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口腔种植修复与常规修复对牙列缺失患者生活质量及龈沟液细胞因子水平的影响*

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摘要 目的:研究口腔种植修复与常规修复对牙列缺失患者生活质量及龈沟液细胞因子水平的影响。**方法:**选择从2015年7月到2016年7月在我院接受治疗的牙列缺失患者108例作为研究对象。根据随机数字表法将患者分为对照组(n=54)和观察组(n=54),对照组实施常规修复,观察组给予口腔种植修复,随访3个月后,对比两组患者疗效、生活质量、治疗前及治疗3个月后龈沟液的细胞因子水平变化以及并发症情况。**结果:**观察组的总有效率较对照组明显升高(98.15%vs87.04%)($P<0.05$)。治疗后3个月两组的生理功能、情感功能以及社会功能评分均分别较治疗前升高,且观察组高于对照组($P<0.05$)。治疗后3个月两组患者的白细胞介素-6(IL-6)、白细胞介素-8(IL-8)以及肿瘤坏死因子- α (TNF- α)水平均分别高于治疗前,而观察组低于对照组($P<0.05$)。观察组患者并发症的总发生率较对照组明显降低(7.41%vs22.22%)($P<0.05$)。**结论:**牙列缺失患者经口腔种植修复方式治疗的效果更好,对于龈沟液细胞因子水平上升具有明显的抑制作用,减少并发症,值得关注及推广。

关键词:口腔种植修复;常规修复;牙列缺失;生活质量;龈沟液;细胞因子

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Effect of Oral Implant Repair and Routine Repair on Quality of Life and Levels of Cell Factors in Gingival Crevicular Fluid in Patients with Missing Dentition*

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ABSTRACT Objective: To study the effect of oral implant repair and routine repair on the quality of life and the levels of cell factors in gingival crevicular fluid in patients with missing dentition. **Methods:** A total of 108 patients with missing dentition, who were treated in 85th Hospital of People's Liberation Army from July 2015 to July 2016, were selected and randomly divided into control group (n=54) and observation group (n=54). The control group was received routine repair, and the observation group was given oral implant repair. After 3 months of follow-up, the efficacy, quality of life, levels of cell factors in gingival crevicular fluid before treatment and 3 months after treatment and complications were compared between the two groups. **Results:** The total effective rate of the observation group was significantly higher than that of the control group (98.15% vs 87.04%) ($P<0.05$). 3 months after treatment, the scores of physiological function, emotional function and social function of the two groups were higher than those before treatment, and the observation group was higher than the control group ($P<0.05$); the levels of interleukin-6 (IL-6), interleukin-8 (IL-8) and tumor necrosis factor- α (TNF- α) in the two groups were all higher than those before treatment, while those in the observation group were lower than those in the control group ($P<0.05$); the total incidence of complications in the observation group was significantly lower than that in the control group (7.41%vs22.22%) ($P<0.05$). **Conclusion:** The effect of oral implant repair is better in the patients with missing dentition, and it has obvious inhibitory effect on the rise of cell factors in gingival crevicular fluid and can reduce complications, which is worthy of attention and promotion.

Key words: Oral implant repair; Routine repair; Missing dentition; Quality of life; Gingival crevicular fluid; Cell factor

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前言

在口腔科临床上,牙列缺失属于一类较为常见的疾病,此病随着年龄的增加,发病率也呈现出规律性的上升趋势。此类

患者若不及时加以治疗,则可能影响其咀嚼功能,严重时甚至可能会导致牙颌骨的畸形发育亦或是牙槽骨的迅速吸收,不仅会对其面部美观度产生一定损害,而且还会影响口腔健康及日常生活质量^[1,2]。对于牙列缺失的治疗,临床以往应用的常规修

