

P.284 In vitro analysis of types of internal fixation after BSSO

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One of the most useful methods in orthognatic surgery is the bilateral sagittal split osteotomy of the mandible (BSSO) introduced by Obwegeser in 1955, with further modifications.

Proper stabilization of the osteotomized fragments after the split of the mandible is necessary, which effects both the comfort of the patient postoperatively and maintaining the effect of the treatment in the further observations.

The aim of this study is in vitro experimental evaluation of the biomechanical parameters of various fixation methods applied to fix the osteotomized fragments after BSSO.

The research was performed on polyurethane models of human mandible (Synbone, Switzerland), which after splitting according to BSSO were fixed with three types of osteosynthesis. The monocortical osteosynthesis using the four-hole straight miniplate (Medgal, Poland) six-hole sagittal miniplate (Medartis, Switzerland) and biocortical osteosynthesis using 3 screws (Medgal, Poland) arranged in reverted "L" letter shape were examined. The main assessed parameter was value of displacement of the osteotomized fragments using the holographic interferometry and the speckle photography method.

As a result of the performed tests, it has been determined that the least displacements of the fragments by the forces used in the examination occurred after fixation with six-hole monocortical sagittal plate.

During the post surgery period bone healing is a dynamic process, when initially, the osteotomized fragments only contact to each other and their displacements can disturb the formation of new bone so given this fact and basing on the conducted research, one can point out the six-hole sagittal plate is the most advantageous way of fixation after bilateral sagittal split osteotomy procedure.

P.285 Jacob's disease – own experience

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Objectives: Clinical picture, diagnostics, differentiation, and treatment of 2 patients with Jacob's disease suffering from limited mouth opening have been described.

Methods: 2 female patients aged between 32 and 52 years were treated for limited mouth opening (11 mm – 21 mm). The available range of mandibular movement was unchanged and not painful. The applied treatment consisted of the removal of the pseudojoint from between the coronoid process and the zygoma via extra-oral approach.

Results: Both patients who underwent coronoid osteotomy obtained full range of motion – 35–45 mm.

Conclusions: Our experience seems to confirm that Jacob's disease is very rare. The surgical method of treatment applied in both cases enabled good functional and morphological results.

P.286 Management of epistaxis in UK: a new protocol

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Objectives: Epistaxis is a common medical emergency which can sometimes be severe or even fatal.

Our aim was to create a novel clinical protocol to manage epistaxis patients presenting to an Accident and Emergency (A&E) department of a District General Hospital (DGH), and

to compare the results to the routine management protocol in the same hospital.

Methods: Sixty patients presented with epistaxis were included in this study which was conducted over a 7-month-period (September-March). A novel protocol was developed using nasal tampons (Netcel® Polyvinyl alcohol sponge) instead of nasal packing.

Retrospective data of all patients presented with localised epistaxis to the A&E Department in the same DGH in the past 4 years, (September-March), were collected and analysed. Data included patient's demographics, cause of epistaxis, management plan, admission, in-patient stay and complications.

Results: Retrospective data showed that all patients requiring nasal packing were admitted. Over the previous four-year-period (September to March) a mean of 28 patients were admitted per month.

In the patient group treated under the new protocol, despite no significant change in the number of monthly epistaxis referrals, the total number of admissions was significantly reduced by 73%.

Conclusion: We concluded that if the nasal packing/tampons are correctly applied and advice sheet is given and understood, it is safe to manage patients with routine epistaxis at home. This novel management protocol saved 201 bed days per annum.

P.287 Mechanical properties of a biodegradable locking-plate"

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Introduction: The Inion Free Form Plate is a biodegradable plate just with pilot holes. After drilling through the plate and tapping, a conventional biodegradable screw could be inserted, followed by a cut of the screwhead. As an alternative a countersink screw can be used. The plate is estimate to show the same mechanical stability than a conventional 2.0 mm biodegradable plate.

Aim of the study: Aim of the study was to evaluate the mechanical stability of the 1.4 mm Inion FreeForm plate compared to the 2.5 mm Inion OTPS system.

Material and Methods: Tensile test was carried out to determine the load carrying capacity of the Inion Free Form Plate in comparison to the Inion OTPS 2.5 mm System 6 Hole Plate, extended, in tension and bending.

Results: The 1.4 mm FreeForm plate yielded a higher mechanical stability than the 2.5 mm OTPS plate. The 1.4 mm FreeForm plate shows a significant higher Yield load, Maximum failure load, Initial stiffness, and Maximum strength. Regarding the Yield strength, the 95% confidence levels are overlapping. The results of the 3-point bending test shows, that regarding Yield load, Maximum failure load and Initial stiffness no overlapping 95% confidence levels were found. The 3-point bending test showed no significant difference between the 1.4 mm FreeForm plate and the 2.5 mm OTPS plate.

Conclusion: The results of the current investigation imply, that the FreeForm plate could be suggested as an alternative material to titanium in mandibular fractures with appropriate mechanical properties.

P.288 New surgical treatment of gunshot maxillofacial trauma

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Objectives: Gunshot trauma is an injury different from other injuries by its severity, complication and is multi-factorial. However, it is badly described in medical literature, diagnostics algorithm is not elaborated, there is no basic foundations for treatment course choosing.