

Dental Follicle

The E- Journal Of Dentistry

ISSN 2230-9489 (e) | Dr. Syed Nabeel

Dentistry

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Contents

Editorial Board of Dental Follicle – The E Journal of Dentistry..... 3

Scientific Editorial - Various Types of Orthodontic Brackets – Advantages and Disadvantages – A review 4

A technique for surgical mandibular exostosis removal 6

Introduction..... 6

Case presentation:..... 6

Conclusion 9

References..... 9

Pictorial..... 10

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Scientific Editorial - Various Types of Orthodontic Brackets – Advantages and Disadvantages – A review

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Orthodontics is one the most challenging fields of dentistry. No two cases are same in Orthodontia. From the time of Edward Angle to the present day the, evolution of bracket system has been a constant process. In this editorial we would like to briefly summarize the various types. Bracket Systems are basically classified into Buccal and Lingual types

Buccal types:

1. Pre-adjusted edgewise appliance
2. Tip Edge Appliance
3. Standard Edgewise Appliance
4. Begg Appliance

Lingual Type:

Lingual Appliance

1. Pre-adjusted Edgewise Appliance:
Introduced by Andrews in 1976. Based on the philosophy of ideal bracket system introduced by Andrews in 1976 comes in various slot sizes .018 “x.028 “ / .022” X .028” . These come in various prescriptions such as Andrews, Alexander, Roth’s and MBT. These brackets come in various morphologies

- Siamese – Standard, Minitwin , Minitwin with vertical slot
- Single wing : Attract
- Self-Ligating : Damon, In-Ovation R , Smart Clip

These brackets are made in various materials such as Stainless Steel, Ceramic, Polycarbonate, and Zirconia. Advantage of PEA includes - Decreased Wire bending, Sliding mechanics and good detailing and finishing

Disadvantages: Ignores biological variability, increased friction which requires increased anchorage considerations.

2. Tip Edge System :

Introduced by Kesling in 1988 , based on philosophy of using light forces to first free crown tipping followed by root uprighting . Comes in the maximum dimension of Open.028”X.028” / Closed .022” X .028” . The treatment is done in three stages – Stage 1 involves aligning teeth and correcting incisor and molar relationships, corrections of crossbite and rotations. Stage involves space closure and stage 3 corrects inclination of teeth.

3. Standard Edgewise

Introduced by Angle in 1928 , it has a horizontal slot and tooth movement is achieved by bodily movement. This has been largely replaced over the years by the Preadjusted edgewise appliance.

4. Begg Appliance :

Introduced by Raymond Begg in 1956 , the system is based on light forces and tipping movement of teeth. The bracket has a vertical slot in which the archwire is secured by a brass pin. The treatment is done in 3 stages .

Stage 1: Align teeth with correction of incisor and molar relationships, crossbite and rotations.

Stage 2: Space closure and maintain Stage 1 corrections

Stage 3: Correct inclinations of teeth

Only tipping movement possible and less friction. Largely replaced by Tip Edge .

5. Lingual Appliance :

Can be bonded directly Eg : Incognito . Advantage is aesthetically pleasing and disadvantage is longer operator chair time and increased patient discomfort.

Other Appliances :

Semi- Customized Appliance : (Hocaver , 1985) it has more variability than fully programmed appliance : BEDDOIT – made by mixed prescription Straight Wire Appliance .

Fully Customized Appliance: Designed by Andrieko in 1994, based on individual patient needs. Eg: Ormco Insignia.

A technique for surgical mandibular exostosis removal

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Introduction

Exostosis, termed torus mandibularis¹ (commonly called tori) are a common clinical finding. The majority of these are asymptomatic, benign bony outgrowths which are slow growing over the patient's lifetime. These consist of dense cortical bone and are avascular in nature.² Mandibular exostosis are commonly located lingual to the premolars and are often bilateral. They also may be located on the buccal portion of the ridge either in a solitary location or extensively spread bilaterally. Incidence has been reported in the range of 9 to 60 percent in various

ethnic groups and has been reported in the literature for over 180 years.³⁻⁵ Both genetic and environmental factors have been implicated as the causative factor and the true cause may be multifactorial.⁶

The presence of exostosis may pose a problem in successful construction of dentures. When large enough they may create speech issues due to limitation of the tongue space. The tissue overlaying exostosis histologically is thinner than normal gingiva and may ulcerate easily when masticating hard or sharp foods.

