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АКТУАЛЬНЫЕ МЕТОДЫ ЛЕЧЕНИЯ ТРАВМ СКУЛООРБИТАЛЬНОГО КОМПЛЕКСА С ПРИМЕНЕНИЕМ АУТОЛОГИЧЕСКОЙ ФИБРИНОВОЙ МЕМБРАНЫ ОБОГАЩЕННОЙ ТОРМБОЦИТАМИ

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✓ ***Резюме***

Сегодня в мире рост уровня транспортных, бытовых или криминальных травм в последние годы привел к повышению интереса к лечению травм щечно-орбитального комплекса. За последние 15-20 лет появилось много новой информации о состоянии и методах лечения скулы и орбиты. Хирургическая практика выполнения на скулоорбитальном комплексе совершенствуется день ото дня во многих зарубежных школах челюстно-лицевой хирургии.

Ключевые слова: Богатый тромбоцитами фибрин (PRF), скуло-орбитальный комплекс, переломы, факторы роста, трубка, сгусток, восстановление, иммунная система.

TORMBOTSITLAR BILAN BOYITILGAN AUTOLOGIK FIBRIN MEMBRANASIDAN FOYDALANGAN HOLDA SKULOORBITAL KOMPLEKSNING SHIKASTLANISHLARINI DAVOLASHNING DOLZARB USULLARI

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✓ ***Rezume***

Dunyoda bugungi kunda So‘nggi yillarda transport, maishiy yoki kriminal jarohatlar darajasining ortishi yonoq-orbital kompleks jarohatlarini davolshga qiziqishning ortishiga olib keldi. So‘nggi 15-20 yillarda skula va orbitani holati va davolash usullari to‘g‘risida ko‘plab yangi axborotlar paydo bo‘ldi. Skuloorbital kompleksda bajarilish jarrohlik amaliyoti ko‘plab xorijiy yuz-jag‘ jarrohligi maktablarida kundan kunga takomillashtirilmoqda.

Kalit so'zlar: fibrin trombotsitlariga boy (PRF), zigomatik orbital kompleks, yoriqlar, o'sish omillari, naycha, pıhtı, tiklanish, immunitet tizimi.

CURRENT METHODS OF TREATMENT OF INJURIES OF THE ZYGOMATICO-ORBITAL COMPLEX USING AUTOLOGOUS FIBRIN MEMBRANE ENRICHED WITH THROMBOCYTES

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✓ ***Resume***

Globally today, increasing rates of transport, domestic or criminal injuries in recent years have led to an increased interest in the treatment of injuries to the cheek and orbital complex. Over the past 15-20 years, much new information has become available on the status and treatment of the cheekbone and orbit. The surgical practice of performing on the cheek-orbital complex is improving day by day in many foreign schools of maxillofacial surgery.

Key words: Platelet-rich fibrin (PRF), Zygomatic-orbital complex, fractures, growth factors, tube, clot, recovery, immune system.

Introduction

Oral and maxillofacial surgeons strive to make what they get quality and reduce the time a patient spends at the surgical table. Although there are many different treatments for the cheek-orbital complex, the length of the surgical procedure period and each day after the rehabilitation period after the surgical procedure increase the need for modern treatment[1,4,7]. Considering the above, one of the current pressing issues most often faced by maxillofacial surgeons is to improve the surgical treatment of cheek-orbital complex injuries. Thus, it is necessary to improve the methods of surgical interventions in the cheek-orbital complex, to accelerate the regeneration of bone tissue and other tissues of the eye-one of the urgent problems of modern maxillofacial dentistry and surgery, which must be solved[2,3,9].

At present, scientific research is being conducted to improve wound healing of the zygomatic-orbital complex using fibrin membranes enriched with platelets. In this regard, it is necessary to carry out a retrospective analysis of the results of surgical practice on the treatment of wounds of the zygomaticorbital complex, to improve the methods of obtaining high-quality fibrin membranes from the patient's blood to improve the regenerative aspects of wound healing, to develop a method of using platelet-enriched fibrin to improve the effectiveness of the treatment of wounds of the zygomaticorbital complex, and to develop methods of treating wounds of the zygomaticorbital complex[5,7,8].

