issn 1868-3207 Sondernummer · Vol. 8 · Issue 2/2024

CI ceramic implants

2/24

50 INT. • 30 YEARS OF OEMUS MEDIA & 20 YEARS OF DENTAL TRIBUNE

AND THIS IS JUST THE BEGINNING

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international magazine of **ceramic implant technology**

case report
Single unit implant rehabilitation in the aesthetic area

research
Impact of periodontitis on systemic health and on implants

events
ESCI satellite symposium 2024

oemus

February 8, 2025

SOPIO & EACim MEETING

Lisbon University
Portugal

Ceramic Implant as an alternative to Titanium

•

Immediacy in Implant Dentistry

INTERNATIONALLY RENOWNED LECTURERS WITH LONG EXPERIENCE IN IMPLANTOLOGY

João Caramês / André Moreira / Helena Francisco / Paulo Carvalho / Luca Stavola
Juan Blanco / Giancarlo Bianca / Oliver Cheron / Amandine Para / Fabrice Baudot

Lectures in **English**

9h15 - 9h30 • Opening and presentation of the seminar

9h30 - 10h10 • Paulo Carvalho
10h10 - 10h50 • João Caramês
10h50 - 11h20 • Coffee Break
11h20 - 12h00 • Luca Stavola
12h00 - 12h40 • Juan Blanco
12h40 - 13h10 • Morning round table
13h10 - 14h20 • Lunch

14h20 - 15h00 • Giancarlo Bianca
15h00 - 15h40 • Oliver Cheron
15h40 - 16h00 • Coffee Break
16h00 - 16h40 • Fabrice Baudot
16h40 - 17h20 • Amandine Para
17h20 - 17h50 • Evening round table
17h50 - 18h00 • Closing

INFORMATION & REGISTRATION

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Timo Krause
Germany
Editorial Manager

Timo Krause

Don Quixote—quitting is no option

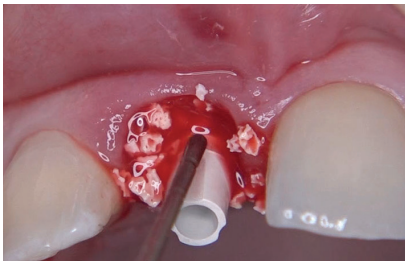
Let's begin with a brief history lesson: the earliest attempts at dental prosthetics date back to the 5th millennium BCE. Archaeological illustrations show how shell fragments were used to replace extracted teeth. Remarkably, this material came directly from nature—composed of calcium carbonate, magnesium carbonate, silicates, clay minerals, and organic components.

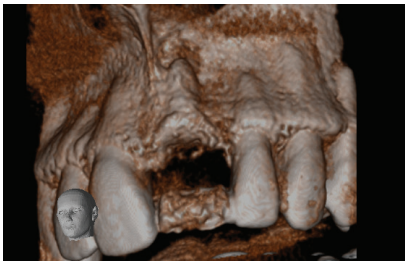
Even in ancient times, dentures made of ivory or walrus tusks were common. These "teeth" were secured with gold bands and threads around neighbouring teeth.

Then, in 1806, Giuseppangelo Fonzi may have invented the first artificial ceramic tooth, designed to meet both functional and aesthetic standards. This innovation was a milestone, paving the way for further development in dental solutions.

Starting in the 1960s, the focused development of dental implants began. Early attempts were made with aluminium oxide to create a system that could be mass-

CONTENT





produced. Although there were setbacks, the idea of a metal-free alternative to popular titanium implants stuck with many pioneers. In the 1990s, they developed new solutions using zirconia, a type of ceramic that was stronger and more resilient than aluminium oxide. The benefits of this new material were quickly recognised in the dental field.

Where are we today? Zirconia implants have now shed their niche status and established themselves in modern dentistry. From a small group of enthusiasts, a global network of experts has emerged. They regularly exchange ideas, bringing fresh perspectives to the industry, which in turn continuously refines these materials.

And where will this lead? We don't know for sure. But we do know that ceramic implantology remains a niche for many and is sometimes underestimated due to the material's specific properties. However, zirconia implants, as stated by numerous studies and committees, now offer a competitive alternative to metal. Although ceramic implantology is sometimes viewed with skepticism, many advanced concepts have developed around the implanting process itself, contributing significantly to successful treatments.