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复措施需要为固位体预留较大空间,针对完全龋坏和基牙等有关病变牙也需给予充裕的牙体预备,甚至对于病变严重者还需给予牙髓治疗,因此,在此过程中,如覆盖黏膜和修复体间的粘合较差,则易发生食物嵌塞,而若粘合过紧,则会增大黏膜压力,严重可导致术区坏死及继发型感染,对患者的预后具有不良影响^[9]。近年来,伴随口腔种植技术的进一步发展,口腔种植修复已被应用于治疗牙列缺失,但目前大多关注此种修复方式的疗效^[4-5]。本文通过比较口腔种植修复以及常规修复对牙列缺失患者生活质量以及龈沟液内细胞因子水平的影响,以期为牙列缺失患者的临床治疗提供依据,现报道如下。

1 资料和方法

1.1 临床资料

选择从2015年7月到2016年7月在我院接受治疗的牙列缺失患者108例作为研究对象。纳入标准:(1)所有患者均经X线片确诊;(2)牙缺失颗数为1-3颗;(3)年龄>20岁;(4)患者均对本次研究知情同意,并签署同意书。排除标准:(1)合并严重心、肝、肾功能障碍者;(2)口腔颌面部存在急性炎症或口腔内的卫生条件差者;(3)拟种植区存在骨量不足或是附着龈少者;(4)颌骨囊肿、残根以及埋伏牙者;(5)有正畸治疗史者;(6)处于妊娠或哺乳期的女性;(7)有恶性肿瘤或血液疾病者。根据随机数字表法将患者分成观察组(n=54)和对照组(n=54),其中观察组男24例,女30例;年龄25-69岁,平均(42.65±2.23)岁;病因:外伤10例,牙周病变25例,牙体缺损19例;患牙区域:前磨牙11颗,磨牙15颗,前牙10颗,下颌52颗,上颌40颗。对照组有男25例,女29例;年龄23-66岁,平均(42.70±2.38)岁;病因:外伤11例,牙周病变23例,牙体缺损20例;患牙区域:前磨牙12颗,磨牙13颗,前牙11颗,下颌54颗,上颌41颗。比较两组的以上资料,差异不显著(P>0.05),具有临床可比性。我院的伦理委员会已经授权批准本次研究的进行。

1.2 研究方法

对照组实施常规修复,主要方式为:为患者常规消毒、麻醉,清理其残牙部位后将患牙拔除,在完全愈合后进行常规备牙,然后为其佩戴好模型牙。观察组则给予口腔种植修复,主要分两期手术进行:(1)一期手术先常规消毒、麻醉,在牙槽嵴的顶部实施弧形切口,切开骨膜和黏膜,将骨面予以显露,而后对孔道进行定位。再用1级裂钻为孔道扩张到所需深度,同时为大上半部实施扩大处理。随后通过2级裂钻实施全程扩展,经肩抬钻扩大患者种植窝的上口,并预备好种植窝,用生理盐水实施局部降温。在窝内缓缓植进种植体,放置顶部螺丝,再冲洗

并缝合创口。3-6个月之后,经X线显示种植体满足骨性结合之后方可给予二期手术。(2)二期手术先放置基台于术区,在两侧的牙龈创口区域进行环抱式的缝合,1周后拆线。收集患者的牙颌石膏模型,待种植义齿完成制备后对其实施修复。两组患者在治疗后均口服3d的抗生素药物,保持口腔内的清洁。

1.3 观察指标

从手术治疗全部结束后开始,以来院复诊及电话、微信等综合随访方式随访3个月,对比两组疗效、生活质量、治疗前及治疗后3个月龈沟液的细胞因子水平变化以及并发症情况。其中生活质量应用医院自拟的牙科患者生活质量评分量表进行评测,此量表信度为0.512,共包含3个条目,分别为生理功能、情感功能以及社会功能,每个条目100分,分值越高代表患者的生活质量越好。龈沟液的细胞因子包括白细胞介素-6(interleukin-6, IL-6)、白细胞介素-8(interleukin-8, IL-8)以及肿瘤坏死因子- α (tumor necrosis factor- α , TNF- α),分别在治疗前及治疗3个月为两组患者采集其2mL的龈沟液,以100 μ L的PBS液洗脱并行10 min 3000 r/min的离心,而后保存待测,采用酶联免疫吸附测定法测定TNF- α 水平,采用免疫比浊法测定IL-6和IL-8水平,试剂盒均购自武汉的博士德公司,在检测操作过程中应严格遵照试剂盒说明书进行。

