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磁性附着体用于牙列缺损修复的临床观察及对牙周微生态的影响 *

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摘要 目的:研究磁性附着体用于牙列缺损修复的临床效果及对牙周微生态的影响。**方法:**选取2014年8月至2015年8月我院接诊的80例牙列缺损患者作为研究对象,按照随机数表法分为观察组40例和对照组40例。对照组采用常规修复,观察组采用磁性附着体治疗,观察两组患者治疗后固定力、咀嚼效力、舒适程度、语言功能、外观及牙周微生态。**结果:**治疗后,观察组固定力、咀嚼效力大于对照组[(4.07±0.38)N vs (3.10±0.29)N, (0.80±0.23)% vs (0.59±0.21)%],两组比较差异具有统计学意义(P<0.05);观察组舒适程度、语言功能、外观均优于对照组[(4.21±0.45)score vs (3.10±0.42)score, (4.79±0.50)score vs (3.90±0.42)score, (3.98±0.61)score vs (2.76±0.56)score],两组比较差异具有统计学意义(P<0.05);观察组PLI、PD显著小于对照组[(1.34±0.31)° vs (1.49±0.43)°, (1.53±0.29)mm vs (1.67±0.32)mm],两组比较差异具有统计学意义(P<0.05)。**结论:**磁性附着体治疗牙列缺损疗效显著,能够减少对牙周组织的损伤,提高舒适度和咀嚼功能。

关键词:磁性附着体;牙列缺损;牙周微生态

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Curative Efficacy of Magnetic Attachment in Treatment of Repair of Dentition Defect and Its Effects on Periodontal Micro Ecology*

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ABSTRACT Objective: To study the curative efficacy of magnetic attachment in the treatment of repair of dentition defect and its effects on the periodontal micro ecology. **Methods:** 80 patients of defect of dentition who were treated from August 2014 to August 2015 in our hospital were selected as the research objects. The control group was treated with routine repair, while the observation group was treated with magnetic attachment. Then the fixation force, masticatory effectiveness, comfort level, language function, appearance, periodontal micro ecology in two groups after treatment were compared. **Results:** After treatment, the fixed force, chewing effect of observation group were better than the control group[(4.07±0.38)N vs (3.10±0.29)N, (0.80±0.23)% vs (0.59±0.21)%](P<0.05); the comfort level, language function, appearance were better than the control group [(4.21±0.45)score vs (3.10±0.42)score, (4.79±0.50)score vs (3.90±0.42)score, (3.98±0.61)score vs (2.76±0.56)score](P<0.05); the PLI, PD were less than the control group [(1.34±0.31)° vs (1.49±0.43)°, (1.53±0.29)mm vs (1.67±0.32)mm](P<0.05). **Conclusion:** Magnetic attachment was effective for the repair of dentition defect, which could reduce the damage to periodontal tissue and improve the comfort and chewing function.

Key words: Magnetic attachment; Dentition defect; Periodontal micro ecology

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前言

牙列缺损指牙齿部分因某些因素导致恒牙牙列不完整,龋病、病菌、外伤等因素均可导致牙列缺损,影响患者的口腔系统健康及咀嚼功能,使患者无法正常进食,且对美观造成影响^[1,2]。临床上主要采用义齿种植、可摘局部义齿、固定义齿等来对牙列缺损进行修复,随着人们生活水平的提高,对口腔的美观要求也越来越高,常规修复已经无法达到患者的要求。研究显示

磁性附着体通过利用义齿和基牙处磁体的相互吸附达到稳定义齿的效果,其具有方便摘戴、异物感小、提高咀嚼效率、易清洁的优势,且能够达到患者对于口腔美观的要求^[3]。本实验旨在研究磁性附着体用于牙列缺损修复的临床效果及其对牙周微生态的影响,现进行报道如下。

