Teetanium Prosthodontic Procedure

Reference: PROCEPROSTEETEN_rev1
Review and approval date: 2022/02/15

impladental

teetanium by Medibrex

PROSTHODONTIC PROCEDURE
Prosthodontic instruments and components

WARRANTY PLAN

Its use outside of the indications for use specified here is excluded from the Product Quality Guarantee Plan. Any use not indicated (off-label), such as placement in a dental sector that is not indicated or the use of accessories and / or instruments not compatible with the product, entails additional foreseeable risks that may cause non-osseointegration or loss of the implant, as well as fractures or unplanned surgical and / or clinical interventions.

INCIDENT NOTIFICATION

Any complaint or incident that occurs with the device shall be reported to the manufacturer GS Impladental (or through local distributors) immediately (no later than 24 hours). Any serious incident that has occurred in relation to the device should be reported additionally to competent authority of the Member State in which the user and/or patient is established.

TECHNICAL INFORMATION

The information detailed below is not sufficient for the use of Teetanium dental implants, the person handling them must have sufficient training and information on dental implant treatment and the use of Teetanium dental implants.

In case you are not familiar with the clinical procedure described here, you can contact your Teetanium commercial advisor and he/she will provide you with the information and / or training that you may require to carry out this procedure.

Consult the detailed information in instruction for use before use.
These instructions for use are electronic and are not accompanied in paper format and are addressed to the healthcare professional. You can download the instructions from the download section of the manufacturer's website at https://www.medibrex.com/.

IMPORTANT BEFORE USING TEETANIUM

The Teetanium implant system incorporates in its innovative design, advanced technological features, developed only for professionals who understand technology as an advantage and design as a benefit.

Teetanium complies with all the requirements established by the European laws and guidelines regarding the manufacture and distribution of medical-sanitary products. The Teetanium implant system is certified and authorized for marketing by the corresponding European Notified Body. GS Impladental, S.L. complies with the most rigorous international quality standards for medical devices, guaranteeing perfect quality of its products, with the sole objective of constantly increasing customer satisfaction.

The use of other components or products not manufactured by GS Impladental, S.L., which may have contact with the originals of Teetanium implant system manufactured by GS Impladental, S.L. can cause serious damage to the health of the patient as they are not contemplated for use with those referenced in the documentation provided by the manufacturer. Any use of non-original components or instruments indicated in this procedure, which may have contact with the referenced ones, will automatically void any type of guarantee for the products manufactured by GS Impladental, S.L.

The use and application of the Teetanium dental implant system is beyond the manufacturer's control, the user being responsible for any damage that may be caused by the use of the product, leaving GS Impladental, S.L. exempt from liability for damages or losses arising from improper handling or use.
The reuse of single-use products entails a possible deterioration of their characteristics, which implies the risk of tissue infection, surgical or prosthodontic failure and / or deterioration of the patient's health.

The documentation of the Teetanium implant system is periodically renewed according to the state of science and technology. It is necessary for the user of the Teetanium products to request product

information on a regular basis, in addition to attending regularly established training courses on the product and technique. The use and placement of Teetanium implants in unsuitable areas and the use of surgical instruments or prosthetic components not reflected in this procedure, may cause serious damage to the health of the patient and total loss of the product warranty. The Teetanium implant system is designed to carry out the rehabilitation of teeth in a single-unit or multiple way, according to the traditional clinical processes reflected in this documentation as well as the restorations through CAD-CAM.
The Teetanium implant system is distributed internationally in different countries with different technical and health regulations and laws, and there may be differences from one country to another in the content of the procedure. Contact the exclusive Teetanium distributor in your country and request documentation regarding the products and their availability.

Any illustration that may appear in this document is not to scale.

WASTE DISPOSAL

Follow the instructions available for each device involved. Infectious waste shall be disposed in accordance with applicable regulations in force in the country of use and according to standard procedures in use at the user site.

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1. INTRODUCTION

The objective of this prosthetic procedure is to allow a global vision of all the abutments, establishing the procedure for the different prosthetic restorations that can be carried out on implants of the Teetanium system, both for clinical use and in the laboratory. From single, multiple cases, fixed prostheses, and complete restorations.

With the Teetanium system you will be able to make multiple current options in today's implantology.

The Teetanium implant system has an extensive range of abutments that allow for prosthetic restorations on implants.

The availability of Teetanium abutments with different transmucosal heights make it possible to adapt the emergence profile of the crown in relation to the adjacent natural teeth and the thickness of the soft tissue, in addition to respecting the platform modification for establishments of the supracrestal tissue component “biological width” of utmost importance for the maintenance of the periimplant crestal bone.

2. TYPES OF IMPLANT RESTORATIONS

2.1. IMMEDIATE RESTORATIONS

Temporary immediate restoration without functional occlusal load, is the procedures that places de restoration the same day of surgery up to 1 week of implant placement. The immediate restoration could be direct or indirect:

- Direct immediate restoration: The temporary prosthesis is made chair-side, with no need of impression taking.
- Indirect immmediate restoration: The temporary restoration is made on the lab or in a CAD/CAM production center after implant impression taking.
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The prosthesis is screwed or cemented in the implant or in an abutment, assuring no functional load. Although occlusal forces may be avoided in immediate restoration cases, it must be emphasized that the action of the oral muscles - such as the tongue, lips, and cheek, as well as interposed food when chewing - will result in forces being directed onto the implant. These considerations must be taken into account during the implementation of this protocol.

