

# The aesthetic out come of primary

## Cheilo-Rhinoplasty

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*Ehab Wagdy Ragy is the only author and has fully contributed to the manuscript.*

**Background:** The earliest procedure in unilateral cleft lip nose management was concentrated by **Victor Veau** in his book at 1938. He used simple coaptation of the margins of the cleft after they had been surgically exposed. The results obtained with this technique were unfortunately consistently bad for many reasons but mainly because of poor surgical reconstruction of the labial musculature. Through the principles done by **Veau** and more recently by **Delaire**, there has been a re-appraisal to concept of primary cheilorhinoplasty in unilateral cleft lip management. Senior cleft surgeons as **Millard**, **McComb** and **Salyer** provided encouraging results after reviewing the long term results of simultaneous repair. They proved that there was no interruption of growth by early surgery and reported stable results up to 18 years after surgery. **Aim and objectives:** To assess the results of primary cheilo -Rhinoplasty in infants with unilateral complete cleft lip nose according to symmetry

and parents' satisfaction. **Subjects and methods:** This is an intervention study, carried out in the plastic surgery department, Zagazig University Hospital in the period from December 2017 to June 2019. The study included 13 patients who had unilateral complete cleft lip nose. All patients were subjected to complete history taking, full clinical examination, laboratory investigations including complete blood count, liver function tests, renal function, and coagulation profile tests. Patients were admitted to the hospital and the operations were done with general anaesthesia. **Results:** the parents highly appreciated the results according to the cosmetic and regarding the symmetry there is no big difference between two sides from the eye view. **Conclusion:** The use of primary Cheilo- Rhinoplasty in all cases of cleft lip-nose has yielded cosmetic results and balanced nasal development.

**Keywords:** Rhinoplasty, Cleft lip, Plastic, Surgery.

## INTRODUCTION:

CLP occurs in 1 in 500–2,500 live births depending on ancestry, geographic location, maternal age, prenatal exposures, and socioeconomic status. The latest center for Disease Control and Prevention (CDC) at Atlanta USA, estimates report the incidence of CLP to be 1 in 940 live births, with 4,437 cases every year. More than 60% of orofacial clefts involve the lip. It was reported that isolated cleft lips alone accounts for about 10–30%; combined primary and secondary palate involvement comprises 35–55% of cases; involvement of secondary palate alone accounts for 30–45% of cases. [1]

Major population differences have been reported, with the highest rates in Asians and Native Americans (1 in 500 births) and the lowest rate in Africans (1 in 2,500 births). [2]

Cleft lip is consistently more common in males at a 2:1 ratio, in contrast to cleft palate which has a similar ratio in favor of females. Some have postulated that common maternal hormones may be involved in both sex determination and orofacial clefting. [3]

Unilateral cleft lip shows a 2:1 left side predominance. While the mechanism is unclear, the observation that the facial artery develops slower on the left may be a factor. An association between cleft laterality and handedness has been proposed but this has not been consistently shown. [4]

Efforts are required to discover the epidemiology and underlying causes of this disease. The WHO-supported multinational integrative research study on craniofacial abnormalities

represents an enormous network to create a comprehensive database and organize research approaches. The best management of a child with cleft lip requires a coordinated effort including the fields of otolaryngology, maxillofacial surgery, plastic surgery, speech therapy, pediatrics, orthodontics, nursing, psychology, audiology, genetic counseling, and social work.

[5]

The objectives are to optimize nutrition, facial development, speech, and language development. Another of the main tasks of plastic surgeons is to reestablish natural eating, speech, and presentation. Effective reconstruction of the cleft lip is both satisfying and demanding. [6]

**Aim and objectives:** To assess the results of primary Cheilo-Rhinoplasty in infants with unilateral complete cleft lip nose according to symmetry and parents' satisfaction.

### **Subjects and methods**

Technical design:

Study design: An intervention study, carried out in the plastic surgery department, Zagazig University Hospital in the period from December 2017 to June 2019. The study included 13 patients who had unilateral complete cleft lip nose who had primary Cheilo-Rhinoplasty.

Inclusion criteria included patients with unilateral complete cleft lip nose at the age of three months till two years old of both genders. On the other side, exclusion criteria included children who were more than 2 years old with previous cheiloplasty, incomplete cleft lip and bilateral complete cleft lip.

### **Methods:**

Detailed full history was taken from patient's parents including personal history as name, age, and sex. Present history was declared via analysis of parent's complaint (cosmetic & functional or both). Past History included asking about parents' consanguinity, if there was similar condition in the family and maternal history for very young patient. Full clinical examination was done with special stress on the state of nutrition, associated anomalies, presence of other diseases such as cardiac, respiratory, renal, or hepatic diseases and excluding syndromes. Local examination of the cleft lip nose defect was done. Routine investigations were done as complete blood count, liver function tests, renal function, and coagulation profile tests. Patients were admitted to the hospital before operation, fasting for

four hours from milk and two hours from water or clear fluid prior to operation. The operations were done with general anaesthesia with orally centrally located endotracheal intubation with iv line. All patients were photographed preoperatively & post operatively from frontal and basal views.

**Administrative considerations:** Written informed consent was obtained from all participants and the study was approved by the research ethical committee of Faculty of Medicine, Zagazig University (Institutional Research Board IRB). The work has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for studies involving humans.

