

**Prosthodontic Rehabilitation with Telescopic Overdenture: An Alternative for Severely Compromised Teeth**

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**Citation of this Article:** Dr. Pallavi Thalakola, Dr. Rachel R. Changrani, Dr. Kawalpreet Kaur Kalra, Dr. Ritu Mohindra, Dr. Mohd Anwar, Dr. Deeksha Chaudhary, “Prosthodontic Rehabilitation with Telescopic Overdenture: An Alternative for Severely Compromised Teeth”, IJDSIR- September – 2025, Volume – 8, Issue – 5, P. No. 05 – 09.

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**Type of Publication:** Original Research Article

**Conflicts of Interest:** Nil

**Abstract**

**Background:** Loss of teeth continues to be a significant challenge in geriatric and compromised dental patients. While complete dentures have long been used to restore function and esthetics in edentulous patients, their limitations in stability and bone preservation are well documented. In cases where teeth remain but are severely compromised, extractions followed by complete dentures or implant-supported prostheses are often considered. However, complete dentures accelerate alveolar resorption, while implants may be limited by systemic health, economic constraints, or inadequate bone volume. Telescopic overdentures, utilizing a system of primary and secondary copings, provide an alternative strategy

that maximizes the utility of remaining teeth and improves prosthesis stability.

**Objective:** This article reviews the role of telescopic overdentures in prosthodontic rehabilitation for patients with severely compromised teeth, examining their biomechanical principles, clinical indications, advantages, limitations, and future prospects.

**Methods:** A narrative literature review was conducted using databases such as PubMed, Scopus, and Google Scholar, focusing on telescopic overdentures, compromised dentition, and prosthodontic rehabilitation strategies. Articles published between 1990 and 2024 were considered.

**Results and Discussion:** Telescopic overdentures distribute occlusal loads axially, preserve residual

dentition, and enhance retention compared to conventional dentures. They improve patient satisfaction by maintaining proprioception, esthetics, and stability. However, they are technique-sensitive, time-consuming, and require meticulous hygiene maintenance. Their success largely depends on accurate fabrication and patient compliance.

**Conclusion:** Telescopic overdentures represent a valuable alternative for patients with severely compromised teeth when implants are not feasible. Advances in digital dentistry and biomaterials are expected to further enhance their clinical applicability and long-term outcomes.

**Keywords:** Telescopic overdenture, Double crown system, Severely compromised dentition, Prosthodontic rehabilitation, Retentive prosthesis, Alternative to implants

### Introduction

The preservation and restoration of oral function in patients with compromised dentition has long been a cornerstone of prosthodontics. With advancing age, periodontal disease, and caries, many patients present with severely reduced numbers of teeth, often with compromised periodontal support. Traditionally, such cases were managed with complete dentures following extraction of the remaining teeth. However, complete dentures are associated with significant drawbacks including poor retention, impaired masticatory efficiency, reduced patient confidence, and progressive alveolar bone resorption.<sup>1,2</sup>

Implant-supported prostheses have emerged as a gold standard in modern prosthodontics due to their superior function, esthetics, and patient satisfaction. Nonetheless, systemic conditions such as diabetes, osteoporosis, or cardiovascular disease, along with financial limitations and inadequate bone availability, may restrict their use.<sup>3</sup>

In such situations, telescopic overdentures offer a middle ground between complete dentures and implant-supported prostheses. By retaining and utilizing remaining compromised teeth through primary and secondary coping systems, telescopic overdentures ensure retention, distribute masticatory loads axially, and preserve alveolar bone, all while providing patients with a removable, hygienic solution.

### Discussion

#### 1. Biomechanical Basis of Telescopic Overdentures<sup>4</sup>

The telescopic overdenture is based on a double crown system comprising:

- **Primary coping (inner crown):** Cemented permanently to the prepared abutment tooth.
- **Secondary coping (outer crown):** Integrated into the removable denture and fitting over the primary coping.

