ULUSAL TRAVMA DERGİSİ
TURKISH JOURNAL OF TRAUMA & EMERGENCY SURGERY
Volüm 7 Sayı 1

USE OF A MODIFIED OCCLUSAL BITE GUARD TO TREAT SELF-INDUCED TRAUMATIC MACROGLOSSIA (TWO CASE REPORTS)

HASTANIN KENDİSİNİN OLUŞTURDUĞU TRAVMATİK MAKRO GLOSSİYİ ÖNLEMEK İÇİN AĞIZ AŞISI APEREYİN KULLANIMI

Serhat YALÇIN[1], Buket AYBAR[2], Cemalettin ERTEKİN[3], Recep GÜLOĞLU[4]

ÖZET: Amaç: Dilde devamlı olarak meydana gelen travmayı önlemek üzere ağız açıcı apareyin kullanımı
Dizayn: İki vaka raporu
Araçlar: ağız açıcı aparey
Sonuç: Ağız açıcı apareyin erken kullanılarak, travmatik makroglossi'li 16 yaşında erkek ve 22 yaşında bayan hastanın, diline gelen travmanın önlenmesi ve dildeki ödemin hızla giderilmesi
Anahtar kelimeler: Komaya giren hastalar, travmatik makroglossi, oral cerrahiv kullanılmaya başlamıştır (4).

SUMMARY:Objective: To describe the use of a bite guard to avoid continued tongue trauma and edema
Design: Two case reports
Interventions: bite raiser
Conclusion: Muscle relaxation and a bite guard were used in a 16 years old male and 22 years old female with traumatic macroglossia, which allowed for rapid resolution of edema and prevented additional trauma to the tongue.
Key words: Comatose patients, traumatic macroglossia, oral surgery

INTRODUCTION

As a consequence of head trauma and some other neuralgic diseases a clinical case called "coma" might occur (1). A multidisciplinary approach must be applied in intensive care units on patients having the case mentioned above. Comatose patient exhibit powerful ruminatory reflex chewing and bruxism that may result in soft tissue trauma, most commonly to the tongue (2,3). This condition called as a "Traumatic Macroglossia". Traumatic Macroglossia is defined as a resting tongue that protrudes beyond the teeth or alveolar ridge (4). This is a rare condition and only a few cases have been reported(1,2,4,5,6,7).

The purpose of this report is to describe two cases of traumatic macroglossia and their clinical progresses in the intensive care units in terms of head trauma.

[1]:Professor, Istanbul University, Faculty of Dentistry, Department of Oral Surgery, Capa, Istanbul, Turkey
[2]:Research Assistant, Istanbul University, Faculty of Dentistry, Department of Oral Surgery, Capa, Istanbul, Turkey
[3]:Professor, Istanbul University, Istanbul Faculty of Medicine, Department of General Surgery, Capa, Istanbul, Turkey
[4]:Associate Professor, Istanbul University, Istanbul Faculty of Medicine, Department of General Surgery, Capa, Istanbul, Turkey
* Yazışma Adresi : Buket Aybar Dr. Dt (✉)
İ.Ü.Diş Hekimliği Fakültesi
Ağız Diş Çene Hastalıkları ve Cerrahisi ABDÇapa/İstanbul
Telefon: (90) 212 534 68 00-289 E-mail: buketaybar@hotmail.com

CASE I

A male patient at the age of sixteen had been hospitalised in Istanbul University, Faculty of Medicine, Department of Emergency Service and Intensive Care Unit after having been fallen from an electric post. The patient with unconscious, has been found to have a Glasgow coma scale of E_1 M_1 V_{E3}:5. During this period, intensive care unit clinician realised that the patient's tongue had become gradually protrusive and macroglossic. After consulting with ENT surgeons, treatment of high doses steroid was applied on the patient. However, no recovery was recorded at the end of this treatment which lasted for a week. Approximately forty five days after the injury, Istanbul University, Faculty of Dentistry, Department of Oral and Maxillofacial Surgery Clinic was referred for consultation by the intensive care unit. After clinical examinations, it was observed that the patient's tongue approximately one and a half as big as its normal dimensions, had grown so big that it no longer fit his mouth (Fig. 1). Although the patient

was cooperative, he was neither able to talk nor move his tongue which was dry and covered with crust. The tissue continuity of the tongue was lost by the penetration of the lower incisal teeth to the ventral side of the tongue carving a wound 3 mm depth and 4 cm long. This obstruction of the lymphatic and venous drainage caused congestion in the tongue. Upon these changes, oedema and inflammatory change occurred with the corpus of the tongue. Diagnosis was made as a "Traumatic Macroglossia".