2.2. IMMEDIATE LOADING

Temporary immediate restoration with occlusal contact, which is the procedure that places the restoration the same day of surgery up to 1 week after implant placement. The use of a primary stability meter like resonance frequency analysis (RFA) devices are recommended in order to verify if the values obtained are optimal to guarantee this technique. It is suggested that Implant Stability Quotient (ISQ) values ≥60 up to 65 are considered adequate for immediate loading (IL) of single and full-arch restorations. Another reference most commonly used is the quantification of insertion torque (IT) in Newtons’ per centimeter (N/Cm). Values of IT ≥20 up to 45 Ncm and ≥30 Ncm have been considered adequate for either partial/single and full-arch restorations respectively. The insertion of Teetanium implants should be performed at 35Ncm.

In the case of overdentures on bars, if indicated, a second overdenture adjustment will be made in the mouth.

- Direct immediate loading: The temporary prosthesis is made chair-side, with no need of impression taking
- Indirect inmmediate loading: The temporary or definitely restoration is made on the lab or in a CAD/CAM production center after implant impression taking.

2.3 EARLY LOADING

Prosthesis connected to the dental implant between 1 week and 2 months (8 weeks) after implant placement. The implants are put into function during the later stages of bone healing, also soft tissues are healing during this period and have almost entirely healed at two months, resulting in reduced treatment time between implant placement and loading. The prosthetic process is performed in the laboratory.

Early loading with provisional prosthesis allows to:
-Reshape morphology of peri-implant soft tissues in line with aesthetic considerations.
-Modify the oclusal schemes evaluating the morphology and function of the planned implant prosthesis

The treatment is completed at a later stage with the delivery of the final prosthesis.

Provisional or definitive rehabilitation with occlusal contact at 1-8 weeks, after implant insertion.

The use of a primary stability meter is recommended in order to verify if the values obtained are optimal to guarantee this technique.

2.4. CONVENTIONAL LOADING

Placement of the prosthesis 2 or more months after implant placement. The prosthetic process is performed in the laboratory.
Conventional loading allows complete bone and peri-implant soft tissue healing. Longer treatment time between implant placement and loading is required.

Conventional loading with provisional prosthesis allows to:
-Reshape morphology of peri-implant soft tissues in line with aesthetic considerations.
-Modify the oclusal schemes evaluating the morphology and function of the planned implant prosthesis

The treatment is completed at a later stage with the delivery of the final prosthesis.

2.5. CLEANING AND STERILIZATION

The implants are provided sterile. The sterilization method is gamma irradiation. The sterile barrier is the tyvek sealed outer blister.
In case the container is damaged or has been inadvertently opened and the sterility of implants may have been compromised, do not use the product and notify the manufacturer immediately.
The reuse and / or reprocessing of single-use products can lead to the loss of functionality and / or safety of the product and may cause a potential incident to the patient.
Abutments and instruments are provided non-sterile. The cleaning, disinfection and sterilization protocol can be consulted in the IFU *PROSPLDEGSIEN CLEANING, DISINFECTION AND STERILISATION PROCESS - Prosthodontic instruments and components.*

2.6. MINIMUM DISTANCE BETWEEN TEETH AND IMPLANTS

As a general rule, a minimum distance of 3mm between two adjacent implants and 1.5mm between an implant and a tooth is recommended in order to preserve bone vascularization and the emergence profile.

2.7. TREATMENT PLANNING

The goal of dental implant treatment is to restore the functionality of lost natural teeth. To achieve the objectives of the treatment, it is necessary to plan it from a prosthodontic point of view. For this,

the clinical history, clinical-radiological diagnosis, exploration, use of study models, among others, are used according to general standards and protocols applied in implant dentistry.

Teetanium recommends conducting a three-dimensional study using Cone-Beam Computed Tomography imaging (CBCT) and the use of surgical splints for the correct positioning of the implants, in all 3 dimensions (apico-coronal, mesio-distal or buccal-lingual or palatal). The CBCT scan also allows to recognize bone quality and quantity, an important factor for the drilling technique. It also aids to determine the proximity of critical anatomical structures to avoid surgical complications during surgical instrumentation and implant placement(e.g., inferior alveolar nerve trajectory, sinus floor, sublingual artery, lingual- and mental- foramina, zygomatic processes, upper maxilla tuberosity).

The information to carry out the treatment should comprehend the following:

- Personal and family medical history.
- General medical condition.
- Oral medical status.
- Clinical and radiological oral examination.
- Registration of the anatomical state using study models.
- Patient expectations.
- Possible contraindications.

Contraindications of dental implant therapy

There are no absolute contraindications for dental implants placement, but relatives ones. In this sense, both local- and systemic- risk factors affecting implant therapy outcomes must be considered. The uncontrolled diabetes, implant placement in patients with previous or concomitant periodontal disease, the tobacco consumption, bruxism, are well known and established risk factors for dental implant failure and for the developing of biological complications (e.g., mucositis, periimplantitis). Other risk factors and systemic diseases that may affects dental implants outcomes are showed below:

General Factors: Age, Stress, Tobacco, Pregnancy, Blood dyscrasias, Psychic factors, Valve prostheses, Terminal pathologies, Lack of oral hygiene, Bone deficiency, Alcoholism, Drug addiction, Poor medical condition, among others.

Systemic Diseases: Endocrine, Haematological, Acute or chronic infectious, Osteoporosis, Epilepsy, Maxillary osteitis, Cardiovascular Radiotherapy treatments, Corticosteroid treatments, Anticoagulant treatments, among others.

Thus, relative contraindications could relate to the potential additive risk and clinicians should consider these factors carefully when more than one exposure is present.

Warnings and precautions

It's important to follow the instructions below on torque applicable for implants and abutments.

