challenges in reconstructive facial surgery due to its intricate anatomy. The paramedian forehead flap, leveraging texture and color congruence with nasal skin, is frequently used for larger defects. However, in complex oncological cases, beyond skin restoration, hard tissues and inner nasal lining must be recreated to optimize functional and aesthetic results.

**Aim:** To present a case of complex nose reconstruction with rib cartilage, paramedian forehead and pericranium flaps after subtotal nose resection due to metastatic endometrioid adenocarcinoma.

**Material and methods:** 51 year old patient presented to our clinic with a rapidly-growing subcutaneous ±4cm tumor infiltrating the whole right side of the nose. Diagnostic imaging confirmed a 4.2x2.6x2.6cm tumor infiltrating soft tissues of the nose and destruction of nasal bones, septum, and maxilla. Fine needle aspiration and punch biopsies results were inconclusive. As the tumor had grown significantly over a 2-week period, our tumor board meeting decided to begin with radical surgery and definite histology.

Therefore, the patient underwent a subtotal nasal resection including vomer and part of the right maxilla, with only the tip of the nose and allar rim remaining intact. After harvesting a right paramedian forehead flap, the inner lining of the nasal cavity was formed from the left forehead pericranium flap. The carcass of the nose was recreated from rib cartilage graft, fixed to frontal bone with titanium mini-plate and to alar cartilages with non-resorbable sutures, following skin reconstruction with the forehead flap. After 1 month, the pedicle was divided, with appropriate debulking and contouring the recipient site.

Histology report confirmed an unexpected diagnosis of metastatic endometrioid adenocarcinoma. However, no primary tumor was detected on full-body CT-scan. Bloody vaginal secretions and possible uterine tumor were observed on gynecologic examination. Subsequently, uterine curettage confirmed the diagnosis of endometrioid adenocarcinoma. Afterwards, a total hysterectomy with bilateral adnexectomy was performed, followed by 6 cycles of adjuvant chemotherapy (carboplatin-paclitaxel).

**Results:** To this day, the patient is tumor-free and satisfied with her appearance.

**Conclusion:** This case highlights the critical role of reconstructing three-dimensional nasal anatomy and interdisciplinary coordination in complex oncological cases to achieve optimal functional and aesthetic facial reconstruction alongside oncologic control.

## Dentoalveolar surgery

### Comparison of the effect of lornoxicam and etodolac on postoperative sequels following lower third molar surgery: A randomized clinical study

4. Dentoalveolar surgery

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**Background:** The surgical removal of the impacted third molars is the most frequently performed surgery in oral and maxillofacial practice. Manipulation of the soft and hard tissues during extraction results in inflammation. Postoperative inflammation accompanies pain, swelling and trismus which can affect patients' quality of life postoperatively.

**Aim:** This study aims to compare the efficacy of two non-steroidal anti-inflammatory agents (NSAIDs), namely lornoxicam and etodolac for controlling pain, edema and trismus after removal of lower impacted third molars.

**Material and methods:** A total of 20 patients comprised of both genders with bilateral impacted lower impacted third molars (in similar positions) was included in the present study. Patients were randomly assigned either to the lornoxicam group (8 mg of lornoxicam) or to the etodolac group (400 mg of etodolac). Pain intensity was recorded subjectively using a Visual Analog Scale (VAS) by the patient, where pain was evaluated at 2, 6, 12, 24 and 48 th postoperatively. Facial edema was evaluated by measuring three reference lines on the face using a flexible plastic tape. In regarding trismus, the maximum interincisal opening was measured with a caliper between the incisal edges of the upper central incisor and the lower central incisors on the right side preoperatively and 48 h and 168 h postoperatively.

**Results:** Regarding the pain data, VAS score was lower in the lornoxicam group at earlier periods (2 h) while it was lower in the etodolac group at later periods (12, 24, and 48 h). VAS score was approximately equal in both study groups at 6 th h. However, differences were not statistically significant in both groups ( $p>0.05$ ). Swelling and trismus at 48 th and 168 th were numerically higher in lornoxicam group than etodolac group but differences were not statistically significant ( $p>0.05$ ).

