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### 钴铬合金和钛基台与全瓷冠间粘接界面的三维有限元应力分析

Cobalt-chromium alloy and titanium abutments and all-ceramic crowns bonding interface between the t

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**摘要** 目的 对比观察钴铬合金基台和钛基台支持时与氧化锆全瓷冠、氧化铝全瓷冠和铸造全瓷冠间复合树脂粘接界面的应力分布情况,分析钴铬合金基台的特性。方法 建立右下颌第一磨牙种植体局部结构的三维有限元模型,在冠咬合面加载水平和垂直力,以模拟最大咬合力的侧向水平分力和垂直分力。结果 钴铬合金基台粘接界面应力最大数值小于钛基台粘接界面,应力集中区域较钛基台粘接界面广泛。钴铬合金基台粘接界面应变最大数值小于钛基台粘接界面且应力分布区域更均匀广泛;钴铬合金基台粘接界面同钛基台相似,应力最大值主要来自水平侧向力,应力集中主要在基台和冠颈部与种植体连接处。钴铬合金基台粘接界面总变形最大值较钛基台粘接界面大且分布范围区域较均匀广泛。结论 钴铬合金基台粘接界面应力分布优于钛基台界面,钴铬合金基台相对钛基台更抗折断,钴铬合金基台粘接界面与钛基台界面的应力分布区域相似。在临床应用中,钴铬合金基台是钛基台的一种有益补充。

**关键词:** 钴铬合金基台 钛基台 粘接界面 粘接剂 全瓷冠 三维有限元 应力

**Abstract:** Objective By comparing the observed cobalt-chromium alloy and titanium abutment abutment supported all-ceramic crowns with three kinds of composite resin bonding between the interface stress distribution to the difference between cobalt-chromium alloy to observe the characteristics of base stations. Methods Mandibular first molar implants local structure of three-dimensional finite element model to simulate the maximum bite force at the crown teeth occlusal surface horizontal and vertical force loading. Results Cobalt-chromium alloy on bonding interface of base stations was less than the stress of titanium abutment interface and a more uniform stress distribution in the region wide, cobalt-chromium alloy with titanium bonding interface of base stations as base stations, the horizontal loading force much larger than the maximum vertical load and, stress concentration, mainly in the neck and base stations and the crown implant junction. Cobalt-chromium alloy on bonding interface of base stations, the maximum stress concentration than the titanium abutment interface was small and wide distribution. Conclusion Cobalt-chromium alloy bond stress distribution of base stations is better than titanium abutment interface. Cobalt-chromium alloy on bonding interface of base stations is relatively more resistant titanium abutment fracture. Cobalt-chromium alloy on bonding interface of base stations, base station interface with titanium as similar to the stress distribution. In clinical applications, cobalt-chromium alloy is a titanium abutment of base stations a useful complement.

**Keywords:** cobalt -chromium alloy base station titanium abutment bonding interface adhesive all-ceramic crown three-dimensional finite element stress

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