3. TEMPORARY RESTORATIONS ON TEETANIUM IMPLANTS

The objectives pursued through a temporary rehabilitation on implants are:

Aesthetic objectives

Creation of an adequate emergence profile, which also depends on:

- The position of the implant.
- Deepness.
- Emergence.
- Direction.
- Gingival phenotype.

Biological objectives

- Formation of a peri-implant groove.
- Formation of the biological seal.
- Organized bone apposition

Biomechanical objectives

With the prosthesis in slight infraocclusion and without lateralities, the progressive and controlled function of:

- Axial loading.
- Flexural momentum.

Functional objectives

- Functional adaptation of implants to load resistance by modifying temporary crowns according to bone quality.
- Control of the clinical and radiographic signs of the state of maturation of the tissues.

For rehabilitation using temporary prosthesis, the Teetanium implant system has four different options:

  - Rehabilitation on Teetanium straight or angled abutment using a screwed provisional titanium cap.
  - Rehabilitation on Teetanium straight and angled millable abutment.
  - Teetanium temporary restoration using CAD-CAM.

Immediate loading could be applied in single, partial or complete edentulism. Immediate loading allows the mechanical and functional adaptation of bone after prosthesis was delivered. In sigle or partial edentulism, the temporary prosthesis requires emergence profile contours adaptation during the healing phase to optimize the esthetic results of peri-implant soft tissues for the confection of the definitive prosthesis. The immediate implant loading protocol avoids secondary surgery by providing patients with implant-supported prostheses within the first week following implant placement.

If immediate functional loading is not indicated, an aesthetic provisional restoration is performed favoring a biological adaptation and sealing of the soft tissue.

3.1 ABUTMENT-LEVEL TEMPORARY RESTORATIONS

Components

Provisional coping on straight and angled abutments for temporary restorations. Copings are machined in titanium, with hex and non-hex connections.

Applicable procedures

Direct and indirect immediate restorations with or without occlusal loading.

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Objectives

- Soft tissue remodelling to create an adequate emergence profile.
- Stimulation of bone and mucosal tissue repair in immediate restorations, allowing mechanical adaptation, biological sealing, aesthetics, and function of the peri-implant tissues.
- Immediate and progressive mechanical adaptation of bone tissue to functional load, formation of a more structured osteoid tissue and early remodelling according to functional needs.
- Establishment of the characteristic biological space of the system with platform modification.

Contraindications

- Temporary immediate restoration with occlusal contact, which is the procedure that places the restoration the same day of surgery up to 1 week after implant placement. The use of a primary stability meter like resonance frequency analysis (RFA) devices are recommended in order to verify if the values obtained are optimal to guarantee this technique. It is suggested that Implant Stability Quotient (ISQ) values ≥60 up to 65 are considered adequate for immediate loading (IL) of single and full-arch restorations. Another reference most commonly used is the quantification of insertion torque (IT) in Newtons' per centimeter (N/Cm). Values of IT ≥20 up to 45 Ncm and ≥30 Ncm have been considered adequate for either partial/single and full-arch restorations respectively. The insertion of Teetanium implants should be performed at 35Ncm.

Advantages

- Allows a temporary restoration on a definitive abutment.
- In immediate loading, it allows the mechanical and functional adaptation of bone and soft tissue (emergence profile) from the moment of implant insertion.
- It allows the adaptation of the soft tissue to the progressive loads and a protection of the biological seal.
- Allows early restoration of peri-implant supracrestal tissue height.

Recommendations

- The treatment is carried out after the correct diagnosis and planning of the case.

3.2 AESTHETIC AND DIRECT IMMEDIATE LOADING

General indications:

The objective of immediate aesthetic treatment involves the placement of the provisional prosthesis without occlusal contacts in the same surgical procedure after insertion of the implants up to one week, while immediate loading implies including occlusal contacts.
The preparation, relining and adjustment of the provisional prosthesis is carried out directly in the mouth. The provisional prosthesis is made in the laboratory before surgery or directly in the patient's mouth in special cases of crowns and / or short bridges.

Material, abutments, and instruments for the clinic

- Straight abutment or angled abutment.
- Titanium temporary cap (hexed/ non-hexed) for temporaries.
- Abutment clinic screw.
- Laboratory screw.
- 1.25 mm screwdriver.
- Dynamometric wrench.
- Wrench screwdriver tip 1.25mm.
- Self-curing resin for temporaries*
- Mixing cup and syringe dispenser*
- Resin crown or bridge preforming in the laboratory, white or transparent*
- Instrument for modelling*
- Cutting-roughing and polishing instruments for handpiece*.

* Material not supplied by Teetanium.

Manufacturing of the temporary prosthesis

1. Perform diagnostic wax-up on semi-adjustable articulator mounted casts.
2. Using this wax-up as a reference, fabricate the provisional prosthesis.
3. Make the chimneys in the occlusal aspect of the prosthesis for the passage of the clinical and laboratory screws.
4. Placement of the abutment and protection cap.
5. Select Teetanium abutment suitable for gingival tissue height and occlusal emergence plane.
6. The abutment screw is held using the 1.25 mm hand driver. The screw is then inserted through the coronal access hole of the prosthetic abutment, ascertaining the screw protrusion through the bottom. Position the Teetanium abutment using the protractor on the implant. Hand-tighten the screw.

7. Tighten the abutment screw exerting a force of 25Ncm (as it is a provisional restoration) with the torque wrench and the 1.25mm hand driver.

Insertion of the titanium coping

8. Manually insert the Coping for Temporaries () onto the Teetanium Abutment.
9. Check the stability of the coping.
10. Insert the lab screw through the Cap and thread it manually up to the manual locking stop. The position of the laboratory screw allows checking the insertion axis of the provisional prosthesis and the location of the entrance hole of the clinical screw.

