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Summers骨凿提升上颌窦的临床应用

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[摘要] 目的 评价Summers骨凿在上颌窦闭合式内提升、植骨及同期牙种植术中的效果。方法 对上颌后牙区牙槽骨严重吸收的66例患者, 采用Summers骨凿预备种植床, 植入人工骨并同期植入种植体, 术后6个月完成种植修复。结果 66例患者上颌窦提升高度2~5 mm, 术后皆无上颌窦炎发生。牙科CT扫描显示窦内形成一圆形光滑的突起, 提升部位表面光滑完整, 无黏膜穿破表现。6个月后X线片显示植入的骨材料无明显吸收, 种植体骨结合完成。种植修复完成12~24个月后复查, 无种植体松动、脱落, 牙龈组织健康, 种植体上部结构功能恢复满意。X线片显示: 种植体与骨结合紧密, 种植体周围骨垂直吸收小于1 mm。结论 Summers骨凿可安全地提升上颌窦底, 并可避免异位取骨, 值得临床推广。

[关键词] Summers骨凿; 上颌窦提升; 牙种植; 骨移植

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Clinical application of maxillary sinus lift with Summers osteotome ZHOU Lei, XU Shu-lan, XU Shi-tong, HUANG Jian-sheng, SONG Guang-bao, ZHANG Xue-yang. (Oral Implant Center, Guangdong Provincial Stomatological Hospital, Guangzhou 510280, China)

[Abstract] Objective To introduce and evaluate the procedure and the effect of maxillary sinus lift with closed technique by Summers osteotome, bone grafting and simultaneous implant placement. Methods 66 cases with severely resorbed alveolar bone in maxillary posterior region received sinus lift with Summers osteotome, simultaneously bone grafting and implants placement. The final restoration was finished at 6 months postoperatively. Results The operation procedure were eventless in the 66 cases, the sinus floor were elevated by 2-5 mm, three-dimensional reconstruction of the CT scan pictures showed the smooth dome profile of the lifting sites and no signs of laceration on the membrane, and there were no maxillary antritis after operation. After 6 months, no significantly bone graft resorption and good osseointegration were noticed in X-ray imaging. The final restoration was finished at this time. 12-24 months after the restoration, all implants inserted were remain, the hard and soft tissue were healthy, prosthesis were stable and functioned. X-ray showed good osseointegration in the lifting sites, the vertical resorption around the implants were less than 1 mm. Conclusion With properly use of Summers osteotome, scraps of the bone in the implant sockets can be pushed into the sinus, these autogenous bone scraps were in favor of the osseogenesis and the sinus floor can be easily elevated by the method with very infrequent complications. It enlarged indication of dental implants and avoided operation of harvesting autogenous bone in other site. The method is simple and valuable to clinical application.

[Key words] Summers osteotome; maxillary sinus lift; dental implant; bone grafting

上颌骨后份的骨量不足相对来说多以高度不足多见, 而高度不足多是由于上颌窦腔化所致, 所以将上颌窦黏膜从窦底剥离后提高, 在此窦底黏膜与窦底骨之间植入骨移植材料, 可有效增加骨的高度。提升上颌窦底黏膜及植入骨移植材料的方式主

要有两种, 一种是在上颌窦侧壁开窗, 在直视下植入骨移植材料, 这种方式称为上颌窦开放式提升术; 另一种是从种植窝内将上颌窦底黏膜推向上与窦底骨分离后, 送入骨移植材料提升上颌窦底, 这种方式称为上颌窦闭合式内提升术。

Summers医师根据上颌窦闭合式内提升的原理, 设计了一套骨凿, 专用于此类手术并作了临床应用报道^[1]。广东省口腔医院采用Summers骨凿提升上颌窦, 取得了较好效果, 现报道如下。

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1 材料和方法

1.1 临床资料

选择2004年12月—2006年6月在广东省口腔医院口腔种植中心就诊的66例上颌后牙区牙槽骨严重吸收患者为研究对象。66例患者中,男45例,女21例;年龄23~53岁,平均年龄46岁。术前X线全景片显示,上颌窦底与牙槽嵴距离为4~9 mm,其中40例为4~5 mm,26例为6~9 mm。所有纳入对象要求无全身性疾病。

Summers骨凿中1和2号骨凿较细,所有骨凿顶端都有一凹面(图1)。植入种植体为Xive种植体(Friadent公司,德国)和ITI种植体(Straumen公司,瑞士)。

