

interpreting tool. 6 cases of unicortical bond model(5, 7, 10, 13, 15, 16.5mm) and 3 cases of bicortical bond model (10, 13, 18mm) were used to analyze stress distribution in this study.

Following conclusion were drawn from this study.

1. Maximum stress was shown at the top of cortical bone area regardless of bone engagement types. 2. Longer the implant fixture length, less the stress on cortical bone area, however cancellous bone showed different stress distribution. 3. Bicortical engagement showed less stress accumulation when compare to unicortical case overall.

OIV-7

## An Experiment Investigation between Osseointegration and Stability of Implants Used as Orthodontic Anchorage in Dogs

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**Objective :** The purpose of this study was to investigate osseointegration and stability of three kinds of implants used as orthodontic anchorage in dogs.

**Methods :** HA-coated, titanium coated, and uncoated titanium implants were inserted into each femur of two dogs. After heal period of three months, the orthodontic force of 200g was applied by means of Ni-Ti springs, which were connected to the two adjacent implants, for two months. The position change of implant was firstly measured and then caculated. The shear bond strength of the interface between implant and bone was measured with push-test. After the test the fracture surface at the interface observed with scanning electronic microscope.

**Results :** All implants were stable, without mobility. The highest bond strength and mature bone compactness showed at the interface between HA-coated implant and bone. The other two were found no significance in bond strength.

**Conclusion :** Although the bond between HA-coated implant and bone is the firmist, the osseointegration was found at the interface between all three kinds of implants and bone and no movement of them occurred during the application of clinical orthodontic force.

OIV-8

## Osseous Microbial Invasion Associated with a Failed Dental Implant

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Biomaterial implants not biological inert, although they are inaminate. All implants devitalized tissues are foreign bodies, and their extrusion, by inflammatory responses, macrophage activation, and cytokines cascades is programmed by evolution (1). Dental implants can be an ideal substrate for bacterial colonization and are readily infected by smaller microbial inoculi. The adherence of plaque-forming bacteria was found to be reduced more than fivefold on titanium compared with enamel (2). We present in this presentation, information regarding dental implant design-making a point that design characteristic can lead to microbial