1 资料与方法

1.1 一般资料

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选取 2014 年 8 月至 2015 年 8 月我院接诊的 80 例牙列缺损患者作为本次研究对象。纳入标准^[4]:① 无根尖组织病变;② 近期未做过牙周基础治疗;③ 无糖尿病或全身系统疾病;④ 单颌至少保留健康牙齿 2 颗及以上;⑤ 配合研究患者;排除标准:① 常侧嚼、抽烟患者;② 近期使用过抗炎治疗;③ 患有精神疾病。根据治疗方法进行随机分组,观察组 40 例,男 23 例,女 17 例,年龄 40~70 岁,平均年龄(62.39± 2.01)岁,病程 6 个月~4 年,平均病程(12.02± 1.41)月;对照组 40 例,男 24 例,女 16 例,年龄 41~70 岁,平均年龄(61.93± 2.04)岁,病程 6 个月~4 年,平均病程(11.87± 1.40)月;本研究已通过伦理委员会批准,两组患者的年龄、性别、病程等资料差别无统计学意义($P>0.05$),具有可比性。

1.2 治疗方法

对照组患者采用常规修复。观察组患者采用磁性附着体治疗,先准备基牙,在给予患者进行修复前,平齐龈缘截断基牙,把患者的根面磨成凹面,保持合适的距离来容纳人工牙以及磁体,将牙根面的锐利面角修掉,将口侧修整为适合根管的性状。然后进行跟帽制作,将硅橡胶注入根管并覆盖根面,制作石膏模型。给予患者试戴跟帽并合适后,然后将其粘固于患者的基

牙,检查是否佩戴的吻合性,常规取模,制作义齿,试戴义齿的时间为 1~2 周,然后在义齿基托中粘固磁性附着体,磁体与衔铁之间需保持 0.1 mm 的间隙,然后将磁体吸附在衔铁上,患者带上义齿后指导患者进行咬合运动以将多余的塑料清除。

1.3 观察指标

观察两组患者治疗前后固定力、咀嚼效力,舒适程度、语言功能、外观。采用固位力测定仪检测患者治疗前后固定力;采用吸光度法测定咀嚼效力。采用自制问卷调查满意度,非常满意(5 分),满意(4 分),一般(3 分),不满意(2 分),非常不满意(1 分)。

1.4 统计学分析

采用 SPSS18.0 统计学软件进行分析处理,计数资料采用 χ^2 检验,计量资料采用 t 检验,以 $P<0.05$ 为差异有统计学意义。

2 结果

2.1 两组患者治疗前后固定力、咀嚼效力比较

治疗前,两组患者固定力、咀嚼效力比较差异无统计学意义($P>0.05$)。治疗后,两组患者固定力、咀嚼效力均较治疗前显著上升,且观察组固定力、咀嚼效力均明显大于对照组($P<0.05$),见表 1。

表 1 两组患者治疗前后固定力、咀嚼效力比较($\bar{x}\pm s$)

Table 1 Comparison of the fixed force, chewing effect between two groups before and after treatment($\bar{x}\pm s$)

Groups		Fixed force(N)	Chewing effect(%)
Observation group(n=40)	Before treatment	1.64± 0.13	0.36± 0.10
	After treatment	4.07± 0.38* [#]	0.80± 0.23* [#]
Control group(n=40)	Before treatment	1.65± 0.12	0.35± 0.11
	After treatment	3.10± 0.29	0.59± 0.21

Note: Compared with the same group before treatment, * $P<0.05$; Compared with the control group after treatment, [#] $P<0.05$.

2.2 两组患者治疗后满意度比较

($P<0.05$),见表 2。

治疗后,观察组舒适程度、语言功能、外观均优于对照组

表 2 两组患者治疗后满意度比较($\bar{x}\pm s$,分)

Table 2 Comparison of the Satisfaction degree of two groups after treatment($\bar{x}\pm s$, score)

Groups	Comfort	Language function	Appearance
Observation group(n=40)	4.21± 0.45 [#]	4.79± 0.50 [#]	3.98± 0.61 [#]
Control group(n=40)	3.10± 0.42	3.90± 0.42	2.76± 0.56

Note: Compared with the control group after treatment, [#] $P<0.05$.

