

High Tension Electrical Injury **Dr. Dana A. Abdulmagid**

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Name of the patient / Aram Abubakir Muhammad

Age / 27 years

Sex / Male

Nationality / Iraqi

Date of Injury / May 5th 2015

Date of admission / May 6th 2015

Cause of the injury / high tension electrical burn/ Flash burn

Description of the wound / Hemitotal scalp (25 by 19 cm) and skull burn involving outer and inner table (10 by 6 cm)

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Surgeries

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1-Wound excision, neurosurgeon involved, to excise the full thickness scalp and inner and outer skull tables. **May 19th 2015**

2-Free Latissimus Dorsi Flap from Right shoulder anastomosed to the right superficial temporal artery, plus interposition vein grafted to the external jugular vein for about 10 cm extension. The flap lost to uncontrolled post operative spasm or probably to the occlusion of the anastomosis, inflow failure. We could not re-explore the anastomosis because of poor general anaesthesia setting in our hospital, the anesthetist argued the risks on the patient health after the initial 8 hours surgery that took us in the free flapping. **June 1st 2015**

3-Delay forehead flap and posterior scalp flap on the left superficial temporal vessels and right occipital artery, respectively

4-Full decortications of the outer plate of the skull by neurosurgeon, since the bad condition of the delayed local flaps, as is obvious from the pictures, note the High tension electrical effect on the vessels and the patient history of heavy smoking, we believe that he is not compliant about quitting smoking!! **23/6/2015**

5-We intend to rotate the local flaps and to skin graft the decorticated bone as a temporary measure.

Computed tomography angiographic findings of relevant importance

1-The occipital artery is very close to the occipital protuberance which is making the arc of rotation of the posterior scalp

flap is very limited even if I dissect the occipital artery to make the later flap an island flap.

2- The left superficial temporal artery is not supple in supplying the forehead flap, as I concluded from handy doppler identification of the later artery. Unfortunately as its obvious from the CT angiography, the choke vessels are not opened in the base of the later flap, so you can observe tip necrosis in the forehead flap, making the flap a random flap surviving in a ratio of 3 to 1 which is insufficient to reach the exposed Dura matter and the dead skull inner table.

3- The transverse cervical artery is arising directly from the subclavian artery, an anatomical variation, is supplying the Trapezius muscle. We may consider it a potential plan B flap, may be after some expansion to extend the reach of the later flap.

Conclusion

So far the case management is extremely challenging. For instance we are allowing the decorticated skull to granulate as much as possible with daily wound care under the umbrella of culture driven antimicrobial therapy. Skin grafting is considered as a provisional solution. I will expand the posterior scalp flap and or the Trapezius muscle flap when the wound is stable enough. For instance expansion of posterior scalp may be a bit risky since the flap bed is already elevated in the process of delaying it,



although still this solution is a possibility.