1.4 疗效评价^[6]

显效:患者治疗后的牙列缺失已完全恢复,且从外观和牙齿使用功能方面与正常牙齿相比无差别;有效:患者治疗后的牙列缺失已基本恢复,且外观和牙齿使用功能较治疗前有所改善;无效:患者治疗后的牙列缺失并未修复,且外观和牙齿使用功能和正常牙相比有明显差别,口腔活动存在明显的不适感。其中总有效率为显效率和有效率之和。

1.5 统计学方法

本次研究所涉及的数据均通过SPSS21.0进行统计分析,性别构成、总有效率、并发症发生率等计数资料用率(%)表示,其比较采用 χ^2 检验。生活质量评分、龈沟液细胞因子水平等计量资料用($\bar{x} \pm s$)表示,其比较采用t检验,检验标准设置为 $\alpha=0.05$ 。

2 结果

2.1 两组患者疗效对比

观察组的总有效率较对照组明显升高(98.15%vs87.04%)(P<0.05),见表1。

2.2 两组患者生活质量对比

治疗前两组患者的生理功能、情感功能以及社会功能评分比较差异无统计学意义(P>0.05)。治疗后3个月两组的生理功

表1 两组患者疗效对比[n(%)]
Table 1 Comparison of effect of two groups[n(%)]

Groups	n	Excellence	Effective	Invalid	Total effective rate
Observation group	54	31(57.41)	22(40.74)	1(1.85)	53(98.15)
Control group	54	22(40.74)	25(46.30)	7(12.96)	47(87.04)
X ²	-				4.860
P	-				0.027

能、情感功能以及社会功能评分均分别较治疗前升高,且观察组较对照组升高($P<0.05$),见表2。

表2 两组患者生活质量对比($\bar{x}\pm s$,分)
Table 2 Comparison of quality of life of two groups($\bar{x}\pm s$, scores)

Groups	n	Physiologic function		Emotional function		Social function	
		Before treatment	3 months after treatment	Before treatment	3 months after treatment	Before treatment	3 months after treatment
Observation group	54	45.88± 5.27	84.47± 10.53*	56.19± 4.27	86.48± 10.24*	61.26± 10.38	93.14± 8.08*
Control group	54	45.91± 5.19	67.82± 9.58*	56.23± 4.33	73.08± 5.47*	61.34± 11.25	80.24± 7.66*
t	-	0.030	8.595	0.048	8.482	0.038	8.514
P	-	0.976	0.000	0.962	0.000	0.969	0.000

Note:compared with before treatmentm,* $P<0.05$.

2.3 两组患者龈沟液细胞因子水平对比

治疗前两组患者龈沟液 IL-6、IL-8 及 TNF- α 水平相比差异无统计学意义 ($P>0.05$)。治疗后 3 个月两组 IL-6、IL-8 及

TNF- α 水平分别较治疗前升高,而观察组明显较对照组降低

($P<0.05$),见表3。

表3 两组患者龈沟液细胞因子水平对比($\bar{x}\pm s$)
Table 3 Comparison of gingival crevicular fluid cytokine of two groups($\bar{x}\pm s$)

Groups	n	IL-6($\mu\text{g/L}$)		IL-8($\mu\text{g/L}$)		TNF- α ($\mu\text{g/L}$)	
		Before treatment	3 months after treatment	Before treatment	3 months after treatment	Before treatment	3 months after treatment
Observation group	54	15.28± 1.94	25.94± 3.18*	37.18± 4.67	69.32± 8.70*	2.34± 0.29	3.57± 0.41*
Control group	54	15.31± 2.03	41.33± 5.82*	37.23± 5.52	106.69± 13.21*	2.33± 0.31	4.68± 0.55*
t	-	0.079	17.052	0.051	17.361	0.173	11.890
P	-	0.938	0.000	0.960	0.000	0.863	0.000

Note: compared with before treatmentm,* $P<0.05$.

