

儿童面部不同部位外伤美容缝合术后效果回顾分析

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摘要

目的: 分析儿童急诊面部外伤行一期美容缝合术后效果。方法: 回顾性分析自贡市第四人民医院烧伤整形美容外科2019年7月至2022年2月内278例单纯儿童面部挫裂伤急诊行美容缝合术后效果, 主要分析儿童面部不同部位采用同样美容缝合技巧后瘢痕情况、术后不良反应、患儿家属满意度等数据, 采用瘢痕评分量表、视觉模拟评分表、满意度调查表等分析量表。结果: 病例以创口部位分为额部(108例)、眶周(47例)、面颊(45例)、口周(78例), 其中患者额部、面颊部创口美容缝合术后满意度最高, 眶周、口周创口美容缝合术后满意度相对欠佳。其中口周较眶周美容缝合术后效果满意度稍差。以两岁为分界, 将病例分为4组, 其中2岁~4岁(≤ 4 岁) 114人; 4岁(> 4 岁)~6岁(≤ 6 岁) 94人; 6岁(> 6 岁)~8岁(≤ 8 岁) 45人; 8岁(> 8 岁)~10岁(≤ 10 岁) 25人。其中以8岁(> 8 岁)~10岁(≤ 10 岁)组美容缝合术后效果最佳, 随诊年龄层次增加, 术后瘢痕满意度增高。结论: 儿童急性面部单纯性皮肤挫裂伤选择美容缝合修复在短期、长期内均可收获良好的术后效果, 但其最终预后由多方面因素共同决定。其中额部及面颊创口美容缝合后均达到满意术后效果, 口周、眶周美容缝合术后效果相对满意率较低。且随着儿童年龄增长, 真皮层随之成熟, 局部抗张力作用更强, 局部瘢痕遗留更小, 美容缝合术后效果更佳。

关键词

美容缝合, 面部外伤, 一期缝合

Retrospective Analysis on the Effect of Cosmetic Suture after Trauma in Different Parts of Children's Face

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Abstract

Objective: To analyze the effect of primary cosmetic suture after emergency facial trauma in children. **Methods:** From July 2019 to February 2022, 278 children with simple facial contusion and laceration who underwent emergency cosmetic suture in Department of Burns and Plastic Surgery, Zigong Fourth People's Hospital were retrospectively analyzed. The data of scar condition, postoperative adverse reactions and family satisfaction of children with different facial parts using the same cosmetic suture technique were analyzed. The scar rating scale, visual analogue rating scale and satisfaction questionnaire were used to analyze the scale. **Results:** According to the wound site, the patients were divided into frontal (108 cases), periorbital (47 cases), cheek (45 cases) and perioral (78 cases). Among them, the satisfaction of aesthetic suture of frontal and cheek wounds was the highest, while the satisfaction of aesthetic suture of periorbital and perioral wounds was relatively poor. Among them, the satisfaction of cosmetic suture around the mouth is slightly worse than that around the orbit. The patients were divided into 4 groups according to the age of 2 years, including 114 patients aged 2~4 years (≤ 4 years), 94 persons aged from 4 years (>4 years) to 6 years (≤ 6 years); 45 persons aged 6 years (>6 years) to 8 years (≤ 8 years); 8 years old (>8 years old) to 10 years old (≤ 10 years old) 25. Among them, the group of 8 years old (>8 years old)~10 years old (≤ 10 years old) had the best postoperative effect, and the age level increased with the increase of postoperative scar satisfaction. **Conclusion:** Cosmetic suture repair for acute simple facial skin contusion and laceration in children can achieve good postoperative results in the short and long term, but its final prognosis is determined by many factors. Among them, the frontal and cheek wounds achieved satisfactory postoperative results after cosmetic suture, and the relative satisfaction rate of postoperative results of perioral and orbital aesthetic suture was low. In addition, as children grow older, the dermis becomes mature, the local anti-tension effect is stronger, the local scar is smaller, and the effect after cosmetic suture is better.

