closure of the opposing edges. This process allowed for a large area to be covered with hair-bearing scalp with good cosmetic results.

Key Words: DermaClose, external tissue expanders, scalp defects, scalp reconstruction, reconstructive surgery

Reconstruction of scalp defects presents a unique challenge for plastic and reconstructive surgeons. The limited flexibility of the scalp and hair-bearing nature makes it difficult to repair tissue defects with tissue that is similar in color, thickness, and texture.[1] Tissue expansion is an effective method that can overcome these barriers in scalp reconstruction.[1–4] The scalp is ideal for use of external tissue expanders, such as the DermaClose (Synovis Micro Companies Alliance Inc., Birmingham, AL) continuous external tissue expansion. Two main types of soft tissue expanders that have been used in scalp reconstruction include long-term internal tissue expanders and external tissue expanders. Internal tissue expansion with silastic balloons usually requires preoperative planning and is best used before the wound is created rather than use in acute wounds due to trauma or malignancy. Complications include extrusion, infection, and expander failure. The development of CETE yields the same benefit as internal tissue expansion, while avoiding the major complications of its use in scalp reconstructions.[3]

MATERIALS AND METHODS

A 27-year-old male presented to his dermatologist in December 2019 with a parietal scalp lesion and underwent Mohs micrographic surgery with pathology revealing dermatofibrosarcoma protuberans. The patient subsequently required multiple procedures for re-excision due to positive margins. This resulted in a large defect with exposed calvarium. Integra Dermal Regeneration Template (Integra LifeSciences, Princeton, NJ) was used to cover the exposed calvarium after each debridement to assist with granulation. Once negative margins were achieved, Negative Pressure Wound Therapy (NPWT) with a wound vacuum-assisted closure was applied to help with tissue granulation.

One month later, the wound vacuum-assisted closure was removed, and the scalp defect measured 16×9 cm with granulation tissue covering the exposed scalp (Fig. 1A). The anterior and posterior aspects of the wound were undermined, and primarily closed resulting in a defect size of 12×7 cm. ADAPTIC Non-Adhering Dressing (KCI USA Inc., San Antonio, TX) was laid down on the granulating tissue bed. After this, 2 DermaClose CETE devices were applied to either edge of the wound. The metal anchors were applied spaced 2 cm apart from each other and bridging metal tubing was then applied using the V-M-W technique. This application reduced the defect to 12×4 cm (Fig. 1B). One month later, the patient was taken to the operating room for the second application of 2 DermaClose devices in a similar fashion. This procedure reduced the defect size to 12×2 cm (Fig. 1C). Finally, the DermaClose CETE devices were removed 1 month later.

The wound skin edges were undermined to allow primary closure with full thickness vertical mattress sutures. The final result of the reconstruction 4 months after the final stage is shown in Figure 1D. The patient reported very satisfactory results at his 4-month follow up. The University of Maryland Institutional Review Board provided exemption for this study. Photo consent was obtained from the patient.

DISCUSSION

Typical options in the reconstructive ladder commonly used in head and neck reconstruction have limited utility repairing large scalp defects.[1,5] Primary closure is often effective but is limited to defects <3 cm in diameter,[1] while healing by secondary intention relies on the presence of underlying periosteum. Skin grafts used in cases of exposed calvarium offer poor skin, color, and texture matching. Finally, microvascular tissue transfer can be used. A commonly used free flap is the latissimus dorsi free flap given the muscle's large surface area and long pedicle. However, disadvantages include poor tissue match, lack of hair-bearing skin, length of the surgery, complication rates, and donor site morbidity.

External tissue expanders have been successfully used in closing large scalp defects with good results.[1–3] CETE takes advantage of the elastic properties of the skin to increase the surface area near the wound and reduce the size of the defect.[5] Tissue expansion relies on both mechanical creep by stretching collagen fibers, and biological creep by stimulating new tissue growth.[4] External tissue expanders apply continuous load on the tissue over time, providing negative pressure on the wound.[5] Finally, stress relaxation results from decreasing the retractive forces of the skin as the tissue is held in stretch over time. This allows for closure of the defect with tissue that is hair-bearing and of similar physiological properties.

CONCLUSION

This report describes the reconstruction of a 16×9 cm scalp defect after resection of a large parietal scalp dermatofibrosarcoma protuberans. Reconstruction was achieved using Integra Bilayer Matrix Wound Dressing and NPWT to form granulation tissue over the exposed calvarium. Next, the application of 2 rounds of DermaClose CETE was used to achieve tissue expansion and primary closure of the opposing wound edges with good results.