2.4 两组患者并发症对比

观察组患者并发症的总发生率较对照组明显降低(7.41%

vs22.22%)($P<0.05$),见表4。

表4 两组患者并发症对比[n(%)]
Table 4 Comparison of complication of two groups [n(%)]

Groups	n	Blood loss	Tingling sensation	Post and core loss	Total incidence
Observation group	54	2(3.70)	1(1.85)	1(1.85)	4(7.41)
Control group	54	4(7.41)	5(9.26)	3(5.56)	12(22.22)
X ²	-				4.696
P	-				0.030

3 讨论

随着居民生活水平的逐渐提高,当前社会中部分群体存在着不同程度的牙齿疾病。牙列缺失即为一种常见类型的牙齿疾病,大多数是由牙齿龋坏亦或是牙周炎导致的,虽不会危害患者生命安全,但会影响患者咀嚼能力和辅助发音等相关功能,使其日常生活质量下降,同时患者面部美观度也会降低^[7-9]。常规修复疗法虽可获得一定的疗效,但常需大量牙体预备,病情严重者还需给予牙髓治疗,并发症较多。口腔种植技术当前已用于治疗牙列缺失疾病,有报道指出,其固定效果更佳,并发症较少^[10-12]。为了更加科学而全面地比较口腔种植型修复和常规

修复治疗牙列缺失患者的效果及预后情况,本文进行两种方案的对比研究。

本研究的结果发现,观察组的总有效率较对照组升高($P<0.05$),这提示了观察组应用口腔种植修复治疗方式的疗效更好。分析原因,主要是口腔种植修复所用的牙根材料及固定嵌合更符合生物力学特性,具体而言,口腔种植是选择一类生物型亦或是非生物型材料以制备患者的人工牙根,并在牙槽骨中植入,此方案可以较好地避免或者减小有关基托,具有较好的固定效果^[13-15]。人工牙根在植入牙槽骨后不会增大黏骨膜张力,并可与骨质共同产生牢固而紧密的生物力学嵌合作用,有效防止了细菌和食物残渣累及于骨内环境,加强了附近组织与

种植体在骨段中的结合,因此治疗效果更好^[16-18]。同时,本研究发现,治疗后3个月两组患者的生理功能、情感功能以及社会功能评分均分别较治疗前升高,且观察组高于对照组($P<0.05$),这提示了观察组治疗方式能更好地改善患者的生活质量。究其原因,主要是因为口腔种植修复存在和正常牙齿类似的结构,而且更加美观及舒适,具有良好的生物学结构,不会对余留牙和咀嚼功能造成损害,还可使牙列恢复更加完整,较好地缓解患者的痛苦,因此对患者的生活质量具有明显的改善作用^[19-21]。IL-6、IL-8以及TNF- α 均为临床常用的细胞因子监测指标,三者均可较好地反映出机体的炎症反应状态^[22-24],本研究结果显示,治疗后3个月两组的IL-6、IL-8及TNF- α 水平均分别明显高于治疗前,而观察组明显低于对照组($P<0.05$),这提示了观察组应用口腔种植修复方式治疗后,龈沟液的细胞因子水平升高幅度明显更小。原因主要是对牙列缺失进行修复虽然会导致不同程度的炎症反应,然而观察组治疗方式对于牙周组织产生的刺激相对更小,其对于骨质形成的有关嵌合作用更好,降低了刺激物的产生几率,并有效缓解了炎症反应,最终对牙列功能产生了较好的保护作用^[25-27]。此外,本文还发现观察组并发症的总发生率为7.41%,明显低于对照组的22.22%($P<0.05$),这提示了观察组应用的口腔种植修复这一治疗方案具有更高的安全性。究其原因,主要考虑口腔种植修复能够通过种植体将咬合力传递到患者的下颌骨,进而刺激四周骨组织,有助于保持牙槽嵴区域的稳定性,降低修复失败的几率及各类并发症的发生风险。这在Bömicke W等人^[28-30]的报道结果中也有类似的结论能够加以佐证。

综上所述,应用口腔种植修复方式治疗牙列缺失患者具有明显的疗效,同时还可避免龈沟液细胞因子水平过度上升,炎症控制效果好,且安全性较高,值得临床推广应用。

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