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玻璃纤维桩树脂核和金属铸造桩核修复上颌前牙残根残冠的疗效比较

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摘要 目的:比较玻璃纤维桩树脂核和金属铸造桩核修复上颌前牙残根残冠的临床疗效。**方法:**选择 2008 年 1 月 -2011 年 12 月我院 200 例上颌前牙残根残冠患者,随机分为观察组与对照组,每组 100 例,观察组采用玻璃纤维桩树脂核修复,对照组采用金属铸造桩核修复,比较两组患者患齿修复成功率、修复后 1、2 年咀嚼效能有效率、修复前后患齿健康指数。**结果:**①观察组患者因牙龈炎、牙龈着色、冠折 / 根折、全冠松动 / 脱落、桩核松动 / 脱落而失败的发生率为 2.0%、2.0%、1.0%、2.0%、1.0%,均低于对照组的 6.0%、7.0%、5.0%、7.0%、5.0%，观察组总成功率为 94.0%，显著高于对照的 74.0%，两组数据比较差异均有统计学意义（均 P< 0.05);②观察组修复后 1、2 年咀嚼功能改善有效率分别为 94.0%、86.0%,对照组分别为 89.0%、72.0%,比较差异均有统计学意义（均 P< 0.05);③两组患者修复后抗折裂强度、GI、SBI 均较修复前明显改善,比较差异有统计学意义(均 P< 0.05),观察组修复后抗折裂强度、GI、SBI 较对照组改善更明显,比较差异有统计学意义(均 P< 0.05)。**结论:**玻璃纤维桩树脂核修复上颌前牙残根残冠具有较高成功率,咀嚼功能改善明显,临床效果优于金属铸造桩核修复。

关键词:上颌前牙残根残冠;玻璃纤维桩树脂核;金属铸造桩核;修复

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Comparison of Efficacy of Glass Fiber Post and Resin Core and Metal Casting Post and Core in the Repair of Maxillary Anterior Residual Roots and Crowns

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ABSTRACT Objective: To compare the clinical efficacy of glass fiber post and resin core and metal casting post and core in repairing maxillary anterior residual roots and crowns. **Methods:** 200 cases of patients with maxillary anterior residual roots and crowns who were treated in our hospital from January 2008 to December 2011 were selected, and were randomly divided into the observation group who were given glass fiber post and resin core and the control group who were treated with metal casting post and core, with 40 cases in each group. The success rate of repairing of suffering tooth, masticatory efficiency after the restoration of 1, 2 years, health index before and after restoration were compared between the two groups. **Results:** ① The incidence rates of repair failure of the gingivitis, gingival coloration, fold crown / root fracture, crown loose or off, post and core loose or off of the observation group were lower than those of the control group (2.0%, 2.0%, 1.0%, 2.0%, 1.0% vs 6.0%, 7.0%, 5.0%, 7.0 %, 5.0%), the total success rate (94.0%) in the observation group was higher than that (74.0%) of the control group, the difference was statistically significant (all P< 0.05); ② The effective improvement rate of masticatory function of the observation group after restoration of 1, 2 years were 94.0% and 86.0%, while that of the control group were 89.0% and 72.0%, and the difference was statistically significant (all P< 0.05); ③ The anti-fracture strength, GI, and SBI after restoration of the two groups were significantly improved compared with before restoration, and the difference was statistically significant (all P< 0.05), the anti-fracture strength, GI, SBI after restoration of the observation group were significantly improved than the control group, the difference was statistically significant (all P< 0.05). **Conclusion:** Glass fiber post and resin core has high success rate in the repaire of maxillary anterior residual roots and crowns, it effectively improves masticatory function, and its clinical effect is better than that of metal casting post and core restoration.

Key words: Maxillary anterior residual roots and crowns; Glass fiber post and resin core; Metal casting post and core; Restoration

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前言

上颌前牙在外力及龋坏等多种原因的作用下易发生牙根牙冠缺损,形成残根残冠,而增加患者根尖周炎的发生率,如不能采取有效的治疗和修复,可以引起全身性疾病,甚至诱发口腔癌[1,2],为此,对上颌残根残冠及时采取有效修复具有非常重要的临床意义。目前,桩核技术是临床上修复残根残冠最常用

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的方法,纤维桩树脂核与铸造金属桩核是当前临床最常用的桩核材料[3],对于两种桩核材料的优缺点研究报道还非常少。为此,本研究旨在比较玻璃纤维桩树脂核和金属铸造桩核修复上颌前牙残根残冠的临床疗效,现报道如下。

