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ORIGINAL ARTICLE

AUGMENTATION RHINOPLASTY USING SEPTAL CARTILAGE – A TWO YEARS STUDY

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ABSTRACT: The increasing awareness about rhinoplasty as a cosmetic surgery and the rising number of patients seeking this procedure was the motivation behind this study. Twenty patients in whom augmentation rhinoplasty was done were monitored in terms of original deformity, the various steps undertaken for correction, complications encountered and the results achieved. Although the basic steps remain more or less the same, modifications were made according to individual needs and surgical acumen. A proper preoperative counseling is mandatory to achieve a satisfactory result.

KEYWORDS: Rhinoplasty, Augmentation, Septal cartilage.

INTRODUCTION: Since the beginning of history, man has considered the nose to be the key to facial appearance. The nose is the central and most prominent feature of the face. The relative facial beauty of a person depends on the size, shape & appearance of the nose to a great degree.[1] Over and above the functional & aesthetic aspects, the patient's reaction to his or her own nose as well as the reaction of the public to it contributes to the psychic aspects.

Rhinoplasty is an anatomic dissection of nasal structure that requires alteration, elements of the nose being conservatively shaped and repositioned. Accurate diagnosis of the nature of the defect and selection of appropriate reconstruction technique are necessary to achieve an optimal cosmetic and functional result.[2] Correction of saddle deformity should not merely consist of augmenting saddle defect but rather dealing with broad nose and reshaping tip simultaneously whenever indicated to achieve overall aesthetic and pleasing effects of surgery.[3] The aims of our study are; to evaluate the effectiveness of septal cartilage as a graft material for augmenting nasal dorsum, comparing results of autograft and allograft septal cartilage, analyzing functional and cosmetic result.

MATERIALS AND METHODS: Twenty patients who attended ENT Department of our hospital during the 2 years period (January 2007 to December 2008) were included in this study. At first visit, anatomical defects resulting in the deformity and functional problems were assessed and the patients were given a realistic scenario of what could be achieved by surgery.

A detailed case history was taken and patients were evaluated by proper clinical examination, assessment of external nasal deformity & nasal airway, the nature of skin, the nasal angles and a psychological evaluation. Pre & postoperative photographs – lateral, frontal & basal views were taken.

Graft material for augmentation included septal cartilage taken from patient itself or preserved septal cartilage.

The cases were followed up 1 week, 3 weeks, 2 months, 6 months & 1 year after surgery. The observations and results were documented, tabulated and assessed.

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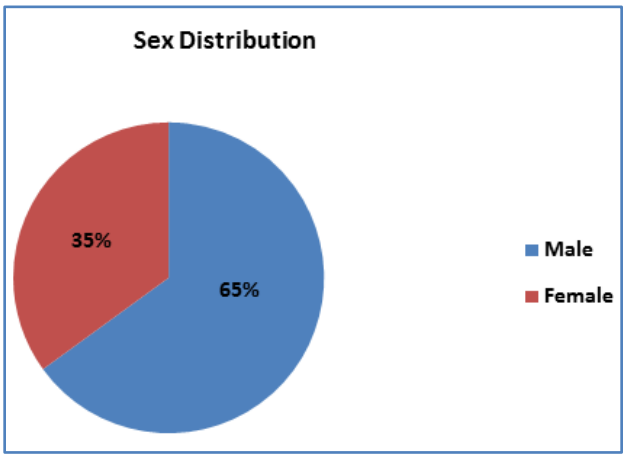
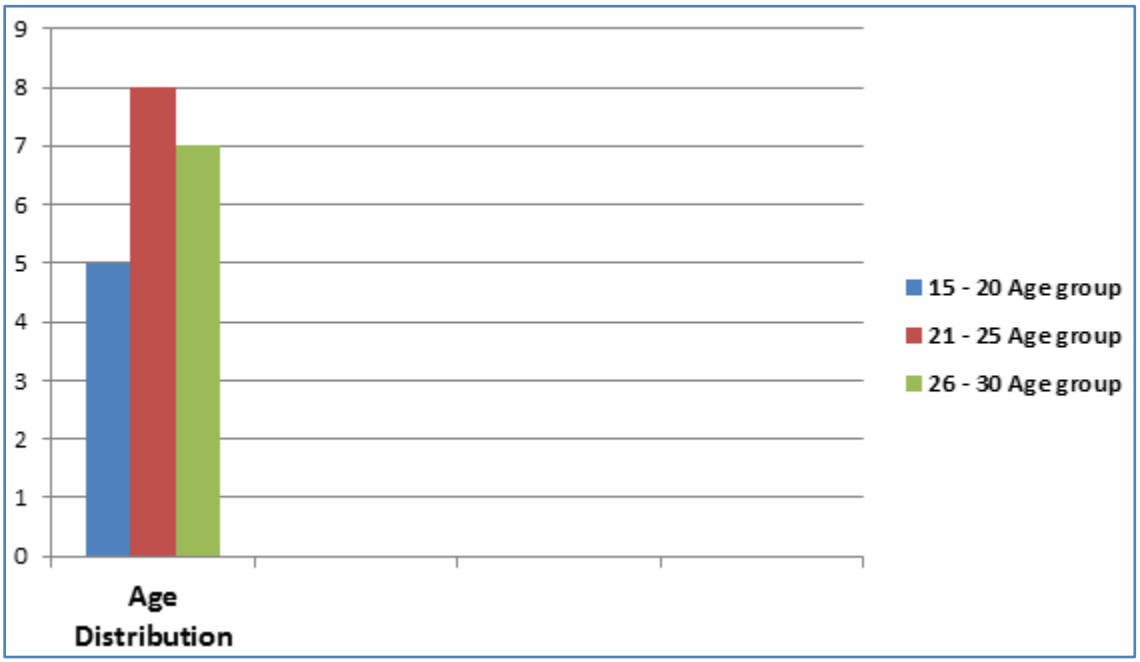
OBSERVATIONS & DISCUSSION:

