



Fixed Prosthesis on Two Implants from Different Manufacturing Companies Case Report

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Abstract: The following is a clinical case of a screw-retained prosthesis on two implants with different designs and manufacturers. A 73-year-old man visited the dentist in January 2023 to rehabilitate the edentulous right area of the mandible. In December 2018 another dentist placed implants (Biohorizons, Madrid, Spain) in positions 45 and 46 with a metal-porcelain bridge over both. In 2022 he lost implant 45 (Biohorizons tapered internal 3.8 x 9) and with it also the bridge, although he still had implant 46 (Biohorizons tapered short 4.6 x 7.5). On the day of surgery, a simple opening flap was performed and drills were used sequentially until a 4 x 8 mm Galimplant IPX implant (Sarria, Spain) was placed in position 45. After a period of four months, the impression abutments of implants 46 and 45 were attached with dental floss and flowable composite, and an open-tray impression was taken. One week later, the screwed metal-porcelain fixed prosthesis was placed on both implants. It is difficult to find bibliographic information about fixed prostheses on implants manufactured by different companies and placed in the same patient. The placement of a prosthesis on two implants from different manufacturers is not a complication, but rather an unscheduled inconvenience. The clinical case presented allows us to point out that a fixed prosthesis on implants from different manufacturers can give excellent results.

Keywords: Implant, Prosthesis, Screwed, Manufacturer, brand, Company.

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INTRODUCTION

Dental implants are available in different designs, with different surface characteristics, and have been developed for different clinical situations [1]. When different implants were studied, no evidence was found that one implant system was superior to another [1].

Conventionally, it is preferred to keep implants unloaded during the healing period to improve osseointegration. There may be immediate (within 1 week), early (between 1 week and 2 months), and conventional (after 2 months) loading of osseointegrated implants [2, 3]. The data suggest that immediately loaded implants fail more frequently than those conventionally loaded [2, 3].

In the case of rehabilitating a large area of up to three missing teeth, it has been recommended to make a bridge on two implants [4].

Regarding the way to fix the prosthesis on implants, it has been described that cementation on a prefabricated abutment is possibly the most used [5, 6]. Cement-retained implant crowns are considered more esthetic than screw-retained implant crowns, as they do not have an access hole [5]. Screw-retained implant crowns have the advantage of minimizing the risk of peri-implantitis and are easier to remove [5]. The latter makes it easier to repair, or replace the crown in case of porcelain fracture [5]. The drawback is that the screw access hole can give an unsightly result [5].

The following is a clinical case of a screw-retained prosthesis on two differently designed and manufactured implants.

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CLINICAL CASE

A 73-year-old man visited the dentist in January 2023 to rehabilitate the edentulous right area of the mandible. He stated that in December 2018 another dentist placed implants (Biohorizons, Madrid, Spain) in positions 45 and 46 with a metal-

porcelain bridge over both. In 2022 he lost implant 45 (Biohorizons tapered internal 3.8 x 9) and with it also the bridge, although he still had implant 46 (Biohorizons tapered short 4.6 x 7.5). For this reason, an orthopantomography was requested (fig. 1).



Fig. 1: Orthopantomography before treatment

In that image, the existence of implant 46 was seen. Then, it was thought to rehabilitate the area by placing a new implant 45, with a delayed technique in the placement of the fixed prosthesis. A healing abutment was placed on implant 46. The

diagnosis was completed by taking several periapical radiographs of the area from different angles, with 4-mm-diameter metal balls as references (fig. 2).

