

# Plastic and Cosmetic Repair of Facial Soft Tissue Injury Based on Digital Customization Technology

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## Abstract

With the improvement of living standards, patients also have higher requirements for the beauty of face and face. We should not only ensure the effectiveness of treatment, but also improve the beauty of face and face. Plastic and cosmetic repair is a repair method of facial soft tissue injury with wide range of clinical application and good repair effect, which has been popularized in our country. Because the face is exposed for a long time, it is very easy to cause skin and soft tissue damage due to a variety of factors. Once facial soft tissue injury occurs, early repair treatment will have a very important impact on future recovery. Compared with traditional surgery, cosmetic surgery has increased the proportion of facial beauty in treatment, with longer operation time, more detailed operation and more careful anesthesia selection. The degree of facial soft tissue repair and beauty of patients is closely related to surgical methods. In this paper, the related problems and development situation of plastic and cosmetic repair of facial soft tissue injury will be discussed.

## Keywords

Digital customization technology, Facial soft tissue injury, Plastic surgery.

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## 1. Introduction

With the development of social civilization, people's requirements for human beauty are rising, especially young people, who pay special attention to the pursuit of beautiful appearance [1]. This requires emergency surgeons and community doctors to have good aesthetic views and skills. The face is the exposed part of the human body, and its integrity plays a decisive role in facial beauty. Any lesion defect or defect deformity will have a serious impact on people's psychology [2]. With the improvement of living standards, patients also have higher requirements for the beauty of face and face, which should not only ensure the effectiveness of treatment, but also improve the beauty of face and face [3]. From the treatment of facial soft tissue injuries to the removal of sutures, we should follow the principles of cosmetic surgery, so that the repaired parts are free of deformities, minimize scars and avoid the pain of secondary reduction [4]. Plastic surgery is a widely used and effective method to repair facial soft tissue injuries, which has been popularized in China [5]. During the repair, the treatment of the wound was not considered from the aesthetic point of view, which left unsightly marks after the wound healed [6]. For the wounds with large defects, many doctors did not fill and repair them, leaving the patients with dents and defects after recovery, resulting in defects [7].

Because the face is exposed for a long time, it is easy to cause skin and soft tissue injury due to various factors.

When suturing the facial incision in traditional clinic, the requirements of patients for aesthetics are often ignored, resulting in postoperative scars and even facial deformities [8]. Once facial soft tissue injury occurs, early repair treatment will have a very important impact on future recovery. With the improvement of living standards, patients also have higher requirements for the beauty of face and face. We should not only ensure the effectiveness of treatment, but also improve the beauty of face and face. Many people without facial injuries will still choose plastic repair to make their faces satisfactory. Therefore, the fear of facial injuries of patients with facial injuries has far exceeded the pain itself. Compared with traditional surgery, cosmetic surgery has increased the proportion of facial beauty in treatment, with longer operation time, more detailed operation and more careful anesthesia selection. The degree of facial soft tissue repair and beauty of patients is closely related to surgical methods. Therefore, the early treatment of facial soft tissue injury is very important.

## **2. Materials and methods**

### **2.1 General information**

From January 2018 to January 2020, 200 patients with facial skin and soft tissue injury were selected for cosmetic surgery, including 100 males and 100 females, aged from 8 to 59 years, with an average age of (37.3 14.9) years. The causes of injury were: 36 cases of cutting, 45 cases of traffic accident, 11 cases of explosion, 47 cases of falling injury and 30 cases of glass. There were 48 cases of frontal injury, 69 cases of buccal injury, 23 cases of eyelid injury, 18 cases of nose injury, 39 cases of Chin injury, and the other 3 cases. There were patients with multiple site injury, and some patients had pigment deposition in the wound. All patients were confirmed to be life-threatening. There was no significant difference in the general data of all patients ( $P > 0.05$ ).

