doi: 10.13241/j.cnki.pmb.2015.18.042

不同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：对比玻璃纤维桩树脂核与铸造金属桩核修复上颌前牙残根残冠的疗效。**方法**：选取 2011 年 10 月至 2013 年 12 月在我院口腔科就诊的 120 例因前牙牙体缺损或者冠折需行桩核冠修复术的患者，随机分为玻璃纤维桩组及铸造金属桩组，每组各 60 例。玻璃纤维桩组采取玻璃纤维桩核与烤瓷全冠修复术治疗，铸造金属桩组采取钴铬合金铸造桩核与烤瓷全冠修复术治疗。对比 2 组患者修复治疗的疗效及失败情况。**结果**：玻璃纤维桩组有 1 例（1 颗）患者因搬迁失访，铸造金属桩组有 2 例（2 颗）患者因金属致敏性导致治疗中断；余 117 例（179 颗）患者中，玻璃纤维桩组共 92 颗牙，成功率为 89.13%，铸造金属桩组共 87 颗牙，成功率为 79.31%，玻璃纤维桩组的明显高于铸造金属桩组；玻璃纤维桩组牙根折裂、桩核松动或脱落的发生率明显低于铸造金属桩组；而桩核折的发生率则明显高于铸造金属桩组，差异有统计学意义（P<0.05）。**结论**：玻璃纤维桩具有美观、抗疲劳、易于操作、患者复诊次数少等优势，且不存在细胞毒性及过敏反应等问题，其修复效果优于铸造金属桩核。

关键词：玻璃纤维桩树脂核；铸造金属桩核；上颌前牙；残根残冠修复

中图分类号：R783 **文献标识码**：A **文章编号**：1673-6273（2015）18-3561-03

Effect Comparison of Different Post and Core in the Repair of Residual Root and Crown of Maxillary Anterior Teeth

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ABSTRACT Objective: To compare and analyze the clinical effects of the two different repairment on the residual root and crown of maxillary anterior teeth. **Methods:** 120 cases of patients with anterior teeth defect or crown fracture who needed surgery to repair the line core crown pile from October 2011 to December 2013 in our hospital were randomly divided into glass fiber pile group and cast metal pile group, each with 60 cases. Glass fiber pile group were given nuclear and porcelain crown treatment. Cast metal pile group were given chromium alloy cast post and core drilling with a porcelain crown treatment, restorative treatment efficacy and failures of two groups were compared. **Results:** Glass fiber pile group had 1 case due to the relocation lost to follow-up, follow-cast metal pile group had 2 cases patients of treatment interruption due to metal sensitization, which were removed. In the rest 117 cases (179 tooth) of patients, the glass fiber pile group had 92 teeth, the success rate was 89.13 %, cast metal pile group had 87 teeth, and the success rate was 79.31%, significantly higher than the fiberglass cast metal pile group; glass fiber pile group root fracture, the incidence of post-core loose or fall off was significantly lower than that of cast metal pile group; while the incidence of nuclear pile off the pile group was significantly higher than that of cast metal pile group. The difference was statistically significant (P <0.05). **Conclusion:** Glass fiber post is beautiful, fatigue, easy to operate, results in fewer patient referral and there is no cell toxicity and allergic reactions or other complications, the repair is better than that of metal post.

Key words: Glass fiber post and resin core; Cast metal post and core; Maxillary anterior teeth; Residual root crowns

Chinese Library Classification(CLC): R783 Document code: A

Article ID:1673-6273(2015)18-3561-03

前言

残根残冠进行桩冠修复术时，铸造金属桩因其可以被塑造成与根管桩道吻合的形态，且具备良好的物理性能及机械强度而广泛应用于临床[1,2]。但是其操作繁琐、等待时间过长、需要多次复诊、腐蚀变色或根折的可能性极高、部分患者易产生金属致敏性等缺点，严重影响患者的治疗进程[3,4]。近年来，随着医学的不断进步，不少研究认为[5-8]，玻璃纤维桩具有较好的弯曲及拉伸强度，相容性高、抗腐蚀及美学性能均较强。我院经过大量研究，比较玻璃纤维桩树脂核与铸造金属桩核修复上颌前牙残根残冠的疗效，现将研究结果报道如下：

