

· 基础与临床研究 ·

不同去势时间对大鼠牙槽骨微结构影响的比较研究

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【摘要】目的 比较不同去势时间对大鼠牙槽骨微结构的影响, 探讨牙槽骨骨质疏松大鼠模型建立成功的参数。**方法** 24只6月龄雌性SD大鼠, 随机分为4组: (1) 对照组1 (Sham1); (2) 去势组1 (OVX1); (3) 对照组2 (Sham2); (4) 去势组2 (OVX2)。分别在全麻下行假手术和双侧卵巢去势术。于术后3个月和4个月处死各组大鼠, 取双侧上颌骨标本, 通过Micro-CT扫描、HE染色、抗酒石酸酸性磷酸酶 (TRAP) 染色、Van Gieson染色、荧光双标观察并分析牙槽骨微结构的变化。**结果** 去势3个月后OVX1组与Sham1组大鼠相比, 体重增加25.09% ($P < 0.01$); 牙槽骨骨体积分数 (BV/TV)、骨小梁数目 (Tb.N)、骨小梁分离度 (Tb.Sp), 牙骨质界-牙槽嵴顶 (CEJ-ABC) 距离无改变 ($P > 0.05$), 骨小梁宽度 (Tb.Th) 降低了12.44% ($P < 0.05$), 破骨细胞数量增加了40.12% ($P < 0.01$), 骨形成沉积率 (MAR) 无明显改变 ($P > 0.05$); 去势4个月后OVX1组与Sham1组大鼠相比, 体重进一步增加了26.25% ($P < 0.01$), BV/TV、Tb.Th、MAR分别降低了11.15%、17.22%和38.45% ($P < 0.01$), Tb.Sp和破骨细胞数量分别增加了81.89%和35.67% ($P < 0.01$), Tb.N和CEJ-ABC距离无变化 ($P > 0.05$), HE和Van Gieson染色均表明OVX2组大鼠牙槽骨骨量降低, 骨髓腔面积增加, 骨小梁微结构破坏、变细, 部分区域发生断裂。**结论** 6月龄雌性SD大鼠去势4个月后, 牙槽骨发生明显骨质疏松, 可作为合适的牙槽骨骨质疏松大鼠模型参数的理论依据。

【关键词】 大鼠 牙槽骨 骨质疏松 去势 微结构

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A comparative study of the effects of different castration time on the microarchitecture of alveolar bone in rats

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【Abstract】Objective To study the effect of different castration time on the microarchitecture of alveolar bone in rats. **Methods** Twenty-four 6-month-old female Sprague Dawley rats were randomly assigned to four groups: SHAM1, OVX1, Sham2, and OVX2. Rats were subjected to either bilateral ovariectomy or sham operations. At 3 or 4 months post-surgery, rats in Sham1 and OVX1, or Sham2 and OVX2 were sacrificed. Both sides of the maxillae were removed from each rat for alveolar bone microarchitecture examination, including micro-computed (micro-CT) tomography, hematoxylin and eosin (H&E) staining, Van Gieson's staining, tartrate-resistant

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