

Cribiform Otoplasty

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Article Information

Received date: Sep 25, 2017

Accepted date: Oct 18, 2017

Published date: Oct 25, 2017

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Keywords Otoplasty; Reconstructive surgery; Prominent ears

Abstract

Prominent ears are the most common congenital cause of atrial deformity. This benign condition can be treated by surgery. There are many techniques described to treat and deform the cartilage to complacency to achieve the desired shape. In this article we describe the surgical technique of cribiform otoplasty to treat these alterations of ear deformity. Cribiform otoplasty is a useful alternative technique, simple and easy to replicate to treat cartilage without damaging it, only weakening it and generating smooth contours and more natural results when treating prominent ears.

Introduction

Prominent ears are the most common congenital cause of atrial deformity, affecting approximately 5% of the population [1-3].

This benign condition can be treated surgically to reduce or prevent psychological and social problems [4].

Although the exact cause of such prominence is unclear it is assumed that there are some primary determinants for the development of deformity in newborns such as muscular hypertonia, collagen alterations or a genetic predisposition [5]. Moreover, there are structural changes of the auricle components that generate the prominence deformity of the auricular pavilion, such as lack of development of the antihelix or incomplete development, hypertrophy of the concha or hypertrophy of the earlobe, even the combination of some of these. In 1881 Ely made the first correction of prominent ears for cosmetic purposes and since then a wide variety of techniques have been developed to obtain the best results without a consensus regarding the different techniques to mold the cartilaginous auricle [6,7]. There are many techniques described to treat and deform the cartilage to complacency to achieve the desired shape, such as cartilage grating, crushing, carving, thinning, resection or sectioning of some segment and deformation with stitches, by any of the different approaches and later.

Material and Methods

We perform the procedure in the operating room with local anesthesia and sedation, under the supervision of an anesthesiologist, we place an intravenous line during the surgery to administrate medications (Ethamsylate, cephalotin, dexamethasone and celecoxib) and keep it until the discharge of the patient. We use the same material for a conventional otoplasty (basic minor surgery equipment, scalpel, blade # 15, curved iris scissors, Freer type cartilage dissector, double hooks, PDS 4-0 atraumatic needle and Monocryl 4-0), a thin electrocautery tip and a plastic rule 1 cm wide and 5 cm long made with blunt edges.

In those cases in which it is necessary to reconstruct the axis of the antihelix we make anterior marking of the axis of the ill defined crus and we put marks equidistant to each side of the axis that will define the extension of our dissection and the site where the points of Mustardé will be placed. Then a posterior approach is performed by resecting a skin spindle on the concha (5 x 1 cm), and dissecting the posterior cartilage structure and making an incision through the 13 mm long cartilage perpendicular to the axis of the antihelix (Figure 1). Through this incision, the anterior subcutaneous detachment of the antihelix is performed and dissected in the anterior plane



Figure 1: A) Area to be dissected between black dotted parallel lines and the white dotted line demarcates the incision through the perpendicular cartilage through which a pocket is dissected where the protector will be introduced. B) The white dots mark the area where the cribriform perforation of the antihelix axis must be carried out and the asterisks show where Mustardé stitches were placed (*).

along the length and width of our marks in the cephalic direction until reaching the uppermost border of the poorly defined crus. We introduce a protective plastic material (disposable vinyl ruler) 1 cm wide and 5 cm long with blunt edges; in the pocket generated by the dissection, to avoid thermal damage of the skin. We perform a Colorado-tipped cribriform perforation in the previously demarcated area, applying low thermal intensity to avoid cartilage necrosis and weakening it (Figure 2); and finally we put the stitches of Mustardé that are necessary with atraumatic sutures (PDS 4-0) to generate the necessary convexity in the previous surface. We add stitches of Furnas (concha-mastoid) if there is a prominent concha.



Figure 2: Plastic protector inserted into the dissected pocket between the anterior plane of the cartilage and the anterior skin. Cribriform perforation with Colorado tip is also appreciated.

Results

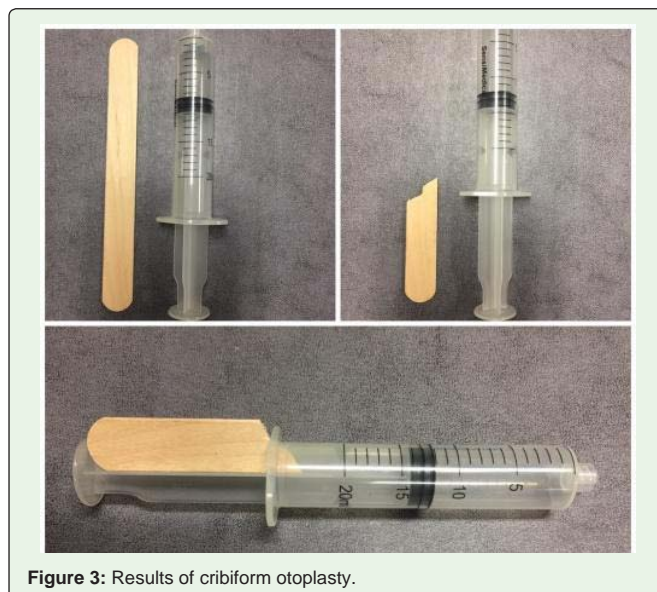


Figure 3: Results of cribriform otoplasty.

Discussion

Although many techniques have been described to treat the prominent ear over the years, we continue to find that the auricle cartilage per se has memory and has independent forces to it, which can generate changes in the evolution of the post-surgical result [6]. Despite applying the principles described by Gibson [8] of the cartilage behavior after its treatment, we still obtain sometimes unpredictable results and relapses; it is thus that the stitches described by Mustardé classically can generate unnatural appearance and sharp edges in the anterior view of the reconstructed anatomical structures if the otoplasty with cartilaginous weakening is inadequately complemented [1,9].

That is why we have chosen to damage as little as possible the cartilaginous structure, weakening it (without scraping, without grating, without cutting, without crushing) and generating more natural structures when carrying out the reconstruction based on a basic physical principle of weakening structures rigid with the use of micro perforations, as in the case of titanium miniplates. This has been achieved by performing a stitching in the cartilage applying minimal energy on the major axis of the structure to be rebuilt to weaken it and decrease its strength and memory, which at the moment of placing the stitches described by Mustardé will generate a smooth and very natural contour with long-term results.

Conclusion

Cribriform otoplasty is a useful alternative technique, simple and easy to replicate to treat cartilage without damaging it, only weakening it and generating smooth contours and more natural results when treating prominent ears.

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