

Intraoral treatment of ankylosis on the temporomandibular joint and reconstruction with a custom made joint prosthetic

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Background: Gun shot wounds (GSW) to the temporomandibular joint (TMJ) generate comminute fractures that cause severe complications such as temporomandibular ankylosis. This in turn generates pathological changes to the anatomical and physiological integrity of the joint, causing severe limitations to the mandibular joint movement. The conventional focus on treating ankylosis consists of extraoral surgical procedures to expose and visualise anatomical structures. Due to the proximity to vital anatomical structures, there are inherent risks associated with this procedure, including injury to the facial nerves and salivary fistulas.

Objectives: Describe a case of intraoral surgical release of TMJ ankylosis, followed by a second surgery to reconstruct de TMJ with a custom-made Hoffman articular prosthesis.

Methods: We present a 37-year-old male with a five-year history of a GSW to the left TMJ that was not treated at the time of the initial trauma. The patient presented TMJ ankylosis as a result of multiple unsuccessful surgical interventions to release the joint. In 2015, the patient was treated at Centro Policlínico, where he received intraoral surgery to release the ankylosis on the left TMJ and subsequent joint reconstruction using custom-made joint prosthetics in a second procedure. An intraoral approach was selected in order to preserve tissue that would allow fitting a TMJ prosthesis.

Conclusions: Intraoral ankylosis release is a valid surgical technique with successful results in highly selected cases when performed by experienced surgeons. This technique spares tissue that can be later used to reconstruct the TMJ with a prosthesis.

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Modified eminoplasty revisited

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Background: Eminectomy has been the gold standard of surgical procedures to manage chronic recurrent dislocation (CRD) of the temporomandibular joint (TMJ) while other augmentation techniques were not as popular mainly due to hardware complications.

Objectives: The present study revisits modified eminoplasty as an alternative augmentation technique to manage CRD of the TMJ.

Methods: Six bilateral CRD patients (two males and four females) with a mean age range of (32.5 ± 5.36 years) were treated in this study. The technique comprised wedging of a rectangular chin bone wedge graft into the obliquely osteotomised eminence using a specifically designed instrument (Moez Graft Tucker) to create a green-stick fracture preserving the elastic bone recoil that aided in graft stabilisation. Patients were maintained in maxillo-mandibular fixation for two weeks and followed-up clinically and radiographically using cone-beam computed tomography for six months postoperatively.

Findings: After six months, there was a total gain of (12.98 ± 4.19%) in the mean peak amplitude of the eminences. There was a net reduction in the maximum interincisal opening and protrusive measurements of (25.29 ± 8.11%) and (28.93 ± 19.08%), respectively. No motor nerve deficit was documented. Recurrence of dislocation occurred only in one TMJ for a couple of times and was self-reducible without further complications.

Conclusions: Modified eminoplasty proved to be an effective and a technique sensitive procedure preserving the TMJ anatomy and providing free excursions without the risk of further dislocation while obviating the need for osteosynthesis hardware.

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Primary chronic osteomyelitis of the jaw in children: case series and literature review

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Background: Primary chronic osteomyelitis (PCO) of the jaw is a rare presentation which can lead to pain, trismus, and swelling. Only sparse cases with onset during childhood or adolescence have been reported in the literature. We report the largest series of PCO of the jaw in children and review their management; whilst examining the available current evidence.

Methods: Retrospective analysis of patients diagnosed with PCO and treated at Great Ormond Street Hospital.

Results: 15 patients were identified satisfying the selection criteria. Median age was 8 years and 3 months (7 months–15 years). Male to female ratio was 1:3. Site of distribution; right to left: 1:1. All patients had a biopsy confirmed diagnosis of osteomyelitis and treated with antibiotics. 5 patients needed surgical intervention.

Conclusion: PCO of the jaw in children requires careful examination and appropriate investigations, which should be complemented with a clinical treatment plan formulated following a multidisciplinary team discussion.

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Aetiology of temporomandibular disorders: do we have support for current treatments?

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Background: Temporomandibular disorders (TMDs) affect around one-third of the population and associated with significant morbidities. Nevertheless, their aetiology is poorly understood, and there is a great deal of interindividual variability in the signs and symptoms of the affected individuals.

Objectives: This study aims (1) to evaluate the potential etiological/risk factors associated with TMDs, (2) to investigate the most common TMDs symptoms reported and (3) to look for the common clinical oro/facial manifestations in patients with TMDs.

Methods: A survey-based study accompanied by a clinical screening for 1361 participants. The questionnaire contains two axes; the

first somatic evaluation and the second is psychological evaluation via the Hospital Anxiety and Depression (HAD)-scale.