1 资料与方法

1.1 一般资料

选择 2008 年 1 月 -2011 年 12 月我院 200 例上颌前牙残根残冠患者(200 牙),纳入标准[4]:①影像学确诊为上颌前牙残根残冠;②残根残冠根管治疗完善,可行桩核修复;③患者知情同意,配合治疗。排除标准[5]:①Ⅱ度以上牙周病;②咬合异常,牙松动超过Ⅰ度;③覆盖超过Ⅱ度;④可用牙本质肩领< 15 mm 者;⑤牙槽骨吸收> 1 / 3 牙根长度。按随机字数表法分为观察组与对照组各 100 例(100 牙)。其中观察组:男 54 例,女 46 例,年龄 32-64 岁,平均(49.85± 7.25)岁,残根 64 牙,残冠 36 牙,采用玻璃纤维桩树脂核修复。对照组:男 55 例,女 45 例,年龄 31-65 岁,平均(49.27± 7.88)岁,残根 62 牙,残冠 38 牙,采用金属铸造桩核修复。两组患者均经术后病理检查证实其病理分型。两组患者一般资料比较差异无统计学意义(P> 0.05),具有可比性。

1.2 修复方法

两组患者修复前均给予根尖 X 线片检查,测量根管长度,确认根管治疗彻底,证实根尖周围组织情况允许桩核修复,首先根据根管的长度,预备根管,一般桩核深度控制在根长的 2/3-3/4,桩径约为根茎 1/3 长度,对根尖牙胶封闭区进行适当的保留。然后植入桩核,对照组采用两步法制作金铂合金桩核,粘结剂应用松风聚羧酸锌水门汀。观察组选用瑞士康特玻璃纤维根冠桩,选择瑞士康特 ParaCore 复合树脂做为核树脂,美国 3M 公司生产的 RelyX Luting 为树脂粘结剂。最后,两组患者桩核粘固后进行排龈,均采用硅橡胶两次法取印模,采用钴铬烤瓷全冠进行患齿修复。

1.3 观察指标

①修复总成功率:参照 Bass 报道的标准[6],修复后无自觉不适症状,其咀嚼功能基本恢复正常,修复体结合紧密完整、无松动,叩诊无不适感,外观美观,无色素沉着,X 线片根尖区正常或低密度无进展;②修复后 1、2 年咀嚼功能改善有效率[7]:优良:修复齿无移位松动现象,咀嚼功能基本恢复正常;一般:修复齿无明显松动与移位现象,患者一般咀嚼功能尚可,但咀嚼硬物效果不佳;较差:修复齿有松动,甚至脱落现象,咀嚼功能无明显恢复,甚至不能正常行使。有效率 =(优良例数 + 一般例数)÷ 总例数× 100%。③修复前与修复 2 年后患齿健康指数,包括抗折裂强度、牙龈指数(GI)及修复齿出血指数(SBI)。抗折裂强度数值增大,抗折性增强;GI 与 SBI 越低,牙齿健康程度越高。

1.4 统计学方法

采用 SPSS17.0 软件进行统计学分析。所有计量资料采用 t 检验,结果用均数± 标准误表示。所有计数资料采用卡方检验,结果用 X^2 和 P 表示。当 P<0.05 时说明具有显著学差异。

2 结果

2.1 两组患者修复总成功率与失败原因比较

观察组牙龈炎、牙龈着色、冠折 / 根折、全冠松动 / 脱落及桩核松动 / 脱落而失败的发生率为 2.0%、2.0%、1.0%、2.0%、1.0%,均低于对照组的 6.0%、7.0%、5.0%、7.0%、5.0%,观察组总成功率为 94.0%,显著高于对照的 74.0%,两组数据比较差异均有统计学意义(均 P< 0.05),见表 1。

表 1 两组患者修复总成功率及失败原因比较[n(%)]

Table 1 Comparison of the total successful rate and causes of failure repair in two groups[n(%)]

组别 Groups	例数 Cases	牙龈炎 Gingivitis	牙龈着色 Gingival coloration	冠折 / 根折 Fold crown / root fracture	全冠松动 / 脱落 Crown loose / off	桩核松动 / 脱落 Post and core loose / off	总成功率 Total success rate
观察组 Observation group	100	2.0(2/100)	2.0(2/100)	1.0(1/100)	2.0(2/100)	1.0(1/100)	94.0(94/100)
对照组 Control group	100	6.0(6/100)	7.0(7/100)	5.0(5/100)	7.0(7/100)	5.0(5/100)	74.0(74/100)
X^2		7.85	8.13	8.44	8.29	8.44	12.37
P		0.046	0.037	0.035	0.032	0.035	0.002

2.2 两组患者修复后 1、2 年咀嚼功能改善有效率比较

观察组修复后 1、2 年咀嚼功能改善有效率分别为 94.0%、86.0%,对照组分别为 89.0%、72.0%,比较差异均有统计学意义(均 P< 0.05),见表 2。

2.3 两组患者修复前、后患齿健康指数比较

两组修复前抗折裂强度、GI 及 SBI 比较差异无统计学意义(均 P> 0.05),两组患者修复后抗折裂强度、GI、SBI 均较修复前明显改善,比较差异有统计学意义(均 P< 0.05),观察组修复后抗折裂强度、GI、SBI 较对照组改善更明显,比较差异有统计学意义(均 P< 0.05),见表 3。

