

Removal of Garbaccio-Type Implants Using a Conventional Locking Plier: A Clinical Case Report

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Abstract

Objective: To describe a simplified, low-cost, and clinically applicable technique for removing Garbaccio-type implants using a conventional locking plier associated with cervical bone reduction.

Case Report: An 80-year-old female patient presented for full oral rehabilitation. Clinical and radiographic examination revealed multiple outdated Garbaccio-type implants placed over 30 years ago, as well as a conventional implant in the region of tooth 23.

Implant removal was indicated to allow optimal positioning of new osseointegrated implants. The proposed technique consisted of cervical bone reduction followed by mechanical engagement using a locking plier, enabling reverse torque application (retriever-like effect).

Four mandibular implants were successfully removed. The maxillary implant fractured at the apical portion, preventing complete removal. The conventional implant showed failure of the reverse torque retriever, which fractured inside the implant. The locking plier technique was subsequently applied successfully.

Results: The technique enabled effective implant removal with minimal bone loss and allowed predictable placement of new implants and prosthetic rehabilitation.

Conclusion: The proposed method represents a viable, accessible, and effective alternative for removing obsolete implant systems and conventional implants with fractured retrieval devices.

Keywords: Dental Implants; Implant Removal; Garbaccio; Oral Rehabilitation; Implant Dentistry

Introduction

Before the introduction of osseointegrated implants by Brånemark, several empirical implant designs were used, including needle implants and screw-type systems such as Garbaccio implants. These systems lacked standardized surgical and prosthetic protocols, frequently leading to compromised functional and aesthetic outcomes [1,2].

Although currently obsolete, such implants are still encountered in clinical practice and often require removal to enable modern implant rehabilitation [3]. However, their removal remains challenging due to the absence of prosthetic interfaces, cylindrical geometry, and limited mechanical resistance, which restrict the use of conventional removal systems such as reverse torque devices (retrievers) [4-6].

Additionally, mechanical complications such as fracture of retrieval devices during implant removal are well documented and may further complicate clinical management [7-9].

The present study describes a simplified technique using a conventional locking plier, expanding the therapeutic possibilities for implant removal in complex clinical scenarios.

Case Report

An 80-year-old female patient presented seeking full oral rehabilitation.

Clinical and radiographic examination (Figure 1 and 2) revealed multiple Garbaccio-type implants in the mandible and one conventional implant in region 23.

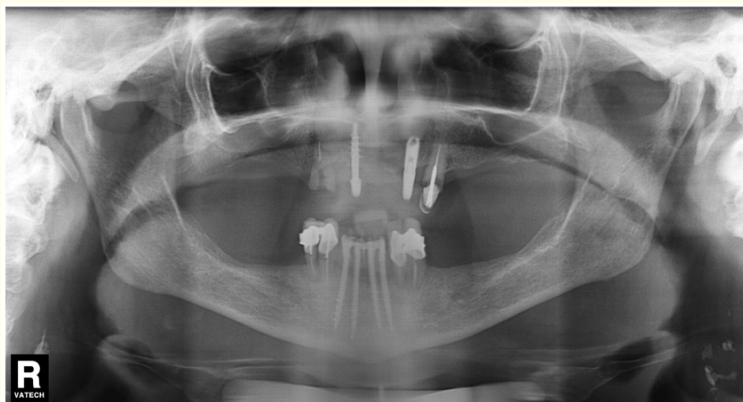


Figure 1



Figure 2

Surgical technique

The removal protocol consisted of:

- Cervical bone reduction (Figure 3).
- Mechanical engagement using a locking plier.
- Application of reverse torque (retriever-like effect).

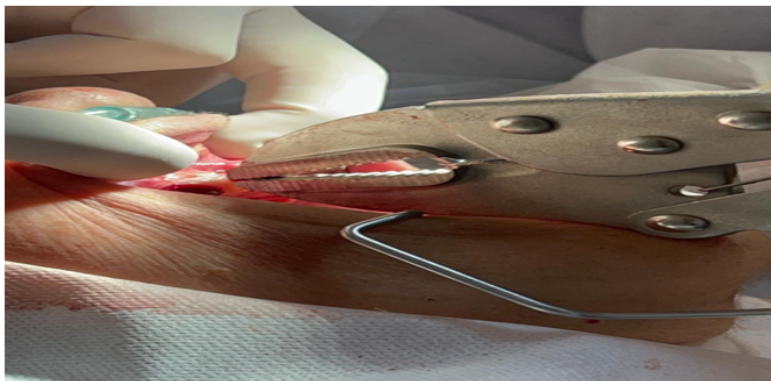


Figure 3

Four mandibular implants were successfully removed (Figure 4).

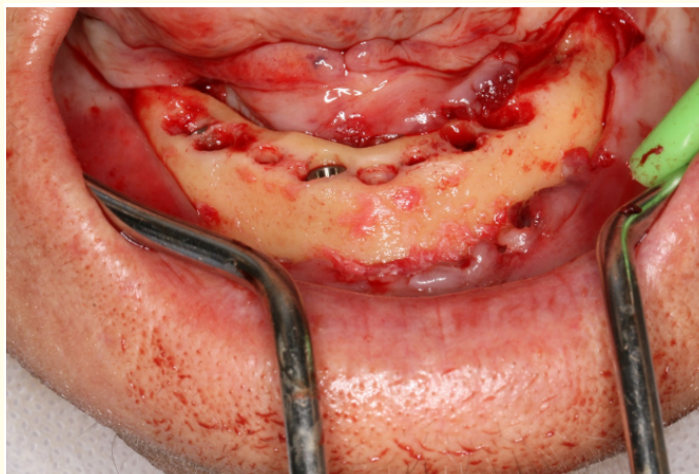


Figure 4

The maxillary implant fractured at the apical portion (Figure 5), preventing complete removal through this technique.