Keywords

Cosmetic Suture, Facial Trauma, Primary Suture

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1. 引言

随着社会经济全面发展, 国家政策下全面二胎计划的落实, 新增儿童人数也逐年递增。面部作为常规暴露区域, 在儿童外伤中最为常见[1] [2] [3]。据目前国内数据统计, 在儿童外伤中, 面部外伤占儿童急性外伤比例约 68.2% [4]。因而, 在处理急诊儿童面部外伤时, 其预后效果受到极大重视。本研究收集我院收治的 278 例急诊面部外伤手术患者, 并对整形美容缝合技术在儿童面部外伤手术中的效果进行分析, 汇报如下。

2. 资料与方法

2.1. 临床资料

一般资料选取 2019 年 7 月至 2022 年 2 月我院收治的 278 例儿童(2 岁~10 岁)急诊面部外伤手术患者,

其中额部创口 108 例；眶周创口 47 例；面颊创口 45 例；口周创口 78 例，年龄层次为 2 岁~4 岁(≤ 4 岁) 114 人；4 岁(> 4 岁)~6 岁(≤ 6 岁) 94 人；6 岁(> 6 岁)~8 岁(≤ 8 岁) 45 人；8 岁(> 8 岁)~10 岁(≤ 10 岁) 25 人组间对照。纳入标准：急诊初诊年龄 2~10 岁；颜面部外伤且生命体征平稳；符合伦理要求且患儿监护人签署知情同意书；排除标准：头部、四肢及躯干其余部位受伤；患儿合并其他严重外伤；凝血功能异常；过敏及瘢痕体质；差异具有可比性，差异无统计学意义($P > 0.05$)。

2.2. 手术方法

对病例均采用“心型”皮下减张缝合方法[5] [6] [7]。具体方法如下：创口周围清理血凝块、异物、及挫伤坏死表皮，反复盐水冲洗干净术区后常规消毒铺巾，创口予以 1:100 盐酸肾上腺素：利多卡因予以局部浸润麻醉。手术刀锐性清除创口内裹挟泥沙或无法清洗的异物，再次创口内彻底消毒。清创后据创口形状及深度，逐层解剖复位毁损组织，至少自肌层减张对位间断褥式缝合缝合创口深层，自面部皮下脂肪层游离创口边缘组织，游离间距与裂口间距等宽，尽可能在缝合深层组织后能达到皮肤无张力对合。修剪创缘呈锐性内斜，尽量保护皮肤真皮组织，减少不必要的组织损伤。自脂肪 - 浅筋膜层进针，向真皮层潜行，点状钩挂真皮层后立即向创口近端浅筋膜 - 脂肪层出针，减少缝线在真皮层内残留，保证出针位置位于皮下，对侧缝线对称缝合，线结埋于皮下，减少组织对线结排异反应。针距据缝合创口时张力决定，尽量保持间距对称，力量均衡，创口闭合无死腔，创口微凸出皮肤。创缘对合整齐、紧密[8] [9] [10]。

2.3. 数据采集

观察指标采取温哥华瘢痕评定量表(Vancouver Scar Scale, VSS)对患者术后创口色泽、柔软度、厚度、血管分布进行评分，总分为 15 分，患者得分越好则表示创口恢复越好，瘢痕预后越好；采取患者及家属调查表对患者满意度进行调查，调查表总分为 100 分，患者满意度越高则问卷调查得分越高；

2.4. 统计方法

采用 SPSS 20.0 软件对本次研究数据做统计学分析，采用 t 检验比较组间术后瘢痕满意度， $P < 0.05$ 时提示差异有统计学意义。

3. 结果

3.1. 面部不同部位美容缝合效果差异

将病例以创口部位分为额部(108 例)、眶周(47 例)、面颊(45 例)、口周(78 例)，其中患者额部、面颊部创口美容缝合术后满意度最高，眶周、口周创口美容缝合术后满意度相对欠佳。其中口周较眶周美容缝合术后效果满意度稍差。(见表 1、图 1)