Case presentation:

An 86 year old female patient of the practice presented with the complaint of soft tissue irritation due to abrasion from food in the buccal posterior right quadrant. A buccal exostosis was present at the first molar and had been not increased in size during the sixteen (16) years the patient had been in the practice. (figure 1) After discussion with the patient she requested that the exostosis be removed to help

decrease the future food abrasion of the thin overlaying tissue.



Fig1



Fig2



Fig3



Fig 4

Anesthetic was administered to block the inferior alveolar nerve. Additional anesthetic was then applied locally at the papilla to control bleeding at the surgical site.

A bipolar electrocautery unit (Bident, Oaks, PA) is utilized to make an intrasulcular incision distal to the exostosis to be removed and extended mesially to allow soft tissue reflection and exposure of the exostosis. (Figure 2) Vertical releasing incisions are not necessary and if additional reflection is needed the sulcular incision should be extended further distal and

mesial to the surgical site. The incision may be made with a scalpel blade but the bipolar surgical tip will afford better hemostasis during surgery⁷ and therefore provide better visibility. The bipolar electrocautery tip may be used in a wet field⁸ and the authors recommend applying a water spray during cutting. This will keep the tissue hydrated and yield a flap margin that is non-charred.⁹

Reflection of the soft tissue is accomplished with a periosteal elevator with care being given to avoid tearing the thin tissue. Tissue should be reflected as a full thickness flap, with the entire exostosis being exposed especially inferiorly. (figure 3)



Fig5



Fig 6

The periosteal elevator is placed inferior to the exostosis to protect the underlying soft tissue and a surgical length carbide (Brasseler, Savannah, GA) in a highspeed handpiece with water is used to score a line

on the superior aspect of the exostosis. (figure 4) The score line should be placed close to the normal contour of the alveolar ridge. A monoplane chisel is placed in the score line. The chisel will allow the exostosis to be cleaved from the alveolar ridge. It is important that the periosteal elevator be placed inferior to the exostosis to prevent accidental slippage of the chisel tip and subsequent tissue damage. The tip of the periosteal elevator is kept in contact with the bone and a gentle tap is applied to the chisel with a surgical mallet. (figure 5)

The exostosis being dense cortical bone will cleave at the score line and separate from the underlying bone as a single piece. (figure 6) The osseous bed will present with sharp edges at the point of cleavage. (figure 7) A football diamond (Brasseler, Savannah, GA) is utilized in a highspeed handpiece with water to smooth the alveolar ridge and remove any sharp edges that resulted after cleavage of the hard exostosis. (figure 8) The flap is repositioned and a vertical mattress suture is placed at each papilla with 4-0 polyglycolic acid (PGA) suture. (figure 9) The sutures should be left in place for twenty-one (21) days. Prior to release of the patient, gentle pressure is applied to the site with wet gauze to permit a fibrin clot to help tack the periosteum to the new osseous bed. Pressure should be applied for 5 minutes. This will also prevent fluid accumulation under the flap during the immediate period following surgery.



Fig7



Fig 8



Fig9



Fig 10

The patient returned two weeks post surgical to check healing and sutures were still present. Inflammation was absent and the patient indicated that minimal discomfort was present following surgery and the area felt normal 3 days after surgery. A follow-up appointment was scheduled at four weeks post surgical to check the site. Sutures were absent and tissue appeared healed. Slight recession was noted on the mesial buccal of the first molar

Conclusion

Exostosis are a common occurrence as cited in the literature. These slow growing dense cortical bone deposits usually do not cause patient issues except where removable prosthetics must sit either adjacent to or over these areas. Because the overlying tissue is thin, it may ulcerate easily due to appliance pressure or abrasion from some foods.

