

Case Report

Long scarf: a rare cause of scalp avulsion injuries

Muhammad Ahmad,¹ Shahid Hussain,² Saleem A Malik³

ABSTRACT

We describe a peculiar kind of scalp avulsion injuries, in women wearing scarves while working.

(Rawal Med J 2009;34:229-230).

Key words: Scarf, scalp injury, avulsion.

INTRODUCTION

Long scarf worn around the neck is a common tradition in our Eastern culture. This can produce strangulation injuries.¹⁻⁴ The victims are usually riding the motorcycle while they sustain these injuries. Some features related to these injuries have been described.⁵

CASE REPORTS

Case 1: A 69-years-old lady was referred to Pakistan Institute of Medical Sciences (PIMS), Islamabad with a two days history of scalp avulsion due to the entanglement of her hair and scarf in the grass chopping machine. Examination revealed a completely avulsed scalp. The attendants did not bring the scalp with them. She had slight neck pain but no cervical spine injury was seen on X-rays. Almost two third of her cranium was visible with the galea around the margins. She was very weak and pale with Hemoglobin of 8.2 mg/dl. She was given blood transfusions and high protein diet and this improved her Hemoglobin.

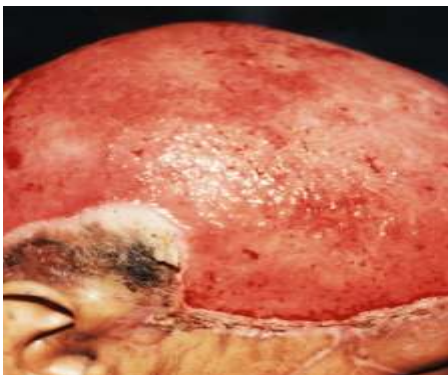


Fig. 1. Exposed scalp bone covered with granulation tissue.

She underwent the burring of external cortex of the skull with the help of burrs under general anesthesia. From the second post-operative day, her wound was

daily dressed using the non-adherent, antibiotic coated tulle-gras (Bactigras®). She received first generation cephalosporin. After 4 weeks, she was re-admitted. Her scalp was almost covered with granulation (Fig. 1). The wound tissue cultures revealed no microorganism. She underwent split thickness skin grafting. Her wound healed very well. She was advised to wear a wig after 4 months from the time of surgery, if she desired.

Case 2: A 36-year-old female presented in the emergency room with a 3 hours history of scalp avulsion while working at the chopping machine. She got her scarf entangled in the machine. Examination revealed almost whole of the scalp avulsed. The avulsed scalp was examined but there was no possibility of replantation. After debridement, she underwent burr holes in the external cortex of the cranium. The wound was dressed with the non-adherent, antibiotic coated tulle-gras (Bactigras®) and prophylactic antibiotics



were administered.

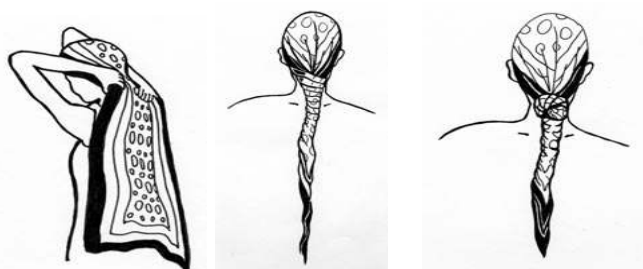
Fig. 2. Burr holes and partly covered bone with granulation tissue.

After 3 weeks, she was re-admitted. The entire skull

was covered with healthy granulation (Fig. 2). All the area was skin grafted. The graft healed satisfactorily and she was discharged. She was advised to wear a wig after 3 months.

DISCUSSION

Women in our country, especially in the villages, have a peculiar way of wearing scarf while working. The hair is twisted in and around the scarf and the whole amalgam is put on the back (Fig. 3). While working especially around machines, there is likely chance of entanglement of the scarf in the open machine parts, in grass chopping machine. This type of injury is rare but can be seen in the Indo-Pak region. Very interestingly none of the published



reports has yet described this type of injury as a separate entity.

