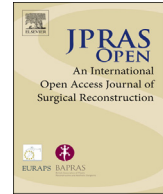




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Case Report

The modified folded pharyngeal flap operation for the treatment of velopharyngeal insufficiency

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ABSTRACT

Pharyngeal flaps have a long-established place in surgery for velopharyngeal insufficiency and many designs of pharyngeal flap have been described. Here we describe a modification of the folded pharyngeal flap operation by Issiki. With our procedure, the base of the pharyngeal flap is located at the level of the lower edge of the palatine tonsil, with the width of the flap designed to be 15 mm. The pharyngeal flap tip is located slightly above the epiglottis. Then, the raised pharyngeal flap is folded and sutured. The folded part of the pharyngeal flap is lifted with a hook; subsequently, a full-thickness incision of 4 mm is made on both sides. Two 4–0 vicryl threads are applied to each side of the created wound, followed by suturing to the mucosa on the nasal side. We performed this method on seven cases with velopharyngeal insufficiency. The patients did not develop complications after the surgery with this procedure. Visual inspection of the oral cavity and lateral cephalometric radiography confirmed that the flap was fixed at a favorable position in relation to the soft palate in all cases. After 6 months of speech training, all cases showed improvement in the velopharyngeal function. With our procedure, a full-thickness incision is made on both sides at the folded part of the flap. Therefore, a wide area of the wound can be sutured to the soft palate. This procedure, which is both rational and simple, was found to be useful.

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Pharyngeal flaps have a long-established place in surgery for velopharyngeal insufficiency and many designs of pharyngeal flap have been described. Here we describe a modification of the method first presented by Issiki.¹ A folded pharyngeal flap operation is a procedure aimed at permanently maintaining the length by folding the superiorly based flap, thereby avoiding exposure of the wound.¹ However, this procedure requires complicated manipulation to achieve de-epithelialization of only the mucosa of the folded part of flap and subsequent suturing to the mucosa on the nasal side of the soft palate. Recently, we devised the modified folded pharyngeal flap operation that enables reliable suturing of the pharyngeal flap to the soft palate.

Surgical procedure

With this new procedure, a full-thickness incision is first made on the soft palate from the palatine uvular base to the level of the posterior palatal arch (Figure 1). Then, the soft palate is everted and only the mucosa on the nasal side is horizontally incised over a length of about 15 mm. A thread is then applied to the previously divided soft palate for traction, and the pharyngeal flap is raised. The base of the pharyngeal flap is located at the level of the lower edge of the palatine tonsil, with the flap designed to be 80% of the width of the posterior pharyngeal wall. The flap tip is located slightly above the epiglottis; the flap is raised together with the pharyngeal constrictor, followed by plication of the flap-donated site. Then, the raised flap is folded and sutured with 4-0 vicryl. The folded part of the flap is lifted with a hook; subsequently, a full-thickness incision of 4 mm is made on both sides at points shifted from each other, in a stepwise manner. Two 4-0 vicryl threads are applied to each side of the created wound, followed by horizontal mattress suturing to the mucosa on the nasal side. Each of the nasal-side mucosa, muscle, and oral-side mucosa of the soft palate is sutured, which completes the operation.

Results

We performed the procedure on four cases with congenital velopharyngeal insufficiency and three cases with postoperative cleft palate (Table 1). Palatoplasty had been conducted at other facilities in

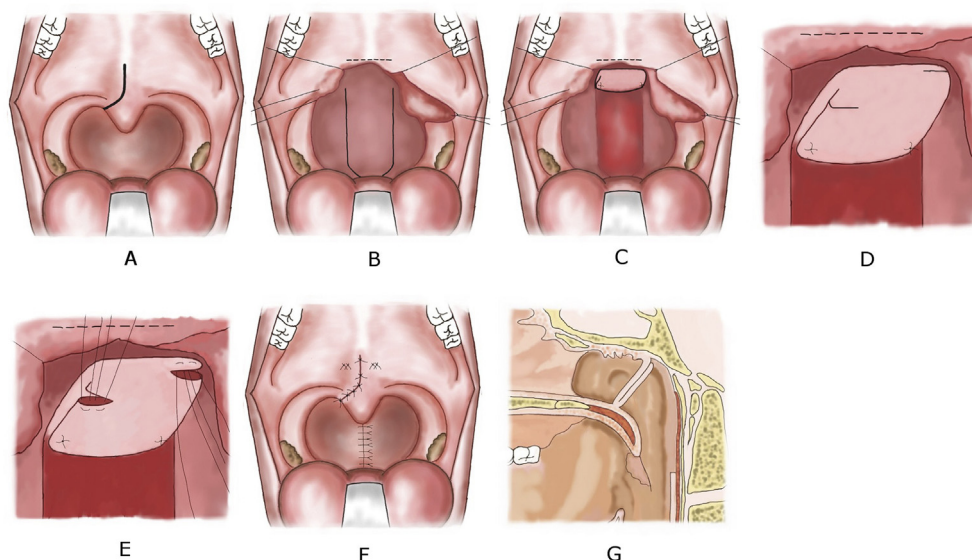


Figure 1. Diagram of the surgical methods. A: The first incision is made on the soft palate. B: The mucosa on the nasal side is horizontally incised. The dotted line indicates the incision site. C: The raised flap is folded and sutured. D: A full-thickness incision is made on both sides at points shifted from each other, in a stepwise manner. E: Two threads are applied to each side of the created wound. F: The flap is fixed to the soft palate by means of horizontal mattress suturing. G: Fixation of the pharyngeal flap on the soft palate is performed at the level of the posterior palatine arch.

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