

Clinical Effect Observation of Different Oral Restoration Membrane Materials in Guiding Bone Regeneration in Dental Implantation

Chun ZHANG*, Caiyun Chen

Lanzhou Stomatological Hospital, Lanzhou, Gansu, China

herry552@126.com

*corresponding author

Keywords: Bot medical collagen membrane, Haiao oral repair membrane, Guided bone regeneration in dental implants, Curative effect, Adverse reaction

Abstract: Objective: To explore and analyze the clinical effects and value of different oral restoration materials in guiding bone regeneration in dental implants. Methods: Select 80 patients who came to our hospital from August 2017 to August 2019 who need to undergo dental implant guided bone regeneration as observation objects. According to the principle of randomization, they were divided into experimental group ($n=40$) and control group ($n=40$), all dental implant patients used Tianbo bone powder as grafts, the control group received Bot medical collagen membrane for repair, and the experimental group received Haiao oral repair membrane for repair. The bones of the two groups of dental implant patients were compared. Thickness, thickness of bone graft, overall treatment effect, adverse reaction rate. Results: The bone thickness and bone thickness of dental implant patients in the experimental group were significantly better than those in the control group, and the overall treatment effect was significantly better, with a lower adverse reaction rate, and the difference was statistically significant ($p<0.05$). Conclusion: The use of Hai'ao Oral Prosthetic Film for restoration in guided bone regeneration in dental implants has a good clinical effect, can significantly improve the oral health of patients, and is safer, and has a high clinical promotion value.

1. Introduction

Teeth are easily damaged by oral lesions or external trauma factors. The defect of teeth not only affects the patient's vocalization and facial appearance [1], the defect is serious and even causes a huge obstacle to the patient's chewing function and eating. Failure to perform dental implants for restoration will seriously affect the patient's normal study, life and work, and greatly reduce the patient's quality of life. As a common type of oral restoration, dental implant surgery plays an important role in the restoration of tooth defects. The guided bone regeneration membrane technology uses a polymer membrane to cover the tooth defect with a biofilm barrier to ensure the repair of the defect [2]. It is a new clinical treatment technology. Polymer membranes are mainly of two types: absorbable and non-absorbable. They are commonly used clinical materials for repairing tooth defects and have positive significance for the prognosis of patients. In this study, 80 dental implant patients admitted to our hospital from August 2017 to August 2019 were selected as observation objects, and the clinical effects and value of different oral restoration materials in guiding bone regeneration in dental implants were analyzed.

2. Materials and Methods

2.1 General Information

Eighty patients who came to our hospital from August 2017 to August 2019 who needed dental implant guided bone regeneration were selected as observation objects. According to the principle of randomization, they were divided into experimental group ($n=40$) and control group ($n=40$). In the control group, there were 24 males and 16 females with the age of (41.5 ± 2.3) years of dental

implant guided bone regeneration; the experimental group included 23 males and 17 females with the age of (40.5±2.4). year old. Inclusion criteria: All patients have single or more tooth defects, the defect sites are anterior teeth, premolars, molars; patients voluntarily participate in this study and actively cooperate; exclusion criteria: patients with allergy to guided bone regeneration membrane; severe mental Patients with diseases or communication disorders; clinical data is incomplete. There was no statistically significant difference in the general data of the two groups of patients ($p>0.05$).

2.2 Method

All dental implant-guided bone regeneration patients use Tianbo bone powder as a graft. Before surgery, the patient's oral cavity, adjacent teeth, and tooth defect bone mass are carefully checked to ensure normal nerve function and coagulation function. After rational use of antibiotics, the patient's oral cavity is locally anesthetized, the implant cavity is prepared, and Tianbo bone powder is infiltrated and placed on the defect site, and then guided bone regeneration membrane technology is performed. The control group is given Bot medical collagen membrane (Fujian Bot Biotechnology Co., Ltd., production batch number 20163640508) for restoration. Patients in the experimental group were given Haiao Oral Prosthetic Film (produced by Haiao Oral Prosthetic Film, production batch number 20173030062) for restoration, covering about 3mm on the edge of the placed dental implant bone powder. The wound is closed, the postoperative anti-inflammatory is routine, the sutures are removed one week later, and patients with dental implants to guide bone regeneration need to be reviewed regularly.

2.3 Observation Indicators

In this study, the results were obtained by comparing the bone thickness (mm), bone graft thickness (mm), overall treatment effect, and adverse reaction rate of the two groups of dental implant guided bone regeneration patients. The overall treatment effect and adverse reaction rate are expressed in percentage. The overall treatment effect is divided into three indicators: markedly effective, effective, and ineffective according to the patient's dental defect restoration and oral health. The treatment is effective=(Significantly effective number + effective number)/ total people×100%.Adverse reactions include oral infection, wound dehiscence, local swelling, peeling of repair membrane, etc. Adverse reaction rate = number of patients with adverse reaction/total number×100%.