### **2.2 Way**

In the control group, routine clinical repair was used, and the patients' injuries were comprehensively examined before operation, such as whether there were traumatic fractures, etc., and the vital signs of patients were closely monitored, and the patients were fully prepared for operation.

(1) Anesthesia and debridement. Ask the patient's injury time and try to suture the patient's wound within 8 hours. If the patient's injury time and treatment time have exceeded 8 hours and no infection is found through clinical observation, suture can still be carried out. If the patient has completed debridement and suture before admission, if the wound  $\leq 45$  h, the suture can be removed and sutured with cosmetic surgery technology. If the patient whose wound is more than 3 days requires the suture to be removed, the needle eye can be removed and the plastic and cosmetic suture technology can be used.

(2) Wound treatment. If the patient's wound is contaminated, the wound should be washed with normal saline to remove clots and foreign bodies, protect the wound, and clean the skin around the wound with soapy water. We used more than two methods, such as external anti-scar Chinese medicine ointment, scar patch, ultrasonic Chinese medicine introduction and local elastic bandage compression, for more than 3 months.

(3) Repair surgery. For the wound with small tension and neat wound edge, there is no need to reduce tension. Dermal suture was performed first with 6-0 vicho. For patients with neat wound margin and non inactivated tissue, cosmetic suture can be directly adopted. When there is tension in the suture of skin defects, the wounds were repaired by "/" plasty, 0-1 plasty, adjacent flap transfer and sliding flap advancement.

(4) Suture. Wound sutures were removed intermittently in "days" after operation, and all were removed in 7 days. Tension wound sutures should extend the suture removal time appropriately. According to the actual situation of patients, choose the appropriate suture. The incision was stitched

into a "V" shape. Three-point suture is adopted, and the whole layer of tip should not be penetrated. If the defect area is large, the free skin flap can be transplanted and then compressed and bandaged.

### 2.3 Statistical analysis

Spss24.0 software was used to analyze and process the data. The measurement data were expressed in (mean  $\pm$  standard deviation) and t-test was used; The counting data is expressed in (n,%), using  $\chi^2$  test, with  $P < 0.05$ , the difference was statistically significant.

## 3. Result analysis and discussion

### 3.1 Evaluation of patient repair effect

In 200 cases, the wounds of all patients healed in grade I. The follow-up results of 6 months after operation showed that the scar was fine and dark red linear. The follow-up of 1 year after operation showed that the scar basically disappeared in all patients, which was no different from normal skin. Within 1 year, all patients had no complications such as wound dislocation deformity and scar hyperplasia. The local scar was not obvious, the appearance and function were good, and the effect was satisfactory. During the treatment, all children had no complications, no injury to mandibular nerve, blood vessel and tooth germ, and no lower lip sensory numbness during postoperative follow-up. After operation, facial symmetry was obviously improved, bite relation tended to be normal, bite plane tended to be horizontal, and satisfactory results were obtained. To observe the CT data before and after the retractor was taken out, and to analyze the osteogenesis and reconstruction. All patients in this group have effective prolonged treatment, good osteogenesis and achieved the expected results, as shown in Figure 1.



Figure 1 Comparison before and after operation

The two groups of patients were given the same basic treatment methods and nursing countermeasures. First, the vital signs of the patients were observed, the condition was diagnosed, and the anesthesia mode and treatment scheme were determined according to the patient's constitution, injury and vital signs. In the control group, routine suture was used. Firstly, the injury state and repair method of the patient were determined. The wound must be cleaned and routine postoperative nursing measures must be taken. The primary healing rate of study group was 96.1%, while that of control group was 83.71%. The rate of scar hyperplasia in study group was 28.52%, while that in control group was 57.05%. The cosmetic rate of the study group was 9.82%, while that of the control group was 36.23%, and the difference was statistically significant ( $P < 0.04$ ). See table 1.