Purpose of the study: To investigate the incidence of fractures of the skeletal-orbital bone and the method of using the fibrine membrane

Methods and materials

Before collecting blood samples, 29 patients supplied prior permission. All methods involving human subjects in this study adhered to the ethical standards set by the organizational as well as national scientific committees. All blood samples were taken at the Tashkent Medical Academy and used in compliance with Medical Ethics Standards and Guidelines. Factors influencing Genetics, acquired factors (e.g., platelet activation, hyperhomocysteinemia, abnormal thrombin and factor XIII levels in plasma, blood flow, oxidative stress, hyperglycemia, medications, and cigarette smoking), and environmental factors (e.g., temperature, reducing agents, chloride and calcium ion concentrations) all contribute to fibrin clot formation and structure. All patients confirmed that they did not have any of the aforementioned conditions. Prior to the studies, the CBCs were analyzed to confirm conventional cell count ranges. The PRF was produced using an Dilab centrifuge. Each of the 29 participants supplied 29 vials of blood in normal 10 mL glass collection tubes (vacutainers) [7]. We lead to common blood test till preparing PRF membranes. Unique side of this method is we complete all steps PRF preparation. Moreover, those steps we do in operation theatre simultaneously with performing reconstruction zygomatic orbital complex. During this performance surgeon use titanium plates for reconstruction the floor of orbital after “blow-out” fractures [8-12]. Titanium plate covered with fibrin membranes and cytokines produce from PRF then they useful for recovery bone structures of ZOC and regeneration soft tissue.

Result and discussions

As in the preceding group, all (n = 29) patients with varied SOC fractures who were treated with autologous fibrin membranes supplemented with platelets were classified strictly using the Manson 1990 classification.

Maxillofacial surgeons, ophthalmologists, and, if necessary, neurosurgeons examined the patients' conditions prior to surgery. In the second group (n = 29), all reconstructive procedures on the zygomatic-orbital complex were carried out making use of PRF membranes.

The diagram shows that in the main group of the study, patients before the surgical period complained more than 25 about the aesthetic defect of the zygomatic-orbital complex, 22 complaints were related to enophthalmos, hypophthalmos was identified in 19 patients, the step symptom was identified in 15 patients, it is important to note that all complaints have a combined character. One of the features of our work, in addition to the general standard laboratory tests that the patient underwent in the emergency room, before each preparation of PRF membranes, we conducted a thorough general blood test with a detailed formula of 31 indicators on a hematological analyzer manufactured in 2022 by DF 50 DYMIND, which complies with the European standard in operating rooms. After an examination, the maxillofacial surgeon at the Tashkent Medical Academy's plastic surgery department orders laboratory and instrumental studies for patients, such as computed tomography with a 3D model of the skull (to determine the nature of the fracture, the volume of surgical manipulations which performed, and the size of the lower wall of the orbit). Laboratory tests include a general blood test (to determine the number of platelets, as it is difficult to obtain a high-quality