Adaptation of the prosthesis

11. Insert the provisional prosthesis through the laboratory screw through the perforation made at the occlusal level (for molars and premolars) or palatal-lingual (for incisors and canines), up to the level of the external cone of the implant, coping and gingiva. Touch up the prosthesis and positioner to eliminate any interference.
12. Adjust occlusally to desired height.

Relining and placement of the prosthesis

The use of a rubber dam is recommended to avoid contact of impression materials with soft tissue.

13. Remove the prosthesis, dry it well and add a light layer of acrylic inside of the crown and around the Coping.
14. Apply petroleum jelly around the prosthesis and surgical splint in the relining areas to avoid adhesions.
15. Insert the prosthesis through the laboratory screw and remove excess material before setting. It is recommended to turn the screw to avoid its adherence to the resin. If gaps appear between the prosthesis and the screw, re-pass it.
16. Remove the screw and the prosthesis manually once the material has set, applying a slight axial force with a crown and bridge extractor.
17. Remove excess material and proceed to final reshaping and polishing of the prosthesis to allow soft tissue healing and emergence profile formation.
18. Insert the prosthesis in the mouth applying slight pressure until the retentive anchor is felt.
19. Screw the prosthesis with the final clinic screw, giving a manual torque.
20. Check the occlusion so that there are no occlusal contacts in case of Immediate Esthetics or make the appropriate occlusal adjustments for Immediate Loading.
21. Apply petroleum jelly to the hole in the prosthesis, protect the screw with a cotton ball and cover with a temporary filling material.

Note: When placing the definitive prosthesis, the abutment that the patient initially wore could be replaced by another one if desirable. If not, the same Teetanium abutment can be used.

Note: There is the possibility of performing the restoration using CAD/CAM techniques.

3.3 IMMEDIATE INDIRECT LOADING

General indications

The goal of the procedure is the placement of a provisional restoration with occlusal contacts within 24 hours of insertion of the implants up to one week.
When, due to its technical difficulty, the adaptation of the prosthesis made before the intervention must be carried out in the laboratory.
When, for any reason, the provisional prosthesis must be made in the laboratory after the surgical intervention.

Material, abutments and instruments for the clinic

- Straight abutment or angled abutment.
- 1.25mm Teetanium driver.
- Teetanium Wrench screwdriver tip of 1.25 mm.
- Teetanium torque wrench.

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- Teetanium abutment impression transfer.
- Abutment clinic screw.

Material, abutments and instruments for the laboratory

- Teetanium dental implant analog.
- Titanium temporary cap (hexed / non-hexed) for temporaries.
- Abutment laboratory screw.
- 1.25mm screwdriver.
- Wrench screwdriver tip 1.25mm.
- * Self-curing resin for temporaries.
- * Mixing cup and syringe dispenser.
- * Resin crown or bridge preformed in the laboratory, white or transparent.
- * Modelling instrument.
- *Cutting-roughing and polishing instruments for handpieces (burs, discs, abrasive rubbers, etc.).

* Material not supplied by Teetanium.

Clinic: Impression taking

1. Select Teetanium abutment suitable for gingival tissue height and occlusal emergence plane.
2. Position the Teetanium open-tray impression transfer in the implant platform and hand-tighten the screw.
3. Check by x-ray the correct fit of the transfer on the implant.
4. Perform the impression. It is recommended to use a rubber dam to avoid contact of the silicone with the stitches. Before removing the tray, unscrew the pin if you are using an open-tray impression transfer. Remove the tray with the impression transfer.
5. Cover the Teetanium abutment with the healing abutment to prevent soft tissue collapse while the prosthesis is fabricated in the laboratory.

Laboratory: Manufacturing of the temporary prosthesis

1. Attach the impression transfer retained in the impression to the corresponding dental implant analog.
2. Once the chosen dental implant analog is positioned and screwed on the impression transfer , the impression is cast with plaster to make the working model.
3. Once the plaster has set, extract the model, prepare, condition, and mount it in the articulator. This model can be used to make the temporary or the definitive prosthesis.
4. Position the temporary cap (hexed/non-hexed) on the implant analog.
5. Apply coronal pressure until you feel an anchor.
6. Verify that the temporary coping is stable and immobile in this position and fits snugly over the platform of implant analog.
7. Pass the screw through the temporary cap (hexed / non-hexed). Screw it by hand-tighten torque into the dental implant analog. The position of the laboratory screw allows checking the insertion axis of the provisional prosthesis and the location of the entrance hole of the clinical screw.
8. Adjust the temporary cap if it interferes occlusally until the desired height is achieved.
9. Manufacture the provisional prosthesis using standard laboratory techniques.

Clinic: Placing the temporary prosthesis

10. Place the prosthesis in the mouth applying enough pressure to the final position for adjustment and for the clinic screw to pass.
11. Adjust the occlusion for functional contacts.
12. Apply an antiseptic gel (e.g. Chlorhexidine) to the hole in the prosthesis using the prosthetic srew as a carrier, adjust the screw with the dynamometric wrench at 25 N.cm.
13. Protect the screw with a mechanical barrier (e.g. Polytetrafluoroethylene strips or balls) and cover with a temporary filling material.

Note: There is the possibility of performing the rehabilitation using CAD/CAM techniques.

4. IMPRESSION TAKING AND TRANSFER TO THE MODEL

Impression taking can be performed at both implant- and abutment-level. Both methods are used to transfer the position of the implant in the biological medium to a working model in the laboratory.

