

RELATION BETWEEN THE INITIAL STABILITY OF DENTAL IMPLANT AND THE HOST BONE QUALITY

利用牙科用錐狀電腦斷層掃描探討植牙處齒槽骨骨質骨量與人工牙

根植體穩定度相關性研究

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ABSTRACT

The purpose of this study was to determine the correlation between the initial stability of the dental implant, which represented by maximum insertion torque value (ITV), and the host bone density, which represented by grayscale value measured by dental cone-beam computed tomography (CBCT). Twenty one lumbar vertebrae were collected from seven healthy bovine. Each bone specimen was subjected to CBCT to obtain the bone density (in grayscale value). The dental implants were inserted into the bone specimen and recorded the maximum ITV. Pearson's correlation coefficient (r) was used to evaluate whether there was a statistically significant correlation between the ITV and bone density. The experimental results indicated that the initial stability of the dental implant, quantified as the ITV, was strongly positively correlated ($r=0.968$) with the bone density in grayscale, as measured from dental CBCT.

KEYWORDS

Dental implant; initial stability; insertion torque; bone quality; dental cone-beam computed tomography

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