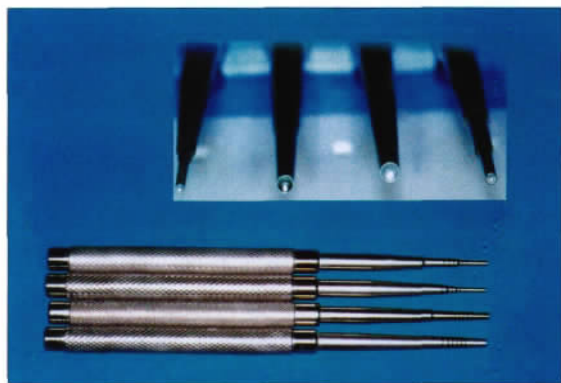


图1 Summers骨凿
Fig 1 Summers osteotome

1.2 方法

上颌后牙槽神经阻滞及局部浸润麻醉后,牙槽嵴顶作水平切口,翻起黏骨膜瓣,先用球钻于牙槽嵴上拟种植部位定位,再用2 mm直径先锋钻制备种植窝,根据术前X线片预测的牙槽嵴高度作种植窝预备,预备到离上颌窦底2~3 mm的深度。用1号Summers骨凿通过敲击使窦底出现骨折,在骨凿进入上颌窦底时,可有一明显的落空感,注意此时不可再进一步深入,以免骨凿穿破窦底黏膜,再换用大一号的Summers骨凿,小心地继续向上敲击,由于大一号的骨凿直径略大于此前预备的种植孔,其顶端凹面的边缘将种植孔周围的骨刮下并随进一步的敲击被推入上颌窦(图2)。进入上颌窦的骨屑推挤窦底黏膜使之向窦腔移位,用种植系统专用的骨挤压器作最后的种植窝预备,然后将人工骨通过种植孔推入上颌窦底空腔内,并同期植入牙种植体,最后复位黏骨膜瓣,常规缝合。术后6个月行二期手术,完成种植修复。

注意事项:术前半小时服抗生素,术后24 h内冷敷,漱口液含漱,全身用抗生素1周,避免感冒,2周内不擤鼻涕。

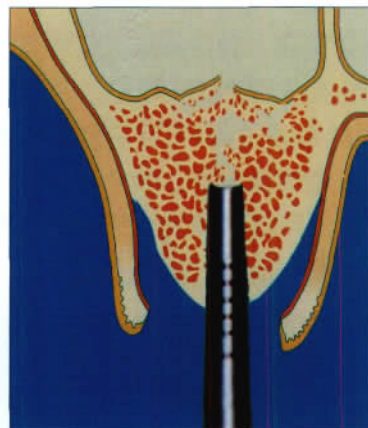


图2 Summers骨凿提升方式的示意图
Fig 2 Delineation of the sinus lift with Summers osteotome

2 结果

采用Summers骨凿进行上颌窦闭合式内提升、植骨及同期牙种植的66例患者,上颌窦提升高度2~5 mm,术后皆无上颌窦炎发生。其中3例患者在术后有轻微鼻腔出血,但24 h内出血即停止。术后牙科CT扫描显示窦内形成一圆形光滑的突起,提升部位表面光滑完整,无黏膜穿破表现(图3、4)。

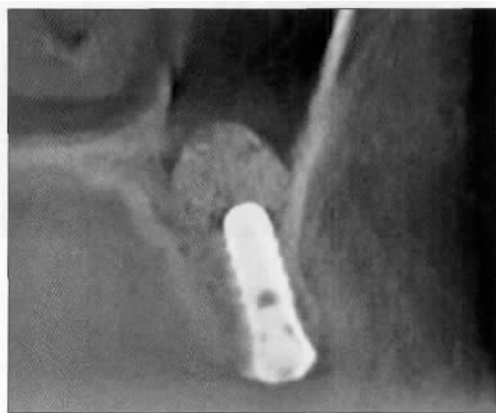
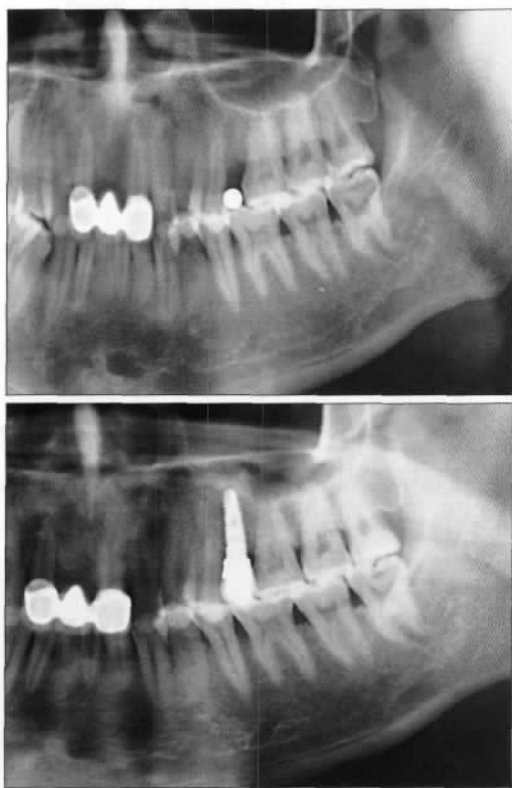


