



ISSN Print: 2394-7489
ISSN Online: 2394-7497
IJADS 2018; 4(1): 143-146
© 2018 IJADS
www.oraljournal.com
Received: 24-11-2017
Accepted: 25-12-2017

Elias Boutros
PhD in Oral and Maxillofacial
Surgery, Faculty of Dentistry,
Al-Andalus University for
Medical Sciences, Qadmous,
Tartous, Syria

Abdullah Atik
MSc student, Oral and
Maxillofacial Surgery,
Faculty of Dentistry, Hama
University, Hama, Syria

Effect of the use of platelets: Rich plasma (PRP) on periapical bone repair following Apicectomy on a sample of patients from the middle area in Syria

Elias Boutros and Abdullah Atik

Abstract

Purpose: To efficacy evaluation of using platelets rich plasma (PRP) on bone healing after eradication of maxillofacial cysts.

Materials and Methods: 30 peak lesion cases that achieved on 28 patients. The sample was randomly divided into two groups. Group I: Practice plasma rich platlets on 14 patients after extraction of cyst lesion. Group II: Extracted of cyst lesion for 14 patients without adding plasma rich platlets. Cases were clinically and radio graphically follow-up after 3, 6 and 9 months.

Results: PRP group showed bone reconstruction faster than the control group. There are statistical differences between groups in 1, 3, 6 and 9 months after surgery for management with PRP.

Conclusion: The results of this study suggest that using platelets rich plasma (PRP) provide bone reconstruction faster and better after eradication of maxillofacial cysts.

Keywords: Platelets rich plasma, bone repair, cyst, Apicectomy

Introduction

Apicoectomy may be the best medical choice for cases that are failed the conservative unsurgical pulpal treatment with them for eliminating of periapical lesion ^[1]. Apicoectomy means cutting or amputation the root apex and curettage of periapical lesion during surgical operation. Mandibular cysts considered relatively of commonly lesions, were about 22.5% from oral diseases ^[2].

All commonly methods used in cysts treatment are means an alternative of two main methods which are: total eradication (Enucleation) and Marsupialization^[3].The purpose of this article is to review many of opinions and discussions about the existence of cancer stem cells, it's origin, and role in (HNSCC) in addition to identification, markers, metastasis and treatment.

Aim of study

The study is aimed to knowledge of effecting range of plasma rich platlets PRP in bone restoration and curing after dental cysts extraction, though from studying clinical and radiographic changes where bone density.

Materials and Methods

The sample is composed of 30 peak lesion cases which achieved on 28 patients (between of them tow patients had two cysts lesions) there ages between (18-45) years from revision patient in Oral and Maxillofacial surgery Department in Faculty of Dentistry in Hama – University during 2014-2015 years, were cases are equally distributed to two groups:

- First Group: Practice plasma rich platlets on 14 patients after extraction of cyst lesion.
- Second Group: Extracted of cyst lesion for 14 patients without adding plasma rich platlets.

Surgical Incision

The incision is executed into adjacent teeth to interference tooth, the section is trapezium or a triangle shape, by using a blade number 15, then eliminated the section by sharp periosteum elevator, and protecting of section in its place by another elevator.

Correspondence

Elias Boutros
PhD in Oral and Maxillofacial
Surgery, Faculty of Dentistry,
Al-Andalus University for
Medical Sciences, Qadmous,
Tartous, Syria