**Conclusion:** Based on the results obtained in the present study, it has been verified that both lornoxicam and etodolac were adequately effective in the management of pain following third molar surgery. Lornoxicam and etodolac had similar impacts on pain, swelling and trismus after lower third molar surgical extractions.

## Does overweight influence postoperative morbidity and complications after surgical removal of mandibular third molars?

4. Dentoalveolar surgery

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**Background:** Overweight is considered a significant risk factor for increased morbidity and risk of complications following surgery in general. The influence of overweight on the intra- and postoperative course in oral surgery has only received limited attention.

**Aim:** The objective of this review and clinical observational study was, therefore, to test the hypothesis of no difference in postoperative sequelae and complications following surgical removal of third molars between overweight patients and normal weight patients.

**Material and methods:** A systemic review of the literature was conducted according to the PRISMA guidelines. In addition, a prospective clinical trial of surgical removal of third molars is conducted, in which the patients are categorized as overweight (body mass index of more than 24.9) and normal weight (body mass index of 18.5-24.9) patients. Outcome measures include pain (visual analogue scale score), maximum mouth opening (trismus), quality of life (oral health impact profile-14) and complications. Outcome measures are assessed intraoperatively and seven days following removal of third molars.

**Results:** Six studies could be included in the literature review. Four studies indicated that overweight patients have a greater risk of postoperative sequelae and complications in terms of pain, soft tissue abrasion and incorrect tooth sectioning, whereas two studies showed no significant differences between overweight patients and normal weight patients. Three studies focused only on complications, whereas three studies focused on postoperative sequelae. The studies were characterised by small sample sizes, different outcome measures and different intervals for follow-ups. Data analysis of the ongoing clinical study is in progress and preliminary results will be presented and discussed.

**Conclusion:** Overweight patients seem to have an increased risk for postoperative sequelae and complications following surgical removal of third molars compared to normal weight patients. Thus, further studies assessing postoperative sequelae and complications in third molar surgery between overweight patients and normal weight patients are needed in terms of predicting difficulties in surgery, patient selection and to improve information to the patients regarding the expectations of risks and postoperative sequelae.

## Trauma surgery

### Incidentally diagnosed air gun pellet lodged in the maxilla

5. Trauma surgery

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**Background:** While maxillofacial trauma caused by high velocity firearms tend to be violent and apparent, injuries from low velocity, smaller calibre weapons such as air guns can be more elusive. Even though they are loosely regulated and generally considered toys there are numerous reports of severe and even fatal injuries caused by air guns. Reported here is the case of a young boy accidentally shot by an air gun where the full extent of the injury was initially underestimated and subsequently delayed adequate treatment. Considerations of initial examination and choice of treatment are discussed.

**Aim:** Case report

**Material and methods:** Case report

**Results:** Case report

**Conclusion:** Case report

## Other

### **A Case Report of Hyperparathyroidism-Jaw Tumor Syndrome, clinical presentation with multiple ossifying fibromas of the jaws, and genetic analysis**

Other

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**Background:** Hyperparathyroidism-Jaw Tumor Syndrome (HPT-JT) is a rare (incidence < 1/1 000 000) autosomal-dominant inherited disease caused by mutation of the gene CDC73 encoding parafibromin, a tumor suppressor. The clinical manifestations of HPT-JT are hyperparathyroidism due to neoplasms within the parathyroid glands, and patients can also be affected by neoplasms of jaws, kidneys, or uterus.

**Aim:** -

**Material and methods:** A case report of a 65-year-old man presenting with a secondary infection of a long-standing fibro-osseous lesion of the lower jaw requiring surgical treatment. A fibro-osseous lesion in the upper jaw was earlier removed. Blood workup and medical history indicates an increased level of parathyroid hormone. Further investigations gave indication for genetic testing of the patient for suspected HPT-JT, thus confirming the diagnosis.

**Results:** -

**Conclusion:** A case report of a 65-year-old man presenting with a secondary infection of a long-standing fibro-osseous lesion of the lower jaw requiring surgical treatment. A fibro-osseous lesion in the upper jaw was earlier removed. Blood workup and medical history indicates an increased level of parathyroid hormone. Further investigations gave indication for genetic testing of the patient for suspected HPT-JT, thus confirming the diagnosis.

