The forehead flap is a widespread procedure used to reconstruct midline defects of the face. It is most commonly used in elderly people with skin cancer to close and reconstruct iatrogenic facial defects. It is rarely performed in children primarily due to the concern that the flap might not grow and adapt to the growth of the underlying supporting tissue. There exist only a few studies concerning the topic,1–3 and therefore, it seems relevant to publish a case report of an 8-year-old boy, who underwent nasal reconstruction with a forehead flap—with a 9-year follow-up.

**CLINICAL CASE**

An 8-year-old boy was admitted to The Department of Plastic Surgery and Burns at Rigshospitalet in June 2005 after a partial amputation of the nose due to a dog bite.

The lesion comprised whole tip of the nose, partial dorsum, and ala of the nose. The tissue missing was approximately 3 cm in diameter, including most of the soft tissue of the columella and the medial site of anterior nasal aperture. Mucosa and cutis were lacking on the frontal parts of both nostrils and part of crus medialis. The remaining cartilage on the nose was preserved (Fig. 1).

The patient was initially treated with antibiotics and analgesics, and the wound was dressed with saline gauze. Five days after the injury, the surgery was performed.

During the first stage of surgery, a left forehead flap was raised, curved to the right side to allow it to turn more easily and slightly extending its reach. The blood supply was based on the left supratrochlear artery, which was identified with a Doppler signal. Caudal parts of the flap were initially trimmed. After trimming of the defect and adjustment of the flap, it was rotated downward and approximated precisely before it was sutured to the margins of the defect. The forehead defect was closed directly.

During a second procedure (Fig. 2), 2 weeks later, the flap was sectioned, the intermediate segment was discarded, and the base was used to close the donor sites. Overall, the result of the procedure was considered satisfactory by the family and the surgeon after 2 (Fig. 3), 6 and 18 months.

After 9 years, the now 17-year-old boy came to a clinical examination with his parents (Fig. 4). An x-ray was taken of his left hand and revealed skeletal maturity for all practical purposes. Both the patient and his parents were still content with the cosmetic result. The reconstructed nose tip still appeared adequate in size and well-proportioned in relation to his face, indicating that the tissue had grown with the patient. The most conspicuous element was the scar on the forehead which he sometimes received comments on. His only nuisance was hair growing at the distal part of the reconstructed nose (derived from the earlier hairline of the forehead). He had previ-

**Disclosure:** The authors have no financial interest to declare in relation to the content of this article. The Article Processing Charge was paid for by the authors.
ously been referred to the Department of Dermatology for the purpose of laser treatment to get rid of the hair, but they had declined because the hair was too bright. The surgical considerations were—apart from the one listed above—a minor difference between the horizontal level of the eyebrows, which could be dealt with by a small V-Y reconstructional procedure.

**DISCUSSION**

The nose is an important characteristic of the face, and lack of, or deformity of, the nose can lead to experience of stigmatizing behavior, such as staring and teasing. Therefore, it is important that nasal defects in children are treated with the best-known treatment initially.

With this case report, we wish to illustrate that nasal reconstruction with a forehead flap can prove to be successful in children. The nose is not fully grown at the age of 8, and maximum growth velocity appears to be from 8 to 13 years in boys. A review from 2008 concerning nasal growth and maturation concludes that in 98% of adolescent boys, the nose is mature at the age of 17.

**CONCLUSION**

The fact that the flap remains adequate in size, after the boy is fully grown, indicates that the flap can evolve with the child. However, one cannot con-
include that flaps in general will follow the growth of the underlining tissue, and therefore, we invite other surgeons to publish similar case studies.

**REFERENCES**

1. Duteille F, Perrot P, Pannier M. Suitable age for nasal reconstruction after subtotal amputation in a child, with respect to a case involving purpura fulminans. *J Pediatr Surg*. 2006;41:1616–1619.
2. Giugliano C, Andrades PR, Benitez S. Nasal reconstruction with a forehead flap in children younger than 10 years of age. *Plast Reconstr Surg*. 2004;114:316–325; discussion 326–328.
3. Ueda K, Nuri T, Okada M, et al. 28 years’ follow-up of bitten-off nose replantation performed in a 9-year-old girl. *Plast Reconstr Surg*. 2014;133:904e–905e.
4. Masnari O, Landolt MA, Roessler J, et al. Self- and parent-perceived stigmatisation in children and adolescents with congenital or acquired facial differences. *J Plast Reconstr Aesthet Surg*. 2012;65:1664–1670.
5. Verwoerd CD, Verwoerd-Verhoef HL. Rhinosurgery in children: developmental and surgical aspects of the growing nose. *GMS Curr Top Otorhinolaryngol Head Neck Surg*. 2010;9:Doc05.
6. van der Heijden P, Korsten-Meijer AG, van der Laan BF, et al. Nasal growth and maturation age in adolescents: a systematic review. *Arch Otolaryngol Head Neck Surg*. 2008;134:1288–1293.

---

**Fig. 4.** The forehead flap 9 years after surgery.