Table 1. Among the four anatomical parts of the forehead, orbit, cheek and mouth, the satisfaction of cosmetic suture was the highest in the forehead (98.1%)

表 1. 在额部、眶周、面颊、口周四处解剖部位中，行美容缝合满意度最高为额部(98.1%)

部位	很满意	满意	不满意
额部	106	1	1
眶周	42	3	2
面颊	44	1	0
口周	69	6	3

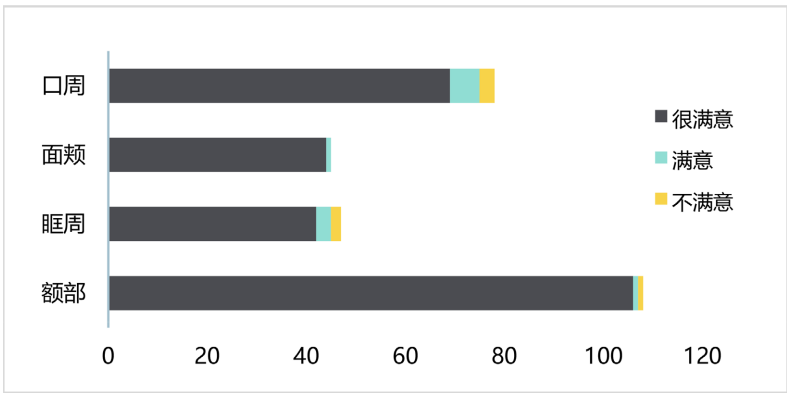


Figure 1. Among the four anatomical parts of the forehead, orbit, cheek, and mouth, the satisfaction of aesthetic suture was the highest in the forehead (red bar chart)

图 1. 在额部、眶周、面颊、口周四处解剖部位中，行美容缝合满意度最高为额部(褐色柱状图)

3.2. 不同年龄阶段美容缝合效果差异

以两岁为分界，将病例分为 4 组，其中 2 岁~4 岁(≤ 4 岁) 114 人；4 岁(> 4 岁)~6 岁(≤ 6 岁) 94 人；6 岁(> 6 岁)~8 岁(≤ 8 岁) 45 人；8 岁(> 8 岁)~10 岁(≤ 10 岁) 25 人。其中以 8 岁(> 8 岁)~10 岁(≤ 10 岁)组美容缝合术后效果最佳，随着年龄层次增加，术后瘢痕满意度增高(中图 2、表 2)。

Table 2. Between 2 and 4 years old (≤ 4 years old); 4 years (> 4 years)~6 years (≤ 6 years); 6 years old (> 6 years old)~8 years old (≤ 8 years old); Among the four groups aged 8 years (> 8 years)~10 years (≤ 10 years), the postoperative scar satisfaction increased with the increase of age level

表 2. 在 2 岁~4 岁(≤ 4 岁)；4 岁(> 4 岁)~6 岁(≤ 6 岁)；6 岁(> 6 岁)~8 岁(≤ 8 岁)；8 岁(> 8 岁)~10 岁(≤ 10 岁)四组中，随着年龄层次增加，术后瘢痕满意度增高

年龄	很满意	满意	不满意
2 岁~4 岁(≤ 4 岁)	107	3	4
4 岁(> 4 岁)~6 岁(≤ 6 岁)	87	6	1
6 岁(> 6 岁)~8 岁(≤ 8 岁)	43	1	1
8 岁(> 8 岁)~10 岁(≤ 10 岁)	24	1	0