**Statistical Analysis:** The collected data were computerized and statistically analyzed using SPSS program (Statistical Package for Social Science) version 16.0 (SPSSInc., 2007). For the statistical calculations data coding was done. Qualitative data were represented as frequencies and percentages, Chi-Square test ( $\chi^2$ ) and Fisher exact test were carried out for testing the association between the qualitative data frequencies. Quantitative data were represented as mean, standard deviation (SD) and median, student's t-test was used to detect difference between groups which were normally distributed. The test results were considered significant when p-value  $\leq 0.05$ , highly significant when p-value  $\leq 0.001$ .

### **Results:**

The sex distribution of the studied group, there was nine male patients and four female patients all the patient had complete unilateral cleft lip nose, 8 of the patients had left cleft while 5 had right cleft among the studied group. According to the parents satisfaction distribution of the studied patients, 85% of parents were satisfied while 15% unsatisfied. Intention for further operation only 30% of parents were intended to do further operation while 70% did not need to further operation. According to the bilateral nasal symmetry by using photography 67% patients had symmetrical opening while 33 percent of parents were asymmetrical among the studied group. 39% of patients had complications in the studied group, only one patient had vermilion notching, 39% of patients had edema at the site of operation, only 16% of studied patients had fever for one day post operative, 7% had wound dehiscence which was healed by secondary intention.

### **Cases :**

**Case Number ONE**



**Case Number Two**



**Case Number three**



**Discussion:**

Nasal deformity in the unilateral lip is a problem and a liability to the patient and a concern to the surgeon. Lately, there's been a concern in fixing this issue especially in this time of lip repair and use a closed or open method rhinoplasty at the same time with cheiloplasty. [7]

The CLN is so well identified. However, for a long period, cleft surgeons believed that fixing the CLN at time of primary repair may induce a growth disruption, particularly in the nose. Consequently, the facial deformity wasn't even repaired unilaterally. [8]

Recent literature suggests that nasal reconstruction at the time of primary lip repair helps to improve the instantaneous look of the nose and also has a beneficial impact on long-term development, as the pattern of excessive nasal development is changed and the nose curvature is even less severe in teenage years. [9]

This has been proved by other surgeons like **Haddock** in 2012. He assumed that primary nasal repair is effective and decreases the extent of secondary surgery in adolescents. However, there is still debate about the ideal corrective method, the right exposure and repair methods, and, most notably, the timing of the intervention. [9]

The aim of this study is to study the results of primary cheilo-rhinoplasty in repairing of the unilateral complete cleft lip nose according to symmetry and parent's satisfaction. This prospective study was conducted on 13 patients, that). The demographic characteristics of group (A) patients showed male to female ratio of 9:4 The gender incidences are like the figures of the general population reported by others. [10]

Here, all patients lip repair was done using Millard rotation advancement repair all patients. This technique provided minimal or no discarded tissue; the technique is flexible and adaptable; it allows creation of a normal-looking Cupid's bow. [11]

The nasal repair was done by using **McComb's** technique in which, nasal skin was freed from the nasal bone and cartilage via the incision in the upper buccal sulcus. The scissors were also passed up through the columella to free the skin from the medial crus and dome of the alar cartilage. The extent of the nasal dissection was from the alar rim over the nasal tip and up to the nasion on the cleft-side hemi-nose. A point of debate has been to retain the

achieved location of the alar cartilage. Although most surgeons rely only on their suspension sutures. [12]

Regarding the time of operations, it was about 59 minutes. Regarding to the hospital stay there was from one to two days post operative .

The methods that used to evaluate the results of both techniques for repairing complete unilateral cleft lip nose are either subjective, objective, Objective assessment was done by asking parents whether they are satisfied, fairly satisfied, or not satisfied. In this study, there was a significant difference between two groups. parent's satisfaction was excellent in 11 patients (85%) while only 2 cases (15 %) are fairly satisfied. Only 30% of group parents showed intention to do further operation while in group 70% were intent to do more operation. [13]

Horswell and Pospisil in their study compared the results of Cheilorhinoplasty and Millard's cheiloplasty. They studied 33 children, 16 underwent Cheilorhinoplasty procedure and 17 underwent Millard's procedure. Using photos, they analyzed the nasal symmetry in the two groups and found that the cheiloplasty group appeared to have much more asymmetrical noses and greater tip variance, close to our findings. [14]

Delaire's theory that muscular action around the perinasal region is essential for development sounds to be supported with these findings. [15]

The extent of more correction in individuals who had primary cheilorhinoplasty is restricted to touch ups and fine tuning with excellent outcomes. Simple cheiloplasty and keeping the nose unchanged, on the other hand, may lead to a long-standing complicated nasal disfigurement, resistant to molding and reconstructing, with matured cartilage. [16]

Regarding post-operative complications of studied groups as it has been showed . (39%) of each group had complications. At the first, post-operative, week, 3 patients of each group showed expected complications of edema, while one patient in had a severe infection, fever. Only one patient of had wound dehiscence. During follow up, after complete healing, the parents had notes about the shape of the scar, besides one patient has developed vermilion notch.

**Conclusion and recommendations:**

The idea of primary nasal deformity repair at the time of lip repair is appealing. With pliable cartilage that can be formed without difficulty, it offers the chance to achieve symmetry. In this kind of surgery, the ideal alar left remains the cornerstone, followed by the nasal floor closure. Based on the finding of this study we recommend the use of primary cheilo-rhinoplasty in all cases of cleft lip-nose for the better aesthetic results and balanced nasal growth that it yields. However, because of the limited number of patients and short period of follow-up our results should be taken cautiously. Further studies of the same design but with larger number of patients and longer period of follow-up are also recommended.

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