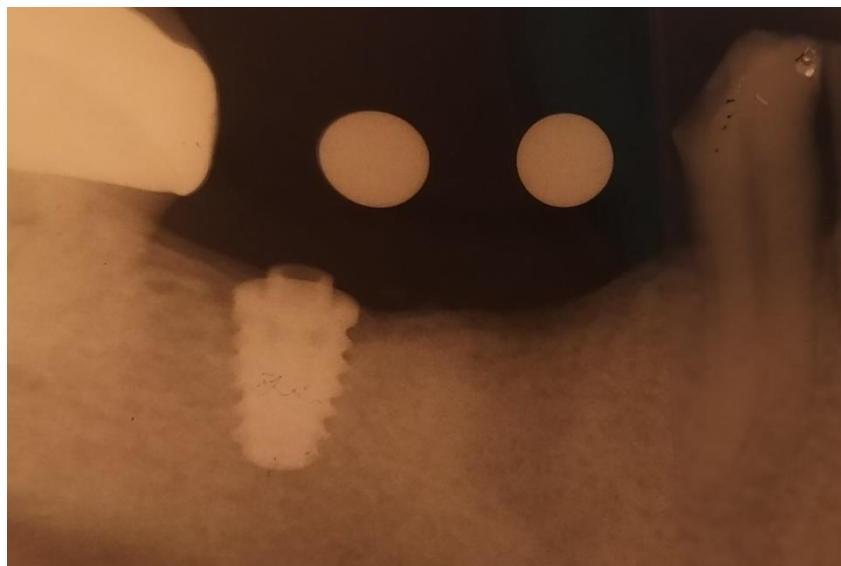


Fig. 2: Periapical radiograph with a 4 mm reference metal ball

An lower model of the mouth was also made in plaster. Days before surgery, the entire procedure (oral and written) was explained to the patient, written informed consent was obtained, and amoxicillin/ac. clavulanate 500/125 every 8 hours

was advised for prevention. On the day of surgery, a simple opening flap was performed and drills were used sequentially until a 4 x 8 mm Galimplant IPX implant (Sarria, Spain) was placed in position 45 (fig. 3).

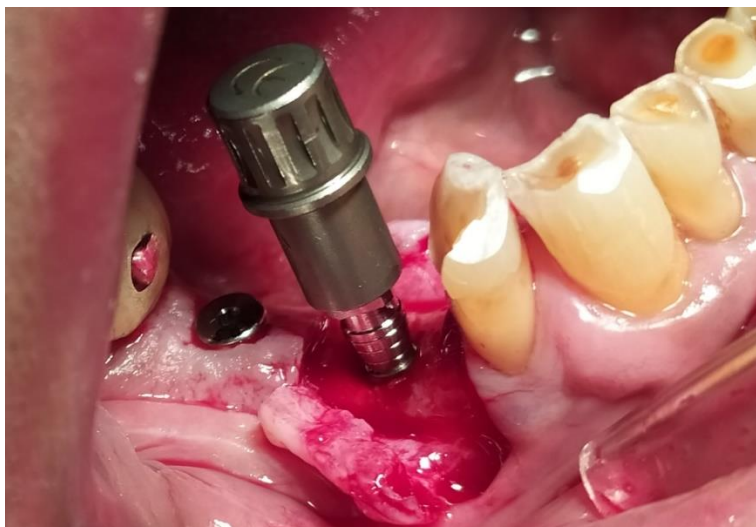


Fig.3: Galimplant IPX 4 x 8 mm implant placement in position 45

Bone drilling was carried out correctly in width and depth, achieving good primary stability (fig.4).



Fig.4: Periapical radiograph of the implants 46 and 45

At that time, a transepithelial abutment (2 mm high rotational aesthetic straight multiposition

abutment, Galimplant. Sarria. Spain) was placed on implant 45 (fig. 5).

