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牙周组织再生术联合正畸治疗对牙周炎患者牙周状况及满意度的影响 *

周维君 车英林 苏 野 邓秋艳 乐志亮

(南方医科大学第三附属医院口腔科 广东 广州 510000)

摘要 目的:探讨牙周组织再生术联合正畸治疗对牙周炎患者牙周状况及满意度的影响。**方法:**选取我院于2016年3月-2017年4月期间收治的牙周炎患者76例为研究对象。按照随机数字表法将患者分为研究组(n=38)与对照组(n=38),对照组行牙周组织再生术,研究组行牙周组织再生术联合正畸治疗。于治疗前、治疗后3个月检查患者牙周指标情况和X线头影测量情况,对比两组患者治疗前后视觉模拟疼痛评分(VAS),随访一年,于治疗1年后采用医院自制调查问卷评价患者满意度,观察并比较两组患者治疗后并发症发生情况。**结果:**治疗后3个月,两组患者的牙龈指数(GI)、菌斑指数(PLI)、龈沟出血指数(SBI)、牙周探诊深度(PD)以及临床牙周平均附着丧失(CAL)均显著降低,且研究组低于对照组($P<0.05$)。治疗后3个月,两组患者的SNA角、SNB角均显著降低,且研究组低于对照组,两组患者的ANB角显著升高,且研究组高于对照组($P<0.05$)。两组患者治疗后VAS评分较治疗前显著降低,且研究组低于对照组($P<0.05$)。研究组患者牙龈健康状况评分、口腔清洁能力评分、美观评分、满意度均高于对照组($P<0.05$),而两组患者咀嚼功能评分相比无统计学差异($P>0.05$)。两组患者治疗后并发症发生率比较无统计学差异($P>0.05$)。**结论:**牙周组织再生术与正畸治疗联合运用,对牙周组织健康状况有显著改善作用,且安全有效,提升患者满意度。

关键词: 牙周组织再生术; 正畸治疗; 牙周炎; 牙周状况; 满意度

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The Effect of Periodontal Tissue Regeneration Combined with Orthodontic Treatment on Periodontal Status and Satisfaction of Patients with Periodontitis*

ZHOU Wei-jun, CHE Ying-lin, SU Ye, DENG Qiu-yan, LE Zhi-liang

(Department of Stomatology, The Third Affiliated Hospital of Southern Medical University, Guangzhou, Guangdong, 510000, China)

ABSTRACT Objective: To investigate the effect of periodontal tissue regeneration combined with orthodontic treatment on periodontal status and satisfaction of patients with periodontitis. **Methods:** 76 cases of periodontitis treated in our hospital during the period of March 2016 to April 2017 were selected as the subjects. The patients were divided into study group (n=38) and control group (n=38) according to the random number table method, the control group underwent periodontal tissue regeneration, the study group underwent orthodontic treatment on the basis of the control group. The periodontal index and X-ray cephalometric measurement were examined before and 3 months after treatment, the Visual analogue pain scores (VAS) before and after treatment in two groups were compared, after a year of follow-up, the hospital self-made questionnaire was used to evaluate the patient satisfaction after 1 years of treatment, the postoperative complications of the two groups were observed and compared. **Results:** The gingival index (GI), plaque index (PLI), gingival crevicular bleeding index(SBI), periodontal probing depth(PD) and clinical periodontal average attachment loss (CAL) in the two groups 3 months after treatment were significantly decreased, and the study group was lower than the control group ($P<0.05$). 3 months after treatment, the SNA angle and SNB angle of the two groups were significantly decreased, and the study group was lower than the control group, the ANB angle of the two groups increased significantly, and the study group was higher than the control group ($P<0.05$). The scores of VAS in the two groups after treatment was significantly lower than that before treatment, and the study group was lower than the control group ($P<0.05$). The gingival health scores, the oral cleanliness scores, the aesthetic scores and the satisfaction in the study group were higher than those in the control group ($P<0.05$). There was no significant difference in masticatory function scores between the two groups ($P>0.05$). There was no significant difference in the incidence of postoperative complications between the two groups ($P>0.05$). **Conclusion:** The combined use of periodontal tissue regeneration and orthodontic treatment has a significant effect on the health of periodontal tissue, and it is safe and effective to improve patient satisfaction.