2.4 Statistical Methods

The relevant data of the two groups of dental implant patients obtained in this study are used SPSS20.0 The software was used for statistical processing, $P<0.05$, the difference was statistically significant.

3. Results

3.1 Comparison of Bone Thickness and Bone Graft Thickness between the Two Groups of Dental Implant Patients

It can be seen from Table 1 that the bone thickness (mm) and bone graft thickness (mm) of the experimental group of dental implant patients were significantly better than those of the control group, and the difference was statistically significant ($p<0.05$).

Group	Number of cases	Bone thickness (mm)	Bone graft thickness (mm)
Control group	40	(2.21±0.12)	(2.15±0.29)
test group	40	(2.79±0.23)	(2.93±0.68)
t	-	14.140	6.673
p	-	0.000	0.000

Table 1 Comparison of Bone Thickness and Bone Graft Thickness between the Two Groups of Dental Implant Patients

3.2 Comparison of the Overall Treatment Effect of the Two Groups of Dental Implant Patients

It can be seen from Table 2 that the overall treatment effect of dental implant patients in the experimental group was significantly better than that in the control group, and the difference was statistically significant ($p<0.05$).

Table 2 Comparison of The Overall Treatment Effect of the Two Groups of Dental Implant Patients

Group	Number of cases	Markedly effective	effective	invalid	Effective treatment (%)
Control group	40	18	12	10	75%
test group	40	22	15	3	92.5%
X ²	-	-	-	-	4.501
p	-	-	-	-	0.034

3.3 Comparison of Adverse Reaction Rates between the Two Groups of Dental Implant Patients

It can be seen from Table 3 that the number of patients with adverse reactions such as oral infection, wound dehiscence, local swelling, and shedding of repair membranes in the experimental group of dental implant patients was significantly less, and the adverse reaction rate was significantly lower than that of the control group, and the difference was statistically significant ($p<0.05$).

Table 3 Comparison of Adverse Reaction Rates between the Two Groups of Dental Implant Patients

Group	Number of cases	Oral infection	Open wound	Local swelling	Laminating	Adverse reaction rate (%)
Control group	40	3	2	4	2	27.5%
test group	40	1	1	1	1	10%
X ²	-	-	-	-	-	4.021
p	-	-	-	-	-	0.045

4. Discussion

Tooth defect has a great impact, and how to effectively repair it is an important content of clinical stomatology research. With the continuous development of medical technology, the treatment plan for tooth defect restoration is continuously improved, and there are more and more restoration materials. It has high clinical significance for the restoration of patients' teeth and improving the quality of life. Dental implants are also called artificial dental implants. Their nature does not belong to natural teeth. They mainly use materials similar to human bones to make teeth that are similar to the patient's own teeth and place them in the alveolar bone. After a period of recovery, The artificial teeth will be intimately combined with the gums, and finally after the crown is made on the artificial root, the dental implantation is basically completed. The guided bone regeneration membrane technology is mainly used to protect dental implants and play a barrier role to ensure the restoration effect. The traditional protective film material is mainly titanium film, which is a type of non-absorbable regenerated film. However, due to its hard texture and tight surface, it will limit the patient's blood circulation, hinder the absorption of blood by the bone grafted teeth, and cause various adverse reactions. Affect the patient's dental implant effect, and the prognosis is poor. As a new type of material, Haiao oral repair film is absorbable, has a longer degradation time, can meet the role of barrier period, promote the absorption of blood by bone grafted teeth, and is safe and non-toxic. Compared with traditional regenerated film, it has very advantages obvious. In this study, 80 dental implant patients admitted to our hospital between

August 2017 and August 2019 were selected as observation objects, and the clinical effects and clinical effects of different oral restoration materials in guiding bone regeneration in dental implants were explored and analyzed. Its value. The results showed that the bone thickness and bone graft thickness of the experimental group of dental implant patients were significantly better than those of the control group, and the overall treatment effect was significantly better, the adverse reaction rate was lower, and the difference was statistically significant ($p<0.05$).

5. Conclusion

In summary, the use of Haiao Oral Repair Membrane for restoration in guided bone regeneration in dental implants has a good clinical effect, can significantly improve the oral health of patients, and has higher safety, and has high clinical value. Promote applications.

References

- [1] Xiong Tao. Analysis of the application effect of oral restorative membrane materials in guiding bone regeneration in dental implantation. Journal of General Stomatology (Electronic Edition), Vol.6, No.31, pp.32,42, 2019.
- [2] Sang Zhuo,Guo Zhaozhong,Liu Yingzhi, et al. The influence of different oral restoration membrane materials on guided bone regeneration in dental implantation. Practical Clinical Medicine, Vol.20, No.9, pp.62-63, 87, 2019.