Table 1 Statistical table of wound healing effect and scar hyperplasia in observation group and control group [cases (%)]

Group	Number of cases	Primary healing	Scar hyperplasia	Need plastic surgery
Control group	100	89	61	36
Research group	100	98	30	1
$\chi^2$ value	-	7.276	5.115	4.255
P value	-	<0.05	<0.05	<0.05

### 3.2 Patient satisfaction survey

The questionnaire of satisfaction showed that 200 patients were satisfied with the repair effect, and the satisfaction was 100%.

### 3.3 Discuss

At present, human beings' demand for beauty is increasing, so early treatment of facial soft tissue injury is very important. At present, the clinical treatment principle for patients with facial trauma focuses on functional recovery and wound healing. Although the wound healing effect is good, it is often accompanied by serious secondary deformities and obvious scars, which affects the beauty of patients' faces and often requires later surgical repair. Many surgeons have not received standardized training in plastic and cosmetic techniques. When treating patients' wounds, they only deal with them according to routine procedures, which makes scars easily appear after the wounds heal, affecting the appearance of patients. Clinically, the traditional surgical repair technology focuses on the wound healing and functional recovery of patients, so many beauty lovers are not satisfied with their appearance after surgical repair. This is mainly related to the failure to repair the facial soft tissue injury according to the principle of plastic and cosmetic repair. The essential difference between conventional facial soft tissue injury repair and plastic and cosmetic repair is that conventional repair takes the restoration of tissue function as the fundamental premise, the primary purpose in the repair process is to ensure the recovery of tissue function, followed by beauty. Therefore, large scars and scar hyperplasia may occur in the repair of some facial areas.

During the repair, there is no tension in the skin edge suture, and absorbable suture is used for the superficial skin of the patient. Considering the appearance of the patient, adjust the direction and position of the wound, and perform scar-free treatment on the wound of the patient. Plastic surgery requires more detailed selection of anesthesia methods. The best operation environment for plastic surgery is that patients can fine-tune their facial expressions during surgery. Plastic surgery mainly involves local anesthesia and nerve root block anesthesia. The treatment of facial soft tissue trauma should not only follow the general trauma treatment principles of surgery, but also pay special attention to the principles and techniques of plastic and cosmetic surgery. Plastic and cosmetic technology can repair facial skin and soft tissue injury, with good healing effect and aesthetic effect, and high patient satisfaction. Plastic and cosmetic repair is based on the recovery of facial appearance and beauty, and takes into account the repair of tissue function, which leads to the great difference in repair methods and ideas, and the repair effect is also different, even when the same facial injury is modified. Plastic surgery must be strictly aseptic, and the attending doctor is required to have a certain aesthetic concept. Before surgery, at least two facial cosmetic repair programs should be given.

## 4. Conclusions

Clinical attention has not been paid to the early repair of facial injury. It is often considered that it is only a simple debridement and suture, which is mostly handled by interns or young doctors, resulting in many residual problems. After facial injury, patients are no longer only satisfied with the healing of wounds and the recovery of functions, but have increasingly strong requirements for the recovery

of their own appearance. With the development of the times and the progress of society, people pay more and more attention to their appearance and image. When choosing plastic repair methods, we should also take the advice of professional doctors and choose the treatment methods suitable for the patients themselves, instead of blindly seeking medical treatment based on their own personal preferences.

First of all, we should determine the plastic scheme to ensure the beauty of the face while restoring the tissue and structural function to the greatest extent. Therefore, the determination of repair method, operation time, operation difficulty and operation cost of plastic and cosmetic repair are significantly higher than those of conventional suture. The application of plastic surgery technology to patients with facial skin and soft tissue injury has a good effect, which can effectively reduce the incidence of postoperative scar, beautify the wound, and reduce the permanent aesthetic damage to the patient's face caused by facial soft tissue injury. Plastic and cosmetic technology can repair facial skin and soft tissue injury, with good healing effect and aesthetic effect, high patient satisfaction, which is worthy of extensive clinical promotion.

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