Key words: Periodontal tissue regeneration; Orthodontic treatment; Periodontitis; Periodontal status; Satisfaction

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作者简介: 周维君(1981-), 女, 本科, 住院医师, 从事正畸医学方面的研究, E-mail: zsgnwo@163.com

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前言

牙周炎是指由局部因素所引起的牙周支持组织的口腔慢性炎症疾病,其主要临床症状表现为牙龈出血、牙周溢脓、牙齿松动等,若未得到及时诊治,易引起患者牙畸形、牙脱离或者牙周组织坏死等严重情况发生,影响患者日常生活^[1-3]。该病多发于35岁以上的人群,因早期无特异性症状而易被患者忽视,待有症状时病情已较为严重,因此,早期诊治对于牙周炎患者具有积极意义^[4-6]。牙周组织再生术是在牙周手术过程中,利用生物膜阻止龈沟上皮的跟面生长,诱导具有牙周组织再生潜力的牙周膜细胞分化生长,形成新的牙周组织^[7-9]。但由于牙周组织解剖结构的复杂性以及牙周炎致病因素的多样性,导致治疗效果也出现多样化,易引发不同程度的牙齿错位畸形,影响患者牙齿的功能以及美观^[10,11]。鉴于此,本研究采用牙周组织再生术联合正畸治疗牙周炎患者,旨在为患者在选择治疗方式上提供参考,结果如下。

1 资料与方法

1.1 一般资料

选取2016年3月-2017年4月期间我院收治的76例牙周炎患者为研究对象。纳入标准^[12]:(1)所有患者均符合牙周炎相关诊断标准;(2)所有患者均满18周岁;(3)根据Armitage标准,患者全口存留牙超过16个,且每个区均存留有牙;(4)牙周炎患病时间不超过2年者;(5)所有患者知情同意并签署知情同意书。排除标准:(1)患有全身系统性疾病者;(2)入院前半年内接受过牙周治疗者;(3)经期、哺乳期、妊娠期患者;(4)伴有其他口腔疾病者。按照随机数字表法将患者分为研究组(n=38)与对照组(n=38),其中对照组男17例,女21例,年龄21-53岁,平均(36.28±4.58)岁;牙周炎患病时间1-15月,平均(8.24±1.79)月;牙齿松动程度:I度18例,II度20例;牙齿畸形类别:内倾斜深覆牙合17例,上前牙前突7例,前牙反牙合6例,下牙散在间隙8例;病情状况:慢性牙周炎患者20例,侵袭性牙周炎患者18例。研究组男18例,女20例,年龄22-55岁,平均(35.72±5.01)岁;牙周炎患病时间1-14月,平均(7.98±2.03)月;牙齿松动程度:I度19例,II度19例;牙齿畸形类别:内倾斜深覆牙合15例,上前牙前突8例,前牙反牙合6例,下牙散在间隙9例;病情状况:慢性牙周炎患者17例,侵袭性牙周炎患者19例。两组患者一般资料比较无差异(P>0.05),具有可比性。本研究经医院伦理委员会审批通过。

1.2 治疗方法

所有患者入院后均行常规抗炎治疗,局部用过氧化氢溶液进行冲洗,牙周袋内给予甲硝唑棒治疗。待病情控制后,对照组与研究组患者均行牙周组织再生术,视情况对患者龈下行刮治术、龈上洁治,同时平整牙根,并进行调牙合治疗以抑制菌斑产生。牙骨丧失严重并恶化成深牙周袋患者采用牙周翻瓣术治疗,在压槽嵴边缘临近处植入人工骨至牙周骨缺损区,而后缝合粘骨膜瓣,彻底清除受损的牙龈组织。牙周组织再生术后3个月进行复查。研究组患者若无严重炎症反应,行牙齿正畸手术。患者口腔固定采用磨牙粘接颊面管,将直丝弓矫正器伸入到移位牙齿段,将牙齿排齐、整平,之后关闭牙间隙或预留2-3 mm

间隙。治疗期内增强患者口腔健康教育知识,洁治牙齿2-3 d一次,检查牙周情况7 d一次,正畸治疗后3个月进行复查。所有患者均随访一年,随访方式为电话询问或门诊复查。

1.3 观察指标

(1)于治疗前、治疗后3个月检查所有患者牙周指标情况,包括牙龈指数(gingival index, GI)、临床牙周平均附着丧失(clinical attachment loss, CAL)、龈沟出血指数(sulcular bleeding index, SBI)、菌斑指数(plaque index, PLI)、牙周探诊深度(probing depth, PD)。GI、PLI、SBI检查使用钝头牙周探针,结合视诊和探诊;PD、CAL用探针的方法检查。(2)于治疗前、治疗后3个月检查所有患者X线头影测量项目,包括:SNA角(蝶鞍中心、鼻根点和上牙槽座点形成的角)、SNB角(鼻根点、下牙槽座点和前颅底平面形成的角)以及ANB角(上牙槽座点、鼻根点和下牙槽座点形成的角)。(3)对比两组患者治疗前后视觉模拟疼痛评分(visual analogue scale, VAS)^[13],VAS评分采用一条0-10的刻度尺,0分表示无痛,10分表示难以忍受的痛,患者根据主观疼痛感受进行评分,由同一名医师协助完成。(4)于治疗1年后采用医院自制调查问卷评价患者满意度,包括咀嚼功能评分、牙龈健康状况评分、口腔清洁能力评分、美观评分以及满意度评分,总分均为100分,分值越高提示患者越满意。(5)观察两组治疗后并发症发生情况。

