Modified Surgical Technique of Transpalatal Distraction

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Summary

Transpalatal distraction (TPD) is a well-proven method in correcting transversal maxillary discrepancies and tooth crowding. A new surgical technique was developed to help avoiding some draw-backs of the originally described technique. This modified operative technique was performed on 6 patients under general anaesthesia in Budapest, Hungary. There was no postoperative complication observed until now. This technique helps in placing the abutment plates in extremely narrow palatal vaults, gives a direct view to the bony surface of the palatal vault and ensures easier manipulation of the abutment plates. It also enables visualization of the maxillary root contours.

Introduction

Transpalatal distraction (TPD) is a well-proven method in correcting transversal maxillary discrepancies and tooth crowding. The distraction device (Transpalatal Distractor™, Surgitec, Belgium) is fixed to abutment plates, which are placed under the palatal mucosa. According to the original description, placement of these plates is done through a T-shaped transmucosal incision. This incision is at the same level, where the plates are positioned. In case of extremely narrow palatal vaults, it is very tedious to position the abutments plates properly, due to lack of space and thick mucosa. A new surgical technique was developed to help avoiding this draw-back.

Materials and methods

Placement of Transpalatal Distractor™ device is done under general anaes-
thesis. After local infiltration of the palate bilateral with an anaesthetic solution containing a vasocostricctor, the palatal incisions run along the palatal marginal gingiva, from the canines to the second molars on both sides. A mucoperiosteal flap is then elevated, giving direct access to the bony surface of the palate (Figure 1.). The abutment plates are placed horizontally on the palatal vault. After fixing the plates, the flaps are sutured back with interdental sutures (Figure 2.). Finally, the palatal mucosa is incised with a scalpel above the abutment plates and the appropriate distractor device is placed into its position (Figure 3). From this point, the operation follows the original description.

Results

This modified operative technique was performed without any difficulties and postoperative complications on 6 patients under general anaesthesia in Budapest, Hungary. Active distraction was started after 5-7 days postoperatively. Orthodontic treatment was started 6-8 weeks postoperatively and lasted 18-24 months. The distractor device and the abutment plates were removed after 6 months postoperatively, after bony consolidation was evaluated by X-ray investigations.

In our series, 4 patients have undergone successful postoperative orthodontic treatment. 2 patients are still in the active phase of distraction.

![Figure 1: Placement of abutment plate. Palatal flap elevated](image-url)
Figure 2: Palatal flap sutured back to its original position

Conclusions

The described surgical manoeuvre is a small modification of the originally published procedure. However, our surgical experiences showed that it helps in placing the abutment plates in extremely narrow palatal vaults. Thus, it facilitates treatment of serious maxillary crowding and malformed upper jaws, like in cleft patients.

Furthermore, this technique gives a direct view to the bony surface of the

Figure 3: Postoperative view. TPD module fixed into the abutment plates
palatal vault and ensures easier manipulation of the abutment plates. It also enables the surgeons to visualize the contours of the roots of maxillary teeth and to avoid any damage to them.

References