Ceramic implantology is neither magic nor a game; it is serious business, and those specialising in this field deserve to be taken seriously. With *ceramic implants*, we aim to provide all ceramic implantology specialists with a platform and a voice.

So, let's not give up—let's break down the barriers standing in our way together and let us continue to fight against the windmills of scepsis, harsh critic and laughter. Don Quixote 2.0.

Sincerely

Timo Krause

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CONTENT

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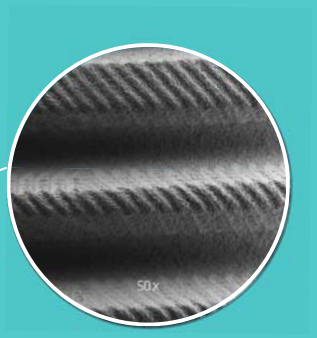

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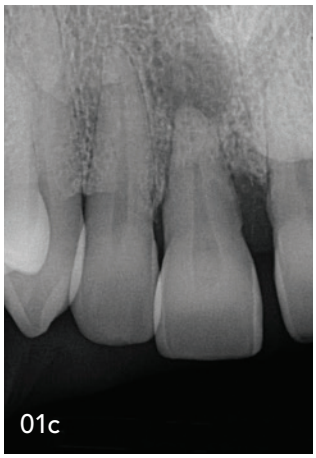
Single unit implant rehabilitation in the aesthetic area

Zi Ceramic Implant System in use with immediate loading associated with Socket Shield technique

Dr Geninho Thomé, Carolina Accorsi Cartelli, Dr Sérgio Rocha Bernardes, Dr Jean Uhlendorf, Brazil



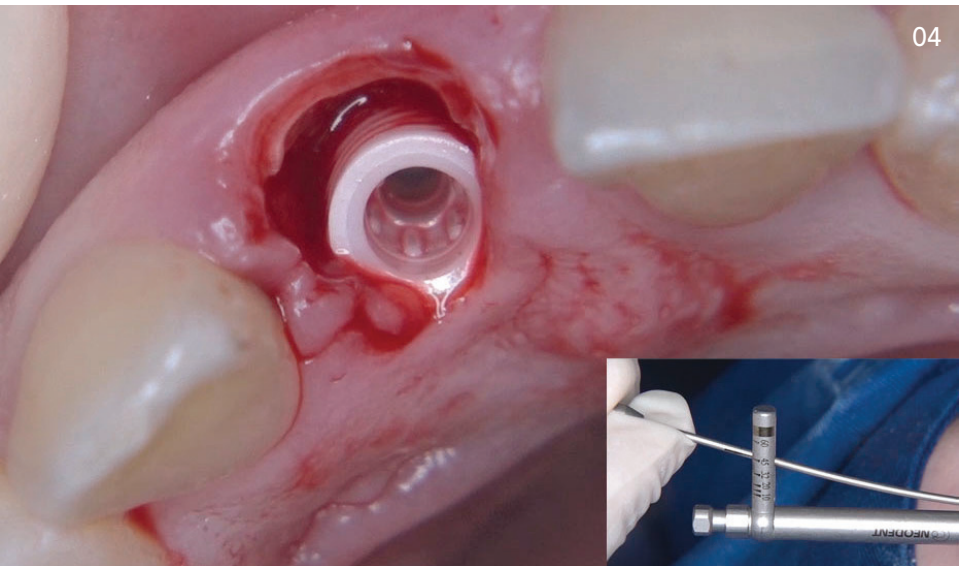
01a–c
Patient's initial situation: patient's smile, occlusal view and periapical X-ray (tooth 11).

"The Socket Shield prevents bone loss and gingival recession while enhancing implant stability and producing a more natural-looking outcome."