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Blunt Eye Trauma: Epidemiology, Prognostic Factors and Visual Outcome—A 10-Year Retrospective Study

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Abstract: The aim of this study is to define the accompanying prognostic factors and evaluate the final visual acuity of patients presenting with blunt eye trauma. The data of this study included the demographic characteristics of the patients, the mechanism of injury, initial and final visual acuities and accompanying pathologies. A total of 259 eyes of 259 patients who presented with blunt eye trauma were included. Eighty-three percent of the patients were male. The most common mechanisms are beaten, accidents, and falls. The visual acuity of the patient at admission was no perception of light, and the final visual acuity was also no perception of light. The incidence of blunt eye trauma was more common in males and in advanced age. A higher final visual acuity level is achieved with successful management of concomitant pathologies.

Key Words: Eye, lens, retina, surgery, trauma

Eye injuries constitute an important part of sight-threatening ophthalmological emergencies. In blunt eye traumas, the impact firstly shortens the anterior-posterior diameter of the eye, then reflects to the posterior pole and causes stretching of the anatomical structures. This movement continues for a while and eventually the globe recovers. Blunt eye traumas characteristically result in trauma to the anterior and posterior segments. Typical injury patterns are combinations of (1) grade I to IV hyphema, iris-lens injury, intravitreal hemorrhage, choroidal rupture; (2) > 180° angle recession, secondary open-angle glaucoma; and (3) vitreous prolapse, lens dislocation, retinal detachment. Berlin edema and retinal detachment are also common after ocular contusion. Patients with outcome and prognosis of blunt eye trauma should be followed up regularly by an ophthalmologist so that possible late complications can be properly treated.[1]

MATERIALS AND METHODS

Patients who were followed up in Department of Ophthalmology, Faculty of Medicine, Mersin University between January 1, 2011 and January 1, 2021 due to blunt eye trauma were included in this study. The protocol of this study; it was approved by Mersin University Clinical Research Ethics Committee. Written informed consent was obtained from all patients. In addition, the Declaration of Helsinki was adhered to throughout this study.

Statistical analysis of this study data was done with IBM SPSS Statistics for Windows, Version 23.0 (IBM Corp., Armonk, NY), package program. Number and percentage were used for categorical variables. For continuous variables, it is shown as mean ± SD. The conformity of continuous variables to the normal distribution was checked using the Shapiro-Wilk test. The hyphema was classified into 5 subgroups. Grade 0: no visible layering, but erythrocyte within the anterior chamber (microhyphema); Grade I: layered blood occupying less than one-third of the anterior chamber; Grade II: blood filling one-third to one-half of the anterior chamber; Grade III: layered blood filling one-half to less than total of the anterior chamber; Grade IV: total filling of the anterior chamber with blood.[2]

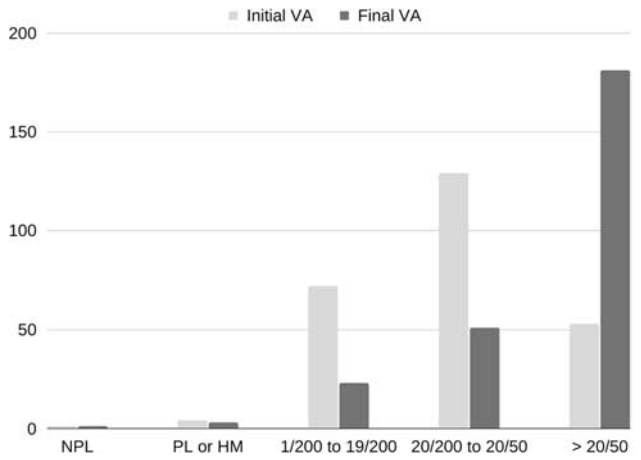

FIGURE 1. Distribution of initial visual acuity and final visual acuity. NPL indicates no perception of light; PL or HM, perception of light or hand motion. VA indicate visual acuity.

RESULTS

Two hundred and fifty nine eyes of 259 patients were included in this study. Considering the age distribution of the patient group, the largest group is over 30 years old. Of the patients, 217 (83.8%) were male and 42 (16.2%) were female. The mean follow-up period of the patients is 11.3 ± 2.7 months (minimum 7–maximum 18 mo). The most common mechanism of injuries are beating in 85 (32.8%) patients, sports injuries in 70 (27.1%) patients, and falls in 54 (20.8%) patients. The initial visual acuity of most patients is between 20/200 and 20/50. As for the distribution of treatment protocols, 227 (87.6%) patients received medical treatment, anterior segment surgery was performed in 25 (9.7%) patients and posterior segment surgery was performed in 7 (2.7%) patients (Supplemental Table 1, Supplemental Digital Content 1, http://links.lww.com/SCS/E413).

