

Short Communication

New surgical adjuncts in the treatment of rhinophyma: the microdebrider and FloSeal®

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Abstract

Rhinophyma is considered to be the final stage of rosacea and has an unknown aetiology. We present two new surgical adjuncts for the treatment of this condition. The microdebrider is easy to use and allows precise contouring of the nose. It shares the same underlying principle as free-hand scalpel shaving but outperforms this method in key areas. We also describe a novel use for FloSeal®, a gelatin-thrombin co-mixture, utilizing its haemostatic properties to address bleeding from the re-shaped denuded nose.

Key words: Rhinophyma; Surgical Procedures, Operative; Surgical Instruments; Gelatin; Thrombin

Introduction

Rhinophyma is a rare, cosmetically disfiguring condition due to hyperplasia of sebaceous and fibrous tissue of the nose. The exact aetiology of the condition is unknown. Surgical treatments include dermabrasion, cryosurgery, free-hand surgical scalpel shaving and laser. As each method excels in a different area some authors have employed a combination of techniques in order to achieve the 'ideal' result.

Our experience with the surgical treatment of rhinophyma is based mainly on the use of free-hand scalpel shaving. Drawbacks of this method include its limited ability to perform predictable debridement and precise contouring. In contrast, microdebriders have proved successful in sinonasal surgery by virtue of the fact that they enable precise control of the amount and location of tissue that needs to be removed. This led us to believe that the microdebrider could play a useful role in surgery for rhinophyma.

Most surgical modalities used to treat rhinophyma are associated with significant surface bleeding. We attempted to combat this by using a proven haemostatic agent called FloSeal®.

Surgical technique

The procedure was conducted under a general anaesthetic. A standard microdebrider was used. The shaving end of the instrument was stabilized by resting the distal shaft on the free index finger, thus enabling precise sculpting to take place. Altering the pressure transmitted from the shaving head to the underlying soft tissue controlled the rate of debridement. Initiation of shaving was easy and continued in a progressive and predictable manner. There was good

feedback from the instrument. The device was used at full speed in both forward and oscillating modes for the purposes of remodelling. Shaving was quicker with the oscillating mode but smoother to use with the forward mode.

Once a satisfactory shape to the nose had been achieved, FloSeal® matrix haemostatic sealant was applied.¹ This was covered with a wet swab and light pressure applied for two minutes to prevent the substance being washed away by the bleeding surface. At the end of the procedure excess FloSeal® sealant was removed with normal saline irrigation. This achieved complete haemostasis. No dressings were required. At six week follow up the result was good. This is the second occasion we have successfully used FloSeal® for haemostasis in rhinophyma.

Discussion

Rhinophyma is characterized by a slow progressive over-growth of the soft tissue of the nose. It can be very disfiguring and cause considerable psychosocial disability. Severe cosmetic deformity or nasal obstruction are indications for surgical treatment.

The microdebrider is a powered rotary shaving device. It has been applied successfully to various aspects of sinonasal surgery such as nasal polypectomy, functional endoscopic sinus surgery, turbinate reduction surgery, and septal surgery. However, there appears to be only one report in the literature describing the application of this device to the nasal dorsum; Krouse successfully used a microdebrider to sculpt the bony nasal dorsum under endoscopic guidance.²

In the case described, the microdebrider was easy to use and overcame some of the difficulties that can be encountered during free-hand shaving. The risk of inadvertently shaving too deeply was minimized as it debrided

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in a predictable manner. As only a small fixed area was shaved with each revolution of the device, debridement was also more precise. The microdebrider allowed the nasal tip and allae to be contoured smoothly. In this respect it had similar attributes to dermal abrasion techniques and lasers which also allow accurate remodeling of the nose.

- **This paper reports the use of debrider to remove tissue and of a gelatin-fibrin mixture as a dressing in the surgery of rhinophyma**
- **This paper presents a single case with very limited follow up and further studies are required to validate these adjuncts to conventional surgery**

Microdebriders do not preclude the submission of tissue for histological analysis during endonasal surgery.³ This may equally apply to tissue obtained during debridement of rhinophyma, but further investigation is required. In contrast, electrosurgery and lasers preclude histological examination of excised tissue.

FloSeal[®] (Fusion Medical Technologies, Inc, Mountain View, CA) is a gelatin-thrombin co-mixture and has been used in a variety of clinical settings, notably cardiac surgery, where it has been demonstrated to be superior in its efficacy to that of gelfoam-thrombin when used as a topical haemostatic agent.¹ Following application to a bleeding area, blood perfuses through the aggregate of thrombin-coated gelatin granules, which expand to form a mechanical haemostatic plug. Furthermore, when blood comes into contact with the thrombin coagulation occurs. Where there is no contact with blood, coagulation does not occur. This excess rinses free with irrigation, leaving a coating of 'sealant' over the wound. Haemostasis was achieved immediately following the application of Floseal[®] in our cases.

Electrosurgery and lasers are also advocated because of their haemostatic properties. However, there is an inherent risk of thermal injury with these methods. There are reports in the literature of facial burns and overabundant vaporization of tissue resulting in significant scarring and skin retraction.^{4,5}

To our knowledge, this is the first reported use of a microdebrider and FloSeal[®] as adjuncts in the surgical treatment of rhinophyma. The microdebrider appeared to provide satisfactory results, and overcame some of the disadvantages associated with free-hand scalpel shaving. We advocate FloSeal[®] because of its significant haemostatic properties and ease of use. Further studies, including long-term follow-up, are required in order to ensure the safety, efficacy and applicability of these techniques.

References

- 1 Oz MC, Cosgrove DM, Badduke BR, Hill JD, Flannery MR, Palumbo R, *et al.* Controlled clinical trial of a novel hemostatic agent in cardiac surgery. The Fusion Matrix Study Group. *Ann Thorac Surg* 2000;**69**:1376–82
- 2 Krouse JH. Endoscopic-powered rhinoplasty. *J Otolaryngol* 1999;**28**:282–4
- 3 McGarry GW, Gana P, Adamson B. The effect of microdebriders on tissue for histological diagnosis. *Clin Otolaryngol* 1997;**22**:375–6
- 4 Bogetti P, Boltri M, Spagnoli G, Dolcet M. Surgical treatment of rhinophyma: a comparison of techniques. *Aesth Plast Surg* 2002;**26**:57–90
- 5 Amedee RG, Routman MH. Methods and complications of rhinophyma excision. *Laryngoscope* 1987;**97**:1316–8

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