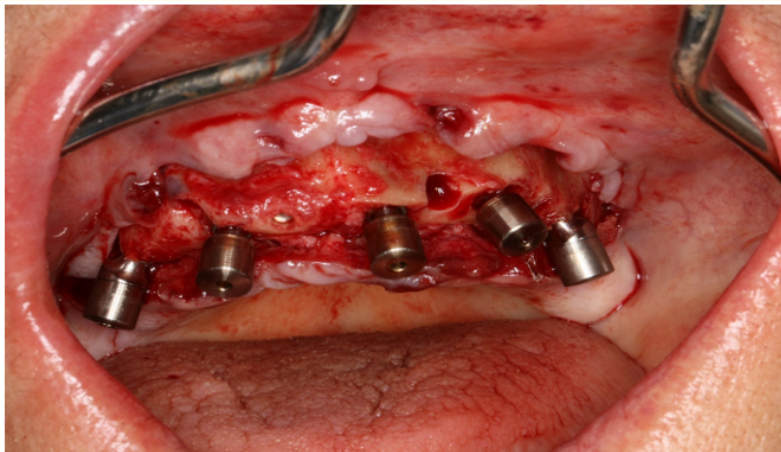


Figure 5

The conventional implant in region 23 presented failure of the reverse torque retriever, which fractured inside the implant. The locking plier technique was subsequently applied successfully (Figure 6).



Figure 6

Following implant removal, new implants were placed in ideal positions, followed by suturing (Figure 7).

Final outcomes were confirmed by radiographic (Figure 8) and clinical evaluation (Figure 9).

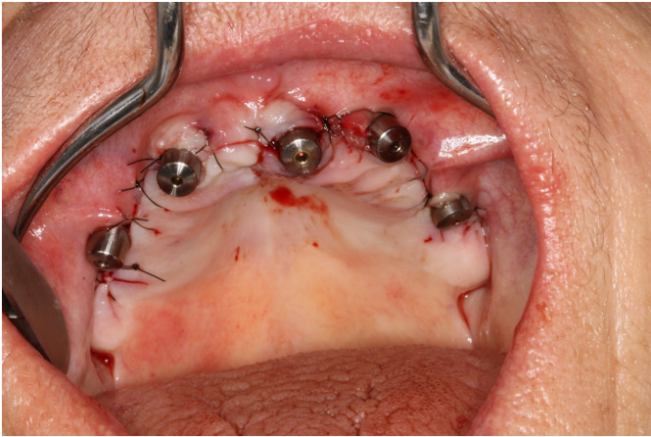


Figure 7

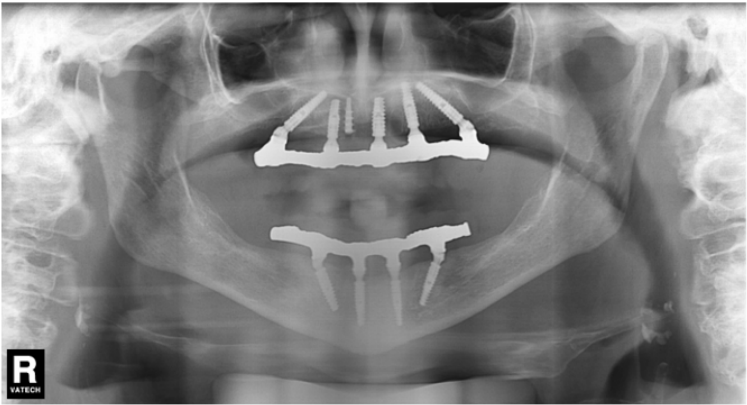


Figure 8



Figure 9

Discussion

The removal of non-standard implant systems such as Garbaccio implants remains a significant clinical challenge. Their cylindrical design and lack of prosthetic interfaces prevent the use of conventional removal devices, particularly reverse torque systems [4-6].

Several techniques have been proposed for implant removal, including the use of trephine burs, piezoelectric surgery, and laser-assisted approaches [8,9,16]. While effective, these methods are associated with increased invasiveness, higher cost, and potential bone loss.

Reverse torque devices are considered a conservative alternative; however, their application is limited to implants with compatible internal connections. Moreover, fractures of retrieval devices are frequently reported and may complicate implant removal procedures [13-15,17].

In such situations, the implant-retriever complex behaves as a solid metallic structure, allowing alternative mechanical engagement strategies.

The present case demonstrates that the use of a conventional locking plier, combined with cervical bone reduction, provides sufficient mechanical grip and torque to enable implant removal. Compared to trephine techniques, this method may reduce bone loss and surgical morbidity [10,11,18].

Furthermore, this technique proved effective in removing a conventional implant with a fractured retrieval device, highlighting its expanded clinical applicability.

To the authors' knowledge, this is one of the few reports describing the use of a locking plier for implant removal, particularly in cases involving fractured retrieval devices.

Limitations of the Study

This study presents limitations inherent to a single-case report. The success of the technique may depend on factors such as implant accessibility and patient mouth opening, which allowed the use of a larger instrument in this case.

Conclusion

The locking plier technique represents a simple, accessible, and effective method for removing Garbaccio-type implants and conventional implants with fractured retrieval devices.

Its success may be influenced by clinical factors such as mouth opening and implant accessibility.

This approach may be considered a valuable alternative in complex implant removal scenarios, enabling predictable rehabilitation with modern implant systems.

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