

<p>265 The modified Direct Aspiration Technique for TMJ Synovial Fluid Analysis. T. SHIBATA*¹, K. MURAKAMI², E. KUBOTA³, I. YAMAMORI¹ and N. YOSHIZAWA¹. (Dept. of O.M.S, School of Medicine, Yamagata Univ¹, Kyoto Univ², Kanagawa Dental College³, Japan).</p> <p>Objectives: The purpose of this study was to evaluate the success rate of the modified direct synovial fluid aspiration technique and to develop an improved method for direct aspiration of the TM joints in humans. Methods: The previous study on the exact location of TM joint fluid using MR imaging in patients with chronic internal derangements revealed that synovial fluid (SF) in a mouth closed condition was most frequently concentrated in the antero-lateral area of upper compartment of TMJ. This position is just under the articular tubercle and just inside of lateral wall of capsule. Based on this information, the point of needle entry was changed to be just under the articular tubercle. Using this modified position, direct aspiration of TMJ-SF was attempted on 101 TMJ disorders patients. Results: In 12 joints the samples of SF were failed to aspirate. Although it was possible to aspirate the sample of SF in 22 joints, those were insufficient in volume and/or in quality. A sufficient sample of SF was consequently obtained in 81 of 115 joints (70.4%). The amount recovered ranged from 10 mg and under to 3200 mg, and mean and standard deviation are 146 and 387 mg, respectively. Conclusion: <u>We believe the modified direct aspiration technique we have described is both logical and will yield the highest success rate possible when attempting direct aspiration of TMJ synovial fluid.</u> The present study was supported in part by a Grant-in-Aid for Scientific Research (A) (project No. 07557127), Japan Ministry of Education, Science, Sports and Culture.</p>	<p>266 Success of surgical treatment of TMJ - a survey of 70 patients Pelkka MK, Salonen MAM, Oikarinen K, Raustia AM (Institute of Dentistry, University of Oulu, Finland)</p> <p>Most TMJ patients can be successfully treated with conservative methods. However, some patients 10-20 % have persistent symptoms. The aim of this study was to evaluate the effect of surgical treatment in the long term. 72 patients (13 men, 59 women, mean age 37 years, range 14-68 years) were operated between 1988-91 after unsuccessful conservative treatment. The success of surgical treatment was evaluated at follow-up in 1997 both clinically and subjectively. The degree of temporomandibular dysfunction (TMD) was assessed using the anamnestic and clinical dysfunction indices of Helkimo. Patients were divided in to three groups according to follow-up time, 1-3 years after surgery (Group I), 4-6 years after surgery (Group II) and 6-11 years after surgery (Group III).</p> <p>At follow-up most of the patients were subjectively pleased with the surgical treatment. Main clinical findings at follow-up were TMJ sounds and deviation of the mandible during opening. Decrease in signs and symptoms of TMD on the basis of anamnestic and clinical indices was statistically significant ($p < 0.001$) with all patients. A statistically significant decrease in dysfunction index score was noted in Groups II and III ($p < 0.001$). Also functioning of the TMJ was statistically significantly improved in Group II ($p < 0.05$) and Group III ($p < 0.01$). <u>In conclusion it seems that surgical treatment of TMJ improves the functioning of the masticatory system and decreases significantly the signs and symptoms of TMD in long term.</u></p>
<p>267 The development of an ultrasonic chisel for cutting bone. B.S. KHAMBAI and A.D. WALMSLEY* School of Dentistry, The University of Birmingham, St. Chad's Queensway, Birmingham, B4 6NN, United Kingdom.</p> <p>An ultrasonic chisel may have advantages over a conventional rotary instrument including more controlled cutting, less traumatic to the associated hard and soft tissues and the potential cleaning benefits of biophysical forces such as cavitation activity and acoustic microstreaming. The aim of this study is investigate how clinicians would use such an ultrasonic chisel and the factors which may affect the cutting process. Five clinicians were asked to cut a length of bovine bone using a conventional drill and an ultrasonic chisel. The bone was placed on a load cell apparatus which measured the forces applied in both the horizontal and longitudinal direction. Clinicians varied in the amount of forces they applied using both instruments. Clinicians applied a higher longitudinal force with the ultrasonic chisel than the conventional drill whilst the downward forces were similar. The ultrasonic drill was placed on a horizontal milling machine and set to cut a piece of bovine bone with the rake angle varied from -10° to $+90^\circ$ and the speed of cutting from 28 to 160mm/min. The automated cutting system was used with the ultrasonic chisel only and the depth of cut was kept constant. As the cutting speed increases there is a significant increase in downward force ($p < 0.05$). The chisel tends to generate a significantly higher longitudinal than downward force ($p < 0.05$). As rake angle becomes more positive i.e. $+10^\circ$ to $+20^\circ$ there are significant increases ($p < 0.05$) in both the longitudinal and downward forces. However increasing the cutting speed above 80mm/min leads to a significant decrease in the longitudinal force ($p < 0.05$). <u>Clinicians may need formal education when using an ultrasonic chisel which differs in its ability to cut bone. To produce effective bone removal the chisel should be held at a rake angle below 10°. Downward loading and cutting speeds should be kept to a minimum.