Clinical Case Reports International

Case Report
Published: 02 Feb, 2022

Nose Replantation Salvage with Heparin Pin-Pricking

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Abstract

Microsurgical replantation is the best option after nose amputation. The most common challenge reported is to obtain an effective venous drainage because of the small size of the veins. In this letter we present a case of nose replantation salvage with heparin pin-pricking.

Keywords: Replantation; Nose; Supermicrosurgery; Microsurgery; Pin-pricking

Introduction

Traumatic nasal amputation is an uncommon injury. In this scenario, composite grafts are at high risk of necrosis of the segment [1-4]. Thus, nose replantation with microsurgical or supermicrosurgical procedures is clearly the best option. The most common challenge reported is to obtain an effective venous drainage because of the small size of the veins [5]. We present the case of a successful nose replantation and our protocol for postoperative pin-pricking with Low Molecular Weight Heparin (LMWH) to handle congestion problems.

Case Presentation

A 57 years old male patient arrived at the emergency department on April 2020 with an amputation of the distal part of the nose secondary to a dog bite injury (Figure 1A). The patient was taken to the operating room for microsurgical replantation. The amputated nose segment was examined under the operating microscope searching for viable vessels. An artery (<1 mm in diameter) was identified in the superior right margin of the segment. The columellar artery (1 mm) was also found, and a vein (0.5 mm) was identified in the medial part of the superior border of the segment (Figure 1B). An adequate pulsating recipient artery was found in the superior edge of the right nasal wing, corresponding to the right lateral nasal artery. Also, a small vein was found in the superior edge of the medial part of the remaining left nasal wing. The severed segment was set in place and the microvascular anastomosis were performed. Despite achieving optimal arterial flow and good flap perfusion, effective venous drainage was not obtained. Mucosa and skin were then sutured (Figure 1C).

The replanted nose soon became congestive, so we started our protocol of pin-pricking for congestive flaps [6]. In this specific case, it consisted of 20 mg of LMWH directly injected in the skin of the replanted segment every 6 h in order to allow bleeding through the multiple needle punctures. At 6 days postoperatively, the frequency of LMWH was reduced to 20 mg/8 h for three days, then 20 mg/12 h and it was finally discontinued 12 days after surgery. Antibiotic prophylaxis with amoxicillin-clavulanic was used for 7 days. The patient received 40 mg/24 h of subcutaneous LMWH and 100 mg/24 h of Acetylsalicylic Acid as thromboprophylaxis. During the postoperative course, the patient required 3 blood transfusions, but there were no further complications and the patient could be discharged on postoperative day 13. After 8 months follow up, aesthetic and functional outcomes were excellent and the patient was satisfied with the result, so revision surgery was not required (Figure 1D).

Discussion

During the COVID pandemic there has been the tendency to avoid microsurgical procedures in favor of simpler reconstructions. Nevertheless, in case of nose amputation, replantation is by far the best reconstructive option. Thus, we believe that microsurgical replantation should be attempted whenever possible. Even when venous drainage cannot be guaranteed it is advisable to perform an artery-only replantation followed by pin-pricking and infiltration of LMWH as described

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Received Date: *04 Jan 2022*
Accepted Date: *27 Jan 2022*
Published Date: *02 Feb 2022*

Citation:
López-Masramon B, Gallardo-Calero I, Aguilera-Sáez J, Monte A, Barret JP, Rivas-Nicolls D. Nose Replantation Salvage with Heparin Pin-Pricking. Clin Case Rep Int. 2022; 6: 1272.

Figure 1: A: Nose defect. B: Severed segment, arrows show arteries, arrow head show the vein. C: Congestion of the replanted segment treated with heparin pin-pricking. D: Result 8 months after replantation.

before. Since the first case described by James in 1972, there are 25 cases of nose replantation published in literature [5,7-30] in order to deal with congestion problems only 5 of them used pin-pricking [8,10,12,18,22] 14 used leaches [5,9,15,16,19-21,23,25-30] and the rest used alternative methods or did not had congestion problems. Despite this, we maintain that pin-pricking provides us with a simple, safe and effective venous drainage that can be targeted to the most congestive areas of the flap. Besides it eliminates the need for leeches, which are uncontrollable, can migrate to other zones, usually require antibiotic therapy to prevent *Aeromona* infection and therefore are bothersome for the patient, especially in the face.

In our experience, microsurgical replantation is the best option in nose amputation, and pin-pricking can manage venous drainage in case of small replanted segments, avoiding the disadvantages of leeching.

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