Fig. 3. Mechanism of avulsion injury.

The possibility of death from long scarf injuries was brought to public attention when the world famous dancer Isadora Duncan died in 1929.^{2,3} Her long scarf was caught in the wire wheels of her Buggati car. She died on the scene sustaining a fractured larynx and carotid artery injury. This pattern of injuries was later referred in literature as 'Isadora Duncan Syndrome' or 'the long scarf syndrome.' It is also described in the skiing related injuries in which victims wear a scarf while skiing.¹

Traumatic defects of the scalp may range from simple lacerations to scalp avulsion to burns of intermediate depth.⁶ These injuries may result in partial or full-thickness loss of the scalp. Management of these wounds depend on the depth of wound, extent of skull exposed and the concern over the long-term aesthetic outcome in terms of hair bearing skin.⁶ The range of options includes simple skin grafting and local or distant flaps. Complex local flaps should not be performed at the acute injury stage when there is

any question of blood supply to the adjacent tissues. It is important to remember that the grafted defect may be secondarily reconstructed with the tissue expansion.

Scalp avulsion injuries are seen in many situations, e.g., road traffic accidents, burns, assault etc. There techniques used for coverage of the exposed scalp bone include latissimus dorsi myocutaneous flap, the trapezius myocutaneous flap, rectus abdominis muscle flap and radial artery forearm free flap.⁶⁻⁸ With the advent of microsurgery, the treatment of such injuries improved significantly.⁵ The first successful total scalp replantation by microvascular anastomosis was performed in 1975 and this is now the treatment of choice.⁹ We used this technique making many tiny holes in the external cortex of the skull bone with the help of burrs. Similarly, the skin graft can also be harvested from the avulsed scalp and used as a split thickness skin graft.¹⁰ In conclusion, prevention remains the mainstay and

From ¹Aesthetic Plastic Surgery, Rawalpindi, Pakistan, ²Aesthetic Artistry, Islamabad, Pakistan, ³Shifa International Hospital, Islamabad, Pakistan.

Correspondence: Dr. Muhammad Ahmad H. No. D-28, Block-6, Faisal Colony, Airport Link Road, Rawalpindi, Pakistan.
Email-plasticsurgeon999@yahoo.com

Received: 25th October 2008. Accepted: June 10th 2009

involve raising a public awareness about this kind of injury.

REFERENCES

1. Siddiqui AA, Shamim MS, Jooma R, Enam SA. Long Scarf Injuries. *J Coll Physicians Surg Pak* 2006;16:152-3.
2. Gowens PA, Davenport RJ, Kerr J, Sanderson RJ, Marsden AK. Survival from accidental strangulation from a scarf resulting in laryngeal rupture and carotid artery stenosis: Isadora Duncan syndrome, a case report and review of literature. *Emerg Med J* 2003;20:391-3.
3. Taff ML, Boglioli LR. Variants of long scarf syndrome. *Am J Foren Med Pathol* 1991;12:359-61.
4. Scarf GE, Wilax D. Alleged work-related injuries. *Med J Aust* 1984;141:765-7.
5. Habal MB, Meguid MM, Murray JE. The long scarf syndrome-a new health hazard. *N Engl J Med* 1971;284:734-6.
6. Sood R, Colemann II JJ. Scalp and calvarial reconstruction. In: Achauer BM, Eriksson E, Guyuron B, Coleman III JJ, Russell RC, van der Kolk CA, Eds. *Plastic Surgery, Indications, Operations, and Outcomes*. St. Louis, Mosby 2000:1519-39.
7. Hansen JE, Chaffoo R. Pediatric tumors. In: Mathes SJ, ed. *Plastic Surgery*. 2nd edition, Philadelphia: Elsevier, 2006 chapter 1, 05. pp 1-18.
8. Swanson E, Boyd JB, Manktelow RT. The radial forearm flap: reconstructive applications and donor site defects in 35 consecutive patients. *Plast Reconstr Surg* 1990;85:258-60.
9. Kiaxiang C, Su Z. Microsurgical replantation of the avulsed scalp, report of 20 cases. *Plast Reconstr Surg* 1996;97:1099-1102.