

Surgical Procedures Carried on the Lower Jaw

Raja Kummoona*

Division of Maxillofacial Surgery, Fellow Royal College of Surgeons, UK

*Corresponding author: Raja Kummoona, Division of Maxillofacial Surgery, Fellow Royal College of Surgeons, UK, E-mail: dr_raja_kummoona@yahoo.com

Received date: November 02, 2017; Accepted date: November 09, 2017; Published date: November 19, 2017

Citation: Kummoona R (2017) Surgical Procedures Carried on the Lower Jaw. Research J Ear Nose Throat. Vol.1 No.1:8.

Copyright: © 2017 Kummoona R. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Introduction

Traumatic injuries to the mandible are very common either isolated or as part of maxillofacial injuries due to isolated trauma or due to road traffic accident with head injury or without it depend on severity of the impact. The magnitude of fractures within facial skeleton has varied during the last 3 decades, there have been considerable advances in the prevention of road traffic crashes and early transport of injured patients via ambulance or helicopter also there have been great development in the diagnosis and managements through advanced radiological tools. Great advances in the treatment of cranio maxillofacial injuries of severely injured patient are those in medication, anesthesia, tool of radiological assessment and care following the steps of advanced trauma life support in a fully equipped recitation unites. The priority of managements based on Kummoona 4 golden C (lifesaving steps) [1,2]. Control breathing and maintain patent airway, Control circulation and manage shock, Control bleeding by cauterization of small blood vessels and ligation of large vessels and Control soft tissue laceration and boney fragments. Serious cases with head injuries and chest injuries required urgent admission to intensive care unit, treatment of maxillofacial injuries might delay for few days till recovery from head and chest injuries. The incidence of mandibular fractures is high, we does reported 678 patients with maxillofacial injuries through 8 years and they are 535 male and 143 female ranged from 4-76 years (mean 40 years). We does reported 287 cases of fracture mandible represent 42.64% of the total cases, 247 were male and 40 female. The mandibular fractures divided according to anatomical cite, fracture body was treated by IMF in 85 cases, intra osseous screw pin used in 12 cases, these procedure designed for un displaced fracture body, its superiority was simple, easy use, no wires been used with good oral hygiene. Treatment by arch bars with IMF were used in 60 cases, edentulous mandible was treated by Gunning splint on 60 cases, while cases with good general condition was treated by open reduction and trans osseous stainless steel wire of 0.5 mm either as lower border wiring or upper border wiring or titanium plating might be used. The angle involved in 86 case unfavorable status with displacement of the ramus by effect of temporalis pull and medial pterygoid muscle required open reduction of lower border by trans osseous wiring these carried out in 46 cases and the rest by IMF (inter maxillary fixation) for 3-4 weeks, mid line fracture of the mandible is quiet rare and

only 22 cases were reported usually treated by lower border plating. The condyle involved in 62 cases; 55 cases with sub condylar fracture and only 7 cases with intra capsular fracture, sub condylar fracture were treated by IMF for 2-3 weeks and intra capsular fracture which is more serious was treated by intra articular injection of few drops of hydrocortisone with immediate mobilization to prevent future ankyloses. Many techniques have been advocated and described for reconstruction of the mandible after radical tumor surgery or post traumatic missile injuries. In a situation with no much tissue lost after radical surgery of tumors of the mandible with no previous chemotherapy or deep X-ray therapy, our choice is bone grafting from iliac crest as cortical-cancellous bone free graft from iliac crest, this grafts were used because its bulk, rigidity, and also to match the shape of the mandible. In my opinion early mobilization of the jaw to enhance growth based on functional demand of periosteal matrix of Moss theory [3].

While cases with malignant tumors required chemotherapy and DXT. We did restoring the continuity of the mandible by using prosthesis like chrome cobalt or stainless steel even K-wire can be reshaped and fixed in the bone for future chemotherapy and DXT. The author fallow cases for 30 years with extensive ameloblastoma treated by hemimandibulectomy and the defect reconstructed by chrome cobalt prosthesis but after 30 years the prosthesis broken due to corrosive process, the prosthesis removed and immediately reconstructed by bone graft from iliac crest. Reconstruction of the mandible in children not an easy task we did face problems such as small operating field and operating in a small field requires many instrumentation and traction of tissue. It is quite difficult to operate on small child and young patients as a long time treatment with other problem such as unpredictable growth of residual mandible and bone graft, we did use rib graft for reconstruction of lower jaw after radical resection of malignant giant cell tumor. The advantage of bone graft is that it provide a definitive biological reconstruction that is potentially denture bearing and future implantation of teeth. But once postoperative radiotherapy designed a free vascularized bone graft decided. There are many factors affecting the choice of reconstruction, these factors associated with type of tumor, age, general condition and future follow-up, prognosis of patient disease, loss of autologous bone graft and patient wish can be good reasons to choose simpler technique and decisive solution. Reconstruction of the mandible with a

