TECHNICAL NOTE

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Self-stabilizing interdental traction sutures for palatal flap retraction during impacted maxillary canine exposure: a technical note

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Abstract (J Korean Assoc Oral Maxillofac Surg 2026;52:100-103)

We describe a simple technique in which traction sutures placed at the palatal flap margin are passed through interdental embrasures and stabilized against adjacent teeth in the contra-lateral arch. This technique was used for 10 patients with impacted maxillary canines.
In our clinical use, the technique eliminated the continuous demand of manual retraction, slippage of retractors during the procedure, palatal flap tear due to uneven distribution of retraction forces. Self-stabilizing interdental traction sutures are a practical, reproducible, and minimally invasive adjunct for palatal flap retraction during surgical exposure of impacted canines in selected clinical situations. The technique is particularly advantageous in single-surgeon procedures, resource-limited settings, and cases requiring prolonged palatal exposure for adjunctive orthodontic procedures, including button or attachment placement.

Key words: Maxillary canine, Impacted tooth, Surgical flaps, Sutures

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I. Introduction

The second most common impacted tooth after third molars is the maxillary canine. The palatal impaction being a common presentation with a prevalence between 0.3%-2.4% and showing a higher predilection in females than in males[1]. Several surgical techniques have been introduced in the literature for the exposure of the impacted canine. An ideal surgical exposure of an impacted maxillary canine requires a full thickness mucoperiosteal flap elevation and constant retraction to permit bone removal covering the impacted tooth[2,3].

This is achieved conventionally with the help of handheld retractors usually by an assistant.

Technical modifications that simplify flap retraction while reducing instrument crowding are desirable. We present a self-stabilizing interdental traction suture technique that provides secure and atraumatic retraction of palatal flap during impacted canine exposure sans the need for continuous handheld retraction by an assistant.

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II. Technical Note

1. Step 1

Following administration of local anaesthesia, a full-thickness mucoperiosteal palatal flap is elevated to expose the cortical bone overlying the impacted maxillary canine.

2. Step 2

After flap elevation, a 3-0 silk suture is placed through the free margin of the flap approximately 2-3 mm from its edge. The needle is then passed interdentally between contra-lateral premolars or molars, allowing the suture to loop around the cervical embrasure.

3. Step 3

Gentle tension is applied, anchoring the flap margin against

the natural contour of the teeth opening the flap like a book exposing the impacted maxillary canine.

4. Step 4

One or more sutures may be placed depending on the extent of flap elevation.

This technique creates a stable operative field for bone removal and exposure of the canine crown.(Fig. 1, 2) At the conclusion of the procedure, the interdental sutures were removed and the flap was repositioned and sutured in the conventional manner. This technique was used for 10 patients with impacted maxillary canines.

5. Case example

A 17-year-old patient with a palatally impacted maxillary canine underwent surgical exposure using Rajguru–Shenoi technique. Retraction was stable throughout the procedure without any palatal flap tear. Postoperative healing was satisfactory with no evidence of interdental papilla trauma.

III. Discussion

Conventional palatal flap retraction during impacted maxillary canine exposure relies on manual retraction using handheld instruments, often requiring continuous assistance. This approach may crowd the limited palatal operative field, obstruct visualization, and result in unstable or uneven retraction.

Surgical exposure of palatally impacted maxillary canines is commonly performed using either an open or closed exposure technique. In the closed technique, the canine is uncovered, an attachment such as an eyelet or gold chain is bonded, and the palatal flap is repositioned over the tooth. In contrast, the open technique involves removal of the overlying palatal soft tissue, leaving the canine crown exposed for direct orthodontic traction[4].

The self-stabilizing interdental traction suture technique described in this report serves as an adjunctive method for flap retraction, allowing stable, atraumatic, and hands-free exposure of the surgical site. By anchoring the flap interdentally, the technique eliminates the need for auxiliary retraction and reduces dependence on assistant-held retractors and minimizes instrument interference within the operative field.

Advantages: (1) Hands-free retraction: A wider surgical field sans the retractor. (2) Simplicity: Requires only silk sutures, no specialized instruments. (3) Safety: Even distribution of traction reduces risk of flap tearing. (4) Accessibility: Particularly useful in resource-limited environments. (5) Application: Applicability in selected cases, particularly during single-surgeon procedures or when additional procedures such as orthodontic attachment placement are required.