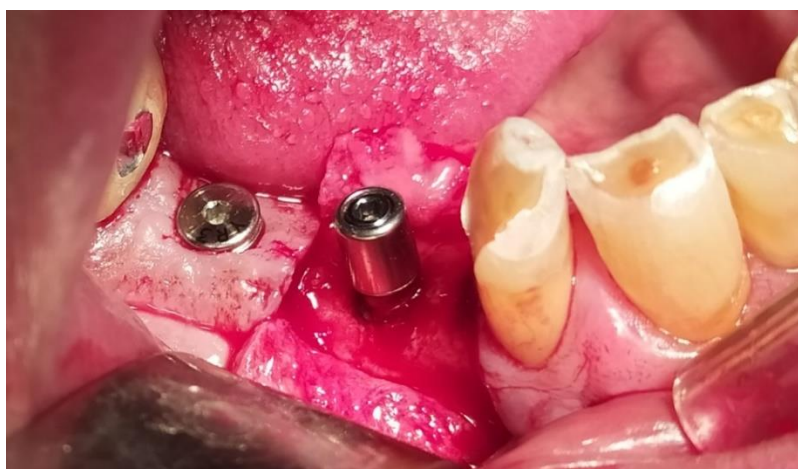


Fig.5. Placement of the transepithelial abutment on the implant 45

It was closed with silk sutures non adsorbable 4/0 (fig.6). After surgery, he was advised to take ibuprofen 400mg every 8 hours if he had inflammation or pain. The next day the patient was

suffering from mild discomfort and inflammation. In a review carried out two weeks later, he was already fine.



Fig.6: Surgical image with five 4/0 silk stitches

After four months, the impression abutments of implants 46 and 45 were attached with

dental floss and flowable composite, and an open-tray impression was taken (figs.7, 8, and 9).



Fig.7: Placement of impression abutments on implants of different brands



Fig 8: Union of both impression abutments with dental floss and flowable composite



Fig 9: Impression image with open tray

When the metal prosthesis was tried on, it was found that the fits were excellent (Fig 10). One week later, the screwed metal-porcelain fixed

prosthesis was placed on both implants, closing the gaps with a Teflon and composite insulator (Herculite XRV, Kerr, USA) (Fig 11).



Fig.10: Metal prosthesis on both implants



Fig.11: Final placement of the metal-porcelain bridge

DISCUSSION

It is difficult to find bibliographic information about fixed prostheses on implants manufactured by different companies and placed in the same patient. This type of clinical work is done

frequently, but it is rarely published. This makes it very difficult to follow up and compare clinical cases.

Successful implant placement depends on biocompatibility, patient factors, implant design,

material, tissue health, bone quality, and quantity, and procedural issues such as insertion torque, healing duration, load biomechanics, load moment, and prosthetic design [7, 8].

In dental implantology, there can be mechanical complications such as porcelain or resin fracture, prosthesis screw loosening or fracture, abutment screw loosening or fracture, and implant fracture [9-11]. This is due to material fatigue and/or corrosion [12], or due to a lack of passive adaptation between the prosthesis and the implant. There may also be clinical complications of a nervous or vascular type, or due to invasion of the maxillary sinus [13-15]. The placement of a prosthesis on two implants from different manufacturers is not a complication, but rather an unscheduled inconvenience.

The passive fit of the prosthesis is very important to minimize inappropriate forces. In the clinical case presented, it was thought from the beginning to make a screw-retained prosthesis.

Studies have been made of restorations on implants from the same manufacturer, with prostheses that have been manufactured with different materials [16]. However, after an extensive search, few restoration works were found with prostheses placed on implants from different manufacturers, which, as is known, maintain different characteristics.

Previous authors connected abutments from a single manufacturer to implants from four different manufacturers (Dentsply Sirona Implants, Biomet 3i, Nobel Biocare, Straumann). Abutment success and survival, papillae fill, probing pocket depth, bleeding on probing, and marginal bone level were evaluated. The results indicated that abutments of a single manufacturer on multiple implant systems demonstrated high levels of success and survival as well as stable peri-implant tissue outcomes [17].

CONCLUSION

The clinical case presented allows us to point out that a fixed prosthesis on implants from different manufacturers can give excellent results. The implants that support this prosthesis may have different characteristics in design and appearance, but this is not inconvenient for correct rehabilitation with a favorable result.

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