Original *versus* interchangeable abutments: Is it worth the saving?

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When osseointegrated implants first arrived in Brazil in the late 80s, great care was taken to choose implants and abutments that met the strict criteria established and recommended by major international companies so as to attain the greatest osseointegration and the best peri-implant / restorative outcomes possible. The protocols developed by Brånemark and later on by Schroeder and Schulte should be strictly followed without creating the opportunity for adaptation, as it could increase the chances of failure.

Eventually, the classic abutments developed by Brånemark, which were the most used, did not effectively meet many clinical needs, including esthetics. As a result, different implant designs were created while implants evolved. Nevertheless, the need for precision and use of original pieces and components was always emphasized. Later on, clone companies copying not only the Brånemark system, but abutments as well, were launched worldwide. A number of companies were set up — some successfully while others not so much — to produce restorative abutments, only. An enormous amount of different types of abutment arose by adapting existing ones. These adaptations became well-known: For instance, the classic UCLA-type abutment developed by the University of California Los Angeles (UCLA) became a synonym of calcinable abutment.

Subsequently, with the increase in the number of abutment brands and types (including original and clone ones), more than 90 brands were available worldwide in the 2000s. Today we cannot measure the exact number of abutment brands available, since there are so many companies engaged in manufacturing implants and all other necessary components.

As osseointegration became successful and popular, less importance was given to the precision of restorative abutments. A compatible abutment would provide just as much attachment, and the intraosseous screw was the part to be most considered while further issues would be solved based on the existing tolerance in the implant-bone interface. Meanwhile, as the price of imported implants were higher, compatible components became popular in the attempt to reduce treatment costs.

As low-cost implants gained ground (in Brazil, national implants have the highest market share), implants, abutments and other components of the same brand have been more routinely used. Even so, a number of components compatible with pieces of other brands are frequently used. Using components of different brands for the same implant-retained restoration procedure is highly common in clinical practice.

After a few years and with the growing number of implants in place, we are now aware of the potential for complication arising from the use of non original pieces: screw fracture and loosening, loss of prosthetic structure and fatigue of components, decreased longevity, in addition to loss of warranty granted by several implant manufacturers.

How to cite this section: Polido WD. Original *versus* interchangeable abutments: Is it worth the saving? Dental Press Implantol. 2014 July-Sept;8(3):6-7. DOI: http://dx.doi.org/10.14436/2237-650X.8.3.006-007.edt

During the manufacturing process, each company establishes their own margin of tolerance not only for implants, abutments and other components (analogues, impression), but also for the implant-abutment connection: This is thoroughly tested by *in vitro* research. Such tolerance is unknown to manufacturers of non original / compatible pieces. They measure the original implant pieces and establish the dimensions of the implant-abutment connection by means of making estimates, which might lead to major consequences caused by these non original pieces. Therefore, the chances of producing outcomes of lower precision (oftentimes unperceivable to the clinical eye, but enormous for the intraoral environment potentially contaminated) are real. A precise implant-abutment interface is potentially what distinguishes one implant brand from another. The more precise, the greater the fitting, the smaller the gap, the better peri-implant tissue stability and the higher the chances of attaining implant-retained restoration longevity.

The literature comprises an enormous amount of publications on bone loss and inflammation surrounding the cervical region of implants: peri-implantitis. This is the greatest complication possible, not only because it causes pain and discomfort to the patient, but because it also leads to implant and significant bone loss, which is oftentimes irreversible and might hinder new implant placement. Imprecise fitting of non original pieces leads to an increased number of restoration and peri-implant complications, in addition to medium and long-term failure of which fault lies with factors such as patient's oral hygiene.

With national and imported implants being commercialized at a lower price, and with the large armamentarium of implants and other related components available, the following question arises: Why are non original components being used?

Should we opt for a low-price implant system, we have to use pieces developed by one single manufacturer. This also applies to imported implants, even though they might be the best available on the market.

As health professionals, we have to be aware that when we opt for a given prosthesis to replace one's body part, we are also responsible for the biological response it provokes. From an ethical and legal standpoint, we should inform patients about our choice of material.

In the event of implant and/or restoration failure, we lose the right to make potential complaints to the manufacturer, since we are fully responsible for the thoughtless attitude of using components of different brands. If we do not have the chance of complaining to manufacturers, they do not become aware of our patient's issue, which prevents them from improving the quality of their products.

Thus, the next time we opt for an implant system to treat our patients, we should carefully consider the following: Is it worth the saving of using non original pieces?

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