4.1 STRAIGHT OR ANGLED ABUTMENT-LEVEL IMPRESSION TAKING

General indications

Taking the impression on the straight or angled abutment allows to transfer the implant and abutment position into the oral cavity to the working model, without having to remove the abutment from the mouth.

Contraindications

No known.

Advantages

Quick, precise, and easy placement.
Easy removal and dragging with the impression material.
One-abutment one-time techniques

Recommendations

It is advisable to ensure the fit when the abutment platform is in a subgingival position.
It is advisable to check the anti-rotation feature of the abutment impression transfer.

Material, abutments, and instruments for the clinic

- Straight abutment or angled abutment.
- 1.25mm Teetanium driver.
- Teetanium Wrench screwdriver tip of 1.25 mm.
- Teetanium torque wrench
- Teetanium abutment impression transfer.
- Abutment clinic screw.
- * Standard or custom tray.
- * Impression material.
- * Exploration probe.

* Material not supplied by Teetanium.

Material, abutments, and instruments for the laboratory

- Teetanium abutment analog.
- Abutment laboratory screw.
- 1.25mm screwdriver.
- Wrench screwdriver tip 1.25mm.
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- *Plaster
- *Gingival silicone

* Material not supplied by Teetanium.

Clinic: Impression taking

1. Remove the healing abutment.
2. Select Teetanium abutment (straight or angled) suitable for gingival tissue height and occlusal emergence plane.
3. Position the Teetanium abutment (straight or angled) using the carrier in the implant.
4. Adjust the screw using the dynamometric torque wrench at 35 N.cm.
5. Fix the open-tray impression transfer (hexed or non-hexed) on the Teetanium abutment (straight or angled) and suture around it (only in cases of immediate loading). The impression transfer serves as a conformer and spacer of the soft tissue avoiding its collapse during impression.
6. Check by x-ray the correct fit of the transfer on the implant.

7. Perform impression. It is recommended to use a rubber dam to avoid contact of the silicone with the stitches.
8. Remove the tray with the impression transfer.
9. Place the healing abutment to prevent soft tissue collapse while the prosthesis is fabricated in the laboratory.

Laboratory: Manufacturing of the anatomical model

10. Attach the corresponding dental implant analog to the impression transfer retained in the impression material.
11. Once positioned in the impression transfer, the impression is cast with plaster to make the working model. The use of silicone gums or gingival masks around the analog is recommended to simulate soft tissue.
12. Once the plaster has set, extract the model, prepare, condition, and mount it in the articulator. This model can be used to fix the temporary and to make the definitive prosthesis.

Note: The Teetanium analog is indicated for making provisional or definitive restorations in the model.

4.2 IMPLANT-LEVEL IMPRESSION TAKING

General indications

When it has not yet been defined the definitive abutment it is necessary to take the impression directly into the implant. The impression will transfer the implant position in the mouth into a working model.

Contraindications

Severe disparallelisms could make it difficult to take an implant-level impression.

Advantages

Quick, precise, and easy placement.
Easy removal and dragging with the impression material.
The use of an open-tray impression technique allows for a more accurate transfer of implants position into the working model.

Recommendations

It is advisable to ensure the fit when the abutment platform is in a subgingival position.
It is advisable to check the anti-rotation feature of the abutment impression transfer.
In the case the implant is placed very deep, it is advisable to carry out a X-ray for ensuring a correct placement of the transfer.

Material, components, and instruments for the clinic

- 1.25mm Teetanium driver.
- Teetanium Wrench screwdriver tip of 1.25 mm.
- Teetanium torque wrench
- Teetanium implant-level impression transfer.
- * Standard or custom tray.
- * Impression material.
- * Exploration probe.

* Material not supplied by Teetanium.

Material, components, and instruments for the laboratory

- Teetanium dental implant analog
- 1.25mm screwdriver.
- Wrench screwdriver tip 1.25mm.
- * Self-curing resin for temporaries.
- * Mixing cup and syringe dispenser.
- * Plaster

- *Gingival silicone

* Material not supplied by Teetanium.

Clinic: Impression taking

1. Remove the healing abutment.
2. Attach the open-tray impression transfer on the Teetanium implant.
3. Check by x-ray the correct fit of the transfer on the implant.
4. Perform the impression. It is recommended to use a rubber dam to avoid contact of the silicone with the stitches.
5. Remove the tray with the impression transfer. Before removing the tray, unscrew the pin if you are using an open-tray impression transfer.
6. Place the healing abutment to prevent soft tissue collapse while the prosthesis is fabricated in the laboratory.

Laboratory: Manufacturing of the anatomical model

1. Attach the impression transfer retained in the impression to the corresponding dental implant analog.
2. Once positioned in the impression transfer, the impression is cast with plaster to make the working model. The use of silicone gums or gingival masks around the analog is recommended to simulate soft tissue.
3. Once the plaster has set, extract the model, prepare, condition, and mount it in the articulator. This model can be used to fix the temporary and to make the definitive prosthesis.

Note: The Teetanium dental implant analog is indicated for making provisional or definitive restorations.

5. DEFINITIVE RESTORATIONS

5.1 DEFINITIVE SCREW-RETAINED RESTORATIONS

General indications

There are two types of Teetanium abutments for screw-retained restorations: straight and angled.
The final torque to the implant is 35 Ncm.
Abutment for single-unit screw-retained crowns, manufactured with conventional technique using a castable hex cylinder.
Abutment for partial or complete screw-retained restorations, manufactured with conventional technique using a non-hex castable cylinder.
Abutment for overdentures on a bar structure manufactured by conventional casting on castable non-hex cylinders or cast bar welding.

Contraindications

If, due to aesthetic limitations, it is not possible to perform a screw-retained restoration, it is recommended to do it cemented.

