

Performing Anterior Upper Jaw Teeth Per-Apical Surgery without Palatal Local Anaesthetic Involvement; A Clinical Study

Running Title: Per-Apical Surgery without Palatal Anesthesia

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ABSTRACT

Aims of study: This study aimed to evaluate the acceptance of achieving per-apical surgery in the anterior upper teeth without involving the palatal mucosa with a local anesthetic injection.

Materials and Methods: Study conducted on 440 tooth, patients of (15-45) years of age, from (2000-2009) in Oral and Maxillofacial Department in Al-Salam Teaching Hospital in Mosul city. All underwent an Apicoectomy operation in upper anterior jaw teeth under local anaesthesia, without palatal anesthetic involvement. Labial mucosal infiltration of anesthetic agent used to manage the whole operations.

Results: all patients satisfy the surgical operation without palatal injection.

Discussion and Conclusions: This technique avoids palatal injection, so minimize per-surgical discomfort and obviate postoperative injection point pain palatally and other complications of local anesthesia.

Keywords: local anesthesia, pain, palatal mucosa, suturing.

INTRODUCTION

The use of palatal anesthesia is a well-known procedure, and it has been described in detail in textbooks. Since it is a rather painful injection ⁽¹⁾, some techniques such as pressure ⁽²⁾, electronic ⁽³⁾, cryogenic ⁽⁴⁾, or topical anesthesia ⁽⁵⁾ have been suggested to reduce the patient's discomfort. However, those methods are not universally effective⁽⁶⁾, and some of them even require specific equipment ⁽⁷⁾. and palatal anesthesia remains a painful experience for most patients ⁽⁶⁾.

Palatal injection for permanent maxillary tooth removal is poorly tolerated by the patients, and it is one of the most painful procedures in dentistry ^(8, 9). Piercing the mucosa is painful to a degree, but the main source of the pain is displacement of the mucoperiosteum⁽¹⁰⁾.

Recently, it has been claimed that maxillary permanent teeth could be extracted without palatal anesthesia^(6,11). There are three opinions explaining the efficiency of the technique. First, it has been advocated that the anesthetic requirement for tooth extraction is not as high as that required for routine conservative dental treatment ⁽¹²⁾. Second, it has been claimed that Articaine diffuses more readily through soft and hard tissues than other local anesthetics⁽¹¹⁾. Finally, it has been suggested that the porous nature of the maxilla facilitates the diffusion of any local anesthetic solution⁽¹³⁾. Aims of study: this study aimed to evaluate the patient acceptance and satisfaction of achieving peri-apical surgery in upper anterior teeth without involving the palatal mucosa with a local anesthetic injection.

PATIENTS AND METHODS

This Study conducted on 440 anterior teeth of upper jaw of 210 patients, ranging from (15-45) years of age, from (2000-2009) in Oral and Maxillofacial Department in Al-Salam Teaching Hospital in Mosul city. All under gonapicoec to my operation in upper jaw under local anaesthesia (1.8 ml lidocaine 2% with adrenaline 1\80000), without palatal mucosa anesthetic involvement. Labial mucosal infiltration of anesthetic drug is the only procedure used to manage the whole operations.

The exclusion criteria include patients with apical lesions bulged palatally, those with spaced or lost teeth involved in the operative site including diastema and paediatric patients. The suturing technique was circumdental suturing (basket and corner type suture).

The study pointed toward detection of patient's feeling-pain throughout the surgical operation involving incision, peri-apical processing and suturing of the three sided labio-buccal mucoperiosteal flap. We explain to the patients who underwent the operative procedures, the possible unpleasant problems that may associated with the surgical technique due to exclusion of palatal mucosa anesthetic injection, all operations started approximately (6-8) minutes from last anesthetic injection to ensure effective vasoconstriction, two cartridges are used for an involved apical lesion for each tooth. The patients evaluated intra-operatively regarding presence or absence of pain. No sedative drugs were used pre-operatively.

RESULTS

For all patients underwent the upper jaw surgical procedures without palatal mucosa anesthetic involvement, nobody experience pain during the operation, including incision, retraction of the labio-buccal mucoperiosteal flap, bone drilling for apical surgery curettage or apicoectomy and finally, flap's suturing. The operator try to avoid any unnecessary contact with the palatal tissue during the operation especially at time of suturing, accordingly, circumdental suturing used to avoid any surgical trauma to the palatal side.

In all operations, nobody necessitate an optional palatal injection. Throughout the operation, there is no interruption with the palatal mucosa.

DISCUSSION

The local anaesthetic solution should be delivered into the loose connective tissue of the alveolar mucosa near to the root apices⁽¹⁴⁾.

Circumdental suturing does not involve the palatal mucosa while securing the flap edges, ensure isolation of palatal mucosa throughout the suturing procedure out of needle tick.

A study conducted by Kubilay et al improve that after an enough post-anesthetic delay, it is possible to extract the maxillary teeth without palatal anesthesia and the technique is effective for all maxillary teeth. However, he mentioned that, palatal anesthesia is a must for the teeth requiring surgical procedures⁽¹⁵⁾.

We ensure that the palatal mucosa was not anesthetized by the indirect effect of labio-buccal infiltration by selecting a sample (20 patients) randomly and try to test the sensibility of pain by make a puncture with a dental needle in the palatal mucosa.

Another study achieved by Richa et al who recommend the use of periodontal ligament injection were a volume of solution of 0.2 to 0.4 ml per root which has several advantages, they consider the periodontal ligament injection more acceptable than direct painful palatal technique⁽¹⁶⁾.

We improve that peri-apical operation for upper teeth could be achieved and being effective without administration of palatal anesthesia, indeed, there is no anesthesia affecting the palatal mucosa transferred thought out the alveolar process from the buccal infiltrative anesthetic agent. Pediatric patients were not included in this study because they might not express the pain correctly.

CONCLUSION

This technique avoids palatal injection, so minimize discomfort preoperatively and obviate postoperative injection point pain palatally.

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