Projection and Deprojection Techniques in Rhinoplasty

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KEYWORDS

• Projection • Deprojection • Increasing projection • Decreasing projection • Shield graft • Lateral crural steal • Septocolumellar suture • Tip graft

KEY POINTS

- Analyze the nose thoroughly to decide on the ideal projection of the nose.
- Discuss the alternatives of tip projection with the patient.
- If the patient's tip projection is satisfactory, the surgeon must prevent postoperative loss of tip support by using columellar struts, or septocolumellar or tongue-in-groove sutures.
- For overprojected tips, the surgeon must determine whether the issue is resulting from to the nasal septum or the lower lateral cartilages.
- The surgeon should try to put all the surgical techniques in his or her armamentarium and choose the ones that will work in each selected case.

Videos of the major surgical steps to deproject the nose accompany this article at http://www.plasticsurgery.theclinics.com/

INTRODUCTION

There are 3 important parameters of the nose that the rhinoplasty surgeon and patients must take into account: nasal length, projection, and rotation of the tip (**Box 1**). All of these parameters are closely linked to each other. During the preoperative consultation, the surgeon should examine and analyze the nose thoroughly and discuss the available solutions with the patient.

In facial analysis, there are many methods to calculate the ideal projection of the nose. The simplest method, described by Simons,[1] states that the length of the upper lip equals the length of the subnasale to the tip. In Goode's formula, a line to the nasal tip drawn perpendicular to a line from the nasion through the alar–facial junction should be 55% to 60% of the dorsal nasal length from the nasion to the tip.[2] Crumley and Lanser described the ideal nasal projection as a ratio equal to 0.2833 by comparing the length of the line from the nasion to the vermilion of the upper lip and the length of a perpendicular line to the tip defining point.[3] Similarly, Powell described that a line drawn from nasion to subnasale is correlated with a perpendicular line reaching to the tip defining point and found it to be approximately 2.8.[4] Byrd published in his research that tip projection should be approximately two-thirds (0.67) of the surgically planned or ideal nasal length[5] (**Fig. 1**).

Current concepts in tip support are based on Anderson's tripod concept.[6] He described the conjoined medial crura as 1 leg and each of the lateral crura as the other legs in the tripod that

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Box 1
Algorithm regarding projection of the nasal tip

1. Decreasing projection
   a. Shortening the long medial crura
      i. Septocolumellar or tongue-in-groove sutures
      ii. Medial crural steal
      iii. Footplate resection
      iv. Lipsett
      v. Medial crural overlay
      vi. Vertical dome division
      vii. Dome truncation
   b. Shortening the long lateral crura
      i. Lateral crural steal
      ii. Lateral crural overlay
      iii. Vertical dome division
      iv. Dome truncation
2. Keeping the projection
   a. Septocolumellar or tongue-in-groove sutures
   b. Columellar strut
3. Increasing projection
   a. Sutures
      i. Lateral crural steal
      ii. Vertical dome division
      iii. Septocolumellar or tongue-in-groove sutures
   b. Grafts
      i. The grafts used to increase the dimensions, change the shape and strength of the caudal septum
         1. Columellar strut
         2. Caudal septal extension graft
         3. L-strut graft
         4. Subtotal septal reconstruction
      ii. The grafts used to support or replace the existing lower lateral cartilages
      iii. The grafts used over the tip
         1. Shield graft
         2. Tip onlay graft

determines tip projection and rotation (**Fig. 2**). The projection of the nasal tip can be changed by changing the length of these legs or the pedestal on which the tripod rests.

TREATMENT GOALS

When dealing with the projection of the tip, there are 3 options that must be considered while performing rhinoplasty: whether to maintain,