IMPLANT ABUTMENT

KEYWORDS

- ❑ MUCOUS SEAL
- ❑ MECHANICAL GENGIVAL STABILITY
- ❑ EMERGENCE PROFILE
- ❑ MECHANICAL STRENGHT ABUTEMENT
- ❑ ABUTEMENT EMERGENCE PROFILE
- ❑ TAILORED ABUTEMENT

AREA

- ❑ BIOMEDICAL

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Patent Type
Patent for invention.

Ownership
Sapienza University of Rome 100%

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Industrial & Commercial Reference
The invention is applied to the implant/prosthetic field in medical dental devices.

Time to Market
TRL 2 – technology formulated concept.

Availability
Exclusive or non-exclusive license, Research, Development, Experimentation and Collaboration

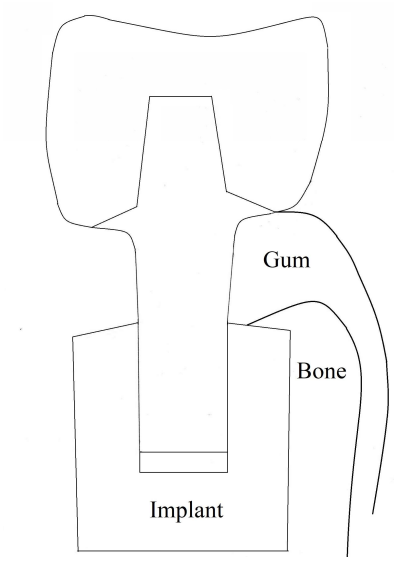

Fig.1 Design of implant abutment

Abstract
The invention consists of an implant abutment individualized in its transmucosal portion, made in order to preserve the volume and trophism of the crestal bone and gingival tissue; favor the airtightness and mechanical stability of the mucous seal; reduce the extent of the surgical trauma and the consequent discomfort for the patient. Individualization allows the creation of an abutment that adapts to anatomical conditions that can be very different in each specific case, this allows maximum respect for the structures and their optimal use for sealing and aesthetic purposes.

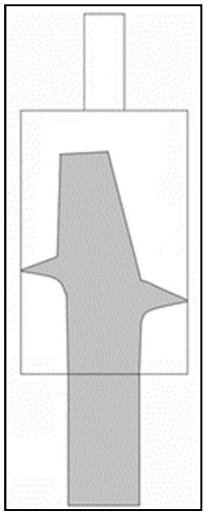

Fig.2 Abutment made with CNC milling

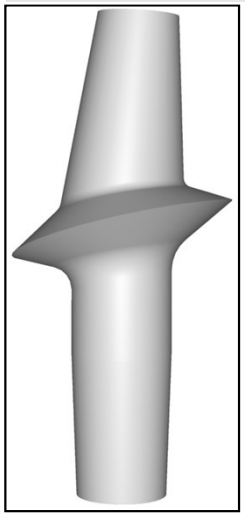

Fig. 3 Customized abutment that can be made with both digital and analog techniques

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IMPLANT ABUTMENT

Technical Description

The ideal use of the abutment made of individualized titanium alloy is in combination with crestal or subcrestal implants used with a two-phase surgical technique with submerged healing and with conical connection, due to the smaller apical diameter of the abutment. However, the concepts that determine the shape of the transmucosal portion are applicable, albeit limited to any implant method, even if not individualised. The shape of the individualized abutment is designed to maximize the function of the gingival seal. The reduction in the diameter of the abutment increases the pressure exerted by the gingiva, while the horizontal coronal connection portion mechanically protects the underlying gingiva

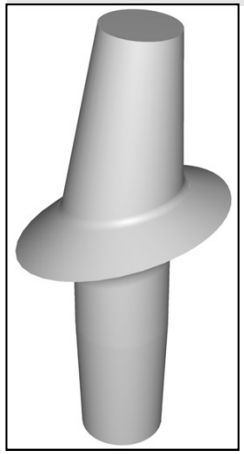

Fig. 4 Customized abutment that can be made with both digital and analog techniques.

Technologies & Advantages

Several authors have tried to define the ideal transgingival prosthetic design, looking for answers to disputes that have been going on for several years, mainly concerning two characteristics: diameter and emergence profile of the prosthetic components. Various authors report the inadequacy of the shape of some abutments in their factory version, as proposed on the market, attributable to a divergent emergence profile (so-called apical flare design), which applies excessive pressure to the complex of peri-implant tissues and to the crestal bone. This pressure leads to peri-implant bone resorption and limits coronal migration of the gingival margin following the healing phase. The inventors claim that, by customizing the subgingival portion of the contour of these abutments, maximizing the reduction of the profile, compatibly with the structural resistance, the maximum space available to the tissues is obtained (tissue-friendly transgingival design). The result will be a greater quantity of peri-implant gum, better adhered to the abutment and protected from mechanical trauma, for the benefit of the seal and aesthetics.

Applications

The invention finds practical application in the implant/prosthetic field.
This invention has been created and used successfully in a clinical setting exclusively by the inventors.

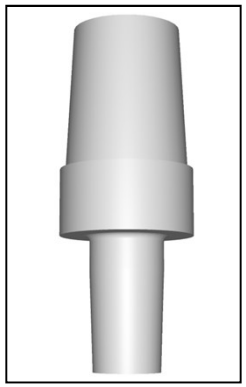

Fig. 5 The millable abutment.

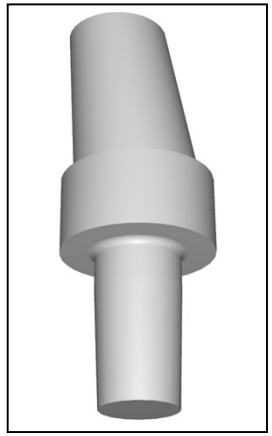

Fig. 6 The millable abutment with pre angulation.

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