

Viability of chondroplastic graft

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Abstract

The operation of chondroplastic graft augmentation rhinoplasty was described in a previous paper by the present author. Seventeen months following one such clinically successful operation, the opportunity was taken at a subsequent nasal procedure to remove a small portion of the original graft and submit this to histological examination. The results of this confirm the viability of a graft harvested and implanted by this technique.

Introduction

In a previous paper (Spencer, 1990), an operative procedure was described for the correction of supra-tip depression of the nose, following collapse of the nasal septum. This particular problem has been approached in a variety of ways in the past, generally by means of an augmentation rhinoplasty involving the grafting either of autograft or homograft cartilage, autograft bone or artificial substances such as silastic. The various problems associated with these techniques were reviewed. Briefly, the fate of

grafted cartilage tends to be either distortion, or necrosis and reabsorption. Grafted bone, generally from the iliac crest, tends to fare better, although the resultant nose tends to have a hard, unpleasant, feel to it. Silastic grafts are inserted via a columella-splitting incision leaving a small scar on the skin of the nose, and their tendency to displace or extrude was discussed. It was felt that in view of the fact that the deficient tissue in cases of supra-tip depression is cartilage the replacement of like with like should be the ideal, and in the chondroplastic graft augmentation

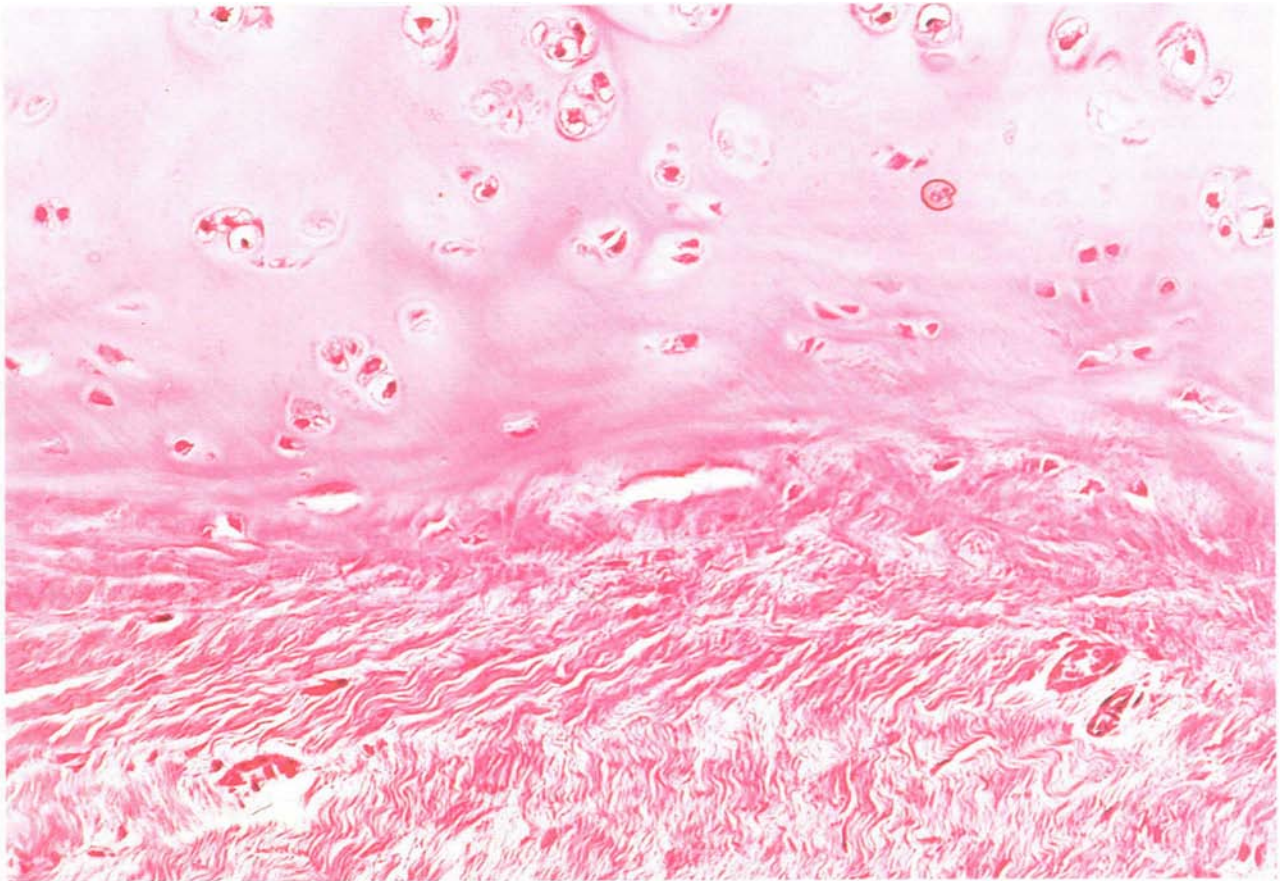


FIG. 1

Section of chondroplastic cartilage graft 17 months following implantation. Approximately $\times 700$ magnification. Specimen stained with haematoxylin and eosin.

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rhinoplasty discussed the tip of the ninth costal cartilage is grafted into a pocket prepared in the depressed area of the nose. The perichondrium is deliberately kept on the graft on the assumption that revascularization of existing perichondrium is more likely to occur than the development *de novo* of fresh perichondrium on a cartilage graft from which this has been removed. This increases the likelihood of the grafted cartilage remaining viable.

Moreover, the graft in this procedure is trimmed only for length and no carving of the cartilage is performed, thereby minimizing any twisting or distortion of the graft as a result of the action of unbalanced elastic forces within the grafted cartilage. In the series of patients so far operated upon, no distortion nor reabsorption of the grafted cartilage has been observed since the first operation was performed in 1986. However, it would be additionally desirable to be able to demonstrate histologically the viability of the grafted cartilage, after a suitably lengthy period of time following the original operation.

Case report

A patient who had a chondroplastic graft augmentation rhinoplasty performed in October 1989 underwent further nasal surgery at the Countess of Chester Hospital in March 1991 for the reduction of a prominent bony hump to the nose which had not been dealt with at the time of the original operation. The opportunity was therefore taken to remove a small piece of the grafted cartilage for submission to histological investigation. The sample was taken from the underside of the graft so as not to affect in any way the shape of the nose. In common with the

other patients who have had this procedure, the cosmetic appearance of the operated nose was completely satisfactory as was the gross appearance of the grafted cartilage when exposed.

The portion of nasal cartilage graft, 5 mm in diameter, was processed and stained by standard histological techniques. The illustration of a haematoxylin and eosin preparation is representative of the multiple levels examined through the biopsy (Fig. 1). The microstructure of the cartilage/collagenous connective tissue (perichondrium) interface is entirely normal. In particular the standard relationship of small blood vessels in the collagen to the cartilage is preserved. Another feature is the complete absence of current or previous micropathology. There is no evidence of inflammatory cell infiltration, no fibrosis, no vascular abnormality and no evidence of degenerative cartilage change. In other sections elastic tissue of normal type and distribution was present. This therefore appears to constitute histological confirmation of the viability of a costal cartilage graft, harvested and implanted into the nose using the chondroplastic technique.

References

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