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聚合瓷嵌体修复活髓后牙大面积牙体缺损中的临床研究

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摘要 目的:研究聚合瓷嵌体修复活髓后牙大面积牙体缺损(Big dentin defect,BDD)中的临床疗效。**方法:**从2009年6月到2011年6月,于我院牙科就诊病患中,后牙的牙体缺损大于1个牙尖者有80例,共87颗牙齿。以数字法随机分成治疗组(41例,46颗)及对照组(39例,43颗)。对照组以高嵌体方案治疗,治疗组以聚合瓷嵌体方案治疗。对比两组一周以及一年后修复体评价情况。**结果:**治疗一周后,治疗组在美观方面显著优于对照组,差异有统计学意义($u=2.038, P<0.05$)。而两组对比术后敏感以及牙周状况等数据,差异均无统计学意义($u=1.132, 1.389$, 均 $P<0.05$)。治疗一年后,治疗组在修复体折裂以及美观等方面显著优于对照组。差异有统计学意义($u=3.138, 2.874$, 均 $P<0.05$)。两组在继发龋和边缘着色,邻接以及肩台适合和牙周状况等方面对比,差异均无统计学意义($u=1.132, 1.374, 1.454, 1.268, 1.366$, 均 $P<0.05$)。**结论:**聚合瓷嵌体对于活髓后牙BDD的修复效果较为显著,可较大程度恢复病患牙体功能,减少继发龋的发生率。不易折裂又更加美观,值得临床推荐。

关键词:聚合瓷嵌体;修复;活髓后牙;BDD;疗效

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Clinical Research of Polymeric Ceramic Inlay Restoration of Vital Pulp Posterior Teeth With Big Dentin Defect

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ABSTRACT Objective: To study clinical effect of polymeric ceramic inlay restoration of vital pulp posterior teeth with big dentin defect (BDD). **Methods:** From June 2009 to June 2011, patients in our hospital tooth defect of posterior were greater than 1 teeth cusp had 80 cases, a total of 87 teeth. Digital randomly divided into the treatment group (41 cases, 46) and the control group (39 cases, 43). The control group used with onlays regimen, while the treatment group used with polymer ceramic inlays, compared two groups of one week and one year after the restoration evaluations. **Results:** After one week of treatment, the treatment group in aesthetics was significantly better than control group. Difference was statistically significant ($u=2.038, P<0.05$), comparing the two groups with sensitive and periodontal status and other data. The difference was not statistically significant ($u=1.132, 1.389$, all $P<0.05$). 1 year after treatment, the rank sum test, the treatment group's aesthetic and restoration fracture was significantly better than the control group. Difference was statistically significant ($u=3.138, 2.874$, all $P<0.05$). The two groups' comparison in secondary caries and marginal discoloration, as well as the adjacent shoulder fit and periodontal status and other aspects. The difference was not statistically significant ($u=1.132, 1.374, 1.454, 1.268, 1.366$, all $P<0.05$). **Conclusion:** Polymeric ceramic inlay restoration of vital pulp posterior teeth with BDD's repairing effect is more significant, patients can resume a greater degree of tooth function, reduce the incidence of secondary caries. It is not easy to fracture and is more beautiful. It is worthy of recommendation.

Key words: Polymer ceramic inlays; Repair; Vital pulp posterior teeth; BDD; Efficacy

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前言

近年来,关于活髓后牙BDD的修复,已有诸多方案可供选择。但直接修复法含银汞和玻璃离子,以及牙本质钉等,但此类方式充填物较易脱落。而嵌体修复对牙体组织产生较大的远期折裂性风险。全冠修复中固位形又较难设计^[1]。桩核全冠在一定程度上摒弃了保留原则。而剩余的聚合瓷嵌体以及高嵌体等方

案逐渐受到临床欢迎,鉴于此,本文通过研究聚合瓷嵌体对于活髓后牙BDD的修复效果,并与高嵌体法对比,得到了一些结论,现报道如下。

1 资料和方法

1.1 临床资料

从2009年6月到2011年6月,于我院牙科就诊病患中,后牙的牙体缺损大于1个牙尖者80例,共87颗牙齿。含男52例,女28例。年龄在31至52岁间,平均年龄为 48.6 ± 3.3 岁。纳入标准^[2]是(1)牙髓活力均正常;(2)口腔内有良好的卫生状况;(3)咬合良好。排除有牙周病病患和有全身系统性病症者,