Surgical intervention was planned and under the general anaesthesia, the patient's mouth was opened an the crust on his tongue was cleaned. Prosthesis could not be prepared because an impression from the patient could not be taken due to macroglossia. For this reason, two mouth prop were placed on the patient's both molar teeth, thus creating an open bite at the anterior area and relieving the tongue from the trauma of the incisive teeth. The mouth prop were secured with a ligature wire of 0.4 mm and the open end of the wire was clasped by a haemostatic pens (Fig. 2).

The patient was given sedative and it was observed that the oedema was dissolved within 24 to 48 hours following the treatment. On the 5th day, the mouth prop was taken off and it was observed that the tongue had become to it original dimensions. The patient was able to move his tongue and the tracheostomy wound was also recovered and finally the patient was discharged from the hospital (Fig. 3,4).

Figure 1. Patient's appearance before the treatment. Tongue protrudes beyond the teeth and alveolar ridge.

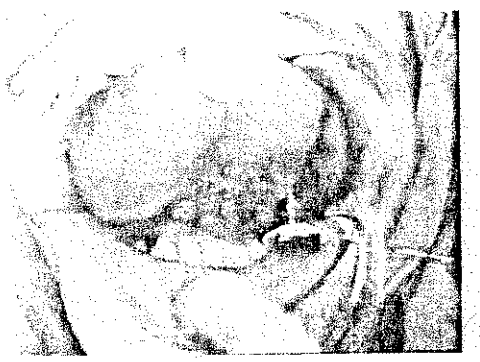

Figure 2.The patient's appearance while the mouth was opened by mouth prop.

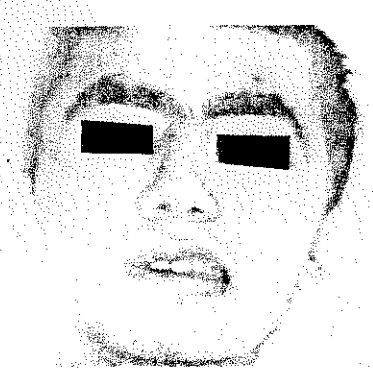

Figure 3.The patient's appearance after the treatment.

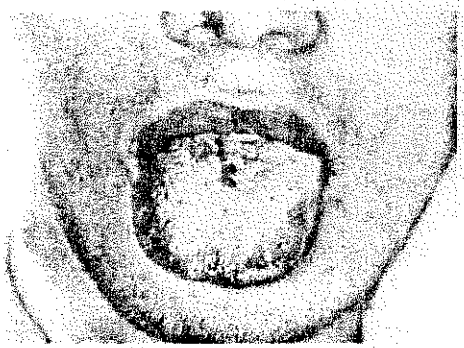

Figure 4.The tongue appearance after the treatment

CASE II

A female patient at the age of twenty-two was hospitalised in Istanbul University, Faculty of Medicine, Department of Emergency Service and Intensive Care Unit as a result of a suicide attempt with a gun. The Glasgow Cma scale was found to be E_1 M_1 V_1:5. The clinical examination showed the pupils minimally isochoric while the light reflex was found-/+.

Approximately two months after the injury, Istanbul University, Faculty of Dentistry, Department of Oral and Maxillofacial Surgery Clinic was referred for consultation by the intensive care unit secondary to patient's tongue that had become gradually protrusive and macroglossic. The clinical examination of this case presented similar appearance and data as of the case discussed above (Fig. 5).

The following procedure were done without any anaesthetic application to the patient because the state of her being unconscious. Maxillary and mandibular impressions were taken in order to prepare a night guard of 2 mm thickness made of soft material by Biostar® for the lower jaw and an acrylic Hawley Plaque for the upper jaw serving as an occlusion elevator at the posterior area (Fig. 6). Thus, an early contact at the posterior and an open bite in the anterior were obtained therefore the tongue was set free to function. Following the cleaning of the tongue and mouth, the prosthesis was placed and the tongue was replaced back into the oral cavity (Fig. 7). Unfortunately, after three days oedema in the tongue had begun to diminish, the patient died without final data obtaining regarding her last condition

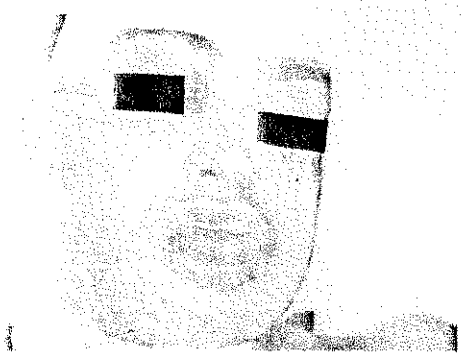

Figure 5.The patient's appearance before the treatment.

Figure 6. Plaster stone models and lower soft night guard and upper Hawley appliance. Thus creating an anterior open bite.

