Comparison between Cartilage Cutting and Cartilage Sparing In Correction of Prominent Ear

Systematic Review

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Mahmoud Mohamed Morshed

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Abb.	Full term

C&S ..... *Culture and Sensitivity*

CCT..... *Cartilage Cutting Technique*

CL ..... *Conchal Line*

CST..... *Cartilage Sparing Technique*

EAC ..... *External Auditory Canal*

FEM ..... *Fixed-Effects Method*

FL ..... *Frankfort Line*

REM ..... *Random-Effects Method*

ABSTRACT

Background: Protruding ears are the most common congenital ear deformity, with a frequency of 13.5% and a well-known hereditary component. Such a deformity can lead to serious psychosocial disturbances from childhood onward.

Aim of the Study: To compare the success rates of cartilage cutting and cartilage sparing technique of otoplasty as regard outcomes, complications and recurrence rates through a systematic review study.

Patients and Methods: Our study included all the studies of cartilage cutting technique and cartilage sparing technique for correction of prominent ear published in PubMed and MEDLINE with using terms (cartilage cutting, cartilage sparing, prominent ear). Our study included (25) studies, (14) studies about cartilage cutting techniques with total number of patients (n=2034) and (11) studies about cartilage sparing techniques with total number of patients (n=933) with only two studies comparing the two techniques at the same time.

Results: There is no significant difference between cartilage cutting techniques and cartilage sparing techniques in term of recurrence (8% and 7%, respectively), bleeding (3% and 4%, respectively) and infection (2% and 1%, respectively). Cartilage cutting techniques have higher percent of hematoma (3%)while cartilage sparing techniques have higher percent of suture extrusion (7%).

Conclusion: *No difference between cartilage cutting and sparing in term of recurrence, infection and bleeding. however,* Cartilage cutting techniques have higher percent of hematoma while cartilage sparing techniques have higher percent of suture extrusion.

Keywords: *Cartilage Cutting - Cartilage Sparing - Prominent Ear- complication.*

Introduction

INTRODUCTION

Protruding ears are the most common congenital ear deformity, with an incidence of 13.5% and have a well-known hereditary component. Such a deformity can lead to serious psychosocial disturbances from childhood onward ***(Balogh and Millesi, 1992).***

Operation is encouraged even before the child is school-age because 85% of the auricular growth is complete by the age of 3 years and the cartilaginous portions of the ears have nearly reached their permanent dimensions by the time the child is 6 to 7 years' old ***(Gasques et al., 2008).***

Hundreds of techniques have been described for correction of prominent ears. They can be classified into 2 broad categories i.e. cartilage-cutting and cartilage-sparing operations. Cartilage-cutting techniques include incisions, excisions, scoring, and/or abrasion of cartilage. The major advantage of cutting techniques is long-term stability of results. While its disadvantages include disruption of cartilaginous support and creation of contour irregularities and higher possibility of infection ***(Adamson and Litner, 2007).***

Cartilage-sparing methods were developed to decrease the incidence of contour irregularities and infection and to maintain the structural support of the cartilage; however, longevity of results may be decreased when compared to cutting techniques ***(Adamson and Litner, 2007).***

Modern otoplasty favours a graduated approach by combining suture techniques, and, when appropriate, adding cartilage- cutting methods in a stepwise fashion until the desired correction is achieved ***(Petersson and Friedman, 2008).***

AIM OF THE STUDY

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o compare the success rates of different techniques of otoplasty as Tregrard outcomes, complications, recurrence rates and patient satisfaction through a systematic review study.

Review of Literature

REVIEW OF LITERATURE

Prominent ear

Definition

Prominent ears are an inherited problem affecting 1-2% of the population although the diagnosis is somewhat subjective , it can be defined as a cephaloauricular angle greater than 40° or a helix-to-scalp distance of 2 cm or greater ***(Adamson et al., 1991).***

It may be unilateral or bilateral and arises as a result of lack (or malformation) of cartilage during primitive ear development in intrauterine life ***(Braun et al., 2010).***

Prominent ears do not have the tendency to improve and about 30% of babies who have prominent ears are born with normal-looking ears with the problem only arising in the first three months of life. This may be exacerbated when the soft cartilage is repeatedly bent over, particularly during breast-feeding. There are no functional problems associated with prominent ears ***(Adamson and Litner, 2011).***

Normal measurements of auricle

The dimensions of the external ear are well characterized, and knowledge of the appropriate proportions is essential to the clinician. The height of the adult ear is 5.5–6.5 cm. On average, The width of the ear is 55 % that of the height. Normal protrusion from the mastoid is about 2 cm (or an angle of 15–25°). Normal projection varies between races, with a greater mastoid to helix distance seen in Asians. The ear at birth is about 66 % of the total size of the adult ear, although the proportions at birth remain unchanged throughout life. Adult ear size is generally achieved in adolescence at about 13–15 years of age, though the majority of growth is complete by 5–7 years of age ***(Tracy et al., 2013).***