Advantages

- Correct implants non-parallelly placed
- Move the screw hole towards a more correct place using angled abutments
- Place the prosthesis correction on an upper place in too deep implants
- One-abutment one-time protocols
- Better maintenance of bone and tissue levels

Material, abutments, and instruments for the clinic

- Teetanium straight or angled screwed abutment .
- Teetanium 1.25mm screwdriver.
- Teetanium wrench screwdriver tip of 1.25 mm.
- Teetanium torque wrench

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- Teetanium abutment impression transfer
- Abutment clinic screw.
- * Standard or custom tray.
- * Impression material.
- * Exploration probe.

* Material not supplied by Teetanium.

Material, abutments, and instruments for the laboratory

- Teetanium coping abutments (Hexed or non-hexed, or coping angled abutment).
- Abutment laboratory screw.
- Teetanium 1.25mm screwdriver.
- Wrench screwdriver tip 1.25mm.
- Hex or non-hex castable cylinders
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- Materials for crown and bridge manufacturing (metal alloys, ceramics, etc)

* Material not supplied by Teetanium.

Clinic: Impression taking

1. Perform an implant- or abutment-level impression (detailed in section 4)

Laboratory: Manufacturing of the anatomical model

2. Manufacture the anatomical model (detailed in section 4)

Laboratory: Manufacturing the definitive prosthesis

A) Conventional prosthesis on castable cylinder

3. Place the castable on the abutment on the working cast. Fix it gently with the lab screw at.
4. Check the soft tissue fit from the implant shoulder to the free gingival margin for the creation of the emergence profile of the restoration.
5. Model the framework with castable wax or resin.
6. Cast the prepared wax or resin framework.
7. Remove the casted framework from the casting investment cylinder and polish it.
8. Check the correct fit of the framework on the analog in the model

B) CAD-CAM prosthesis

Follow the specific procedure for the selected CAD-CAM supplier.

Clinic: Prosthesis try-in

9. Remove the healing abutment.
10. Mount the Teetanium abutment in the mouth and place the prosthesis.
11. Check the fit of the framework:
    - Correct fit of the abutment on the implant.
    - Adjustment in the abutment shoulder.
    - Passivity.
    - The relationship with the gum.
12. Check adjustment by x-ray.
13. Remove the framework.
14. Remove the Teetanium abutments in those cases rehabilitated directly to the implant connection without intermediate screwed prosthetic abutment.
15. Replace the healing abutment.

Laboratory: Finishing the definitive prosthesis

16. Place the ceramics and glaze it.

Clinic: Fixation of the prosthesis

17. Remove the healing abutment.
18. Mount the Teetanium abutment in the mouth and place the prosthesis.
19. Screw the framework with the final clinic screw using a dynamometric wrench, exerting a torque of 35 Ncm.

20. Check the fit of the frame:
    - Adjustments of the abutment shoulder to the implant.
    - Passivity.
    - The relationship with the gum.
    - The points of contact.
    - Occlusion.
21. Check adjustment by x-ray.
22. Fill the screw hole with temporary filling material.

5.2 DEFINITIVE CEMENT-RETAINED RESTORATIONS

General indications

- There are two types of Teetanium drillable abutments: straight and angled.
- The final fixation torque to the implant is 35 Ncm.
- Fixed prostheses cemented to drillable abutments are modelled at the titanium abutment itself.
- Leveling the emergence height of the crown in relation to the adjacent natural teeth and the thickness of the soft tissue.
- When the occlusal height from the implant is greater than 6 mm.
- When it is necessary to adjust the height of the antagonist and parallelize the insertion axis of the prosthesis.
- In fixed restorations with a marked disparallelism between implants.
- In single or multiple restorations where, due to the position of the implant, the entry hole of the retentive screw in a screw-retained prosthesis compromises the aesthetics of the restoration.

Contraindications

When the occlusal height from the implant is less than 4 mm.

Advantages

Greater control of the aesthetics of the prosthesis.
Better fit of the definitive crown to the abutment.

Material, abutments, and instruments for the clinic

- Teetamium straight or angled drillable abutments.
- 1.25mm Teetanium screwdriver.
- Teetanium wrench screwdriver tip of 1.25 mm.
- Teetanium torque wrench
- Teetanium implant-level transfer.
- Abutment clinic screw.
- * Standard or custom tray.
- * Impression material.
- * Exploration probe.

* Material not supplied by Teetanium.

Material, abutments, and instruments for the laboratory

- Teetanium implant analog.
- Abutment laboratory screw.
- 1.25mm screwdriver.
- Wrench screwdriver tip 1.25mm.
- Materials for crown and bridge manufacturing (metal alloys, ceramics, etc)

* Material not supplied by Teetanium.

PROSTHODONTIC PROCEDURE
Prosthodontic instruments and components

Clinic: Impression taking

1. Perform impression taking with implant-level transfer (detailed in section 4)

Laboratory: Manufacturing of the anatomical model

2. Manufacture the anatomical model (detailed in section 4)

Laboratory: Manufacturing the definitive prosthesis

A) Conventional prosthesis on castable.

3. Choose the type of milling abutment that corresponds to:
   - Implant disparallelism
   - Soft tissue height from implant shoulder to free gingival margin.
   - Emergence profile of the prosthesis.
4. Insert the chosen abutment into the dental implant analog, adjusting the hex by small twists and hand-thread the retention screw until the drillable abutment is fixed on the Teetanium implant analog.
5. Check the height of the drillable abutment in relation to the opposing arch and the parallelism with the adjacent teeth and / or abutments.
6. Shape the abutment by milling if necessary.
7. Plug the entry hole of the drillable abutment retention screw with wax and prepare the abutment with spacer.
8. Carry out the wax-up directly on the abutment
9. Model the framework in wax or resin.
10. Cast the prepared wax or resin framework.
11. Remove the cast framework from the casting investment cylinder and polish it
12. Go over and adjust the shoulder.
13. Load the unglazed ceramic, if applicable.
14. Make a guide key on the model for the position of the milling abutment in the mouth.
15. Remove the drillable abutment from the cast.