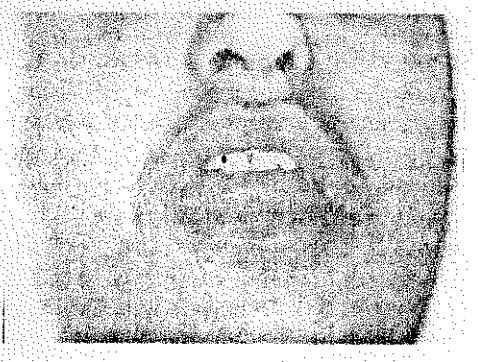

Figure 7. Intraoral view of appliances in place showing position of tongue.v

DISCUSSION

In the intensive care units, the unconsciously wounding of tongue and lips a problem, which the clinicians face. Numerous appliances and techniques to prevent self-inflicted trauma have been tried. They include occlusal bite plane prostheses, rachet mouth props, padded tongue blades, acrylic tongue stent, oral airway appliances and intermaxillary fixation (1,2,8,10,11,12).

An earlier is to be obtained in the treatment when obstruction in the lymphatic and venous vessels are eliminated at the initial treatment stages of the traumatic macroglossi cases. Replacing the tongue into the oral cavity prevents drying, fissuring and superficial infection and more swelling . Earlier manual replacement of the tongue into the oral cavity is advised in order to arrest the cycle of venous and lymphatic obstruction and congestion that leads to further edema and increased tongue swelling(9).

Saah et al (9) has used a bite guard apparatus for the treatment of a case and has observed that the oedema of the tongue was resolved within 48 hours the tongue to take its normal posture.

Roberts (8) had presented a treatment of a twelve year old patient with a mobile apparatus consisting Adam's Cribs and Hawley Russel retainer.

Fenton (12) described the function and fabrication of a removable acrylic resin dental appliance useful in the hospital management patients with uncontrolled seizure disorders or other neurologic impairment.

Piercell et al (2) and Hanson et al (13) were suggested that to use acrylic tongue stent for the traumatic macroglossia patient's treatment. But acrylic tongue stent type apparatus are more difficult to wired in place and cannot be removed for cleaning and performing oral hygiene. In such cases, using mobile prosthesis would be more appropriate to protect the tongue in terms of the hygienic point of view (8,10,12).

In our first case mentioned above, a prosthesis was not made to prevent trauma because an impression from the patient couldn't be taken due to macroglossia. In both of our cases, it was observed that the reason causing the trauma was the lower incisive tooth. Thus, in the second case, to protect the tongue from the sharp edges of the lower front teeth, a night guard made of a soft material was made for the anterior teeth.

As a conclusion, it should always be taken into consideration that early use of a bite guard allows for more rapid solution of edema and prevention of additional trauma to the tongue in patients with traumatic macroglossia

REFERENCES

1. Peters TED, Blair AE, Freeman RG: Prevention of self inflicted trauma in comatose patients. Oral. Surg. Oral. Med. Oral. Pathol. 57:367-70, 1984

2. Piercell MP, Waite DE, Nelson R: Prevention of self inflicted trauma in semicomatose patients. J. Oral. Surg. 32:903-5, 1974

3. Guyton AC: Textbook of Medical Physiology. 6th Edition, W.B. Sounders, Philadelphia 1981, pp. 778

4. Riter FM, Schecter GL, Richardson MA: Macroglossia; etiologic consi-deration and management techniques. Int. J. Pediatr. Otorhinolaryngol. 8:225-36, 1958

5. Alvi A, Theodoropoulos PA: Self - inflicted traumatic macroglossia. J Laryngol Otol. 111:75-6, 1997

6. Kurlemann G, Lunkenheimer A, Jorch G, Bulka M, Hilgenberg F: Traumatic macroglossia-a rare indication for tracheotomy. Clin. Pediatr. 197:312-4, 1985

7. Jakobson DJ, Einav S, Krichevsky I, Sprung CL, Sela MS: Traumatic macroglossia: a life-threatening complication. Crit Care Med. 27:1643-5, 1999

8. Roberts JG: Use of a modified occlusal bite-guard to prevent self-induced injury in intensive care patients. Anaesthesia.

150:144-5, 1995

9. Saah D, Breverman I, Elidan J, Nageris B: Traumatic macroglossia. Ann. Otol. Rhinol. Laryngol. 102:729-30, 1993

10. Wilkinson PA, Wilkinson GR: The use of a bite raiser in the intensive care unit. Anaesthesia. 47:972-3, 1992

11. Freedman A, Sexton T, Reich D, Berkowitz R.J: Neuropathologic chewing in comatosed children: a case report. Pediatr. Dentistry. 4:33-6,1981

12. Fenton SJ: Management of oral self-mutilation in neurologically impaired children. Special. Care. Dent. 2:70-3, 1982

13. Hanson GE, Ogle RG, Giron L: A tongue stent for prevention of oral trauma in the comatose patient. Crit. Care. Med. 3:200-3, 1975