prosthesis made of stainless steel, chrome cobalt, titanium. K wire an easy option with shorter operation time than for substitution of the mandible by bone grafting, but the disadvantages of these metals include loos screw, fractured K wire or corrosion of metal prosthesis or rejection and metal prosthesis exposed preceded by sinus and fistula formation or adherence of the skin to the metal and exposure of the prosthesis. Some of these complications occur less often since the development of new titanium plates and screw (THORP), but they might occur and required removal of prosthesis with failure of reconstruction. Recently we did research for elongation of the mandible of Rabbit by distraction (DO) [4] and the aim was to study the biological changes associated with distraction technique and no body mentioned about these changes before. Distraction as a technique was advocated by genius Russian orthopedic surgeon Illizarof [5] for elongation of lower limbs in children ,this technique was applied for elongation of the mandible in children by McCarthy [6]. Distraction is defined as a process of generating new bone by stretching distraction osteogenesis. Distraction passed through three phases, surgical phase, latent period phase and consolidation phase.

The most critical and vital point in distraction is the latent period phase which elapsed 7 days. We found by our research by studding the latent period after surgical phase a gap created by osteotomized of the bone. During latent period a healthy granulation tissue formed with mesenchymal stem cells derived from periosteum and bone marrow with heavy formation of fibroblasts oriented with the same direction of distraction forces with new bone formation by stretching of bone by rhythmic distraction technique of 1 mm per day divided in 2 terms of 0.5 mm, we did achieve 10 mm elongation of Rabbit mandible. We believe experimental surgery on good animal model is a great benefit for humanity and to improve and advance the Maxillofacial Surgery [7]. In cancer surgery of the orofacial region two regional flaps widely used for reconstruction of the defect in the region, the first flap is forehead temporal flap of McGregor [8] and the second flap is Kummoona Lateral cervical flap advocated in 1994 [9]. Both flaps were used widely for reconstruction of the alveolus, the tongue, floor of the mouth and cheek after radical cancer surgery [10]. This flap consists of skin, platysma muscle and fascia, the blood supply for skin from superficial branch of occipital artery and platysma muscle from sub mental branch of facial artery, other blood supply comes from branches of external carotid artery and elevation of flap has little effect on rich blood supply of the flap. Design of the

flap; by two vertical parallel incisions are made one just below the mastoid region and the other begin below the lower border of the mandible 1 cm anterior to masseter muscle and both vertical incisions extended down to the supra clavicular region. Dissection for elevation of flap started from supra clavicular region and the free end of the flap passed through a tunnel under the angle of the mandible to the oral cavity for reconstruction of the alveolus after resection of the mandible or the tongue after hemi glossactomy or floor of the mouth or the cheek. Orocutaneous fistula occurred and usually it does closed within 3-4 weeks and we do pack it by iodoform pack to prevent infection. The flap also been used for reconstruction of submental region of posttraumatic missile injuries and also for reconstruction of lower lip in war injuries. The advantage of this flap it can be one stage operation, superiorly based, axial pattern flap, and the arc of rotation is about 90°, it's hairless and the thickness of the flap is well tolerated by the oral cavity structures. Kummoona lateral cervical flap can work as a good access for radical neck dissection. The flap also been tested experimentally on Rabbits to assess the viability of the flap.

References

1. Kummoona R (2011) Management of maxillofacial injuries in Iraq. *J Craniofac Surg* 22: 1561-1567.
2. Kummoona R (2017) Pediatric maxillofacial injuries with special attention to fracture condyle. *EC Pediatrics* 5: 170-171.
3. Moss ML (1968) The primary of functional matrices in orofacial growth. *Dent Proc Dent* 19: 65-73.
4. Kummoona R (2010) Reconstruction by lateral cervical flap of perioral and oral cavity: Clinical and experimental studies. *J Craniofac Surg* 21: 660-665.
5. Illizarov GA (1988) The principle of illizarov method. *Bull Hosp Jt Ortho Inst* 48: 1-11.
6. McCarthy JG, David MD, Staff Enbeerg A (1995) Introduction of an intraoral bone lengething device. *Plast Reconstr Surg* 4: 978-981.
7. Kummoona R, Abdul ME (2017) Distraction technique of lower jaw on rabbit: Experimental studies research. *J Stem Cell Biol* 3: 1-5.
8. McGregor IA (1963) The temporal flap in intra oral cancer; its use in repairing post excisional defect. *Br J Plast Surg* 16: 318-325.
9. Kummoona R (1994) Use of lateral cervical flap in reconstructive surgery of the orofacial region. *Int J Oral Maxillofac* 23: 85-89.
10. Kummoona R (2017) Advances of maxillofacial surgery. *Clin Surg* 2: 1-2.