B) CAD-CAM prosthesis

Follow the specific procedure for the selected CAD-CAM supplier.

Clinic: Test of the prosthesis

16. Remove the healing abutment.
17. Mount the Teetanium abutment in the mouth and place the prosthesis.
18. Check the fit of the frame:
    - Adjustments of the abutment shoulder to the implant.
    - Passivity.
    - The relationship with the gum.
    - The points of contact.
    - Occlusion.
19. Check adjustment by x-ray.
20. Remove the framework.
21. Remove the Teetanium abutment.
22. Replace the healing abutment.

Laboratory: Finishing the definitive prosthesis

23. Finish ceramics process and glazing.

Clinic: Fixation of the prosthesis

24. Remove the healing abutment.
25. Mount the Teetanium abutment in the mouth and place the prosthesis.
26. Screw the abutment with the final clinic screw using a dynamometric wrench, exerting a torque of 35 Ncm.
27. Check the fit of the frame:
    - Adjustments of the abutment shoulder to the implant.
    - Passivity.
    - The relationship with the gum.
    - The points of contact.

- Occlusion.

28. Check adjustment by x-ray.
29. Fill the screw hole with temporary filling material.
30. Cement the prosthesis. If the prosthesis is planned to be removed for maintenance, use a temporary cement.
31. Wait for the setting and remove carefully the excess cement.

5.3 BAR-RETAINED RESTORATIONS

General indications

Total removable restorations using an implant-muco-supported overdenture on a bar fixed to implants, from 2 to 4 in the mandibular area and from 4 to 6 in the maxillary area, manufactured with the conventional castable and wax-up technique or by means of CAD-CAM manufacturing.

Contraindications

The main contraindication for using Bars is the amount of vertical dimension required; welding procedures are often necessary and can complicate patient treatment.
the control of dental plaque in the case of the bars is more difficult than in most other abutment.

Advantages

Simpler treatment.
Less working time.
Improves the quality of life of patients with advanced age and significant bone resorption.

Material, abutments, and instruments for the clinic

- Teetaniuum straight and angled screwed abutments.
- 1.25mm Teetanium screwdriver.
- Teetanium wrench screwdriver tip of 1.25 mm.
- Teetanium torque wrench
- Teetanium abutment impression transfer or implant-level transfer.
- Abutment clinic screw.
- * Standard or custom tray.
- * Impression material.
- * Exploration probe.

* Material not supplied by Teetanium.

Material, abutments, and instruments for the laboratory

- Analog of implant Teetanium.
- Abutment laboratory screw.
- 1.25mm screwdriver.
- Wrench screwdriver tip 1.25mm.
- *Material needed for manufacture the bar and the acrylic overdenture.
- *Rotary cutting-roughing and polishing instruments for handpieces (burs, discs, abrasive rubbers, etc.).

* Material not supplied by Teetanium.

Clinic: Impression taking

1. Perform impression taking with the abutment- or implant-level transfer (detailed in section 4)

Laboratory: Manufacturing of the anatomical model

2. Manufacture the anatomical model (detailed in section 4)

Laboratory: Manufacturing the definitive prosthesis

A) Conventional prosthesis on castable.

3. Place the castable cylinder on the working cast. Fix it gently with the lab screw.
4. Check the soft tissue fit from the implant shoulder to the free gingival margin for the creation of the emergence profile of the restoration.

5. Model the bar with castable wax or resin.
6. Cast the prepared wax or resin bar.
7. Remove the cast framework from the casting investment cylinder and polish it.
8. Try in the metal bar,

B) CAD-CAM prosthesis

Follow the specific procedure for the selected CAD-CAM supplier.

Clinic: Test of the bar

9. Remove the healing abutment.
10. Mount the Teetanium abutments in the mouth and screw the bar.
11. Check the fit of the bar:
    - Adjustment of the abutment shoulders to the implant.
    - Passivity.
    - The relationship with the gum.
12. Check adjustment by x-ray.
13. Remove the bar.
14. Remove the Teetanium abutment.
15. Replace the healing abutment.

Laboratory: Finishing the definitive prosthesis

16. Prepare the overdenture following the specific lab procedures.

Clinic: Fixation of the prosthesis

17. Remove the healing abutment.
18. Mount the Teetanium abutments in the mouth at 35 Ncm. .
19. Screw the bar with the final clinic screw using a dynamometric wrench, exerting a torque of 25 Ncm.
20. Check the fit of the bar:
    - Adjustments of the abutment shoulder to the implant.
    - Passivity.
    - The relationship with the gum.
21. Check adjustment by periapical x-ray
22. Place the overdenture on the bar.
23. Check the following aspects:
        - Proper retention
        - Occlusion
        - Relation of the overdenture edges with the soft tissues

5.4 BALL-RETAINED RESTORATIONS

General indications

Ball abutment for performing restorations with implant-gingival-supported overdenture in the mandibular sector. In cases with a significant deficit of mandibular elastic bone mass, where placement of implants for other types of restoration carries a high risk of bone fracture.