1.4 统计学方法

数据均采用SPSS25.0软件处理,计量资料以($\bar{x} \pm s$)表示,实施t检验,计数资料以率表示,实施 χ^2 检验,检验水平设置为 $\alpha=0.05$ 。

2 结果

2.1 两组患者治疗前、治疗后3个月牙周指标情况比较

两组患者治疗前GI、PLI、SBI、PD以及CAL比较无统计学差异(P>0.05);治疗后3个月,两组患者的GI、PLI、SBI、PD以及CAL均显著降低,且研究组低于对照组(P<0.05),见表1。

2.2 两组患者治疗前、治疗后3个月X线头影测量情况比较

两组患者治疗前SNA角、SNB角以及ANB角比较无统计学差异(P>0.05);治疗后3个月,两组患者的SNA角、SNB角均显著降低,且研究组低于对照组,两组患者的ANB角显著升高,且研究组高于对照组(P<0.05);详见表2。

2.3 两组患者VAS评分比较

两组患者治疗前VAS评分比较无统计学差异(P>0.05);与治疗前比较,两组患者治疗后VAS评分均降低,且治疗后研究组VAS评分低于对照组(P<0.05);详见表3。

2.4 两组患者治疗1年后满意度比较

研究组患者牙龈健康状况评分、口腔清洁能力评分、美观评分、满意度均高于对照组(P<0.05);而两组患者咀嚼功能评分相比无统计学差异(P>0.05);详见表4。

2.5 两组患者治疗后并发症发生情况比较

治疗后对照组患者出现切口裂开3例,龈组织水肿5例,牙根敏感3例,并发症发生率为28.95%(11/38);研究组患者出现切口裂开2例,龈组织水肿3例,牙根敏感4例,并发症发生率为23.68%(9/38);两组患者治疗后并发症发生率比较无统计学差异($\chi^2=0.271$, P=0.602)。

表 1 两组患者牙周指标情况比较($\bar{x} \pm s$)Table 1 Comparison of periodontal indexes in two groups ($\bar{x} \pm s$)

Groups	GI(scores)		PLI(scores)		SBI(scores)		PD(mm)		CAL(mm)	
	Before treatment	3 months after treatment	Before treatment	3 months after treatment	Before treatment	3 months after treatment	Before treatment	3 months after treatment	Before treatment	3 months after treatment
Control group(n=38)	1.03± 0.42	0.56± 0.15*	1.87± 0.35	1.25± 0.34*	2.65± 0.51	2.24± 0.57*	4.53± 0.40	3.35± 0.46*	3.09± 1.74	2.29± 0.47*
Study group (n=38)	1.12± 0.36	0.29± 0.17*	1.77± 0.42	0.83± 0.31*	2.68± 0.63	1.76± 0.51*	4.49± 0.55	2.86± 0.52*	3.17± 1.65	1.84± 0.49*
t	1.003	7.341	1.128	5.627	0.228	3.869	0.363	4.351	0.206	4.086
P	0.319	0.000	0.263	0.000	0.820	0.000	0.718	0.000	0.838	0.000

Note: compared with before treatment, *P<0.05.

表 2 两组患者 X 线头影测量情况比较($\bar{x} \pm s$)Table 2 Comparison of X-ray cephalometric measurement between the two groups($\bar{x} \pm s$)

Groups	n	SNA angel(°)		SNB angel(°)		ANBangel(°)	
		Before treatment	3 months after treatment	Before treatment	3 months after treatment	Before treatment	3 months after treatment
Control group	38	85.43± 3.12	74.98± 3.27*	76.32± 2.12	73.12± 2.44*	-3.12± 0.44	-0.84± 0.24*
Study group	38	86.01± 2.83	70.59± 4.02*	75.89± 1.55	71.21± 2.12*	-3.28± 0.33	0.71± 0.19*
t	-	0.849	5.222	1.009	3.643	1.793	31.214
P	-	0.399	0.000	0.316	0.000	0.077	0.000

Note: compared with before treatment, *P<0.05.