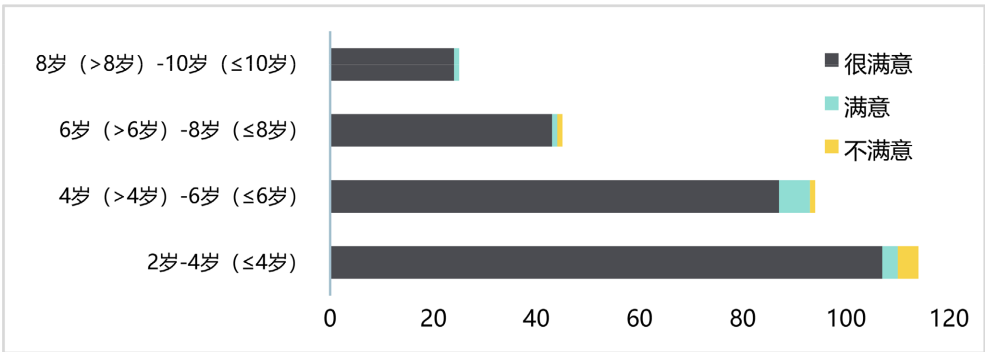


Figure 2. Between 2 and 4 years old (≤ 4 years old); 4 years (> 4 years)~6 years (≤ 6 years); 6 years old (> 6 years old)~8 years old (≤ 8 years old); Among the four groups aged 8 years (> 8 years)~10 years (≤ 10 years), postoperative scar satisfaction increased with the increase of age (brown bar chart)

图 2. 在 2 岁~4 岁(≤ 4 岁)；4 岁(> 4 岁)~6 岁(≤ 6 岁)；6 岁(> 6 岁)~8 岁(≤ 8 岁)；8 岁(> 8 岁)~10 岁(≤ 10 岁)四组中，随着年龄层次增加，术后瘢痕满意度增高(褐色柱状图)

4. 讨论

瘢痕形成过程是软组织损伤延伸至或穿过网状真皮后愈合的后遗症[6] [11] [12]。尤其是头部和颈部的疤痕可能会导致身体毁容,从而产生心理社会影响。在手术后的愈合过程中或在创伤环境中减轻过度的疤痕形成,需从细致的软组织处理和重建技术开始[13] [14]。儿童面部急诊美容缝合封闭创口,可在早期手术时干预瘢痕形成的初始过程,对本次数据分析中,可总结出面部瘢痕遗留明显部位主要为眶周(内眦、外眦),口周(上唇、鼻唇沟、下颌、下颏) [15]。而相对平坦部位,如额部及面颊位置瘢痕形态、颜色、宽度等均表现良好,部分创口甚至能达到无痕愈合。

据目前研究证明,面部瘢痕形成影响因素:皮肤张力(首位),年龄(局部弹力纤维的含量及抗张能力相关),感染,异物,切口与皮肤的角度[13] [16] [17]。皮肤张力的大小据面部位置的不同而不同,相对额部及面颊,眶周及口周组织因术后活动,无形中增加了术后切口张力导致瘢痕增生。组织愈合过程中,瘢痕主要形成于组织重塑过程,重塑中胶原蛋白 I 与胶原蛋白 III 比例逐渐偏斜于胶原蛋白 III 为主,随着年龄的增长,皮肤自身抗张能力增强,组织重塑过程缩短,反而导致瘢痕的增生减少,因此在儿童面部创口愈合过程中,年龄较大者反而瘢痕不明显,此结果也可能与患儿随年龄相关医从性增加相关[18] [19]。因本次病例均选择单纯儿童面部皮肤挫裂伤,术前评估创口均为 1 类或者 2 类创口,其中存在 4 例术后感染,不具差异性。值得一提的是,尽管术前仔细行创口清洗、消毒及术中止血,但术后仍存在感染及排线反应,提示我们在手术中选择缝线的个体性[20] [21]。在本次回顾分析中,发现创口方向与面部皮肤 Langers 线走形一致情况下,瘢痕相较不明显;且在眉间、口周、鼻唇沟、下颌线等面部小解剖单位间创口的瘢痕形成较明显[22];此类部位的创口若为直线形创口,两侧组织在皮肤活动时对瘢痕形成连续、同一方向的张力,导致此类部位的直线瘢痕容易增宽、增生加重,同时在视觉体验中,直线瘢痕较曲线瘢痕更加明显[22] [23] [24] [25]。因此可得出结论:儿童急性面部创口缝合过程中,美容缝合后绝大部分能取得良好的效果,但瘢痕的形成不单一决定于某一因素,在创口的早期处置、创口的缝合,缝线的选择、术后创口的护理、愈合后综合抗瘢痕治疗中均需要行综合性、全面性的评估及预防[13] [26]。