Excision of exostosis in the mandible is a safe predictable procedure with minimal postoperative sequelae. As an alternative to a scalpel, the Bident bipolar electro-surgical unit provides an incision without charring of the flap edges as would be seen with monopolar electro-surgical units.¹⁰ The bipolar electronic surgical tip produced a smaller temperature gradient (average difference, 9.2 degrees C) at the 1-mm tissue depth compared with the monopolar electro-surgery tip (average difference, 14.6 degrees C).¹¹ Additionally, arcing commonly seen with monopolar electro-surgery units when cutting near metallic restorations or

dental implants is not observed with the Bident electronic unit making its usage safe.¹² The tip additionally provides coagulation of the capillaries transected during the incision and hemostasis is maintained providing better visibility in the surgical field then would be expected with a scalpel incision.

The dense nature of the exostosis allows it to be cleaved in a single piece with a chisel after appropriate scoring of the bone. Use of surgical chisels has decreased over the past twenty (20) years for fear the potential of soft tissue damage should the tip of the chisel slip.^{13, 14} Chisels may be used safely when a periosteal elevator is placed below the bone to be sectioned to act as a safety stop. An alternative to the chisel has been use of a diamond to grind away the entire exostosis. In the authors opinion this will lead to accumulation of nonvascular osseous debris under the flap which may lead to compromised healing.

References

1. Abrams S.: Complete denture covering mandibular tori using three base materials: a case report. *J Can Dent Assoc.* 2000 Oct;66(9):494-6.
2. Pynn BR, Kurys-Kos NS, Walker DA, Mayhall JT.: Tori mandibularis: a case report and review of the literature. *J Can Dent Assoc.* 1995 Dec;61(12):1057-8, 1063-6.
3. Shah DS, Sanghavi SJ, Chawda JD, Shah RM.: Prevalence of torus palatinus and torus mandibularis in 1000 patients. *Indian J Dent Res.* 1992 Oct-Dec;3(4):107-10.
4. Jankittivong A, Langlais RP.: Buccal and palatal exostoses: prevalence and concurrence with tori. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2000 Jul;90(1):48-53.
5. Sonnier KE, Horning GM, Cohen ME.: Palatal tubercles, palatal tori, and mandibular tori: prevalence and anatomical features in a U.S. population. *J Periodontol.* 1999 Mar;70(3):329-36.
6. Seah YH.: Torus palatinus and torus mandibularis: a review of the literature. *Aust Dent J.* 1995 Oct;40(5):318-21.
7. Caffee HH, Ward D. Bipolar coagulation in microvascular surgery. *Plast Reconstr Surg* 1986;78:374-7.

8. Gottehrer NR.: Atraumatic Surgical Exposure of Dental Implants: A Case Report. Int Mag Oral Implantology. March 2001:29-30.
9. Livaditis GJ.: Comparison of monopolar and bipolar electrosurgical modes for restorative dentistry: a review of the literature. J Prosthet Dent. 2001 Oct;86(4):390-9.
10. Shellock FG.: Radiofrequency energy induced heating of bovine articular cartilage: comparison between temperature-controlled, monopolar, and bipolar systems. Knee Surg Sports Traumatol Arthrosc. 2001 Nov;9(6):392-7. Epub 2001 Jul 11.
11. Shellock FG.: Radiofrequency energy-induced heating of bovine capsular tissue: Temperature changes produced by bipolar versus monopolar electrodes. Arthroscopy. 2001 Feb;17(2):124-31.
12. Wilcox CW, Wilwerding TM, Watson P, Morris JT.:Use of electrosurgery and lasers in the presence of dental implants. Int J Oral Maxillofac Implants. 2001 Jul-Aug;16(4):578-82.
13. Sailer HF, Pajarola GF: Color Atlas of Dental Medicine: Oral Surgery for the General Dentist. Thieme Publishing, New York. 1999 296-97.
14. Leonard M.: Considerations in the removal of mandibular tori. Dent Today. 2000 May;19(5):86-8, 90.

Pictorial

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: Use irrigating tip..laterally opened...Gauge 30 (tip diameter .3 mm)...place it FREELY inside canal ..3 mm away from apex...irrigate SLOWLY and Gently...take your time...5 ml every 3-5 minutes ..at least for 30 minutes from the



Irrigation tip...G 30 (.3mm)...3 mm from apex

beginning...take deep breath while irrigatin