Contraindications

In the maxillary bone. As it is necessary to place a greater number of implants due to its low bone density, adjusting the rebases and the overdenture to the abutment is more complicated. In all cases where another type of restoration is indicated. In restorations with more than two implants with severe disparallelism (as insertion of the prosthesis would be difficult).

Advantages

Simpler treatment.
Less working time.
Improves the quality of life of patients with advanced age and significant bone resorption.

Disadvantages
Requires considerable precision in the impression registrations.
Precise fitting to soft tissues.
Maintenance of the prosthesis and fixations to the bar structure of ball abutment.

Ball abutments
A ball abutment is a one-piece base abutment for performing restorations with implant-gingival-supported overdenture. The ball abutment is machined in titanium. This abutments attach to the retentive sockets processed into the denture base (Metal cap).

Titanium sleeve with O-ring
Accessory that integrates with the lower part of the overdenture and holds it to the implant by connection to the ball abutment. The element that provides the sleeve-abutment retention functionality is a rubber O-ring seal seated inside the sleeve (housing).

Material, abutments, and instruments for the clinic

- Teetaniuum ball abutments, ball abutment Metal Cap + O-ring
- 1.25mm Teetanium screwdriver.
- Teetanium wrench screwdriver tip of 1.25 mm.
- Teetanium torque wrench
- Teetanium abutment impression transfer or implant-level transfer.
- * Standard or custom tray.
- * Impression material.
- * Exploration probe.

* Material not supplied by Teetanium.

Material, abutments, and instruments for the laboratory
- Analog of implant Teetanium.
- 1.25mm screwdriver.
- Wrench screwdriver tip 1.25mm.
- *Material needed for manufacture the acrylic overdenture.
- *Rotary cutting-roughing and polishing instruments for handpieces (burs, discs, abrasive rubbers, etc.).

* Material not supplied by Teetanium.

Clinic: Impression taking
24. Perform impression taking with the abutment- or implant-level transfer (detailed in section 4)

A) Laboratory: Manufacturing of the anatomical model
25. Manufacture the anatomical model (detailed in section 4)

B) Laboratory: Manufacturing the definitive prosthesis
26. Place the ball abutment on the working cast. Adjust with the screw driver.
27. Check the soft tissue fit from the implant shoulder to the free gingival margin to determine the transmucosal height of the ball abutment.
28. A light-curing baseplate that incorporates the metal housings (ball abutment metal cap) is fabricated on the working cast.
29. A bite rim is fabricated on the baseplate containing the metal housings (ball abutment metal cap) and sent to the dentist for interocclusal records.
30. After interocclusal records, a stabilized overdenture wax try-in is fabricated in the laboratory using the baseplate and bite rim assembly.

C) CAD-CAM prosthesis
Follow the specific procedure for the selected CAD-CAM supplier.

Clinic: Test of the ball retained overdenture

31. Remove the healing abutment.
32. Mount the Teetanium ball abutments in the mouth.
33. Spacers are snapped onto each of the ball abutments, then the baseplate is inserted onto the housings as the wax-up is placed into the mouth for final adjustments and patients approval.
34. Check the fit between the ball abutment and the O-ring sleeves
35. Check adjustment by x-ray.
36. Remove the prosthesis.
37. Remove the Teetanium abutment.
38. Replace the healing abutment.

Laboratory: Finishing the definitive prosthesis

39. Prepare the overdenture following the specific lab procedures.
40. Before the processing of the definitive overdenture, the housing-and-spacer assemblies are prepared for incorporation into a new denture base on the working cast.
41. After lab processing the prosthesis is returned to the dentist for final assembly of the retentive sockets.

Clinic: Fixation of the prosthesis

42. Remove the healing abutment.
43. Mount the Teetanium abutments in the mouth at 35 Ncm.
44. Check adjustment by periapical x-ray
45. Place the female sockets one housing at time is assembled with a rubber liner.
46. Check the following aspects:
    - Proper retention of the rubber liner. Retention can be decreased, if necessary.
    - Definitive prosthesis snaps onto the ball attachments for retention and stabilization of the tissue supported overdenture prosthesis.
    - Occlusion
    - Relation of the overdenture edges with the soft tissues
    -

6. TEETANIUM TORQUE

6.1. IMPLANT-LEVEL

Product	Torque	
Healing abutment	Manual adjustment	
Healing abutment	Manual adjustment	
Impression transfer screw	Manual adjustment	
Screw-retained Teetanium abutment (straight or angled)	35 N·cm	
Teetanium Drillable abutment (straight or angled)	Temporary	25 Ncm
	Definitive	35 Ncm
Laboratory screw	Manual adjustment	
Clinic screw on prosthetic structures / CAD/CAM	Definitive (Co-Cr/Ti/Zr)	35 Ncm
	Temporary (PMMA)	15 N·cm

6.2. ABUTMENT-LEVEL

Product	Torque	
Protection cap	25 Ncm	
Impression transfer screw	Manual adjustment	
Clinic screw on prosthetic structures / CAD/CAM	Temporary (coping)	25 Ncm
	Definitive (CrCo/Ti/Zr)	25 Ncm
	Temporary (PMMA)	15 Ncm
Laboratory screw	Manual adjustment	

Meaning of symbols used in labelling are described below:

	Consult electronic instructions for use
	Caution
	Reference number
	Batch code
	Sterilized using irradiation
	Non-sterile
	Do not resterilise
	Keep away from sunlight
	Do not use if the product's sterilisation barrier has been compromised
	Do not re-use
	Expiry date
	Manufacturer
	Date of manufacture
	CE" with the intervention of the Notified Body
	Temperature limit
	This is a Medical Device
	Unique device identifier (UDI)
Rx Only	Prescription devices (FDA).

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END OF DOCUMENT

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