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以及对药物过敏者。且本次研究全部病患均已知情同意。以数字法随机分成治疗组(41例,46颗)及对照组(39例,43颗)。其中治疗组含男27例,女14例。年龄在31至50岁间,平均年龄为 47.7 ± 3.8 岁。对照组含男25例,女14例。年龄在32至52岁间,平均年龄为 49.2 ± 2.9 岁。两组在性别和年龄等资料方面对比。差异无统计学意义($P > 0.05$)。具有可比性。

1.2 研究方法

1.2.1 治疗组方案 先对病患牙体进行预备和取模,清除腐质,在近髓处以玻璃离子行垫底处理,将薄壁弱尖予以去除。而后制备洞形,确保底平壁直,且洞壁外展约 5° 至 10° ,确保内角无倒凹。深度大于2mm。以美国的3M ESPE公司所产硅橡胶实施咬合记录。以VITA色板行比色处理。以德国的HERAEUS公司所产聚醚橡胶进行取模,并灌注德国的HERAEUS公司所产超硬石膏类模型。在此模型之上,使用广东爵冠义齿加工厂进行外加工的聚合瓷行间接法嵌体操作。查验修复体就位和边缘完整及适合情况,以及外形和邻接、咬合情况。待查验满意之后以聚合瓷所配抛光套给予以打磨抛光处理,并用棉卷隔湿。以3M RelyX Unicem型自粘接树脂加以粘接。清除多余的粘接剂,并用40s光照加以固定。

1.2.2 对照组方案 牙体预备依照保留原则,并在局麻之下处理。近髓处以 $\text{CaOH}_2(3\text{M})$ 垫底。预后之后,边缘若近牙龈亦或是处于龈下之时,以排龈线及硅橡胶获得模型,并以超硬石膏行灌模处理。利用金合金及瓷粉,选择厂商搭配材料并严格按照制作要求,由工作人员完成之后,高嵌体通过口内试戴并调整咬合情况,待病患满意之后行打磨和抛光处理。高嵌体以Fuji PLUS(GC)型玻璃离子类粘结剂处理。对两组病患在治疗

之后均强调口腔卫生的重要性。

1.3 观察指标

以USPHS标准^[9]加以判定,分别在治疗一周以及一年时,以口镜和牙线以及X线片等手段加以检测,结果由两名医务人员分别鉴别。对术后敏感和继发龋,以及牙周状况等多个方面加以评判。结果满足标准A时视为成功,并统计成功率。

1.4 判定标准

A:(1)病患在治疗之后无敏感现象,亦或是敏感于一周内消失;(2)修复体边缘位置的基牙无继发龋,未在边缘处发现着色;(3)探针触边缘不含裂隙感,且无法探入;(4)修复体未见破坏;(5)未发生食物嵌塞;(6)颜色协调且牙龈和牙周的状况较好。B:(1)敏感现象持续约一个月;(2)边缘处有部分着色;(3)探针能触至边缘台阶,且裂隙可见,但牙本质无暴露;(4)食物有轻微嵌塞,能以牙线清理;(5)颜色能够接受;(6)牙龈和牙周的状况中等。C:(1)敏感现象持续 >1 个月;(2)修复体基牙含继发龋;(3)边缘处完全着色;(4)裂隙较为明显,且牙本质已暴露;(5)修复体脱落亦或是破坏;(6)食物嵌塞情况严重;(7)颜色未协调;(8)牙龈和牙周状况差。

1.5 统计学方法

以SPSS13.0软件分析。数据比较以 χ^2 检验及秩和检验。 $P < 0.05$ 为差异有统计学意义。

2 结果

2.1 两组修复体情况对比

治疗后修复体情况对比见下表1。

表1 两组修复体情况对比(颗)

Table 1 Comparison of two groups' restoration situation (pellet)

组名 Group	修复体数 Restoration pellet	颌位 Jaw position		分布 Distribution	
		上颌位 Up the jaw position	下颌位 Down the jaw position	前磨牙 Dentes premolars	后磨牙 Distomolar
治疗组 Treatment group	46	19	27	24	22
对照组 Control group	43	20	23	19	24

2.2 一周时修复体评价对比

治疗一周后,经秩和检验,治疗组在美观方面显著优于对照组。差异有统计学意义($u=2.038, P < 0.05$)。而两组对比术后

敏感以及牙周状况等数据。差异均无统计学意义($u=1.132, 1.389$, 均 $P < 0.05$)。提示治疗组在治疗一周后美观度更高。见下表2。

表2 一周时修复体评价对比(颗)

Table 2 Comparison of restoration evaluation after one week(pellet)