The importance of adequate exposure during impacted maxillary canine surgery has been highlighted in the litera-

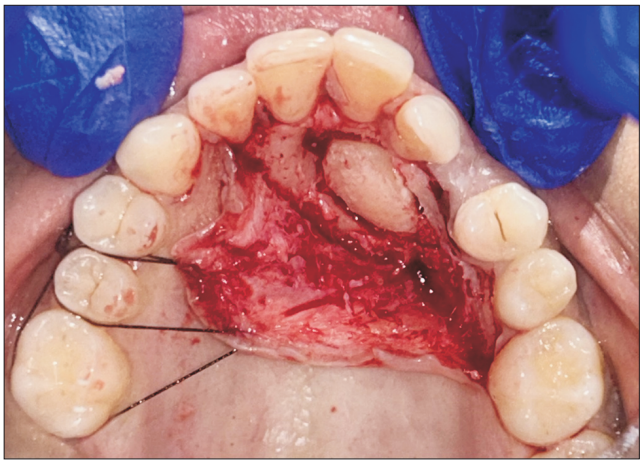


Fig. 1. Flap stabilized without assistant retraction, exposing crown of impacted canine.
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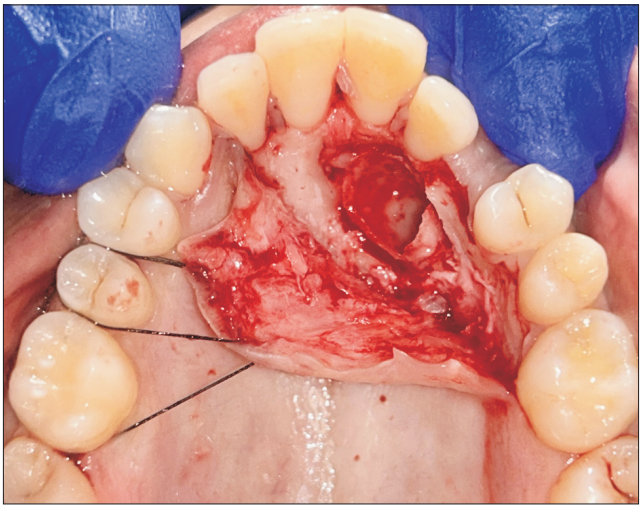


Fig. 2. Rajguru–Shenoi technique: Self-stabilizing interdental traction sutures for palatal flap retraction.
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ture. Lwin et al.[5] reported that successful surgical exposure was significantly associated with the open exposure technique and improved access to the impacted canine crown. Conversely, factors such as limited visibility, unfavourable canine position, and increased surgical difficulty were associated with a higher likelihood of repeat surgical intervention. While the present technique does not alter the biological or positional factors influencing treatment outcomes, it may facilitate optimal exposure by maintaining stable retraction and unobstructed visualization throughout the procedure.

The conventional retraction during palatal impacted canine exposure depends on handheld retractors and assistants which demands a continuous manual retraction, may cause instrument slippage, uneven or excessive traction may damage the flap and obstruct the field.

The Rajguru–Shenoi technique directly addresses these limitations. It secures the flap interdentally, eliminates the need for continuous assistant held manual retraction, provides stable interdental anchorage resistant to instrument slippage, distributes forces evenly along the flap margin to prevent palatal flap tears and maintains pristine surgical field without obstructions like instruments or hands.

1. Limitations

The technique is not universally applicable and should be used selectively. Limitations include: (1) Requirement for intact adjacent teeth to permit secure interdental anchorage. (2) Careful suture placement is necessary to avoid trauma to interdental papillae, particularly in patients with thin gingival biotypes.

Despite these considerations, the method offers an efficient and reproducible alternative to conventional flap retraction.

2. Conclusion

This technique is intended to complement conventional flap retraction methods and should be used as an adjunct rather than a replacement, based on clinical judgment and case selection. When applied judiciously, it adds to the existing spectrum of surgical strategies aimed at improving efficiency and visibility during impacted maxillary canine exposure.

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Authors' Contributions

J.R. conceptualized the technique, performed surgeries, and drafted the manuscript. R.S. contributed to study design, supervision, and critical revision of the manuscript. Both authors read and approved the final manuscript.

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Ethics Approval and Consent to Participate

Ethical approval was not required for this technical note as it describes a surgical technique routinely used in clinical practice without any experimental intervention. Written informed consent was obtained from the patient for the procedure and for the use of clinical photographs and anonymized data for academic and publication purposes. Patient confidentiality has been strictly maintained in accordance with ethical standards and the Declaration of Helsinki.

Consent for Publishing Photographs

Written informed consent was obtained from the patient's guardian for publication of this article and accompanying images.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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