LOP EARS: A RETROSPECTIVE STUDY

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Congenital "lop ears" are a deformity include varying degrees of turning down (lidding) of the helix, reduction in the fossa triangularis, scapha compression, reduction of the superior crus of the antihelix and an associated reduction in vertical height of the external ear. Aim of this retrospective study is to assess the clinical outcome in a series of patients affected lop ears and discuss the pertinent literature. In the period between January 2003 and December 2009, 32 patients underwent to lop ears correction at the Pediatric Surgery Unit, S Anna Hospital, Ferrara, Italy. Patients included 4 (33.3%) females and 8 (66.6%) males. Age ranged from 5.6 to 18 years with a mean value of 11 at the time of admission. Lop ears were treated with Mustarde' surgical technique under general anesthesia. No complications were detected in the follow-up period. The goal standard of surgery treatment for prominent ears is to obtain symmetrical and natural ears with not sign of being operated. More than 200 surgical techniques have been described for its correction indicating the lack of an ideal technique. These techniques can be classified into two categories: with conservation of cartilage and with cartilage section. Section methods attend to eliminate the inherent memory of the cartilage so that the shape of the ear can be modified. These techniques may leave significant asymmetries. In contrast, methods which shape the cartilage are based on the Mustardé technique, which consists of placing 3 or 4 horizontal mattress sutures with permanent suture material along the ridge of the helix, to create an antihelix fold. Our clinical results are similar to those reported in the English literature.

Significant ear malformations are prevalent in today's society and they affect more than 5% of population (1). The anomalies derive from a combination of defects attending the antihelix and the concha. They can include underdevelopment or absent antihelix conchal, hyperplasia or excessively deep chonca, increased concho-scaphal angle (more than 90 degrees), and increased cephaloauricular distances (as superior, medial, inferior) (1, 2).

The formation of the external ear begins about during the sixth week of intrauterine life, from the first or the second brachial arches and it becomes definitive from the third month. About this aspect, the deformity usually is considered congenital, even if which is the biological factor is still unknown (2).

Two types of abnormalities predominant ear are most frequently seen: one, in which the antihelix is quite well formed but there is marked increase in size and convexity of the cavum concha, these are the so called "cat ear", second, these in which the cavum concha is normal about the size but there is an incomplete development of the antihelix, especially of the crura (2).

During the past twenty years, the psychological effect of deformities of the ear has received ever increasing consideration, with corresponding improvement in surgical procedures used to correct these abnormalities (2). The most important effect of this disease on a child is psychological and may be expressed either in feelings of inferiority which may cause the child to avoid personal contact, or perhaps to develop a super abundance of self expression in an effort to compensate an injured ego.

Key words: Ear, anomaly, malformation, cartilage, flap

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More frequently parents anticipate the situation before the child is older enough to be aware of the defect and arrange to have early surgical correction when early age gives easily performance (3).

Surgical approach is the gold standard. There are some things that need attention (4):

1. Different ear has different cartilage, varying in thickness and toughness. Where necessary, the cartilage is weakened before being rolled; this is done by removing the posterior perichondrium or by thinning it using an abrasive cylinder.
2. The use of the diamond burs to thin down the cartilage will avoid the ugly sharp edge.
3. The formation of curved helix is the key of the operation, and all contours should be smooth and round.
4. If the conchal bowl is too big, half-moon Y shaped ellipse cartilage of the ascending conchal bowl should be excised, and the remaining cartilaginous tissues are approximated with 3-0 silk suture.
5. If the earlobe has been under-corrected relative to the rest of the ear, it is shaped like a hockey stick.

A newborn with auricular deformity must undergo detailed investigation of the craniofacial structures. All such patients require thorough examination of the skull, the face and the neck with regard to configuration, symmetry, facial proportions (5).

Plastic surgery of low-grade auricular dysplasia – most frequently prominent ear – begins at the age of 5-6 years. Various methods are used. Second-degree malformations can also be operated upon at this age, providing sufficient cartilage exists to form the new ear.

Aim of this retrospective study is to assess the clinical outcome in a series of patients affected lop ears and discuss the pertinent literature.

MATERIALS, METHODS AND RESULTS

In the period between January 2003 and December 2009, 32 patients underwent to lop ears correction at the Pediatric Surgery Unit, S Anna Hospital, Ferrara, Italy.

Patients

Patients included 4 (33.3%) females and 8 (66.6%) males. Age ranged from 5.6 to 18 years with a mean value of 11 at the time of admission.

Treatment

Lop ears were treated with Mustarde' surgical technique under general anesthesia. No complications were detected in the follow-up period.

DISCUSSION

A normal looking ear is imagine, but hard to capture in measurements. Only in some cases of prominent ears, some measurements are possible. Congenital "lop

Fig. 1. *Lop ear*

ears" are a deformity involving elements of the upper third of the ear (6). Features include varying degrees of turning down (lidding) of the helix, reduction in the fossa triangularis, scapha compression, reduction of the superior crus of the antihelix and an associated reduction in vertical height of the external ear (7).

Incidence in population is different: it's thought that Caucasian are affected for about 2-5% and African descent for about 10-15%, however, Japans babies are the most frequently affected with an incidence for about 38,1% (8).

The goal standard of surgery treatment for prominent ears is to obtain symmetrical and natural ears with not sign of being operated (9). More than 200 surgical techniques have been described for its correction indicating the lack of an ideal technique (10). These techniques can be classified into two categories: with conservation of cartilage and with cartilage section.

Section methods attend to eliminate the inherent memory of the cartilage so that the shape of the ear can be modified. These techniques may leave significant asymmetries. In contrast, methods which shape the cartilage are based on the Mustardé technique, which consists of placing 3 or 4 horizontal mattress sutures with permanent suture material along the ridge of the helix, to create an antihelix fold. These techniques have higher rates of relapse and require surgical revisions more frequently due to failure of correction, compared with section techniques (11).

The ideal age to consider the surgery is about six years, when the cartilage is fully developed. Moreover, in preschool age children do not notice the deformity and do not suffer psychological trauma (12).

Nowadays, surgeons still debate about the best approach. The posterior or retroauricolar approach was described initially by Mang (13), but subsequently anterior or combined approaches were recommended, or even those without any incision whatsoever (14). In every case obtain a good antihelix fold is crucial, and this can be obtained with a multitude of surgical techniques such as horizontal sutures, which fold the cartilage backwards, through the weakening of the anterior side of the cartilage by filing, by multiple incisions in the back of antihelix to make the cartilage more flexible (15). Some Authors (16) described in 10% of cases the extrusion of stitches, usually manifesting with continuous discharge at a particular point of the skin before the suture is exposed. The early detection is very important in order to avoid the possibility of triggering chondritis and because the remedial effect of the stitches may disappear favoring the recurrence of detachment of the operated ear. This is usually the main cause of a secondary operation, and it is more frequent in the anterior approach. Other complications that can be described are infection of skin, cartilage or both. The treatment of choice are antibiotics along with drainage of any collections that may appear (17).

Our clinical results are similar to those reported in the English literature.

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