1 资料与方法

1.1 临床资料

选取 2011 年 10 月至 2013 年 12 月我院口腔科就诊的 120 例因前牙牙体缺损或者冠折需行桩核冠修复术的患者，纳入标准：上颌前牙发现残根残冠，牙齿松动 <I 度；牙本质肩领可用部分 >1.5 mm；牙周组织未发现异常；牙槽骨吸收 <1/3 根

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（收稿日期：2014-10-30 接受日期：2014-11-23）

长；曾于口腔科进行根管治疗，X 线牙片示根管充填良好，并观察 2 周。排除标准：治疗中断及不能按时复诊的患者。所有患者均自愿签署知情同意书。男性 78 例，女性 42 例；年龄最小 18.5 岁，最大 69 岁，平均年龄（42.07± 5.92）岁；共 182 颗患牙，其中切牙共 144 颗、尖牙共 38 颗；损伤原因：外伤共 113 颗、龋坏 69 颗。按就诊顺序进行编号，然后随机分为玻璃纤维桩组及铸造金属桩组，每组各 60 例。两组患者的年龄、性别、损伤因素及患牙病情等资料对比，差异均无统计学意义（P>0.05），具有可比性，见表 1。

表 1 一般临床资料对比

Table 1 Comparison of general clinical data

组别 Groups		玻璃纤维桩组 Glass fiber pile group	铸造金属桩组 Cast metal pile group	T/X^2	P
患牙数 Number of teeth		93	89	-	-
年龄（岁）Age(years)		41.34± 6.24	42.17± 5.33	0.783	0.217
性别（男 / 女）Gender(M/F)		42/18	36/24	1.319	0.251
患牙类型 Teeth type	切牙 Incisor	76	68	0.778	0.378
	尖牙 fang	17	21		
损伤原因 Causes of injury	外伤 Trauma	58	55	0.006	0.937
	龋坏 Caries	35	34		

1.2 方法

玻璃纤维桩组采取玻璃纤维桩核与烤瓷全冠修复术治疗。操作方法：首先，采用 P 钻预备好根管，采用配套钻使根管成形，确保根管预备的深度为 2/3~3/4 根长，剩余牙胶尖与根尖之间相距 3~5 mm，依据牙合关系和 Para Post FiberWhite 玻璃纤维桩道的深度对桩的长度进行调节，并进行标记，采用涡轮钻将多余部分去除，操作过程中切勿将桩切断，对纤维组织造成破坏。然后，按照瑞士康特提供的 ParaCore 复合树脂的说明书进行粘桩以及堆核。铸造金属桩组采取钴铬合金铸造桩核与烤瓷全冠修复术治疗。操作方法：采用上述方法预备及成形根管后，用 P 钻对根管的内壁进行修整，确保内壁光滑，没有倒凹。用意大利金玛克提供的硅橡胶进行印模，采用合肥美观义齿有限公司提供的钴铬合金桩制作完成并试戴桩核合适后，将美国 3M 玻璃离子水门汀（树脂加强型）与金属桩相粘接。全冠制作：常规准备基牙，并使形成的牙本质肩领≧1.5 mm，压排龈线（美国 Uitradent 公司），采用硅橡胶进行印模，比色后制作好临时冠，烤瓷其全冠制作并试戴粘固，完成修复体后进行临床评价。

1.3 观察项目及疗效评定

分别于修复治疗后 6、12 、18 、24 个月时复诊，记录牙根、桩核、全冠、牙龈等情况。并根据修复情况对疗效进行评定。成功：患者对修复体的外形较为满意，咀嚼功能正常；修复体的边缘基本密合，未发现松动，牙龈未发现充血及水肿；X 线片示：根尖区未发现阴影或者原阴影无扩大。否则，视为失败。

1.4 统计学处理

将所得数据导入 SPSS15.0 软件进行分析，组间对比采取 X^2 检验。以 P＜0.05 作为有统计学差异的标准。

2 结果

2.1 疗效比较

玻璃纤维桩组有 1 例（1 颗）患者因搬迁失访，铸造金属桩组有 2 例（2 颗）患者因金属致敏性导致治疗中断，故予以剔除。余 117 例（179 颗）患者中，玻璃纤维桩组共 92 颗牙，成功率为 89.13%，铸造金属桩组共 87 颗牙，成功率为 79.31%，玻璃纤维桩组的明显高于铸造金属桩组。差异有统计学意义（X^2=4.031，P=0.045），见表 2。