This arrangement creates frictional retention and ensures parallel path of insertion. The advantages of this biomechanical design include:<sup>5,6</sup>

- **Axial load transmission:** Functional forces are directed along the long axis of abutments, reducing tipping and lateral forces.
- **Splinting effect:** Multiple abutments connected through the overdenture increase stability and reduce tooth mobility.
- **Stress distribution:** Forces are shared between the teeth and edentulous ridge, preventing overloading of a single structure.
- **Retention and stability:** Friction and precision fit provide greater resistance to dislodgement compared to conventional dentures.

#### 2. Clinical Indications<sup>7,8</sup>

Telescopic overdentures are particularly useful in the following scenarios:

- Patients with few remaining teeth (often 2–6), compromised but strategically distributed across arches.
- Periodontally weakened teeth that can be splinted and preserved rather than extracted.
- Contraindications to implants such as systemic disease, anticoagulant therapy, or patient reluctance for surgery.
- Elderly patients requiring minimally invasive and cost-effective solutions.
- Cases with esthetic requirements where conventional dentures would compromise appearance.

### 3. Advantages<sup>9,10</sup>

- **Preservation of natural teeth:** Retaining even compromised teeth helps preserve alveolar bone and proprioception.
- **Improved retention and stability:** Telescopic copings enhance denture stability compared to conventional dentures.
- **Esthetics:** Metal copings can be hidden under denture material, providing good cosmetic outcomes.

### 5. Comparison with Alternatives<sup>14-17</sup>

Aspect	Conventional Denture	Implant Prosthesis	Telescopic Overdenture
Retention	Low to moderate	Excellent	High (via copings)
Stability	Moderate	Excellent	Good–Excellent
Bone preservation	Minimal	Strong	Moderate (retained teeth)
Cost	Low	High	Moderate
Surgical need	None	Yes	None
Hygiene	Easy	Moderate	Easy (removable)

This table highlights that telescopic overdentures provide a balanced compromise between affordability, function, and tissue preservation.

- **Ease of hygiene:** Removable design allows thorough cleaning of both abutments and prosthesis.
- **Longevity and adaptability:** Can be modified if additional teeth are lost over time.
- **Psychological benefit:** Patients retain their natural teeth, avoiding the psychological trauma of complete edentulism.

### 4. Limitations<sup>11-13</sup>

Despite its advantages, telescopic overdenture therapy has challenges:

- **Technique sensitivity:** Requires precise preparation, parallelism, and laboratory procedures.
- **Increased treatment time:** Multiple steps including coping fabrication, adjustment, and verification.
- **Higher cost:** More expensive than conventional dentures due to additional lab work and materials.
- **Maintenance issues:** Caries, periodontal problems, or coping wear can compromise long-term success.
- **Dependence on patient compliance:** Requires rigorous hygiene practices and regular follow-up.

### Conclusion

Telescopic overdentures provide a unique prosthodontic alternative for patients with severely compromised dentition. They preserve natural abutments, enhance retention and stability, improve function and esthetics,

and minimize bone loss compared to conventional dentures. While more complex and costly than traditional removable dentures, they remain invaluable in situations where implants are contraindicated or declined.

### Future Directions

1. **Integration of Digital Dentistry:** CAD/CAM technology and intraoral scanning will enhance precision in coping design, reduce errors, and shorten treatment time.
2. **Advanced Materials:** The use of zirconia, titanium alloys, and high-performance ceramics for primary copings may improve wear resistance and esthetics.
3. **Hybrid Designs:** Combination of telescopic overdentures with strategically placed implants may improve long-term retention in patients with severely reduced dentition.
4. **Patient-Centered Protocols:** Simplification of clinical steps and cost reduction strategies will make telescopic overdentures more accessible in general practice.
5. **Long-Term Clinical Research:** Well-designed clinical trials with long-term follow-up are needed to establish evidence-based survival rates, patient satisfaction indices, and cost-effectiveness compared to implants.

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