</u></p>	<p>268 The Reproducibility of Head Position for Lasergraphs Using Thin Plate Spines. M. SONCUL*, M. A. BAMBER, M. HARRIS (Department of Oral and Maxillofacial Surgery, Eastman Dental Institute and University College Hospitals, London, U.K.)</p> <p>The aim of this study was to evaluate the reproducibility of the head position for lasergraphs, using thin plate spines software function to measure the errors causing distortion, for facial soft tissue analysis. 12 lasergraphs of a control subject were obtained at specified intervals. The head was positioned using a spirit level to adjust the Frankfort Horizontal Plane parallel to the ground. These scanned images were digitised and the co-ordinates of the landmarks were recorded. The digitised lasergraphs data were compared to each other using the thin plate spines method. Results: the mean distortion caused by the small changes in the head position on the lasergraph was 0.014 ± 0.008 g cm² sec⁻². This error, causing a 2% distortion was found to be statistically insignificant ($p > 0.05$). <u>It was concluded that positioning the head using a spirit level, for lasergraph is accurate and reproducible, and the facility of using the co-ordinate template to correct the minute errors in head position in thin plate spines is very useful.</u></p>
<p>269 A New Hemostypticum for Patients with Hemostatic Disorders: Ethisorb® H.J. BECKER* (Private Praxis, Weender Str. 75, 37073 Göttingen, FRG)</p> <p>Common hemostyptics, almost of biologic origin, are used in patients with hemostatic disorders after oral-surgical operations, are associated with the risk of infectious or allergic reactions. Therefore we developed a synthetic, resorbable intraalveolar tamponade Ethisorb® made of polyglactin 910 and polydioxanone. First coagulation physiology was tested on citrate anticoagulated blood probes after perfusion of Ethisorb® and oxycellulose tamponades. Afterwards mandibular defects in minipigs were filled with the new Ethisorb® tamponade. The biological behaviour was investigated histologically. In a prospective clinical study tooth sockets were tamponaded by Ethisorb® for local hemostasis after tooth extraction in patients under anticoagulation therapy (median INR: 3.1) and compared to the use of oxycellulose. Results: In contrast to Ethisorb® oxycellulose induces slight hemolysis and an increase of PTT and thrombin time. Ethisorb® revealed a significant higher retention of thrombocytes compared to common hemostyptics. In the animal experiment already after three months the Ethisorb® tamponaded defect was almost reossified whereas the tamponade nearly was resorbed. In the clinical study only a slight trickle of bleeding was detected in 2.45 % of all tooth sockets filled with Ethisorb®, which was significantly less than in use of oxycellulose (17.0 %). <u>Conclusion: These results reveal very good hemostatic effects of Ethisorb® combined with excellent osseoconductive qualities. Thereby Ethisorb® reveals an excellent alternative to hemostyptics of biologic origin like collagen or fibrine tissue glue. Because of the excellent osseoconductive qualities further indications like closing of oral-antral communications or filling bony defects after cystectomy or taking bone at the iliac crest might be discussed.</u></p>	<p>270 Double Triangle Flap to Install Dental Implants between Mental Holes. J. HERRAEZ*, J. OARGALLO and C. GAY. (Faculty of Dentistry, University of Barcelona, SPAIN)</p> <p>The aim of this study was to evaluate the double triangle flap design to install dental implants between both mental holes, in front of the design used by the majority of the surgeons.</p> <p>Sixty patients between 47 and 76 years old were included in this study and divided in two groups, using one of the following surgical flap designs: the surgical flap over the alveolar crest with two vertical incisions situated distally to the mental holes and the horizontal incision over the alveolar crest with just one vertical incision, located in the middle line. We installed two or more implants in each patient and always between the mental holes.