

PEDICLED PALATAL FLAP FOR SURGICAL REPAIR OF ORO-NASAL FISTULA

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Oro-nasal fistula can occur secondary to various pathologies, but cleft surgery is the most common. The authors propose a pedicled palatal flap technique for surgical repair of small oronasal fistula (0.5-0.8 cm), derived from their experience in the treatment of 7 patients between March 2003 and December 2007. In one case, the fistula was induced by prolonged snorting of cocaine. In the other cases, the fistulas developed after excision of a benign tumor of the palate. For the cocaine-induced fistula, failure of the repair attempt was apparent within 7 days of surgery. In all other cases, complete fistula closure was obtained, and no complications occurred.

To the Editor,

Oro-nasal fistula is often observed after palatal surgery. The defect also may arise after surgical removal of a benign or malignant tumor, from continuous snorting of cocaine, and for other reasons (1, 2). Although these lesions are not necessarily symptomatic, conditions such as fluid reflux, rhinorrhea, and speech disorders are common presenting signs, which also can affect the size and severity of the fistula. In general, larger fistulas are accompanied by more severe symptoms. Various surgical options, based on fistula size, have been proposed to treat palatal fistulas, including local flaps, regional intraoral and extraoral flaps, free flaps, and prosthetic obturators (3-9).

One of the most common surgical techniques is the single palatal flap, which is usually the preferred flap for small (<1.0 cm) recurrent fistulas (1). For larger fistulas (over 1 cm), the island flap technique is usually effective (8). This flap is positioned above the palatal vascular bundle, and after its release,

substantial flap mobility can be attained, reducing the traction and tension of the flap (8). For very large fistulas or subsequent attempts to address palatal flap failure, other techniques may be considered, such as free flaps, but this type of surgery is much more complex (5, 7).

We propose an alternative technique to repair small oronasal fistula – the pedicled palatal flap – which is easy to perform and has a low rate of failure.

MATERIALS AND METHODS

From March 2003 to December 2007, 7 patients with oronasal fistula (5 women, 2 men; aged 28-67 years) underwent surgery in the Department of Head and Neck Surgery of the Second University of Naples (actual University of Campania "Luigi Vanvitelli"). All patients signed a consent form before the surgery was performed. In one patient, the fistula was induced by prolonged snorting of cocaine. In the other 6 patients, the fistula arose after excision of a benign tumor of the palate

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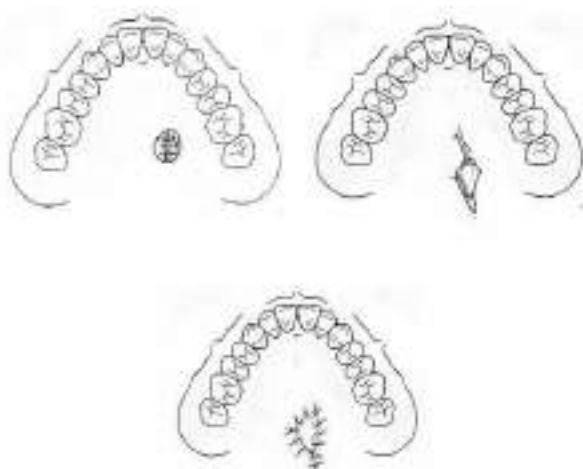


Fig. 1. Graphic representation of the proposed surgical technique.

(pleomorphic adenoma).

The size of oronasal communications in these patients was small, ranging from 0.5 to 0.8 cm. In the patient whose fistula was induced by cocaine use, the communication was purulent. This patient was instructed to start antibiotic therapy 3 days prior to surgery; all other patients began antibiotic therapy on the day of surgery.

In all cases, fistula closure was performed while the patient was under general anesthesia. In addition, xylocaine (0.5%) with epinephrine (1:100,000) was injected in the area around the fistula. Twelve minutes later, the surgical procedure began. A partial-thickness incision of the palatal mucosa was made around the

fistula. After elevating the submucosa, the prepared flaps were reversed and sutured to provide a mucosal lining for the nasal cavity. Following this, a small pedicled flap of mucosa and submucosa was harvested immediately below the fistula, and was mobilized to cover the defect completely (Fig. 1). The flap was fixed with resorbable sutures. Patients were discharged after 3 days (on average).

RESULTS

All patients were prescribed antibiotic therapy (amoxicillin and clavulanic acid, 1 g every 12 hours for 5 days) and were instructed to apply a gel consisting of amino acids and sodium hyaluronate (3 times daily for 15 days).

Seven days postoperatively, early failure of the repair was evident for the fistula that had been induced by cocaine snorting. The patient refused further surgical repair, and a palatal obturator was used instead. In the other 6 cases, there were no complications, and complete fistula closure was obtained (Fig. 2). The follow-up period ranged from 6 months to 24 months (median, 10.8 months).

DISCUSSION

Various surgical techniques have been employed to repair palatal fistula, including creation of local mucoperiosteal flaps or utilization of additional tissue such as tongue flaps, buccal mucosa flaps, and free flaps (3-9). For surgical repair of a small



Fig. 2. Left: preoperative view of a case of palatal fistula. Right: postoperative control, 50 days after surgery.

fistula (<1 cm), local flaps are commonly used (6). In particular, 3 factors affect the success of repair: the extent of the defect (e.g., size, diameter), the amount of time that has elapsed since the defect first appeared, and the condition of the palatal and nasal mucosa (1).

For a new defect (<1 week old) with limited diameter (<0.5 cm), it has been recommended to wait for potential spontaneous closure; however, for chronic and/or larger defects, surgical repair is required (1). When surgery is recommended, Axhausen's principles must still be considered, even though they originated early in the 20th century (10). These principles are: i. the flap must be mobilized without traction or tension; ii. the flap must be adapted so as to cover the defect with a surplus of 0.5 to 0.75 cm; and iii. there should be no residual dehiscence at the wound site.

Although many techniques have been used for surgical closure of oronasal fistulas (3-9), none has proven superior to the others; however, certain advantages and disadvantages do exist.

In the present case series, a mucoperiosteal flap was elevated distally at the entrance to the neurovascular bundle, and was positioned so that it covered the entire area of communication. After elevating the submucosa, the prepared flap was reversed and sutured to provide a mucosal lining for the nasal cavity. Failure occurred in only one case, which likely was attributable to the cause of the fistula (cocaine snorting). Surgical treatment for oronasal fistula repair induced by snorting cocaine is still controversial; a palatal obturator may be a viable option, especially in patients who are chronic cocaine users (11).

The surgical technique proposed by the authors is recommended for select cases in which the oronasal fistula is smaller than 0.8 cm. Even though the number of patients in this case series is small, results demonstrate that the surgical technique is easy to perform, safe, and provides optimal blood perfusion for the flap.

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