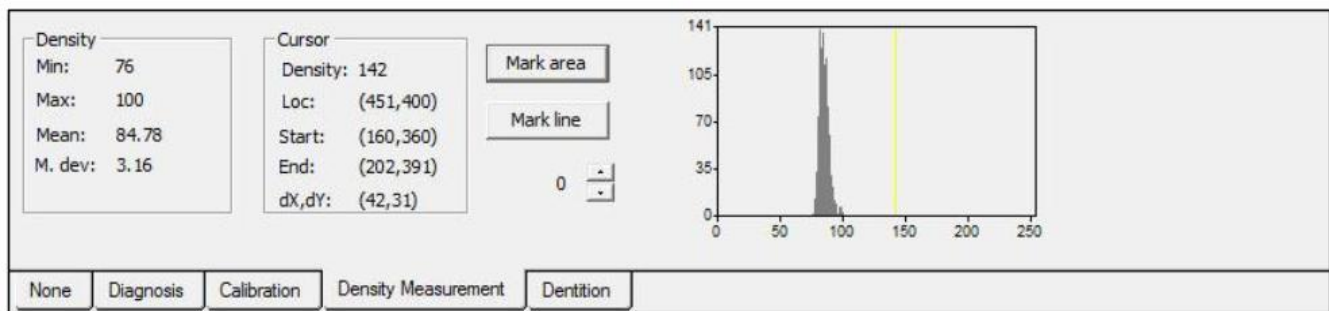
- Exposure of root apex after an accurate determining of its place, this by doing an opening in bone by rounded bur with saline solution, where cases had absorbed bone, were find fistula or losing in vestibule bone plate which lead to root apex, just expansion of bone opening to ability of curettage the injured tissues completely.
- Total curttage for lesion by using different sizes of bone spade to assuring elimination the residual cyst lesion.
- Then applying plasma riches palatetelet within bone cavity formation due to cyst eradication.
- Whereas the second group (watching) we washing the area with sodium chloride only without putting PRP.
- Returning the section into its place and making an intermittent suturing by silk4/0 suture and triangle segment needle.
- Instructions are gives to the patient, which enclosed by prescription, then requesting from the patient to reviewing the clinic after seven days to removed sutures and ensuring from inexistence of side effects may distressing the surgical operation, also we inform the patient with times periods which must revision at regular form for monitoring the healing or relapsing of the case.

Monitoring all cases clinically and radio graphically during three different times as the following:

- First period: after 3 months
- Second period: after 6 months
- Third period: after 9 months

Where depending on radiographical assessment on rude 1972 standards which mostly used and classified as the following: (complete, incomplete, and unsuspected curing, failure), According of this the radiographical curing is undefined as complete curing of bone only but its also as incomplete curing (cicatrical tissue), during clinical assessment they depending on presence or absence of any clinical symptoms or features including pain, oedema, reddish, uncomfotable, appears of fistula,.....etc. according of this results divided into finally two groups:

Cured and uncured cases includes complete or incomplete radiographic curing without presence of clinical symptoms or features, while incomplete curing cases includes radiographic curing undoubted of it or failure or when there are clinical symptoms or features except radiographic curing.



Results

This research aims to efficacy evaluation of using plasma rich platelets on bone healing after eradication of maxillofacial cysts.

The sample of research composed of 30 surgical cases were performed on 28 patients which are interviewing MaxilloFacial Department in Faculty of Dentistry / Hama University in 2014-2015, which ages around (18-45) years, were divided the sample into two groups: watching group which include 14 surgical case where unapplied the plasma riches platlets on them, and testing group include 14 surgical case where applied the plasma riches platlets on them.

Then executed the radio graphical bone density across separated progression times (3-6-9- months).

Mean value of bone density of patient group that unapplied the PRP is about (60.33) and about (54.32) of the other group which applied the PRP on it.

There are no statistical variances between patients in bone density in the two groups preoperatively. This is due to presence of cyst lesion in bone were the measured density is radiographic density of cyst lesion and isn't differ essentially from other lesion just in types, while all cysts which made under surgery are roots therefore are no difference.

Reference probability $P=0.000 < \alpha=0.05$, we regards that

there are statistical differences between patients with bone density according applying PRP this after one month from surgery and these differences are for management with PRP.

Reference probability $P=0.000 < \alpha=0.05$, we regards that there are statistical differences between patients with bone density according applying PRP this after three months of surgery and these differences are for management with PRP.

Reference probability $P=0.000 < \alpha=0.05$, we regards that there are statistical differences between patients with bone density according applying PRP this after six months of surgery and these differences are for management with PRP.

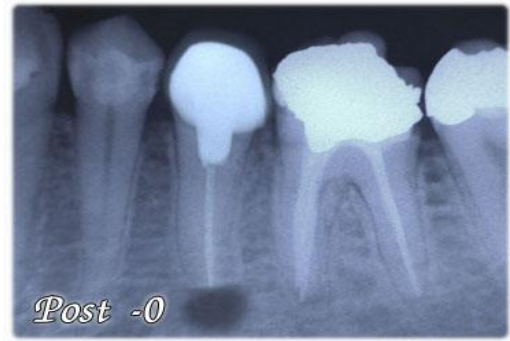
Reference probability $P=0.728 < \alpha=0.05$, we regards there are statistical differences between patients with bone density according applying PRP and this after nine months of surgery and these differences are for management with PRP.