Findings and Conclusion: More than one-third of the participants reported at least one symptom of TMD(s), with a morning headache being the most common with a prevalence of 41.7%. More than half of the participants reported an elevated HAD-scale. Furthermore, about a fifth of the later individuals also reported sleep disturbances and parafunctional habits especially nocturnal bruxism, this was also clearly associated with TMDs symptoms.

The symptoms were highly prevalent among the studied multiethnic population. There was a significant relationship between the elevated HAD-scale and the incidence of parafunctional habits, which in turn have a strong association with the presence of TMD symptoms. On the other hand, there was no correlation between TMD symptoms and dentofacial abnormalities like malocclusion, loss of teeth, tongue indentation, etc. This outcome may support the central mechanism of the problem and question the value of peripheral therapies.

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The use of computer-aided design/computer-aided manufacturing temporomandibular joint prosthesis and orthognathic surgery in patients with craniofacial anomalies

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Background: The integrity and normal function of the temporomandibular joint (TMJ) is crucial to assure a normal breathing, eating and socialisation of the patient at any age. There are some indications for early reconstruction of the TMJ such airway obstruction, masticatory dysfunction and psychological aspects always preserving the potential of growth of the younger patients. The classic reconstruction of the anatomy of the TMJ implies the use of autologous tissues and orthodontic support, but the indications of the new computer-aided design/computer-aided manufacturing (CAD/CAM) TMJ prostheses individualised for each patient and their anatomy and the orthognathic surgery are now an open field with new and interesting applications in our younger patients with extreme conditions.

Objectives: Demonstrate the utility of the CAD/CAM TMJ prosthesis and orthognathic surgery in patients with craniofacial anomalies.

Methods: We present four patients with ages under 20 years old, two with hemifacial microsomia, one of TMJ ankylosis and one Hadju-Cheney Syndrome. The treatment combined the use of CAD/CAM TMJ prosthesis and orthognathic surgery with counterclockwise rotation of the occlusal plane. Follow up period was at least of 10 months.

Findings and Conclusion: All the patients improved in aesthetic and functional aspects. No severe infections or major complications were recorded and all the prosthesis remains in good function. CAD/CAM prosthesis in combination with orthognathic surgery is a valuable technique in younger patients with extreme conditions.

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A five-year retrospective study on the clinical outcomes of open temporomandibular joint surgery

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Background: Internal derangement of the temporomandibular joint (TMJ) is a common presentation in all oral and maxillofacial surgery departments across the world. Open joint surgery is considered in our department for the few patients who fail to respond to conservative advice, steroid injections, arthrocentesis and arthroscopy.

Objectives: To assess the clinical effectiveness of open TMJ surgery in patients under the care of one surgeon.

Methods: A total of 20 consecutive patients were identified who attended between 2011 and 2016. 19 patients were treated with meniscopexy or meniscectomy and one with open joint cryotherapy. Clinical outcomes of pain scores (0–10) and interincisal opening (mm) was compared preoperatively and 6 months post-surgery.

Findings: 15 out of 20 patients (75%) were considered to have a successful outcome with significant improvement in both pain and interincisal opening post surgery; there was a mean reduction in pain score of 5 and mean increase in opening of 12 mm. Five patients did not show improvement in both clinical outcomes and were subsequently referred to tertiary care. Of these, three patients were treated with joint replacement, one with Botox in masseter muscles and another failed to attend their appointments.

Conclusion: There is a high success rate of open TMJ surgery when compared against the literature and should therefore be considered in specific clinical scenarios. This study suggests reasons for those cases considered unsuccessful providing useful information when obtaining consent for such procedures in the future. Further work should incorporate a longer follow up period with a larger patient base.

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Efficacy of platelet-rich plasma versus hyaluronic acid intraarticular injection in arthroscopic management of Wilkes V temporomandibular joint patients

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Background: Temporomandibular joint (TMJ) degenerative diseases are steadily increasing. A variety of noninvasive solutions have been proposed for pain treatment, improvement in function, such as hyaluronic acid (HA), and platelet-rich plasma (PRP). PRP is a minimally invasive method to obtain from the blood a natural concentrate of autologous growth factors that would stimulate healing.

Objectives: To compare the efficacy of platelet-rich plasma and hyaluronic acid intraarticular injections for the management of TMJ Wilkes V patients.

Methods: Patients with Wilkes V TMJ pathoses had been subjected to TMJ arthroscopic surgical procedure with intraarticular injection of either PRP or HA, in Miamiom, Baptist Hospital, Miami, Florida. Data was assessed through the general outcome of the procedure using clinical assessment of pain and function.