表 2 两组患者修复效果比较

Table 2 Comparison of the restoration effect between the two groups

组别 Groups	例（颗）n(a)	成功 Success[n(%)]	失败 Failures [n(%)]
玻璃纤维桩组 Glass fiber pile group	59(92)	82(89.13)	9(9.78)
铸造金属桩组 Cast metal pile group	58(87)	69(79.31)	18(20.68)

2.2 修复治疗失败情况比较

玻璃纤维桩组牙根折裂、桩核松动或脱落的发生率明显低于铸造金属桩组；而桩核折的发生率则明显高于铸造金属桩组。差异均有统计学意义（P＜0.05），见表 3。

3 讨论

牙体缺损和冠折在临床上较为常见，由于患者对保留牙体的需求以及根管治疗方法的不断完善，不少残根残冠能够保留[9-11]，因此，修复治疗日益成为研究的重点。桩核冠修复术作为临床较为常用的修复方法，不同的桩核材料直接影响到牙体修复的成效[12,13]。而桩核材料必须具备强度及耐腐蚀性高、能够抗疲劳、具有较好的透光性、弹性模量与牙本质接近、易于操作等

表 3 两组患者修复治疗失败情况比较 [颗(%)]

Table 3 Comparison of the repair failure of two groups[n(%)]

组别 Groups	例(颗) n(a)	牙根折裂 Root fracture	桩核折 Pile nuclear fold	桩核松动或脱落 Pile nuclear loose or fall off	全冠松动或脱落 Loose or fall off crown	牙龈边缘变色 Gingival marginal discoloration
玻璃纤维桩组 Glass fiber pile group	59(92)	0(0)	4(4.35)	1(1.09)	1(1.09)	3(3.26)
铸造金属桩组 Cast metal pile group	58(87)	4(4.60)	0(0)	6(6.90)	2(2.30)	6(6.90)
X^2		4.327	3.869	4.016	0.399	1.238
P		0.038	0.049	0.045	0.528	0.266

特点[14]。

铸造金属桩核已经应用多年,核和桩属于一体铸造,能够使牙齿原有的方向发生改变,具有较好的修复效果,但目前刚性问题仍然尚未达成共识。随着医学的不断发展,纤维桩开始被用于桩核冠修复术, 纤维桩与牙本质具有相似的弹性模量,表面孔比较多,采用树脂粘结剂进行粘结,可以使牙本质与纤维桩紧密连接,进而减少根折[15]。且玻璃纤维桩具有美观、抗疲劳、易于操作、患者复诊次数少等优势,且不存在细胞毒性及过敏反应等问题。在本研究中,玻璃纤维桩组成功率明显高于铸造金属桩组。说明玻璃纤维桩的修复效果优于铸造金属桩核。

研究结果示, 铸造金属桩组具有较高的牙根折裂发生率,主要考虑是由于金属桩的弹性模量太高所造成。金属桩在作用力较强时亦不会弯曲,导致桩和根管内壁的接触面减少,甚至为点接触[16],因此,根部的牙体局部的应力增加至一定限度时便发生根折。一旦发生这种垂直破坏的折断模式,便无法再进行修复[17]。而纤维桩在遭遇外力时,应力集中于牙齿的颈部,因此,可以根据外力的变化改变应力的方向,增加桩和根管内壁的接触面,进而避免出现根折。但应力过大时,纤维桩的桩核相比于牙本质更容易发生破碎折断,由于金属桩由于具有较高的硬度,故不易折断。因此,在本研究中,纤维桩桩核折的发生率明显增加。当纤维桩桩核折后,从根管中将其取出,择期再次进行修复,均取得较好的疗效。本研究显示,铸造金属桩组桩核松动或脱落的发生率最高,主要是考虑与根管内壁处理的不够完善,粘结界面间机械固位及化学固相对较差有关[18,19]。2 组全冠脱落患者在将原有粘结剂去除,重新进行复位粘结后,均未发生脱落,尚须进一步观察。由于金属桩核具有腐蚀性,其产物能够渗透于桩和牙根之间致使牙龈变色, 在本研究中,2 组患者牙龈变色的发生率并无统计学意义(P>0.05),而玻璃纤维桩组之所以发生牙龈变色,主要可能是由于烤瓷冠金属的腐蚀性所导致[20]。

综上所述,玻璃纤维桩具有美观、抗疲劳、易于操作、患者复诊次数少等优势, 且不存在细胞毒性及过敏反应等问题,其修复效果优于铸造金属桩核。

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