The orbital floor (23.9%) is the most frequently affected orbital wall after trauma, and the second is the medial wall (17.4%). Concomitant pathologies are vitreous hemorrhage in 44 (17%) patients and corneal epithelial defect in 41 (15.8%) patients. All other accompanying pathologies are summarized in Supplemental Table 2, Supplemental Digital Content 2, http://links.lww.com/SCS/E414. In the final visual acuity distribution among all patients, 1 (0.4%) patient had no perception of light. Final visual acuity was between 20/200 and 20/50 in 51 (19.7%) patients, and 20/50 or higher in 181 (69.9%) patients (Supplemental Table 2, Supplemental Digital Content 2, http://links.lww.com/SCS/E414). The initial and final visual acuity values of the patients are shown graphically (Fig. 1).

DISCUSSION

The ways in which traumas occur and their final visual outcomes differ in age groups. In the literature, the mechanism of

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injury is mostly work accidents, traffic accidents and sports injuries in young adults. It is also more common in the male gender. The most common mechanism of injury in elderly patients is falls.[3] Falls are the most common mechanism of injury overall and the leading cause of death in this group, as well as being a common hazard for elderly patients.[4] In patients aged 65 and over, 32% of all falls result in serious injury. In our study, the majority of the patients were over the age of 30, and the most common trauma mechanism was falls. Our results are similar to the literature data.[5]

The initial visual acuity of 29.7% of our patients is below the level of 20/200. When the final visual acuity distribution is considered, this rate is 10.4%. Although low visual acuity at presentation after blunt trauma is frustrating, the final visual results after appropriate medication and surgery are satisfactory.

The results obtained in this study can also be compared with the previous literature. Sheng and colleagues it is also consistent with the finding that initial visual acuity is significantly related to final visual acuity ($P < 0.001$). An important point is that the final visual acuity of the patient, who had no perception of light at the time of admission after a traffic accident and had optic nerve compression, was similarly no perception of light in the posttreatment period. However, some visual improvement was achieved in those who admitted with light of perception or hand movement. In addition to, in the elderly population, general health problems and increased risks of anesthesia require special attention and will limit further intervention in some cases.[6]

The orbital wall most frequently affected by trauma is the medial wall (n = 62, 23.9%). In addition, orbital floor is in the second rank (n = 45, 17.4%). These two walls, which are relatively thin as a result of trauma, seem to be affected more frequently and should be kept in mind in the evaluation of trauma patients. In a study by Yamanaka and colleagues, out of a total of 191 depressed fragment orbital fracture cases, 137 (71.7%) had orbital floor fractures, 30 (15.7%) orbital medial wall fractures, and 24 (12.6%) combined orbital medial medial wall and floor fractures.[7]

In conclusion, orbital traumas are a condition that usually occurs after accidents, beaten, and falls, affects visual acuity significantly, and reaches a satisfactory level with proper management and treatment of complications.

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Congenital Midline Cervical Cleft (CMCC): Z-Plasty Versus Linear Cutaneous Repair

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Abstract: Congenital midline cervical cleft (CMCC) is a rare congenital difference. Accurate diagnosis is important to ensure appropriate treatment. CMCC results in both functional and esthetic concerns addressed by surgical management. While the majority of reported CMCC cases have been treated with a z-plasty, the best method of repair has been debated in the literature. The authors present a case of CMCC and review of the literature.

Key Words: congenital, congenital anomaly, congenital midline cervical cleft, midline cervical cleft, Z-plasty

The congenital midline cervical cleft (CMCC) is a rare congenital difference of the ventral neck. Classic clinical findings include atrophic tissues of the cervical midline between the hyoid and sternum, a caudal soft tissue redundancy with a blind pouch sinus tract that may produce secretions, and a fibrous band that can extend from the sternum to the midpoint of the mandibular symphysis.[1] Proper diagnosis is important to ensure complete and appropriate treatment. CMCC is commonly treated with a form of z-plasty, but there has been debate regarding the ideal form of treatment. Some recommend straight line repair, while others stress complete excision of the fibrous band.[2] The authors present a case of a CMCC and its treatment with a combination of z-plasty, vertical linear repair, and complete excision of the fibrous band.

CLINICAL REPORT

A 4-day-old infant boy was referred for evaluation regarding a CMCC. There were no complications during pregnancy or vaginal delivery at 36 weeks gestation.

The child was found to have a benign physical exam other than the presence of the CMCC (Figs. 1A, C) and mild torticollis. The midline cervical cleft was found to have thin,

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