</p> <p>The two designs offered a very good control over the location of mental holes, allowing the best distribution of the implants. The 30 patients in who the triangle flap was used, with a total of 91 dental implants installed in the anterior region of mandible, presented 3 wound dehiscence at 7 day in the postoperative control, which presented a complete wound healing without treatment at 20 day, and 1 temporal neurological disturbance of the mental nerve, which showed a spontaneous recovery in 40 days. The other group (83 dental implants installed) showed 4 wound dehiscence and 1 temporal neurological disturbance of a mental nerve with similar recovery period. The statistical analysis of the difference in the percentage with X² for the wound healing, neurological disturbance and osseointegration success were not significant. The results of the osseointegration success were agree with Ahlbornsson T. and Worthington P. (Int J Oral Maxillofac Impl 1986;1:11-25) that said that the soft tissue management in order to install dental implants, do not determine the osseointegration success. <u>The double triangle flap is easier to handle, needs just one vertical incision and the flap raised is smallest than the conventional flap.</u></p>
<p>271 Oral complications related to cancer therapy and bone marrow transplantation (BMT) amongst Chinese children. RG NAIR*, GCF CHAN, SY HA, YL LAU. (Department of Paediatrics, Queen Mary Hospital (QMH), The University of Hong Kong, Hong Kong).</p> <p>Oral complications (OC) are common and distressing in adults receiving cancer therapy. The magnitude of this problem in paediatric population, however, has not been properly addressed, especially for the Chinese children. The aims of our study were to determine the incidence and types of oral complications amongst the local paediatric oncology patients receiving cancer therapy. A 5-month retrospective study (Jan. to May '97) was conducted at the Paediatric Oncology/Haematology ward of QMH. Patients were below 15-year-old at the time of diagnosis of their disease (58% males and 42% females). Only patients who were on their active treatment period were included. A total of 394 admissions were recorded during this period, with leukaemia, brain tumour, and various types of solid tumours and primary immunodeficiencies, with treatment regimes such as chemotherapy (58%), radiation (6%), and BMT (6%). The relationship between type of OC, the type of cancer, and therapeutic regimes were reviewed. 13% of the patients had one or more OC such as stomatitis, mucositis, candidosis, herpes simplex infection, hairy tongue, and xerostomia. 4% had a positive culture result for fungi, bacteria or virus. There was a significant correlation between the presence of OC, neutropenia and lymphocytopenia ($p < 0.05$). Majorities were under antibiotic coverage, such as antibacterial (65%), antifungal (3%) or antiviral drugs (7%). <u>Chinese children with malignancy frequently suffer from OC during cancer treatment. Most of these complications were amendable with conservative treatment, if attended early and appropriately. A prospective study is warranted to look into the various causative factors and efficacy of preventive measures and therapeutic intervention, in the future.</u></p>	<p>272 A Longitudinal Study of Disease-Free Lower Third Molars. C M HILL*, JP SHEPHERD, L EVANS, M J EDWARDS, and M R BRICKLEY. (Dept. of Oral Surgery Medicine and Pathology, University of Wales, Cardiff, UK).</p> <p>The removal of lower third molar teeth is one of the most frequently performed surgical operations in the UK, absorbing an annual expenditure of around £23 million. For this increasingly high volume procedure, patient selection is of crucial importance. The National Institutes of Health (NIH) consensus conference in 1979, established criteria for surgical interventions. Despite these criteria, studies have shown that disease-free third molar teeth are increasingly removed without valid indications. Controversy remains particularly in relation to partially erupted lower third molars where there is no evidence of any pathology. Surprisingly, no longitudinal studies have been published regarding the outcome following conservative, non-surgical management of these, initially, pathology-free teeth. The current study has been conducted over a period of two years to date, on patients with disease-free lower third molar teeth (according to the NIH criteria). 250 patients have been recruited and followed up at six monthly intervals and any pathology or symptoms recorded. Since recruitment, 8% of patients have had at least one third molar removed. Fifty percent of these were removed because of pericoronitis. The incidence of lower third molar caries in the group was under 10% but gingival trauma from the upper third molars was found in 40% of the patients. Smoking did not appear to be a relevant factor. During the first two years of the study 92% of the cohort experienced no symptoms or developed any pathology associated with their third molars. <u>At the present time, on the basis of these longitudinal data, there is likely to be little cost-health benefit in the prophylactic removal of symptomless wisdom teeth. Our aim is to continue the study over a period of five years.</u></p>