Out of the 20 patients, 13 were male and 7 were females.



Patients included in the study were in the age group 18 - 30 years. Youngest patient was 18 years and eldest 30 years.



Of the 20 cases, 15 had external deformity and septal deviation, 5 patients had external deformity only.

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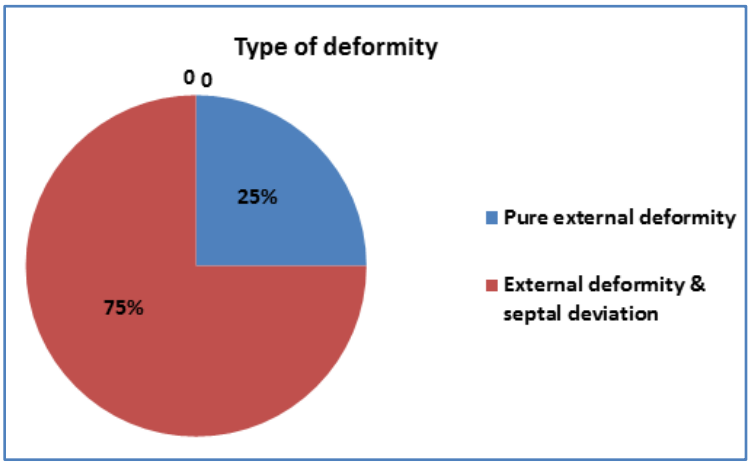

Of the 20 cases, 9 had pure saddle deformity

3 with bony hump and supratip deformity

2 had bulbous tip along with saddling

4 had short columella with saddling

2 with associated fracture of nasal bone due to trauma

Septorhinoplasty was done in 15 out of the 20 cases. All the 15 surgeries were done by an internal approach. Bilateral intercartilaginous incision was combined with transfixation incision. Septoplasty and augmentation of nasal dorsum with septal cartilage was done in all the 15 patients.

For 2 patients with bulbous tip deformity, marginal incision was combined with transfixation incision. In case of 4 patients with short columella and saddle deformity, in addition to augmenting the nasal dorsum, a strut was inserted parallel to and in between medial crura in the entire length of columella through the transfixation incision.

In 3 patients with a bony hump and supratip depression, bony hump was rounded off and supratip was augmented with cartilage graft. In all cases, septal deviation was corrected by septoplasty. Of five cases where rhinoplasty alone was done, an open approach was done in 3 cases and closed approach in two.

Advantages of open approach is that it offers an excellent exposure of dorsum of nose and allows the surgeon to see directly what he is sculpturing, graft lies away from the incision site and hence risk of extrusion is avoided.[4] Proper hemostasis is a major part of Rhinoplasty, fineness is difficult to achieve in a bloody field. In our study we found local anesthesia to be a better option than general anesthesia. Septal cartilage was the graft material used, of which 14 were autologous cartilage graft and six preserved septal cartilage.