Clinical Case

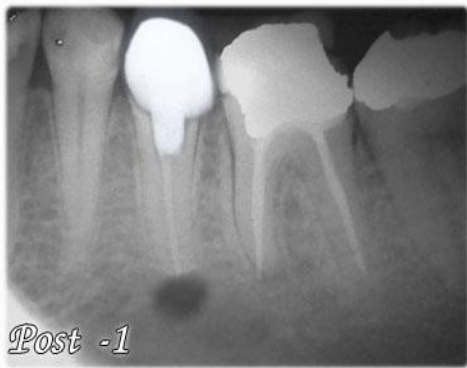
Apicoectomy on the second lower premolar at female patient her age is 28 year, complain from intermittent pains which are acutely sometimes, its illustrating from radiographic examination presence of periapical lesion, which proceeding periapical surgery and putting PRP were the result of controlling through third time (9 months) is led to total radiographic curing and without clinical symptoms.



Postoperative



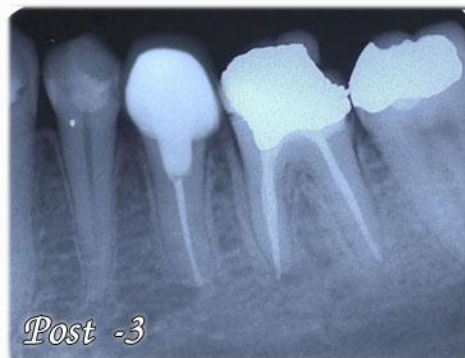
Preoperative



(First controlling time*3months*)



(Second controlling time*6months*)



(Third controlling time*9months*)

Conclusion

The results of this study suggest that using platelets rich plasma (PRP) provide bone reconstruction faster and better after eradication of maxillofacial cysts.

References

- 1 Abaza Huffman J. Cysts of the oral and maxillofacial region. 2009; II:418.
- 2 AL-Talbani, Smith: Experimental dentigerous cysts and enamel hypoplasia their possible significance in explaining the pathogenesis of human dentigerous cysts, 1980, 982.
- 3 Babbch: The use of prp in conjunction with other bone materials: Allograft, alloplast, xenograft. Presented at the 2nd Symposium on platelet-Rich Plasma (PRP) & Its Growth factors, San Francisco, 2003, 23-26.
- 4 Carlson NE, Roach RB. Platelet- rich plasma: Clinical applications in dentistry, 2002, 133.
- 5 Cawson RA, Odell EW. Cysts of the jaws, essential of oral pathology and oral medicine Churchill livingstone, 1998, 95-116.
- 6 DALEY: The small dentigerous cyst, A diagnostic dilemma. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 1995, 79-77.
- 7 Eglimez F, Ergun G, Cekic-Nagas I, Karaca IR, Bozkaya S. Effect of platelet-rich plasma on the outcome of early loaded dental implants (A three year follow-up study), 2012, 534.
- 8 Ferreira CF, Gomes MCC, Scarso Filho J, Granjeiro Jm. Platelet-rich plasma influence on human osteoblasts growth, 2005, 456-460.
- 9 Frechette J, Martineau I: Platelet- rich plasmas growth factor content and roles in wound healing, 2005, 434-439.
- 10 Goaz PW, white S. Oral Radiology principle and interpretation (3rd ed), 1994, 398-676.
- 11 Heimke G. The aspects and models of fixation of bone replacements, 1990, 49-30.
- 12 Jensen S, Melsen F. Tissue reaction and material characteristic of four bone substitutes, 1996, 55-66.
- 13 Larry Peterson: Petersons principles of oral and maxillofacial surgery (Second edition), 2004, 3-15.
- 14 Lucarelli E, Beccheroni A, Donati D *et al.* Platelet-derived growth factors enhance proliferation of human stromal cells, 2003, 3095.
- 15 Main D.M.G. Epithelial jaw cysts: A clinicopathological reappraisal. British Journal of Oral Surgery, 1970a:

8:114-125.

- 16 Marx RE. Platelet- rich plasma: Evidence to support its use. *J Maxilloface Surg.* 2004; 62:489-496.
- 17 Marx RE. Clinical application of bone biology to mandibular and maxillary reconstruction, 1998, 377–392.