## Awareness and Training in the Prevention and Treatment of Medication-Related Osteonecrosis of the Jaw - An Online Survey Among Students

Other

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**Background:** Medication-related osteonecrosis of the jaw is still a relatively new diagnosis, having been described for the first time in 2003. In addition, it is a condition that is diagnosed by dental professionals, while medical professionals might no longer be involved in those cases after prescribing relevant drugs.

**Aim:** The aim was to evaluate differences in awareness and coverage of the topic in dental and medical education.

**Material and methods:** We set up an adaptive online questionnaire with a total of 89 questions in 6 categories on the platform of a commercial online survey provider. 13 questions dealt with Medication-Related Osteonecrosis of the Jaw in dental and medical education. European data protection guidelines were implemented. Standardized mails with a link to the survey were created. Publicly accessible email addresses were researched via the Internet. In addition a QR-Code to link the survey was created and incorporated into lectures throughout the study period and distributed on papercards.

**Results:** Overall 49 students in a relevant course of dentistry or medicine were included. The majority of 68.89% (n = 31) stated that they were in the clinical part of their course. 19 students stated that they had heard about Medication-Related Osteonecrosis of the Jaw during their studies: nine times in the context of oral and maxillofacial surgery, five times in context of pharmacology. The question whether the topic of Medication-Related Osteonecrosis of the Jaw had been adequately covered was answered “no” by 36 students. 36 students also stated that the topic should be covered more extensively. Differences between dental and medical students could be observed.

Of the 21 dental students, only 2 reported having treated patients with Medication-Related Osteonecrosis of the Jaw during their studies, and only another 3 reported having treated patients with a risk of Medication-Related Osteonecrosis of the Jaw.

**Conclusion:** The majority of students had already heard of MRONJ. However, most of them did not consider this to be sufficient. There was a desire, particularly among medical students, to cover the topic more detailed during their studies. Students and patients could benefit from increased collaboration between medical and dental schools and their students.

# Management of Invasive Maxillary Sinus Aspergillosis with Minimal Surgical Intervention: A Case Report

Other

**Mahmut Sami YOLAL**<sup>1</sup>

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**Background:** Aspergillus species are mostly found in soil, air, plants, decaying organic matter, construction sites, hospitals and poorly ventilated environments. Primary infection caused by Aspergillus is observed in the eyes, ears, larynx, lungs and sinuses. Aspergillus is the most common fungus which affects paranasal sinuses. Maxillary sinus is the most commonly affected sinus.

**Aim:** The aim of this case report is to present a male patient 51-year-old who was referred to Kütahya Health Sciences University, Department of Oral and Maxillofacial Surgery with the complaints of persistent pain, swelling and history of surgical intervention (tooth extraction) in the left maxillary region. It was noted that the patient had uncontrolled diabetes mellitus(DM) and history of the COVID-19 infection. Extraoral examination revealed a tender swelling in the left maxillary region near the medial canthus and chemosis in the left eye. Intraoral examination revealed that necrotic bone involving left posterior maxillary region was exposed into the oral cavity. Cone beam computed tomography (CBCT) showed resorption and destruction of the medial, lateral and anterior walls of the left maxillary sinus and thinning of the inferior orbital wall.

**Material and methods:** Sequestrectomy and surgical debridement were performed via an intraoral approach for both treatment and excisional biopsy. After intervention, a surgical drain was placed into the operated region to increase ventilation and provide lavage of the maxillary sinus. Surgical specimens were sent for histopathologic examination.

**Results:** Histopathologic examination revealed Invasive Aspergillosis. The patient was hospitalized after histopathological verification of Invasive Aspergillosis. The medication regimen related to DM was adjusted. Antifungal therapy (intravenous voriconazole) was begun and sinonasal lavage was continued using physiological saline solution through the surgical drain. After 7 days of hospitalization, the patient was discharged and drain was removed. Voriconazole was continued by oral route for 4 months. After surgery and long-term voriconazole administration, the patient's general condition improved. One-year follow-up was uneventful.

**Conclusion:** In summary, early diagnosis and conservative therapy play pivotal role in the management of Invasive Maxillary Sinus Aspergillosis infection.