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Case Report

CASE REPORT

Depressed forehead scar: a case report and review of literature

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Abstract

Depressed forehead scars are not frequently reported in the literature in the West African sub-region. Although they are not commonly reported, few cases were managed and are to be documented. We had seen a case of depressed forehead scar which was due to post frontal avulsion injury of the forehead with an intact posterior table of the frontal bone. He complained of aesthetic and psychological problems of the scar on presentation. The scar revision was done with polymethylmethacrylate bone cement with simple wound closure based on patient's choice after counseling. The treatment outcome was satisfactory. We intend to highlight the use of polymethylmethacrylate bone cement and simple wound closure as an option in the revision of depressed forehead scars as well as add a report to the volume of literature from the sub-region.

INTRODUCTION

Depressed scars could be found at any part of the body but its locationon the face produces psychological effect in the patient. Every person looks at each other's face for recognition or admiration. The impression of beauty on the minds of the beholder is first generated from the facial appearance. Hence, the description of the scar-faced man or woman becomes worrisome that is given to such patient.

The etiology of scars is surgery, lacerations, burns, chronic wounds, acne, steroids and some skin infections that lead to cutaneous wounds [1].Branding has been used in many cultures to identify the individual, especially the slaves [2,3]. Branding refers to a traditional practice of creating burns on the skin with a hot iron rod or metallic object with the aim of identifying the person or tribe.

The patient is often referred by another physician for a specialist opinion. A formal referral may contain useful historical information about the origin of the wound, its management and its effects on the patient. The referral may also provide an insight into the understanding of the realities of scar revision surgery by the physician whose discussions with the patient before the referral may have elevated the patient's expectations. It is important to maintain a sympathetic and professional attitude to both the patient and the referring physician.

The scar should be photographed before and after surgery. The role of photography in plastic surgery cannot be overemphasized as it helps to solve or prevent the problem of litigation. Good quality clinical photographs are an essential part of the surgery of scarring and it should be repeated during the follow-up phase. Patient's consent must be obtained for these photographs and this should be written if publication was envisaged [4].

The reasons for scar revision could be functional, aesthetic or psychological, although a combination of factors has to be addressed in most situations.

The authors have presented a case report of depressed forehead scar that was aesthetically unpleasant and presenting with psychological problem and treatment was by using polymethylmethacrylate bone cement and simple wound closure. It has also added to cases reported within the sub-region.

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Figure 1: A 43 year-old man who presented with depressed forehead scar following frontal sinusitis. After the sinusectomy, the depressed frontal scar developed.

Figure 2: Day 3 post-operative outcome following the debridement of the scar and filling the area with polymethylmethacrylate bone cement and covering it with skin flaps.

Figure 3: A Post-operative outcome at 18 months of follow-up visit showing the filling of the depression and smothering of the forehead.

CASE REPORT

A 43- year- old man presented to us with the history of depressed facial scar of 2 years duration. He had a road traffic accident 2 years ago with loss of bone segment and soft tissue. He was treated at a General Hospital and wound healed with a depressed facial scar [Fig. 1]. A computerized tomography revealed intact posterior table. Clinically, the scar was adherent to the posterior table. It measured 28 × 18 × 10 mm. A diagnosis of depressed forehead scar was made. A scar revision surgery was done by elliptically excising the scar tissue, filling the bone defect with bone cement, and simple wound closure was done with vicryl 3/0 [Fig. 2]. Wound healed primarily with satisfactory outcome [Fig. 3]. Follow-up period was 18 months.

DISCUSSION

Depressed facial scar could be found at any part of the face but its location on the forehead produces psychological and aesthetic effect in the patient. Every person looks at each other's face for recognition or admiration. During discussion, face-to-face contact is important and this puts any lesion on the face to be very conspicuous. Hence, the presence of a scar on the face becomes glaring and worrisome to such patient.

