Review Article **IJDRR (2019) 2:22**

International Journal of Dental Research and Reviews
(ISSN:2637-3750)

A comparison between three unilateral cleft lip surgical techniques approach: a literature review

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ABSTRACT

Unilateral cleft lips are considered to be one of the most common genetic and environmental birth defects globally and regionally, this review shines the light on the different approaches in treating and managing unilateral cleft lips. The different approaches are Millards Technique, Mohlar and finally True Triangle By Dr Abdullah Al Atel. The management of such deformity requires full understanding of all measures to achieve ultimate result of treatment. The Aim of this study is to come up with the most suitable as well as the least failure percentage approach among the three techniques.

Keywords: three unilateral cleft lip surgical techniques approach, literature review

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How to cite this article:
Almohawis, Alhaitham. A comparison between three unilateral cleft lip surgical techniques approach: a literature review . International Journal of Dental Research and Reviews, 2019, 2:22

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Website: https://escipub.com/

INTRODUCTION

The percentage of cleft lip defect in USA is 1\700 births[1], and 2.4 in every 1000 births in Saudi Arabia [2]. It is important to consider the team that help to treat the cleft lip defect, according to American Cleft Palate-Craniofacial Association (ACPCA), The craniofacial team should be composed of nursing and physician specialists with particular interest and training in the care of children with cleft deformities[3]

Through centuries , Ancient Egyptians , Greeks and Arabs have contributed in the treatment of Cleft lip Deformity[4] .The Modern evolution started in the mid 1950's , the well-known Dr. Millard has created a unique way of treating this case, it lasted for years till nowadays Major surgeons are still performing operations on the very unique technique. In 1986 Dr. Lester Mohler at the University of Ohio modified Millard's technique and improved some of the drawbacks of the technique[5], True Triangle technique created By Dr Abdullah Al Atel in 2014 were done to overcome problems of the two other mentioned techniques.[6]

MATERILAS AND METHOD

1400 articles under the title cleft lip repair were searched on PubMed data base, the National Centre for Biotechnology Information, and the Saudi Journal Of Oral Science up to December 2015, only articles regarding Millard, Mohler and True Triangle were considered and the rests were excluded.

DISCUSSION

In this section a detailed explanation along with positive and negative outcome of each technique will be discussed. First, Millards technique, the core of this technique is rotation advancement , Doctor Millard invented this techniques with a principle of " cut as you go "[7]. *On the medial side, a curvilinear incision extends upward from Cupid's bow peak toward the noncleft philtral column. Downward rotation of the philtrum corrects the deformity and leaves a gap. Advancement of the lateral lip fills the defect, corrects the alar flare, and narrows the nostril floor. Finally, a superiorly-based C-flap is elevated and transposed for nasal floor closure. The overall tissue rearrangement is much like a Z-plasty* [8]. However, the main drawback of this technique is the presence of scar. [9]. Second, Mohler technique, Dr. lester Mohler was unsatisfied with the scar produced by Millards, so he modified Millards technique [10]. *He used the columella to lengthen the lip . The rotation incision is designed to mirror the normal philtral column and extends onto the columella .A back-cut is designed to end at the lip-columellar junction and the C-flap is used to both fill the columellar defect and about the rotated lip segment. Lip closure follows anatomic subunits and the concept of using the columella to lengthen the lip has gained popularity*.[11]. Finally , true triangle technique, According to Dr. Abdullah Al Atel he has done the very technique on 309 patients [12]. On published article he said "This technique is a combination of Millard or Mohler technique, depending on the philtrum shape of the non-affected side of the cleft, in addition to creating a modified true triangle used by Noordhoff.

The purpose of using the rotation flap is to get the lengthening effect. The back cut is used to get the lengthening effect advocated by Mohler , and it is used in rectangular-shape philtrums. The back cut and its associated lengthening effect has also been previously used by Randall.

The two true triangles drawn at medial and lateral side of the cleft are placed 1 mm above the vermillion border to avoid the resultant irregular white roll which could result when the triangle is placed at the vermillion border. The triangle at the medial side of the cleft where the triangle base is 2 mm or less to avoid the obvious notching or discrepancy effect noted in Millard's technique corrected by Thompson and Fisher. The triangle is directed toward the collemella, unlike Fisher (2005) where the triangle is directed medially in a horizontal direction " [13].

This technique may overcome some of the drawbacks of the previously described surgical

techniques used for CL repair.[14]

The problem of the True triangle Technique , is that there is insufficient research and studies indicating its drawbacks.

In 1998 , Lazarus DD et al published a retrospective study comparing 5 unilateral cleft lip repair techniques, among the techniques Millards techniques, a 22 patient were selected. Repairs were assessed objectively by measurement of the vertical length of both the repaired and normal sides of the lip with calipers. Subjective criteria used to evaluate the repair were the symmetry of Cupid's bow, the quality of scar, the alignment of white roll, the evenness of the vermilion, and the lip pout, the result showed that he rotation-advancement technique, which tended to result in an unacceptably short lip as measured on the repaired side.[15]

Conclusion

From the evidence based studies its clear that Millards technique showed the most drawbacks among the compared techniques, Mohler on the other side, is considered the least failure percentage between the other two and almost recommended, at last , True Triangle, it is a very promising technique in repairing unilateral cleft lip, but due to its limited popularity the successful rate is inconclusive.

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