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参考文献

- [1] Kishikova, L., Smith, M.D. and Cubison, T.C. (2014) Evidence Based Management for Paediatric Burn: New Approaches and Improved Scar Outcomes. *Burns*, **40**, 1530-1537. <https://doi.org/10.1016/j.burns.2014.01.020>
- [2] Steen, E.H., Wang, X., Boochoon, K.S., Ewing, D.C., Strang, H.E., Kaul, A., et al. (2020) Wound Healing and Wound Care in Neonates: Current Therapies and Novel Options. *Advances in Skin & Wound Care*, **33**, 294-300. <https://doi.org/10.1097/01.ASW.0000661804.09496.8c>
- [3] Hogg, N.J. (2012) Primary and Secondary Management of Pediatric Soft Tissue Injuries. *Oral and Maxillofacial Surgery Clinics of North America*, **24**, 365-375. <https://doi.org/10.1016/j.coms.2012.04.007>
- [4] 余杏侠, 魏捷, 杨卫泽. 儿童意外伤害 482 例原因及特点分析[J]. 中国儿童保健杂志, 2019, 27(6): 687-696.
- [5] 吴兆晴, 等. 皮下“心形”美容缝合技术在初次剖宫产术后切口愈合中的应用效果[J]. 中国美容医学, 2020, 29(8): 101-104.
- [6] Regula, C.G. and Yag-Howard, C. (2015) Suture Products and Techniques. *Dermatologic Surgery*, **41**, S187-S200.
- [7] Yag-Howard, C. (2014) Sutures, Needles, and Tissue Adhesives: A Review for Dermatologic Surgery. *Dermatologic Surgery*, **40**, S3-S15. <https://doi.org/10.1097/01.DSS.0000452738.23278.2d>
- [8] Barone, N., Safran, T., Vorstenbosch, J., Davison, P.G., Cugno, S. and Murphy, A.M. (2021) Current Advances in Hypertrophic Scar and Keloid Management. *Seminars in Plastic Surgery*, **35**, 145-152. <https://doi.org/10.1055/s-0041-1731461>