图3 上颌窦内提升术后窦内形成一圆形光滑的突起
Fig 3 CT scan showing a dome profile in the lifting site after sinus lift



图4 CT扫描三维重建图像显示窦内提升部位(↑)表面光滑完整,无黏膜穿破表现
Fig 4 Three-dimensional reconstruction of the CT scan picture showing the smooth dome profile (↑) of the lifting site and no signs of laceration on the membrane

6个月后X线片显示植入的骨材料无明显吸收,种植体骨结合完成,骨纹理进入原骨粉的颗粒状阴影区。2期手术中见种植体稳定,其周围骨质无吸收。种植修复完成12~24个月后复查,无种植体松动、脱落,牙龈组织健康,种植体上部结构功能恢复满意。X线片显示:种植体与骨结合紧密,种植体周围骨垂直吸收小于1 mm(图5)。



上: 治疗前; 下: 种植修复后12个月

图5 左侧上颌第一前磨牙种植修复后12个月见种植体与骨结合紧密

Fig 5 Good osseointegration in the lifting site were showed after 12 months of implant support restoration of the left upper first premolar

3 讨论

早期的上颌窦闭合式内提升术治疗时是将窦底与挤压器对应直径的骨整块敲入上颌窦内,所以设计的用于上颌窦闭合式内提升的骨凿直径多较大,此时常难以造成窦底的骨折,而大力的敲击会造成患者的严重不适,甚至可能造成窦底较大范围的骨折。而Summers骨凿1号和2号的直径皆较小,临床上很容易穿过窦底骨质,并且小直径骨凿先造成窦底小范围骨折后,随后的较大直径的骨凿就容易进入。同时Summers较大直径的骨凿并非是简单的将窦底提升,而是充分利用骨凿顶端凹面的边缘将种植孔周围的骨刮下送入窦内,这样在骨屑的保护下不易造成窦底黏膜的撕裂。本文66例患者采用Summers骨凿提升上颌窦后,仅有3例术后出现鼻腔内出

血,且均于24 h内停止。牙科CT扫描显示,窦内提升部位表面光滑完整,无黏膜穿破表现。这进一步说明Summers骨凿提升上颌窦较为安全可靠。另外,种植孔周围的自体骨进入窦内后,有利于新生骨的生成,无需开辟第二术区取骨,减少了创口^[2]。

上颌骨血运丰富,具有较强的再生能力^[3],上颌窦提升后可获得较理想的新骨再生。窦底提升后植骨材料主要有自体骨和人工骨两大类。自体骨可选择髂前上嵴、肋骨、胫骨坪、下颌升支、下颌联合处、骨隆突及上颌结节等。自体骨因富含大量存活的骨细胞和骨形成蛋白,成骨能力最强,效果最稳定,一直被视为植骨的最佳选择^[4]。但自体骨最大的缺点就是吸收速度过快,并且异位取骨时需另开一个术区,会造成新的创口。人工骨通常只有骨引导作用,其优点是吸收速度较慢。将自体骨与人工骨联合植入,可充分发挥其各自的优势,在较快成骨的基础上,又不会吸收过快^[5-6]。本文病例在种植孔周围的自体骨与人工骨联合植入6个月后,X线片显示植入的骨材料无明显吸收,种植体骨结合完成,骨纹理进入原骨粉的颗粒状阴影区;12~24个月后复查见,种植体与骨结合紧密,种植体周围骨垂直吸收小于1 mm。这表明,采用Summers骨凿提升上颌窦,利用种植孔周围骨屑及人工骨联合植骨,可安全地提升上颌窦底,并避免异位取骨。

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