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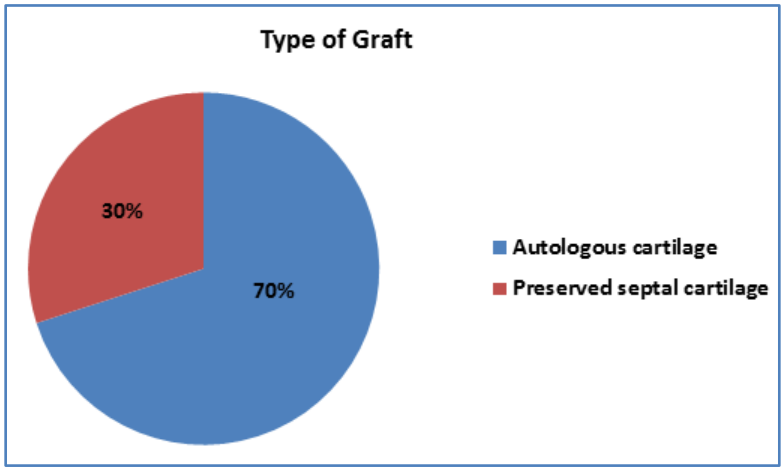

Cartilage grafts have much lower absorption rate as cartilage can survive in areas with diminished vascularity. It is almost inert due to its avascularity and exceedingly low BMR. We found the cartilage grafts superior to other grafts due to –

1) Cartilage can be easily carved to desired shapes.
2) It requires minimal dissection of dorsum and an adequate pocket holds the graft in place.
3) Healing process is satisfactory and can be used equally well in different types of recipient bed
4) It provides consistency and elasticity that is physiological for the nose[5].

One case of graft resorption was encountered due to cellulitis of face, where preserved cartilage was used. In our study, we thus found a better success rate for autologous cartilage graft than preserved one. The only disadvantage with autologous graft is non-availability in the desired amount.

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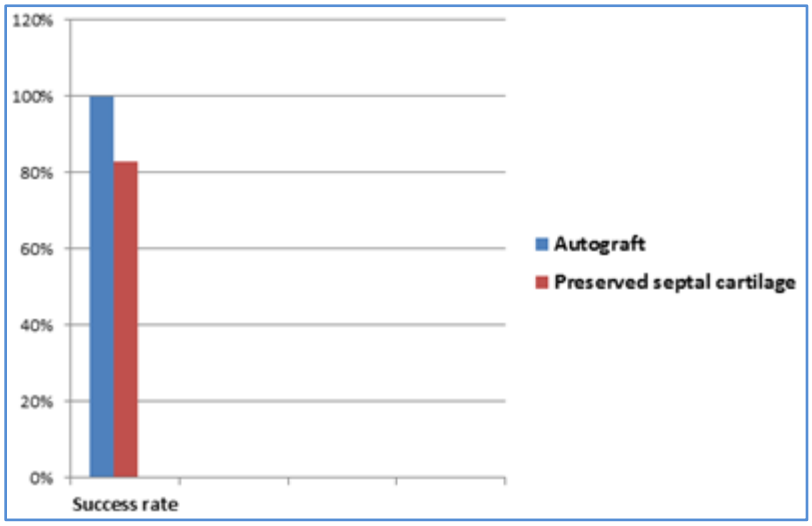
Success Rate



	Autograft	Homograft
Biocompatibility	+	+
Strength	+	+
Ability to contour	+	+
Ability to camouflage	+	+
Donor site morbidity	+	-
Availability of material	Limited	Unlimited supply
Surgical time	More	Less

Comparison between Autograft & Homograft

Other cartilage grafts which can be used are conchal cartilage and rib. Conchal cartilage can be easily shaped and absorption is negligible. Rib cartilage is useful in atrophic rhinitis and secondary rhinoplasty. Bone grafts and synthetic implants are also used for nasal augmentation[6]. From our study, we found that inserting an oversized graft reduces the chances of displacement and give some allowance for inevitable absorption.

The skin should not be under tension and balanced after insertion of graft[7]. The various complications we encountered during our study are:

1) Edema of nose and face – was encountered in the 3 cases done by open technique – which responded to antibiotics and anti-inflammatory drugs. If soft tissue dissection limited and correct plane is entered facial edema can be minimized.
2) Cellulitis of face and nose – was observed in one case which resulted in graft resorption. This was considered for revision Rhinoplasty. To minimize the complication of graft absorption, scar tissue from the recipient site should be removed which reduces contraction and stress over the graft. We prefer autograft compared to homograft and cartilage over bone.
3) Allergy to adhesive plaster.
4) Woody feel of nose – seen in all 3 cases done by open technique. In 2 out of 3, it resolved in 3-4 months but persisted up to one year in one case.

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5) Graft migration, visibility and dorsal irregularities were not seen in any of our cases. Graft migration occurs if pocket made is too big. Pocket should be made just to accommodate the graft[8].

CONCLUSION: This study proves the effectiveness of using septal cartilage as a graft material for augmentation Rhinoplasty. Autologous and preserved septal cartilage grafts both were used which showed a better success rate for autologous cartilage. The graft resorption and migration rates were found to be very minimal. The final cosmetic and functional results were excellent with good acceptance from the patients.

This study also stresses on the importance of proper patient selection, regarding the cosmetic and functional deformity, as well as the personality factors also, which is extremely important in obtaining a successful outcome.

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