组名 Group	例数 (n)	术后敏感 Postoperative sensitivity			美观 Aesthetic			牙周状况 Periodontal status		
		A	B	C	A	B	C	A	B	C
治疗组 Treatment group	46	45	1	0	46	0	0	46	0	0
对照组 Control group	43	40	3	0	12	14	17	41	2	0

2.3 一年后修复体评价对比

治疗一年后,经秩和检验,治疗组在修复体折裂以及美观等方面显著优于对照组。差异有统计学意义($u=3.138, 2.874$, 均 $P<0.05$)。两组在继发龋和边缘着色,邻接以及肩台适合和牙

周状况等方面对比。差异均无统计学意义($u=1.132, 1.374, 1.454, 1.268, 1.366$, 均 $P<0.05$)。提示治疗组在治疗一年之后的疗效更佳。见下表 3。

表 3 一年后修复体评价对比(颗)
Table 3 Comparison of restoration evaluation after one year(pellet)

组名 Group	继发龋 Secondary caries			边缘着色 Edge coloring			肩台适合 Shoulder fit			修复体折裂 Restoration jackknifing			邻接 Adjoin			美观 Aesthetic			牙周状况 Periodontal status		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
治疗组(n=46) Treatment group	46	0	0	44	2	0	46	0	0	46	0	0	46	0	0	45	1	0	46	0	0
对照组(n=43) Control group	41	1	1	43	0	0	43	0	0	20	10	13	41	1	1	12	13	18	39	2	2

3 讨论

有报道表明^[4],因釉质发育欠佳,龋坏就诊延时等诸多原因,病患磨牙,特别是第一磨牙的牙冠形成大面积缺损现象在临床较为常见。由于缺损面积较大,若用直接充填法较难得到合适咬合面和领接面的形态。如今临床上主要采用全冠,或者桩核全冠,亦或是高嵌体修复。而牙髓失活之后,牙体容易变脆,尽管成功完成冠修复,但根折及根裂风险依然相对于活髓牙较高。聚合瓷面世以来,在临床上应用较为广泛。本文所用广东爵冠义齿加工厂进行外加工的种类瓷树脂系统,主要含 73% 比例微细瓷物质,兼有树脂以及瓷成分,因此可确保材料发挥出表面耐磨特性^[5,6]。以往在对活髓后牙 BDD 修复时,可选材料较多,且效果亦有所差异。

本文经过研究后发现,治疗一周后,以聚合瓷嵌体处理的治疗组在美观方面显著优于对照,在术后敏感以及牙周状况方面无显著差异。随访一年后,治疗组在修复体折裂以及美观等方面显著优于对照组,但在继发龋和边缘着色,邻接以及肩台适合和牙周状况等方面并无显著差异。与 Lohbauer U, Pelka M 等人^[7,8]报道一致,这可能是因为,树脂嵌体采用间接法行修复处理,主要步骤是通过高强度的复合树脂以分层堆筑措施于模型上完成。此法能够弥补在固化时的固化收缩难题,还可解决其他方法较难塑形的问题。此外, Santos MJ, Mondelli RF 等人^[9,10]报道表明,在粘接时通过免酸蚀类树脂粘接剂,能够降低对于牙髓产生的刺激,并降低术后敏感,强化边缘封闭和强度。降低微渗漏发生率,此类有效粘接增强聚合瓷嵌体强度及抗折裂能力。在硬度方面,树脂嵌体通常比金属修复质软,而比瓷修复体的韧性更好,若由于深龋而发展成牙髓炎,在金属亦或是陶瓷类修复体时,则往往需要拆除之后方可治疗,而聚合瓷嵌体则不必,仍可融入牙体组织实施治疗,相对而言,十分便利^[11]。Lohbauer U, Pelka M 等人^[12-14]报道称,聚合瓷挠曲强度大约为 146MPa, Vickers 硬度为 726MPa, 而抗压强度甚至达到 314MPa, 因此强度足以耐受常规牙合力。Van Dijken JW, Hasselrot L 等人^[15-18]报道称,在美观方面,由于其填料的特殊性,对于光线折射情况基本于牙釉质及牙本质一致,修复体可显示出天然牙相同的光透射及散射效果,有荧光性及乳光效果,美感

更强。值得一提的是,聚合瓷在着色方面略显薄弱,病患食用富含深色素类食物之时,容易引发^[19,20]。本文实验组在治疗一年后有 2 例病患有着色现象,因此在日常生活中应注意尽量避免此种情况,从而获得更佳美感。

综上所述,聚合瓷嵌体对于活髓后牙 BDD 的修复效果较为显著,可较大程度恢复病患牙体功能,减少继发龋的发生率。不易折裂又更加美观,值得临床推荐。

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