Aetiologically, forehead avulsion injury of a segment of frontal bone with soft tissue loss was the cause of this defect. Although depressed frontal scars are not uncommon, literature search within the sub-region revealed paucity of clinical reports. Motor vehicle accidents account for 71% of frontal sinus (FS) fractures, assaults account for 10%, industrial accidents account for 5%, recreational accidents account for 4% and other causes (eg, gunshot) account for 6% [1]. Among Caucasians, acne and atrophic scars are the leading causes of the condition [5].

The diagnosis of depressed frontal scar is clinical. However, radiological assessment such as CT Scan can determine the extent and nature of the bony involvement. In the index case, the outer table was avulsed with the soft tissue leading to soft tissue adhesion on the inner table of the frontal bone. Scar revision is a commonly requested procedure that is performed frequently by the majority of plastic and reconstructive surgeons. A holistic approach to the patient is paramount in scar revision. For successful reconstruction of the forehead, several principles must be kept in mind: (1) motor function and sensory function should be maintained when possible, (2) incisions required in flap design and closure should align with natural subunit boundaries and skin creases, and (3) the contour of the forehead should best mimic its natural state [1].

The pre-operative part of the treatment is so fundamental to successful surgery. Each patient is unique, and it is simply inappropriate to select a standard operation for all patients. Scar revision can be a complex process that requires careful assessment, technical expertise and recognition of the underlying psychosocial issues if a satisfactory outcome is to be achieved.

Surgeries of depressed forehead scars are varied depending on patient's acceptance, surgeon's expertise and the nature of

depressed scar. Improvement in depressed frontal scars could be achieved by leveling the effect, halving the depth or the surface of the scar. The depressed scar varied in depth from cutaneous to subcutis, muscles and bone lesion in depth. Where bone loss is involved, the defect could be filled with bone wax, local flap or dermal fat graft [6]. Two options were explained to the patient but he declined to the dermal fat graft because of creating another scar. Thus, the use of bone cement became the option of choice. The use of polymethylmethacrylate for residual bone defect was reasonable and avoided harvest from a donor site. Hydroxyapatite cement helps to form a sheet of bone segment and promote excellent bone gap filling and healing. Fat grafting proved to be very effective in the treatment of small scars such as acne scar because of its clinical improvement in scars and texture as well as the absence of bony defect.

When soft tissue loss is the only cause of the defect, there are other options that could be used, varying from simple excision, subcision, dermal fat graft and the use of local flaps. Simple excision is used for small depressed scar which lie near to relaxed skin tension lines [7]. Subcutaneous incision or subcision is very effective technique in the treatment of depressed scars that are not adherence to the bone.

Fillers are also used and are a relatively elegant approach to volume- related scarring. Although major utilization of hyaluronic acid fillers has been in filling the lines, fighting the effects of aging, face sculpting and volumization [8], it could be used in the treatment of traumatic atrophic scars with no major short-term or late complications [9]. Dermal fat transfer is a good alternative here [10]. Autologous fat grafting is a standard method for soft tissue augmentation. The method is commonly used for volume restoration of the aging face. Dermal fat graft required over filling to ensure proper leveling of the defect.

Tissue expansion may be required to increase the amount of local tissue available for reconstruction. Tissue expanders are inflatable silicone reservoirs that are implanted under the galea. The surface area of the overlying skin is gradually increased through a process of biologic creep which provides more tissue from the adjacent areas for reconstruction. The expander base should be 2.5 times as large as the defect to be closed when rectangular expander is used. The set-backs for expander use are infection, extrusion and mechanical failure.

Large defects that require closure and are not amenable to other reconstructive options may require the free tissue transfer. When the defect is greater than 40cm^2 in size, a radial forearm fasciocutaneous flap could be used. This provides a thin, pliable tissue that may improve replication of forehead skin.

CONCLUSION

Depressed forehead scars are gradually becoming common. A good knowledge of its treatment becomes imperative. The use of bone cement and simple wound closure following scar excision is a commendable option for forehead scar revision. The outcome is satisfactory.

CONFLICT OF INTEREST

None declared.

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CONSENT

Written consent was obtained from the patient.

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