Introduction

To restore teeth to their natural appearance and function, aesthetic rehabilitation in dentistry requires accuracy. The selection of methods and materials is essential. Due to their exceptional biocompatibility and attractive features, two-piece injection-molded zirconia implants have gained enormous attention.[1,2]

High biocompatibility of zirconia implants lowers the risk of rejection and inflammation, among other benefits.[3] Compared to standard titanium implants, their white hue closely matches natural teeth, offering greater aesthetics.[4] The injection molding technology in their production ensures perfect adaptation and long-term durability due to its high accuracy and strength.[5] Because of these qualities, zirconia implants combine practical and aesthetic advantages, making them a promising alternative for dental restorations.[6]



02–04
Steps of the surgery: occlusal view after dental section and maintenance of the buccal fragment. Evidence of thread formation in the dental socket. Neodent® Zi 4.3 x 13 mm implant installed (45 Ncm).

The Socket Shield method preserves a portion of the native tooth root after implant insertion, the alveolar bone and surrounding soft tissues are kept intact. This prevents bone loss and gingival recession while enhancing implant stability and producing a more natural-looking outcome.[7] Inject-molded zirconia implants combined with the Socket Shield method are a significant break-through in cosmetic dentistry that provides excellent aesthetic and functional outcomes.[7,8]

In addition to their visibility and aesthetic requirements, dental operations in the maxillary aesthetic areas can be extremely difficult. To guarantee immediate loading, long-term functionality, and harmonious soft tissue aesthetics, these procedures require meticulous and customised planning.[9]
Considering the functional and aesthetic requirements of the clinical case, this study uses a two-piece ceramic implant with the Socket Shield technique to treat the right central incisor region.

General aspects and health conditions

Female, 37 years old, with aesthetic complaints due to the presence of diastema between the upper central incisors with a progressive increase in the space between the teeth over time. (Figs. 1a & b). After the clinical evaluation and periodontal probing, periodontal involvement of the right incisor was ob-

“Ceramic implants have been indicated more frequently over the years, especially in cases of rehabilitation in anterior regions (upper jaw) in patients who have high aesthetic expectations.”

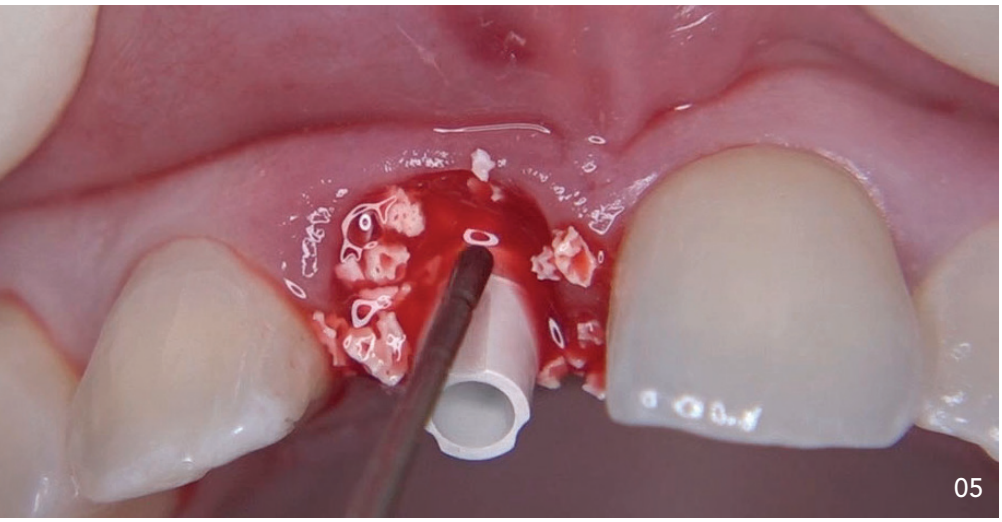
served: deep probing (more than 6 mm in 03 sites) and grade I mobility. After carrying out imaging exams: panoramic, periapical radiographs and CBCT, crestal bone resorption and periapical lesion were observed (Fig. 1c). Considering this diagnostic, the installation of a ceramic implant in the region of tooth 11 was proposed for the patient, using the Socket Shield technique followed by upper lip frenectomy and immediate loading.