2.3 两组患者治疗前后牙周微生态比较

($P>0.05$)。治疗后,两组患者 PLI、GI、PD 均较治疗前显著上升,

治疗前,两组患者 PLI、GI、PD 比较差异具有统计学意义

观察组 PLI、PD 显著小于对照组($P<0.05$),见表 3。

表 3 两组患者治疗前后牙周微生态比较($\bar{x}\pm s$)

Table 3 Comparison of the the periodontal micro ecology between two groups before and after treatment($\bar{x}\pm s$)

Groups		PLI(°)	GI(°)	PD(mm)
Observation group(n=40)	Before treatment	1.30± 0.22	0.34± 0.10	1.51± 0.28
	After treatment	1.34± 0.31*	0.40± 0.10	1.53± 0.29*
Control group(n=40)	Before treatment	1.31± 0.41	0.33± 0.09	1.50± 0.31
	After treatment	1.49± 0.43	0.43± 0.12	1.67± 0.32

Note: Compared with the control group after treatment, * $P<0.05$.

3 讨论

牙列缺损具有较高的发病率,其发病人群多为老年人,缺失牙的数量以及部位的不同,对口腔所造成的影响也不同,其

可导致患者出现不同程度的发音功能障碍,使牙周组织和颞下颌关节发生病变,给患者的生活及与人交流造成影响^[5,6]。临床上常采用人工替代材料来对患者的牙列缺损进行修复,修复后容易出现口臭、缺乏口腔自洁性,口腔异物感,增加牙龈病发生率^[7]。不仅未改善患者的生活质量,还可造成其他病变,使患者无法忍受,无法达到预期的效果^[8]。

磁性附着体是临床上一种新型修复牙列缺损的方法,为该疾病提供了新的治疗途径^[9]。其作用主要是义齿与基牙处磁体间的吸附作用,可将基牙吸附到基牙上或者种植体上,能够稳定义齿,且恒定持久,还具有牙齿生理松度,不会让患者感到不适^[10]。研究证实其还具有以下优势:①在对义齿进行制作时比较方便已操作,可随意摘戴,且在摘戴时不会对固位效果造成影响,方便清洁^[11]。②将衔铁覆盖在患者的牙根根面,边缘结合密切,不会对外观造成影响,能够提高患者的自信,愿意与人交流^[12]。③能够保留患者的自身牙齿,相对的提高了咀嚼度和语言功能,可避免牙槽骨吸收^[13]。④磁性附着体的固位力能够满足口腔功能的覆盖固定力,且效果较其他附着体更佳,可充分满足口腔生理功能^[14]。本研究结果显示采用磁性附着体修复的患者固定力、咀嚼效力显著大于采用常规修复的患者,提示长期使用磁性附着体仍具有良好的磁性作用,能够达到为患者提供长期稳定的固定力。⑤具有磁铁的传导功能,可使患者的基牙应力均匀分布。牙齿松动感能够作为患者牙列缺损修复后的疗效指标,其主要是指真牙与义牙之间的活动度。在 Jung UW^[15]等的研究显示雌性附体修复能够延长固定时间,减少松动。本研究根据随访观察患者的牙齿松动感,发现采用磁性附着体修复的患者修复一个月后,义齿未见松动,采用常规修复的患者修复一个月后,有少数患者已出现松动,说明磁性附着体具有磁引力的特点,能够使磁性附着体存在较好的牙齿松程度,并且同时改善了患者的咀嚼功能和语言功能,方便正常入食,提高了生活质量^[16]。本研究显示采用磁性附着体修复的患者舒适程度、语言功能、外观均优于采用常规修复的患者,提示磁性附着体能够完全适用于患者的日常生活,不会使患者感觉到异物感,提高了患者的使用满意度和舒适度,且磁性附着体不会对患者的牙周组织产生较大的影响,能够减少并发症的发生^[17]。

牙周微生态系动态能够平衡牙周健康,若发生生态失调,可导致牙周病发生,PLI、GI、PD 能够对患者的牙周炎进行系统的评价^[18,19]。在本研究中,所有患者的 PLI、GI、PD 均出现上升,但采用磁性附着体修复的患者 PLI、GI 水平低于采用常规修复的患者,PD 高于采用常规修复的患者。这可能是由于磁性附着体操作简单,且对义齿位道没有过高的要求有关,且能够随时取出清洗,可有效抑制牙菌斑堆积。有研究表明在对义齿进行制作时,磁性附着体采用专业的牙周维护,能够良好的控制菌斑,但常规修复仅采用平常的漱口来保持清洁口腔,效果不理想^[20]。

综上所述,磁性附着体治疗牙列缺损疗效显著,能够减少对牙周组织的损伤,提高了舒适度和咀嚼功能。

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