Treatment of a Nasal Tip Laceration with Adjunctive Leech Therapy: a Case Report

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Introduction

Traumatic injuries can compromise the vascular supply to tissues. After tissue repair, they are at risk of venous congestion due to the increased duration for venous neovascularisation compared to arterial. If not treated acutely, this can result in tissue necrosis (approximately three hours compared to arterial insufficiency, which takes thirteen hours [1]). There are many ways to treat venous congestion (e.g. anti-coagulants, aspiration, decompression and etc) but an effective well-documented method is by using medicinal leeches [2].

Medicinal leeches (Hirudo medicinalis) have been used for hundreds of years in human medicine for a variety of diseases, most recently for venous congestion following reconstructive surgeries (skin flaps and re-implantations) and etc [3].

The majority of similar case reports focus on the replantation of traumatically avulsed ears [4-9] but this report presents a case of postoperative venous congestion of a traumatic nasal laceration following closure. This was successfully reduced using adjunctive leech therapy.

Report of a Case

A 45-year old woman presented to accident and emergency within an hour after sustaining a blow to the face from a metal pole following an assault. She sustained a complex laceration to her nose. After being cleared from head injury and verifying an up-to-date tetanus status, the patient was urgently referred to the maxillofacial team due to the complexity of the laceration and the possibility of tissue loss with risk of necrosis of the remaining tissues. She was otherwise fit and well, smoking approximately 10 cigarettes daily.

On examination the nasal laceration involved the right columellar to nasal tip, dorsum, left columellar and to anterior maxilla inferior to the anterior nasal spine etc. It is important to note that there was some tissue loss to the left alar rim and the wound was not overtly contaminated with dirt.

Due to the complexity of the wound, it was debrided, irrigated and primary closure achieved under general anaesthesia in a controlled setting. No local anaesthesia was used to avoid compromising the blood supply and the deep layers were closed with 4/0 vicryl and the skin with 6/0 ethilon to the anatomical position. The tissues were bleeding and the edges freshened prior to closure with any compromised tissue being removed. She was also commenced on intravenous Co-Amoxiclav 1.2 g TDS and appropriate wound care was initiated. Medicinal leeches were used periodically; two leeches were placed consecutively and two more consecutively after a two hour duration. Each leech was only replaced when it finished feeding and detached. Once detached, the protocol was followed for the disposal of the leech. Bleeding continued to occur even after the leeches were removed. Prophylaxis against Aeromonas Hydrophilia consisted of intravenous Co-Amoxiclav 1.2 g TDS, which was continued for a further seven days post treatment orally with Co-Amoxiclav 625 mg. Revascularisation, occurred after 24 hours commencing of leech therapy and the nasal tip exhibited signs of improvement. Pre-operatively the tip of the nose was already pale blue and it was thought that primary closure would re-establish vascularisation (Figure 1). On day one post op, it was noted that although initially the tip of the nose was healthy- it showed evidence of venous congestion and following the review of our consultant; the decision was made to commence immediately with leech therapy (Figure 2). The patient was discharged on day two post-operative and followed up in a maxillofacial clinic in five days post-operative (Figure 3).

Discussion

Venous congestion occurs due to the reduced outflow from compromised venous return most likely from trauma or surgery. This in return increases the vascular pressure leading to reduced arterial

Figure 1: Post-operative view.

Figure 2: Leech therapy initiated.

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In our case, we achieved an optimal result with minimal disfigurement with the use of leech therapy in the management of venous congestion.

References
1. Vural E, Key JM (2001) Complications, salvage, and enhancement of local flaps in facial reconstruction. Otolaryngol Clin North Am 34: 739-751.
2. Weinzeig N, Gonzalez M (1995) Free tissue loss is not an all-or-none phenomenon. Plast Reconstr Surg 96: 648-660.
3. Elyassi AR, J Terres, HH Rowshan (2013) Medieval leech therapy on head and neck patients: a review of literature and proposed protocol. Oral Surg Oral Med Oral Pathol Oral Radiol 116: 167-172.
4. Akyurek MT, Safak, A Kecik (2001) Microsurgical ear replantation without microvascular repair: failure of development of venous channels despite patency of arterial anastomosis for 14 days. Ann Plast Surg 46: 439-442.
5. Cho BH, HB Ahn (1999) Microsurgical replantation of a partial ear, with leech therapy. Ann Plast Surg 43: 427-429.
6. Concannon MJ, Puckett CL (1998) Microsurgical replantation of an ear in a child without venous repair. Plast Reconstr Surg 102: 2088-2093.
7. Chalain TM (1996) Exploring the use of the medicinal leech: a clinical risk-benefit analysis. J Reconstr Microsurg 12: 165-172.
8. Funk GF (1996) Microvascular replantation of a traumatically amputated ear. Arch Otolaryngol Head Neck Surg 122: 184-186.
9. Hullett JS, GG Spinnato, V Ziccardi (2007) Treatment of an ear laceration with adjunctive leech therapy: a case report. J Oral Maxillofac Surg 65: 2112-2114.
10. Rodgers IR, AS Grove, DG Silverman (1992) Venous engorged tissue flaps treated with medicinal leeches. Ophthal Plast Reconstr Surg 8: 271-277.
11. Hammond, Dennis C, Bouwense, Carrie L, Hankins (2000) Microsurgical replantation of the amputated nose. Plast Reconstr Surg 105: 2133-2136.
12. Riede F, Koenen W, Goertdt S,Ehmke H, Faulhaber J (2010) Medicinal leeches for the treatment of venous congestion and hematoma after plastic reconstructive surgery. J Dtsch Dermatol Ges 8: 881-888.
13. Smoot EC, Debs N, Banducci D, Poole M, Roth A (1990) Leech therapy and bleeding wound techniques to relieve venous congestion. J Reconstr Microsurg 6: 245-250.
14. Jordan GH (1999) Techniques of tissue handling and transfer. J Urol 162: 1213-1217.
15. Mineo M, T Jolley, GRodriguez (2004) Leech therapy in penile replantation: a case of recurrent penile self-amputation. Urology 63: 981-983.
16. Richerson JT, JA Davis, R Meystruk (1990) Aeromonas, acclimation, and penicillin as complications when leeches are applied to skin flaps in rabbits. Lab Anim 24: 147-150.
17. Kalbermatten DF, Rieger UM, Uike K, Erba P, Lafer G, et al. (2007) Infection with Aeromonas hydrophila after use of leeches (Hirudo medicinalis) in a free microvascular osteo-(myo-)cutaneous flap--suggestions for successful management. Handchir Mikrochir Plast Chir 39: 108-111.
18. Utley DS, RJ Koch, RL Goode (1998) The failing flap in facial plastic and reconstructive surgery: role of the medicinal leech. Laryngoscope 108: 1129-1135.
19. Chepeha DB, Nussenbaum B, Bradford CR, Teknos TN (2002) Leech therapy for patients with surgically unsalvageable venous obstruction after revascularized free tissue transfer. Arch Otolaryngol Head Neck Surg 128: 960-965.