Surgical technique

Initially, an anaesthetic infiltration block was performed in the anterior portion of the right superior alveolar nerve and complemented by palatal with subperiosteal infiltration. To preserve the buccal bone wall and maintain the thickness of connective tissue on the same face, it was decided to perform the Socket Shield surgical technique, preserving the buccal fragment of the root (infraosseous). Started with a dental section (Zeckria drill), removation of the palatal portion of the root and curettage of the periapical lesion, followed by grinding and finishing (conical diamond drill with rounded end) of the buccal root fragment (Fig. 2). Then the drilling protocol was made according to the manufacturer’s instructions: Spear drill, conical drill Ø 2.0, Ø 3.5, Ø 4.3 and drill for threading (tapping) with Ø 4.3 respectively (Fig. 3). The Neodent® Zi 4.3 x 13 mm implant was installed in the region reaching 45 Ncm of torque, allowing immediate load. The space (gap) between the implant surface and the root portion was filled with particulate bone (Cerabone Straumann®; Fig. 4).

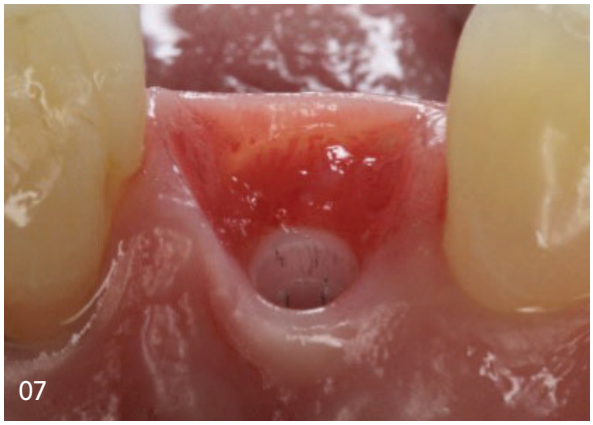
Prosthetic rehabilitation

After implant installation, the narrow PEEK CR abutment (4.0 x 1.5 mm) was selected (Fig. 5). A temporary cylinder was installed to capture the acrylic resin crown, using resin cement, for subsequent installation of the screw-retained crown (torque of 32 Ncm,

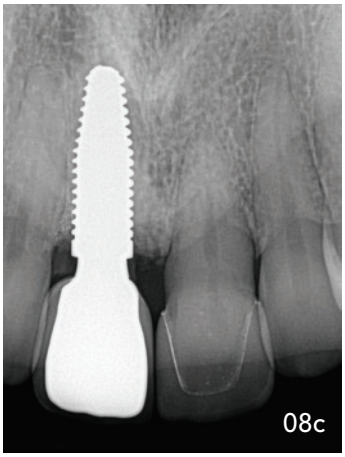


05 + 06
Surgical step: CR abutment installed and insertion of the bone graft (Cerabone Straumann) into the gap. Patient’s smile after implant installation and immediate temporary prosthesis.

07
Follow-up (five months) showing the healthy appearance of gingival tissue after removing the prothesis for the scanning of the final crown.



08a–c
Follow-up (two years of the installation of the implant): buccal and occlusal views, and X-ray.



“Two-piece zirconia implants also avoid wound healing problems and undesirable loading during the healing period, which are disadvantages of one-piece zirconia implants.”

Fig. 6). In the fifth month of postoperative follow-up, the provisional prosthesis was unscrewed (Fig. 7), and the scanning was done to create the definitive prosthesis. The scan body was installed, and through intra-oral scanning, the definitive prosthesis was manufactured (Zirconia). Thus, using the printed model, the crown was cemented onto the ZiBase (3.75 x 4.0 x 1.5) with resin cement and then installed with 32 Ncm of torque.

Discussion and final considerations

Ceramic implants have been indicated more frequently over the years, especially in cases of rehabilitation in anterior regions (upper jaw) in patients who have high aesthetic expectations. Clinical performance of two-piece zirconia dental implants after five and up to 12 years.[10] The literature about ceramic implants shows satisfactory results about the biological, mechanical, and aesthetic properties.[1,2,11]

In this case, it was decided to use the surgical technique called Socket Shield and the use of a Zi System implant (Neodent) to achieve a completely satisfactory result. Maintenance of the buccal root fragment provides anatomical preservation of periodontal structures and prevents long-term recession of the bone