表 3 两组患者治疗前后 VAS 评分比较($\bar{x} \pm s$,分)Table 3 Comparison of VAS scores before and after treatment between the two groups($\bar{x} \pm s$, scores)

Groups	n	VAS scores	
		Before treatment	After treatment
Control group	38	4.56± 1.37	1.92± 0.47*
Study group	38	4.37± 1.29	1.32± 0.35*
t	-	0.622	6.312
P	-	0.536	0.000

Note: compared with before treatment, *P<0.05.

表 4 两组患者治疗 1 年后满意度比较($\bar{x} \pm s$,分)Table 4 Comparison of patients' satisfaction after 1 years of treatment between the two groups($\bar{x} \pm s$, scores)

Groups	n	Masticatory function scores	Gingival health scores	Oral cleanliness scores	Aesthetic scores	Satisfaction
Control group	38	77.93± 19.01	88.38± 12.97	86.64± 11.28	86.47± 17.38	89.46± 12.38
Study group	38	76.75± 20.12	79.94± 13.25	80.37± 10.47	74.58± 18.47	81.29± 11.41
t	-	0.263	2.806	2.511	2.890	2.911
P	-	0.793	0.006	0.014	0.005	0.004

3 讨论

牙周炎作为临床较为常见的口腔炎症性疾病,其发病率呈逐年递增趋势,已成为成年人牙齿缺失的主要致病因素^[14,15]。该病不仅会导致牙齿畸形,还会引发牙周组织附着丧失和骨丧失,而牙齿错位畸形又会进一步加重牙周炎患者病情^[16]。牙周组织再生术是对牙周炎症造成的牙周损伤组织进行修复的一种治疗方式,但并不能彻底根治牙周炎症,该方式可为正畸治

疗创造条件,若要彻底治愈牙周炎患者,不仅仅要修复已经遭到侵害的牙周组织,更为重要的是让牙周组织恢复重生功能。相关研究报道显示仅仅采用牙周组织再生术治疗牙周炎,牙齿的咀嚼功能、牙龈健康状况以及口腔清洁能力改善效果均不显著^[17-19]。正畸治疗是解除牙齿错位畸形的一种矫正性治疗方式,可提高患者牙齿美观性^[20,21]。因此,本研究在使用牙周组织再生术治疗牙周炎的过程中联合使用正畸治疗,二者互相配合以达到最佳治疗效果。

GI、PLI、SBI、PD 以及 CAL 等指标均能反应牙周炎患者病情严重程度,且通过 X 线头影测量项目 (SNA 角、SNB 角、ANB 角),可了解牙颌、颌面骨骼以及软组织发育状况,是评价正畸治疗是否有效的主要手段之一。本次研究结果显示,治疗后 3 个月,两组患者的 GI、PLI、SBI、PD 以及 CAL 均显著降低,且研究组低于对照组;两组患者的 SNA 角、SNB 角均显著降低,且研究组低于对照组;两组患者的 ANB 角显著升高,且研究组高于对照组 ($P<0.05$);两组患者治疗后并发症发生率比较无差异 ($P>0.05$)。表明采用牙周组织再生术联合正畸治疗牙周炎患者安全有效,可改善其牙周状况,修复牙周损伤组织,提高治疗效果。究其原因,主要考虑为以下三个方面:(1)牙周组织再生术可阻止牙龈上皮细胞根向生长;(2)牙周组织再生术可改善病变跟面的生物相容性;(3)牙周组织再生术可增强牙周前体细胞的生物活性^[22-24]。上述三个作用机制均可促进新的牙周组织分化形成,促进支持牙齿稳定性肌肉以及韧带的快速恢复,保证正畸治疗前的固定效果。另外正畸治疗可有效纠正牙齿回归正常位置,获得正常牙周功能,同时正常的牙周功能可促进牙齿功能恢复,从而促进治疗效果^[25-27]。赵玺等人研究结果表明^[28],牙周组织再生术联合正畸治疗可改善患者多项牙周评估指标,促进恢复牙周功能,这与本研究结果内容基本一致。本次研究还表明两组患者治疗后 VAS 评分较治疗前显著降低,且研究组低于对照组 ($P<0.05$),提示该联合治疗方式术后可减轻患者疼痛,缓解患者的身心痛苦。同时研究组患者牙龈健康状况评分、口腔清洁能力评分、美观评分、满意度均高于对照组 ($P<0.05$),而两组患者咀嚼功能评分相比无统计学差异 ($P>0.05$)。表明联合治疗后患者满意度高于牙周组织再生术患者,分析其原因,可能是因为正畸治疗不仅仅局限于矫正牙齿,还可对患者颌骨、颌面进行微整,从而达到了美容的效果,继而提升患者满意度^[29,30]。

综上所述,牙周炎患者使用牙周组织再生术联合正畸治疗,疗效确切,可有效改善患者牙周状况,减轻患者疼痛,提高患者满意度,且不增加并发症发生率。

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