RHINOPLASTY HANDBOOK- Basic Skills Rhinoplasty course April 2021

Introduction

This day course consists of two parts- a morning of lecturing by expert practitioners on the basic elements of the rhinoplasty procedure, with specific attention to patient assessment, the aesthetic objectives of the procedure, and the various techniques of septal, dorsal and tip adjustments.

The afternoon session involves a surgical simulation exercise performed on models constructed with flexible plastic upper and lower lateral cartilages and a septum fixed onto a 3d printed skull segment. The fibrous ligamentous support structures of the interdomal ligament, the scroll area, and the medial crucial ligament are coloured yellow and will need to be sectioned to allow the necessary surgical alterations to proceed. These skeletal elements have an outer silicon layer to represent the nasal skin, and an inner silicon lining representing the mucosa. All structures are fashioned to be both lifelike and representative of a large nose with a prominent dorsal hump, large and asymmetrical lower lateral cartilages and varying degrees of septal deviation. There is some variability with each model, posing specific challenges in each instance.

The surgery itself employs standard surgical equipment, of the type that would be found in any operating theatre. The procedure will involve a dorsal silicon skin degloving with skeletal exposure, septal graft harvest, septal correction, dorsal reduction, the use of spreader procedures, tip recontouring and tip fixation, and the positioning and fixation of a columellar strut or septal extension graft. Unfortunately due to current circumstances, the instruments needed for bony in fracture have failed to arrive from overseas and this part of the procedure can therefore not be undertaken.

The simulation exercise will proceed, under supervision by experienced practitioners, as follows-

1) The surgical exposure is initiated with a trans-columellar incision and elevation, extending to a marginal or alar rim incision, with dorsal silicon skin elevation to achieve skeletal exposure. Specifically, a transverse seagull or step incision is made across the columella of the model, with the development of the columella rim incisions such that the underlying cartilage edges of the medial crurae, and the caudal septal edge, are exposed.

The student will then develop a plane of dissection dorsally directly on the skeletal elements, exposing thereby the domes and wings of the lower lateral cartilages, the upper lateral cartilages, and the entire cartilaginous dorsum. At this point it will be appreciated that the silicon skin have the qualities that of the model does not allow for exposure as it would in real life, and therefore it is likely that the dorsal silicon investment will need to be removed as a unit to allow the simulation exercise to continue.

2). The student then returns to the caudal nasal part of the model, where the medial crurae of the lower lateral cartilages are located. These will need to be separated by sectioning the medial crucial ligaments and the interdomal ligament (which in real life are very flimsy and ill defined), with further dissection displaying the caudal edge of the nasal septum. The internal pink silicon mucosa will need to be elevated off the septum, with this dissection extending superiorly in order to strip the mucosa off the nasal vault. This allows the tip of the scissors to extend proximally below the dorsal cartilage, yet above the mucosa, facilitating a longitudinal extramucosal incision to be made to release the upper lateral cartilages from the septum. This now allows for visualisation of the entire septum.

3) An estimate is then made of the necessary reduction of the dorsal, and strong scissors are used to cut longitudinally along the dorsal septum to leave a smooth, aesthetic dorsal septal edge. The removed segment can be retained for later use.

4) At this point the amount of removable (harvestable) septum is estimated, and a septal graft is excised from the septum leaving sufficient material behind to ensure adequate dorsal support ( allow for a 1 cm rim).

5) If septal deviation is apparent, the septum is then released from the anterior nasal spine area, centralised, and sutured to the anterior nasal spine by a transosseous suture ( for which there is a pre-made hole) using a 4/0 proline suture. The graft material is retained for later use.

6) Attention is then directed to the cut dorsal edges of the upper lateral cartilages. These are folded to create a spreader flap on one side, and a spreader graft is fashioned from the septal graft and secured on the contralateral side with 4/0 proline sutures ( the sutures chosen are both practical for fixating the plastic elements, and are easily visible). Before suturing, the structures are pinned in the required position with needles.

7) After trimming of the caudal edge of the septum, various methods can be used to fixate a septal extension graft crafted from the graft material.

8) Subsequent manoeuvres are undertaken to sculpt the lower lateral cartilages to refine the nasal tip. These will involve cephalic rim excisions of the lower lateral cartilages, lateral crural grafts, domal and transdomal sutures, and fixation to the septal extension graft. Tongue in groove sutures also apply in positioning the nasal tip and columella. All of these can be selected by the student to apply as need be to give the required aesthetic effect.

9) it should be possible to replace the dorsal silicon skin cover, and to secure the columella and alar rim with sutures. It will be a consideration to mark out, and perform, bilateral alar wedge excisions.

At this point the simulation exercise is complete. The model can be assessed for symmetry, and the extent to which the aesthetic objectives have been met.