

# 三维打印技术制作上颌全口义齿基托蜡型的初步研究

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**【摘要】目的** 体外研究三维打印技术在全口义齿基托蜡型制作方面的应用。初步评估其临床应用前景。**方法** 将无牙颌模型随机分为两组, 每组5个样本, 一组用三维打印技术制作基托蜡型(实验组), 另一组用传统手工方法制作基托蜡型(对照组), 将两组装盒制作完成的金属基托截为3个区域, 即双侧尖牙的远中区, 双侧第一磨牙的中央区和后缘封闭区, 记录并比较金属基托与石膏模型之间的间隙值。**结果** 实验组间隙值在 $(149.34 \pm 53.09) \mu\text{m} \sim (235.68 \pm 105.80) \mu\text{m}$ 范围内, 对照组的间隙值在 $(116.62 \pm 19.10) \mu\text{m} \sim (173.94 \pm 115.17) \mu\text{m}$ 范围内, 尽管两组各区之间基托与石膏模型间的间隙值都存在一定的差异, 但差异无统计学意义( $P>0.05$ )。**结论** 利用三维打印技术制作全口基托初步被证明有一定的可行性, 而临床可靠性有待进一步的大样本研究。

**【关键词】** 三维打印技术 基托蜡型 适合性

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## The pilot study of applying three-dimensional printing (3DP) technique in manufacturing wax patterns of the base of complete denture in vitro

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**【Abstract】Objective** The aim of the present study was to use the three-dimensional printing (3DP) technique in manufacturing wax patterns of the base of complete denture in vitro and to evaluate the feasibility of its clinical application. **Methods** Ten pairs of edentulous casts were divided into 2 groups randomly and equally and the metal bases of complete dentures were fabricated on these casts, either by 3DP technique, or by conventional method. The base-cast sets were transversally sectioned into 3 sections at the distal of canines, mesial of first molars, and the posterior palatal zone. The gap between the metal base and cast was measured in the 3 sections. **Results** There was no statistical difference between the gap in 3DP technique group and that in conventional method group, at all 3 section regions ( $P>0.05$ ). At each region, there was no statistical difference between the gaps in the two groups ( $P>0.05$ ). **Conclusions** 3DP technique showed initial feasibility to manufacture the dental base of complete denture and large sample studies are needed to prove its reliability in clinical application.

**【Key Words】** 3DP technology Wax patterns of dental base Fitness

长期以来, 口腔修复体的传统加工模式是以医

师和技师的理论水平、临床经验和操作能力为基础, 实现各类病例的临床修复治疗, 对技师的技能有较高的依赖性。随着新技术的不断引入, 口腔修复体的制作已由传统的手工加工向数字化、无模化和

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