Abstract: Association of Hospital Surgical Volume with Outcomes in Cleft Repair: A Kids' Inpatient Database Analysis

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INTRODUCTION: Many different methods have been described for the revision of cleft lip scars in patients with unilateral cleft lip. The aim of this study is to compare Z plasty and diamond shape excision that commonly used techniques to correct secondary lip deformities.

METHODS: 10 patients and 8 patients were operated diamond shape excision and Z plasty respectively in 2013–2016. Patients photos after lip revision were studied with facial symmetry program and by having the symmetry of the non-cleft side; a normal lip appearance without cleft was obtained. In the late period after surgery, VAS (visual analogue scale) was performed to determine the satisfaction rates of operation. When looking at the scale, patients were given 10 points for their photographs without cleft lip and the pre-revision photographs are considered 0 point. By the surgeon, the non-clefted lips and post-revision lips were overlaid in the 2015 version of Adobe Reader Photoshop CC program, and the asymmetry of the vermillion and the filtral colon distances were determined. The surgical outcome was evaluated by the surgeon. The result is excellent if there is a difference less than 0.5 mm, good result if difference between 0.5 and 1 mm, bad result is if the difference is more than 1 mm. Whether there is a statistically difference in patient and surgeon satisfaction between the two surgical techniques was evaluated by using the PearsonÂ's squared test in the scale data in the SPSS 15 analysis.

RESULTS: There was no statistical significance between the patients and surgeon satisfaction rates and two surgical procedures.

CONCLUSION: Z plasty and diamond shape excision are the most commonly used methods for correcting the secondary cleft lip deformity. These methods, which have no difference in terms of surgeon and patient satisfaction, can be used according to shape of the deformity.

Association of Hospital Surgical Volume with Outcomes in Cleft Repair: A Kids' Inpatient Database Analysis

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INTRODUCTION: Cleft defects are among the most common congenital abnormalities in the US.[1] Increasing centralization of specialist services, including cleft service delivery, is occurring worldwide, with the aim of improving the provision of cost-efficient, quality services.[2,3] The aim of this study is to investigate the impact of hospital volume on complications, charges and length of stay after cleft palate repair in the US.

METHODS: A retrospective analysis of the Kids' Inpatient Database (KID) was undertaken. Children ≤3 years of age undergoing cleft palate repair in 2012 were identified. Hospital volume was categorized by cases per year as low (LV, 0–14), intermediate (IV, 15–46) or high (HV, 47–99); differences in hospital charges and length of stay (LOS) were determined using a gamma log-link generalized linear model. Logistic regression was used to assess hospital volume as a predictor of overall complications.

RESULTS: Data for 2,389 children were retrieved: 24.9% (595) of cases were LV, 50.1% (1,196) were IV and 25.0% (596) were HV. There were significant differences in ethnicity ($p<0.001$), co-morbidity number ($p=0.002$), hospital bed size ($p<0.001$) and concomitant procedure performed (cleft lip, $p=0.025$, or myringotomy, $p=0.041$) between LV, IV and HV centers. HV centers were more frequently located in the West (71.9%) compared with LV (19.9%) or IV (24.5%) centers ($p<0.001$ for hospital region). Median household income was more commonly highest quartile in HV centers compared with IV or LV centers (32.3% vs. 21.7% vs. 18.1%) ($p<0.001$ for household income). There was no significant difference in major complications between different volume centers ($p=0.74$). Compared to HV centers, there was a significant decrease in mean hospital costs for LV centers ($9,682 vs. $8,378, $p<0.001$) but no significant difference in cost for IV centers ($9,260, $p=0.103$). Intermediate and LV centers had a significantly greater LOS when compared with HV centers (1.97 vs. 2.10 vs. 1.74, $p<0.001$).

CONCLUSION: Despite improvement in length of stay in high-volume centers, our findings differ with previous literature demonstrating that concentration of resources in high-volume centers generates cost-savings, as our results do not show a reduction in cost in the high-volume centers. High volume centers may undertake more complex cases, increasing costs, although there was no significant difference in complications between centers of differing volumes. Further research is needed to ensure widespread cost-efficiency.

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Evaluation of the Filtrum Length in Preop, Early Postop and Late Postop Periods in Unilateral Cleft Lips Repaired By Tennison and Millard Techniques

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INTRODUCTION: The cleft lip is caused by the absence of medial nasal and maxillary prominence fusion in embryological development. It results in misplacement of the perinasal and perioral muscles, mainly the orbicularis oris.[1] By separating the muscles from the wrong insersios, symmetrical repair is aimed. Many tecniques including Z-plasties are applied to ensure adequate length. In this study, we aimed to evaluate the preop, early postop and late postoperative filtrum length in patients who were treated with the most commonly used Tennison-Randall and Millard techniques in our clinic and in the world.

METHODS: Photographic records of 58patients who were treated with Tennison-Randall and Millard techniques in our clinic between 2010 and 2015 were reviewed. 23of our patients were treated with Millard rotation flap and 35 with Tennison trianguler flap. Photographs that were taken after the suturation were accepted as perop, photos taken in the first 12 months accepted as early postop, photos taken 12 months later were accepted as late postop. The photos were taken at the same angle as the single CanonEOS 550D SLR and were evaluated by a single person. By Image J program, cleft side and contralateral filter lengths were measured. Datas of Tennison- Randall and Millard techniques were evaluated by ANOVA test and t test.

RESULTS: There was no difference between perop, early postop and late postop measurements in the Millard technique($p > 0.05$). Filtrum was shorter in perop than in early postop ($p = 0.021$) and late postop($p=0.042$) measurements at whom operated by Tennison.There was no significant difference between early and late postop measurements.

When Millard and Tennison were compared with each other, perop filtrum length was longer in Tennison.

CONCLUSION: In patients with cleft lip, asymmetries are formed due to misplacement of perinasal and perioral muscles. In surgery, muscles are separated from the wrong insersions. Orbicularis oris continuity is ensured. Z-plasty should be done to repair skin deficiency. Straight line repair, upper and lower Z plasti techniques are available. Tennison and Millard are the most commonly used techniques in the World.

While in Tennison tecnique, postop lengths were longer than perop; in Millard group there were no statistically differences and when both tecniques were compared with each other no statistically significant difference was found in the length of the filtrum.

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