3 讨论

残冠是指牙冠发生大部分缺损,而残根是牙冠缺损更加严重的一种表现,仅剩牙根,残冠残根发生后,牙齿根管则暴漏于口腔的有菌环境中,成为致病菌侵入根尖的通道,导致根尖周围炎的发生[8-10]。以往治疗该类口腔疾病,通常采取拔牙处理,随着根管技术的不断进步,使得残根残冠修复得到了进一步的发展,患者的残根残冠得以保留[11,12]。

目前,桩核技术是临床上修复残根残冠最常用的一种方法,选择合适的桩核材料是保证修复效果的关键[13]。铸造金属

表 2 两组患者修复后 1、2 年咀嚼功能改善有效率比较[n,%]

Table 2 Comparison of effective improvement rate of masticatory function 1, 2 years after restoration between two groups[n,%]

组别 Groups	例数 Cases	修复后 1 年 1 years after the repair				修复后 2 年 2 years after the repair			
		优良 Good	一般 General	较差 Poor	有效率 Effective rate	优良 Good	一般 General	较差 Poor	有效率 Effective rate
观察组 Observation group	100	69	25	6	94.0*	62	27	11	89.0*
对照组 Control group	100	60	26	14	86.0	53	19	28	72.0

注:与对照组比较,X^2=9.45,X^2=11.48;P=0.028,P=0.011。

Note:compared with control group,X^2=9.45,X^2=11.48;P=0.028,P=0.011.

表 3 两组患者修复前后患齿健康指数比较($\bar{x}\pm s$)

Table 3 Comparison of teeth health index before and after restoration between two groups($\bar{x}\pm s$)

组别 Groups	例数 Cases	抗折裂强度 The anti-fracture strength		GI		SBI	
		修复前 Before restoration	修复后 After restoration	修复前 Before restoration	修复后 After restoration	修复前 Before restoration	修复后 After restoration
观察组 Observation group	100	0.345± 0.092	0.591± 0.087	2.15± 0.48	0.57± 0.12	3.25± 0.72	1.55± 0.32
对照组 Control group	100	0.343± 0.094	0.502± 0.086	2.21± 0.47	0.68± 0.17	3.27± 0.81	1.68± 0.41
t		3.85	7.08	3.18	6.81	2.88	6.29
P		0.104	0.021	0.122	0.025	0.185	0.031

桩核材料具有机械强度高,制作工艺简单,价格低廉的特点,同时具有强度高、耐腐蚀强、抗疲劳性、透光性好、操作简便以及弹性模量接近牙本质等优势[14]。在残根残冠修复中一直处于主导地位,但是,金属桩核存在一些不足之处,长时间使用会出现腐蚀现象,导致牙龈染色,透光性减低,诱发牙龈过敏、发炎,且冠根折发生率较高[14,15]。本研究证实这一观点,结果显示其牙龈炎、牙龈着色、冠折 / 根折、全冠松动 / 脱落、桩核松动 / 脱落发生率分别高达 6.0%、7%.0、5.0%、7.0%、5.0%,总成功率仅 74.0%,这种情况迫切需要新型的非金属纤维桩核弥补铸造金属桩核材料的诸多不足。

林立垚等研究发现玻璃纤维桩树脂核修复前牙残根残冠具有较高的成功率[16],不良反应较低,可取的理想的咀嚼功能,修复效果优于铸造金属桩核材料。本研究采用玻璃纤维桩树脂核修复对 100 例前牙残根残冠进行修复,证实该组患者牙龈炎、牙龈着色、冠折 / 根折、全冠松动 / 脱落、桩核松动 / 脱落不良反应发生率明显低于金铂合金桩核,总成功率高达 94.0%,明显优于金铂合金桩核,比较差异有统计学意义。其修复后 1 年及 2 年咀嚼功能改善有效率分别高达 94.0%、86.0%,明显高于金铂合金桩核修复的 89.0%、72.0%,另外,玻璃纤维桩树脂核修复的患者修复后残根残冠抗折裂强度、GI 及 SBI 较金铂合金桩核修复明显,比较差异有统计学意义,与相关研究结果基本一致[17,18]。充分说明玻璃纤维桩树脂核在修复前牙残根残冠方面具有较高的优势。分析原因认为,纤维桩表面多孔,其弹性模量与牙本质更接近,使用树脂粘结剂将其与牙本质粘结,更容易粘合成为一个整体,更有利于应力均匀分布,避免牙冠牙根折裂的发生[19]。另外,玻璃纤维桩抗疲劳性较金属核桩更强,不存在细胞毒性,修复后可减少患者的复诊次数,优越性更明显[20]。

综上所述,对上颌前牙残根残冠进行完善的根管治疗后,采取玻璃纤维桩核行修复,成功率高,咀嚼功能改善理想,患齿健康指数改善明显,临床效果优于金属桩核修复,值得临床推广应用。

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