fibrin membrane from a small number of platelets) and a coagulogram (particularly to determine the amount of fibrinogen, INR, and APTT), as well as standard studies such as blood biochemistry and blood tests for infection. An anesthesiologist is examined after obtaining anthropometric indicators by analyzing photographs of patients and MSCT data to determine the level of enophthalmos of the affected eye socket (enophthalmos is an ophthalmological pathology in which the eyeball sinks excessively into the socket in which the orbit is present). All SVC restoration procedures involve general anesthesia and tracheal intubation. The temperature in the operating room is regulated to 21-220C once the patient is intubated (since ambient temperature is the most important component for separating fibrin membranes). The surgical field is processed, the surgical incision is made with a disposable surgery scalpel, exposing the fracture lines of the zygomatic bone along the zygomaticofrontal suture and the lower orbital edge through the skin incision, retreating 5 mm from the edge of the lower eyelash line, then coagulation of the vessels is performed, fixation of the upper edge of the surgical wound with a ligature, and this causes the muscle layer of the extraocular muscles to After reaching the bone structure of the eye socket, the eyeball is gently elevated using a short medical equipment to maximize visibility. Before administering anesthesia, venous blood is drawn from the ulnar region. After placing the tubes without anticoagulants at an angle of 450, immediately start the centrifugation stage with a volume of 9-10 ml. The centrifugation step lasts 8 minutes and takes place at 1300 rpm. After centrifugation, the test tube is placed on a stand, and the room temperature should be 21-22C0 to allow the fibrin plate to come into contact with oxygen in the air. The upper part of the resultant material, which is seldom plasma, must be removed using a syringe. Contact with oxygen must last at least 6 minutes. Using medical devices (tweezers), the fibrin membrane (PRF) with the red blood cell mass is gently pulled from the test tube, and the PRF is precisely separated from the red blood cell mass. Following separation, a liquid component may be visible in the fibrin membrane, which includes a considerable number of leukocytes. To achieve a pure fibrin membrane, PRF is compressed with a metal plate for 10-15 minutes.

Conclusion

According to the literature research, no method for preparing a PRF membrane intraoperatively in reconstructive procedures on the zygomatic-orbital complex has been created. The widespread use of PRF membrane intraoperatively in reconstructive procedures on the zygomatic-orbital complex reduces the percentage of postoperative complications and the proportion of radical operations on the ZOC, resulting in a 1.5-fold reduction in inpatient patient days in hospital.

LIST OF REFERENCES:

1. Delaini F, Poggi A, Donati MB. Enhanced afnity for arachidonic acid in platelet-rich plasma from rats with Adriamycin-induced nephrotic syndrome. // Thromb Haemost. 1982;48(3):260–2.
2. Miron RJ, Zucchelli G, Pikos MA, Salama M, Lee S, Guillemette V, Fujioka, Kobayashi M, Bishara M, Zhang Y, Wang H-L, Coi J. Use of platelet-rich fbrin in regenerative dentistry: a systematic review. // Clin Oral Invest. 2017;21(6):1913–27.
3. Miron RJ, Choukroun J, Ghanaati S. Necessity for standardization of rela- tive centrifugal force values in studies on platelet rich fbrin; response to letter to the editor. // J Periodontol. 2018;90:122–5.
4. Ehrenfest DMD, Rasmusson L, Albrektsson TJ. Tib: classifcation of platelet concentrates: from pure platelet-rich plasma (P-PRP) to leucocyte-and platelet-rich fbrin (L-PRF). // Trends Biotechnol. 2009;27(3):158–67.
5. Kobayashi E, Fluckiger L, Fujioka-Kobayashi M, Sawada K, Sculean A, Schaller B, Miron RJ. Comparative release of growth factors from PRP, PRF, and advanced-PRF. // Clin Oral Invest. 2016;20(9):2353–60.
6. Miron RJ, Fujioka-Kobayashi M, Hernandez M, Kandalam U, Zhang Y, Gha- naati S, Choukroun J. Injectable platelet rich fbrin (i-PRF): opportunities in regenerative dentistry? // Clin Oral Invest. 2017;21:2619–27.
7. Miron RJ, Chai J, Zheng S, Feng M, Sculean A, Zhang Y. A novel method for evaluating and quantifying cell types in platelet rich fbrin and an introduction to horizontal centrifugation. // J Biomed Mater Res, Part A. 2019;107(10):2257–71.
8. Nunes CR, Roedersheimer M, Simske S, Luttges M. Efect of microgravity, temperature, and concentration on fbrin and collagen assembly. // Micro- gravity Sci Technol. 1995;8(2):125–30.
9. Ghanaati S, Booms P, Orlowska A, Kubesch A, Lorenz J, Rutkowski J, Landes C, Sader R, Kirkpatrick C, Choukroun J. Advanced platelet-rich fbrin: a new concept for cell-based tissue engineering by means of infammatory cells. // J Oral Implantol. 2014;40(6):679–89.

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