Research Article

Pontic Design Considerations and their Complications in General Population

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ABSTRACT

The purpose of this study is to evaluate the different Pontic designs and their complications among people. The objective of this study is to assess the prevalence of different Pontic designs and their complications in general population. A Pontic is an artificial (false) tooth, usually attached to a dental prosthesis, that replaces a missing tooth .The placement of a Pontic is required when a patient's natural tooth is missing due to dental trauma root resorption, advanced periodontal disease or failed endodontic therapy. They are in different designations and which also possess complications in prosthesis. Most failures of FDP require replacement of restoration, the causes for replacement being wrong Pontic design, defective margins or esthetic considerations.

Keywords: Pontic designs, dental prosthesis, periodontal disease.

INTRODUCTION

Pontics are the artificial teeth which replace the natural teeth, restoring function and appearance[1]. Nowdays, it's an aesthetic challenge for dentist to replace the missing tooth in order to preserve the inter-proximal tissues after extracting certain teeth. Pontic are compatible with good oral health and comfort. While fabricating the pontics, it should be designed carefully in order to adjust the existing occlusal considerations and facilitate the control of plaque. If the Pontic design is altered, stress will be produced during mastication, patient feels pain, preparation of Pontic design requires mechanical, biological and esthetic principles to overcome stress pattern, occlusal loading etc. The present study was conducted to know about the Pontic design considerations and their complications due to it among general populations.

METHODOLOGY

This study is an observational study conducted on both objective as well as subjective. Totally 100 laboratory casts were collected based on Pontic design and they were analyzed based on the following:

Objectives:

These are factors seen in laboratory casts

1. Pontic design
2. Duration
3. Ridge form
4. Tooth type
5. Bulkiness
6. Polished or rough
7. Material

Subjectives:

These are factors observed in patients after wearing fixed prosthesis

1. Life span of edentulous
2. Esthetics
3. Inflammation
4. Bleeding
5. Food accumulation
6. Mucosal contact

RESULTS

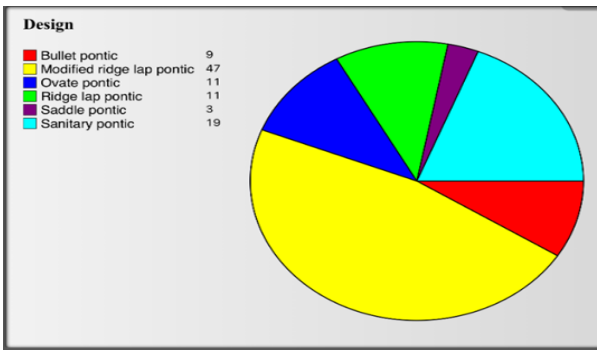

Figure 1: Pontic design

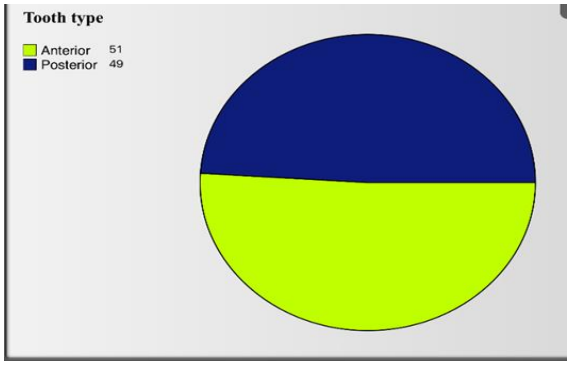

Figure 2: Tooth type

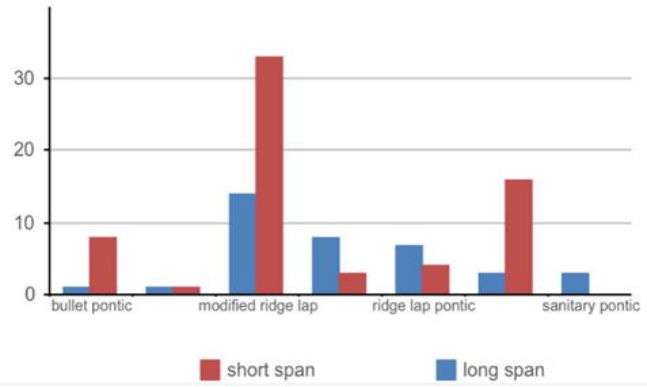

Figure 3: Duration

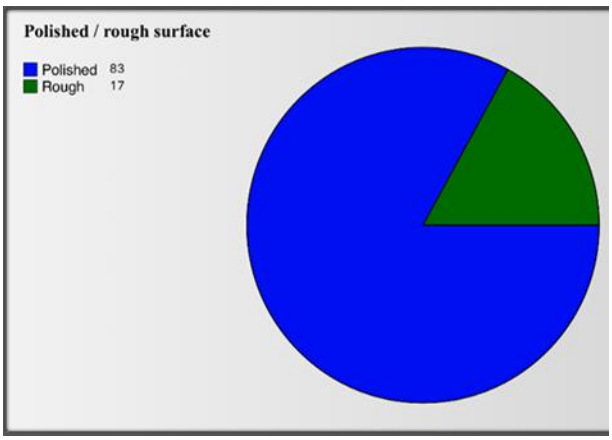

Figure 4: Polished/rough surface

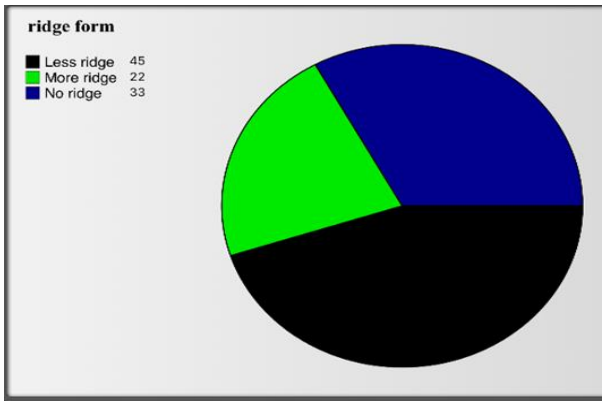

Figure 5: Ridge form

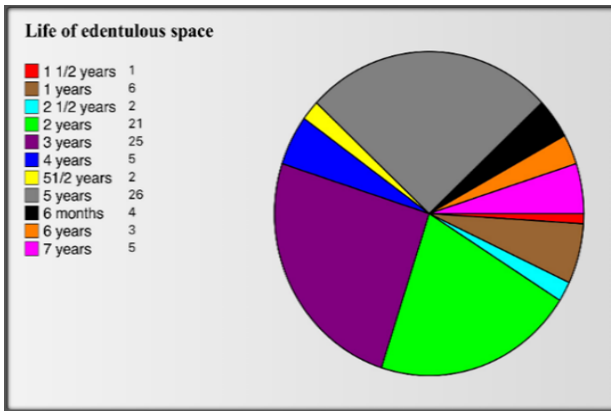

Figure 6: Edentulous space span

Table 1: Material Type

Material type	Percent
All ceramic	65
All metal	1
Metal ceramic	33
Resin bonded	1
Total	100

Table 2: Bulkiness

Bulkiness	Percent
1.5mm	12
10mm	10
2.5mm	1
2mm	14
3mm	13
5mm	50
Total	100

DISCUSSION

Many studies show that fixed prosthodontics failures are varied and often complex in cause and effect. When a problem occurs, the design and condition of the restoration and associated structures must be considered[2]. Apical Pontic height was determined by the existing tissue/bone complex, esthetics and support, ease of cleaning and prevention of food impaction[3].

The guidance of clinician in deciding the Pontic design is as important as fabricating the well-fitting prosthesis. The ideal Pontic design suggested for maxillary and mandibular anterior teeth and maxillary premolars and first molars is Modified Ridge lap because it combines the best features of the hygienic and saddle Pontic designs, combining esthetics with easy cleaning. Sanitary/Hygienic Pontic design should be used for mandibular molars because it allows easy cleaning, as its tissue surface remains clear of the residual ridge and permits easier plaque control by allowing gauze strips and other cleaning devices to be passed under the Pontic and seesawed in a shoeshine manner, but it is the least “tooth-like” design and is therefore reserved for teeth seldom displayed during function. Conical Pontic should be selected for mandibular posterior teeth with knife-edged residual ridge because it is easy for the patient to keep clean due to only one point of the contact at the center of the residual ridge and more over esthetic appearance is less of concern in this area. This type of design may be unsuitable for broad residual ridge, as the emergence profile associated with the small tissue contact point may create areas of food entrapment. The esthetics sometime requires the use of ovate Pontic design in anterior teeth after extraction especially in patient with high smile line. Saddle/ Ridge lap Pontic design should not be used under any circumstances[4, 5, 2] Fixed partial dentures make oral

hygiene efforts more difficult, especially for those in the posterior arch. If the Pontic design is not adequate, it interferes with proper oral hygiene due to plaque accumulation. A rough surface facilitates the accumulation and retention of dental plaque even more[6].

Authors like Rostential, Shillingburg, R.Duane Douglas et.al showed earlier studies regarding Pontic designs in which modified ridge has been used widely it shows excellent aesthetic concern, no signs of periodontal problems and prevents from food impaction compared to other Pontic designs. Sanitary Pontic does not have any ridge form and mostly preferred for posteriors and has good self-cleaning property relatively to other Pontic designs. Ridge lap and saddle Pontic doesn't have that much significance of modified or sanitary Pontic designs

CONCLUSION

In our study we found modified ridge lap Pontic was used effectively by dentist and shows a beneficial results given by patients. Success and failures of Fixed partial prosthesis depends on the clinicians is essential to take interest in laboratory phase of restoration along with laboratory technician, which involve proper designing of Pontic, marginal fit and occlusion.

REFERENCES

1. Stein RS: "Pontic-residual ridge relationship:a research report",J Prosthet Dent. 16:251,1996.
2. Perel ML. "A modified sanitary Pontic". J Prosthet Dent. 28(6), 1972, 589-92.
3. Swapnali Mhatre, anitha gala, Sabitha M Ram,Naisargi shah. "Modified ovate Pontic design for immediate tooth replacement" 10.5005/jp-journals-10031-1013.
4. Shillingburg HT, Hobo S, Whitsett LD, Jacobi R, Brackett SE. Fundamentals of fixed prosthodontics. 3rd edition. Chicago. Quintessence; 1997.
5. Rosenstiel SF, Land MF and Fujimoto J. Contemporary fixed prosthodontics. 4th edition. Mosby Elsevier. 2012.
6. Tolboe H, Isidor F, Budtz-Jorgensen E, Kaaber S. "Influence of oral hygiene on the mucosal conditions beneath bridge pontics". Scand J Dent Res. 95(6), 1987, 475-82.

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