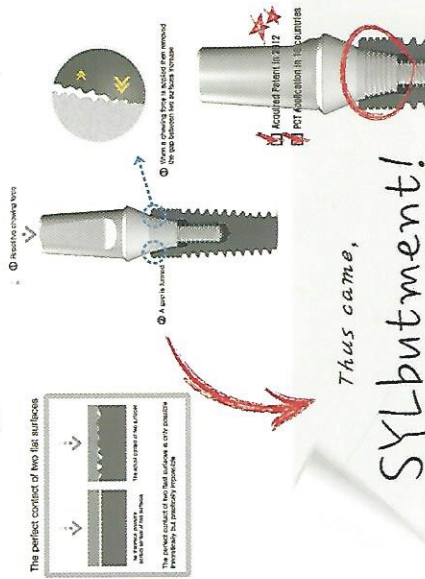
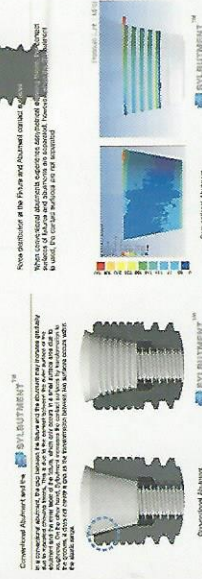


Why does Loosening occur in conventional abutment??



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DEVELOPMENT OF A NEW SEALING ABUTMENT FOR IMPROVING THE CONTACT STATE BETWEEN THE ABUTMENT AND FIXTURE

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RESEARCH OBJECTIVE :
After the concept of body and noble metal osseointegration had been reported, many researches, experiments and clinical applications had passed. Scientific verifications were made and the effectiveness of reliable implants was proven. But the size and shape of the screw, screw head, and the shape of the abutment were not fully considered. The conventional abutment has a cylindrical shape, which is not suitable for the sealing of the abutment. Therefore, we proposed a new sealing abutment with a different shape in which its usefulness is verified by the Finite Element Analysis.

RESEARCH MATERIALS AND METHOD :
Analysis is done by using the Finite Element Method (FEM) 14601. Application for Conventional Dental Implant System. Here the Finite Element Analysis on the contact state where the stress is put between the abutment and the fixture is considered. 3D Modeling using ANSYS Workbench is done, and separate case analysis is done on the Sealing abutment and the Conventional abutment.

RESULT :

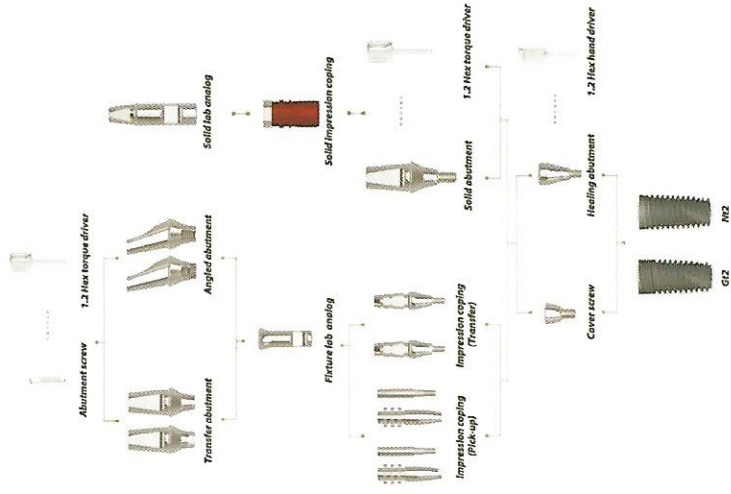
- 1) Separate case analysis is done on the Sealing and Conventional abutment.
- 2) In the case of the Conventional abutment, there is less contact in the fixture. Here gaps can be seen in the abutment and the fixture.
- 3) In case of the Sealing abutment, few gaps occurred in the fixture section. This means that contact capacity in the abutment and fixture is excellent.
- 4) In case of the Sealing abutment, when 77.4 98MPa of pressure and 860MPa of material tensile strength is allowed in the contact part, from separation occurring in the elastic region can be seen.

CONCLUSION :

The ideal basis of the conclusion is that as gaps frequently appear on the fixture portion when conventional abutment is used, the sealing abutment idea is proposed and the analysis performed has verified the result. Therefore in this research, the proposed Sealing abutment's new concept of having the high contact capacity as the pressure in the cylindrical seal is uniformly distributed, which is effective sealing and clean contact.

Key Words : Sealing abutment, Implant, Finite Element Analysis, Sealing Surface Contact.

Submerged System



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