-
- [9] Heppt, M.V., Breuninger, H., Reinholz, M., Feller-Heppt, G., Ruzicka, T. and Gauglitz, G.G. (2015) Current Strategies in the Treatment of Scars and Keloids. *Facial Plastic Surgery*, **31**, 386-395. <https://doi.org/10.1055/s-0035-1563694>
- [10] Gold, M.H., McGuire, M., Mustoe, T.A., Pusic, A., Sachdev, M., Waibel, J., et al. (2014) Updated International Clinical Recommendations on Scar Management: Part 2—Algorithms for Scar Prevention and Treatment. *Dermatologic Surgery*, **40**, 825-831.
- [11] Tierney, E. and Kouba, D.J. (2009) A Subcutaneous Corset Plication Rapidly and Effectively Relieves Tension on Large Linear Closures. *Dermatologic Surgery*, **35**, 1806-1808. <https://doi.org/10.1111/j.1524-4725.2009.01295.x>
- [12] Lubeek, S.F. and Arnold, W.P. (2016) A Retrospective Study on the Effectiveness of Curettage and Electrodesiccation for Clinically Suspected Primary Nodular Basal Cell Carcinoma. *British Journal of Dermatology*, **175**, 1097-1098. <https://doi.org/10.1111/bjd.14770>
- [13] Byrne, M. and Aly, A. (2019) The Surgical Suture. *Aesthetic Surgery Journal*, **39**, S67-S72. <https://doi.org/10.1093/asj/sjz036>
- [14] Paul, M.D. (2013) Barbed Sutures in Aesthetic Plastic Surgery: Evolution of Thought and Process. *Aesthetic Surgery Journal*, **33**, 17S-31S.
- [15] Cho, D.Y., Willborg, B.E. and Lu, G.N. (2021) Management of Traumatic Soft Tissue Injuries of the Face. *Seminars in Plastic Surgery*, **35**, 229-237. <https://doi.org/10.1055/s-0041-1735814>
- [16] Setiawati, A., Jang, D., Cho, D., Cho, S., Jeong, H., Park, S., et al. (2021) An Accelerated Wound-Healing Surgical Suture Engineered with an Extracellular Matrix. *Advanced Healthcare Materials*, **10**, e2001686. <https://doi.org/10.1002/adhm.202001686>
- [17] Barber, F.A., Herbert, M.A., Coons, D.A. and Boothby, M.H. (2006) Sutures and Suture Anchors—Update 2006. *Arthroscopy*, **22**, 1063e1-9. <https://doi.org/10.1016/j.arthro.2006.04.106>
- [18] Beanes, S.R., Dang, C., Soo, C., Wang, Y., Urata, M., Ting, K., et al. (2001) Down-Regulation of Decorin, a Transforming Growth Factor-Beta Modulator, Is Associated with Scarless Fetal Wound Healing. *Journal of Pediatric Surgery*, **36**, 1666-1671. <https://doi.org/10.1053/jpsu.2001.27946>
- [19] Yates, C.C., Hebda, P. and Wells, A. (2012) Skin Wound Healing and Scarring: Fetal Wounds and Regenerative Resitution. *Birth Defects Research Part C: Embryo Today: Reviews*, **96**, 325-333. <https://doi.org/10.1002/bdrc.21024>
- [20] Shokri, T., Smith, J. and Ducic, Y. (2020) Paradigms in Complex Facial Scar Management. *Seminars in Plastic Surgery*, **34**, 305-313. <https://doi.org/10.1055/s-0040-1721768>
- [21] Bock, O., Schmid-Ott, G., Malewski, P. and Mrowietz, U. (2006) Quality of Life of Patients with Keloid and Hypertrophic Scarring. *Archives of Dermatological Research*, **297**, 433-438. <https://doi.org/10.1007/s00403-006-0651-7>
- [22] McClean, M.E., Boen, M., Alhaddad, M., Hoss, E., Kollipara, R. and Butterwick, K. (2020) Suture Lifting: A Review of the Literature and Our Experiences. *Dermatologic Surgery*, **46**, 1068-1077. <https://doi.org/10.1097/DSS.0000000000002297>
- [23] Son, D. and Harijan, A. (2014) Overview of Surgical Scar Prevention and Management. *Journal of Korean Medical Science*, **29**, 751-757. <https://doi.org/10.3346/jkms.2014.29.6.751>
- [24] Al-Shaqsi, S. and Al-Bulushi, T. (2016) Cutaneous Scar Prevention and Management: Overview of Current Therapies. *Sultan Qaboos University Medical Journal*, **16**, e3-e8. <https://doi.org/10.18295/squmj.2016.16.01.002>
- [25] Litwicka, K. and Greco, E. (2011) Caesarean Scar Pregnancy. *Current Opinion in Obstetrics & Gynecology*, **23**, 415-421. <https://doi.org/10.1097/GCO.0b013e32834cef0c>
- [26] Polykandriotis, E., Daenicke, J., Bolat, A., Gruner, J., Schubert, D.W. and Horch, R.E. (2022) Individualized Wound Closure-Mechanical Properties of Suture Materials. *Journal of Personalized Medicine*, **12**, Article No. 1041.