



A new surgical approach for the treatment of Rhinophyma



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A new surgical approach for the treatment of Rhinophyma

BACKGROUND: Rhinophyma is a rare and benign pathological condition affecting the nose. It can be localized or generalized causing a nasal deformity, mainly of the lower 2/3 of the nose. Clinically, rhinophyma is characterized by the aberrant development of the vascularization of the skin of the nose. The nose becomes particularly sensitive, and even a minimal external trauma can cause bleeding. Different treatment methods have been described during the last few years, but surgery still remains the gold standard. The aim is to obtain a reduction of the abnormal tissue, by debulking and fine contouring followed by hemostasis and a very careful postoperative care. Herein we report one case of Rhinophyma treated with the Microdebrider (Storz®).

CASE REPORT: A 70 year old male with a diagnosis of rhinophyma was admitted to the Department of Maxillo-Facial Surgery of "Federico II" University of Naples. The patient underwent a debridement of rhinophyma, combining dermabrasion and decortication, using a Microdebrider (Storz®). After the surgery, the wound was covered with an advanced dressing, a collagen sponge equina (Condress®) applied at the end of the procedure and routinely during the follow up control to promote the healing process.

CONCLUSION: After 2 months the patient was completely healed without any complications and without any signs of recurrence, obtaining a good aesthetic and functional result. After 25 months of follow up the result is still stable.

KEY WORDS: Rhinophyma, Microdebrider

Introduction

Rhinophyma is a rare and benign pathological condition affecting the nose. It can be localized or generalized causing a nasal deformity, mainly of the lower 2/3 of the nose.

Many authors consider it the final stage (III), of rosacea, although in several cases there is no association with this pathology ¹.

It has been reported that 14% of patients affected by rosacea can develop rhinophyma.

There is a male predominance, with a male-female ratio of 5: 1, typically affecting middle-aged men, predominantly Caucasians, rarely Asians and Afro-Americans ^{1,2}. The etiopathogenesis of this rare condition is still unknown. Several different factors have been identified: endogenous factors, such as genetic predisposition and cardiovascular pathologies; and exogenous factors, such as exposure to ultraviolet light, alcohol and caffeine abuse, and bacterial colonization of the sebaceous glands by *Demodex folliculorum*.

These factors act on two mechanisms, implicated in the manifestations of the pathology, inflammation and abnormal vascularization. These vascular abnormalities induce the local production of transforming growth factor TGF-1, leading to fibrosis and thickening of the skin ³.

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Clinically rhinophyma is characterized by the aberrant development of the vascularization of the nasal skin, that becomes particularly sensitive, and even a minimal external trauma can cause bleeding.

Patients manifest erythema, intermittent or persistent patchy flushing and redness, teleangiectasia and dilation of the follicular orifices, with a consequent disfiguring soft nose, hypertrophy and hyperplasia of the sebaceous and connective tissue, with a thickening of the nasal skin. The final stage is represented by fibrosis³.

Different treatment methods have been described in literature. Medical treatment, based on the application of drugs for topical use, such as retinoids and antibiotics, has proven to be useful in reducing sebum secretion and, minimally, the manifestations of rhinophyma⁴.

Surgical management remains the gold standard for rhinophyma. Surgery is aimed at a reduction of the tissue, requiring a debulking and fine contouring, hemostasis and a very careful postoperative care.

In the literature multiple modalities of surgical treatment are described, scalpel excision, electrosurgery or electrocautery, laser, particularly CO₂ and erbium therapy: yttrium-aluminum - garnet (Er: YAG), and dermabrasion with Versajet hydrosurgery⁵⁻⁸.

However, there are no controlled prospective studies that definitively establish the appropriateness of any one of these techniques.

Herein we report one case of Rhinophyma treated with the Microdebrider (Storz®).

Case Report

A 70 year old male was admitted in January 2018 to the Department of Maxillo-Facial Surgery of the University Hospital "Federico II" of Naples with a diagnosis of rhinophyma.

The patient reported a healthy lifestyle (non-smoker, no alcohol abuse, no cardiovascular risk factors) and without any other dermatological pathologies.

The lesion had been present for many years, causing a couple of bleeding episodes and making breathing difficult, especially during the inspiratory phase, due to the weight of the hypertrophic tissue.

Physical examination showed a lesion involving the lower third of the nose, the nasal wings and the dorsum. The mass was irregular, measuring 9 cm x 8 cm, compromising the facial profile and the diameter of the nasal nostrils. The remaining head and neck examination was normal (Fig. 1).

The patient underwent a debridement of the rhinophyma, combining dermabrasion and decortication using a Microdebrider Storz®.

After carefully disinfecting the surgical site with Iodopovidone and performing a local injection of the nose with adrenaline solution (1:100000), the lesion was completely excised with the Microdebrider (Storz®) under general anesthesia. The surgical procedure was 20 minutes. (Fig. 2).

After the surgery, the wound was covered with an advanced dressing.

We used a biological dressing made from equine collagen sponge (Condress®, Abiogen Pharma, Italy), that was applied from the seventh post-operative day to promote the healing process.

The Condress® dressing needed about 3-4 cc of saline solution in order to be activated. At the end of the procedure, it was covered with sterile gauze. The nasal wounds were medicated every 4 days for 45 days.

During the last follow up (after 26 months) the patient was completely healed without any complications and without any signs of recurrence, obtaining a good esthetic and functional result, confirming this approach as a valid option for the treatment of rhinophyma (Fig. 3).

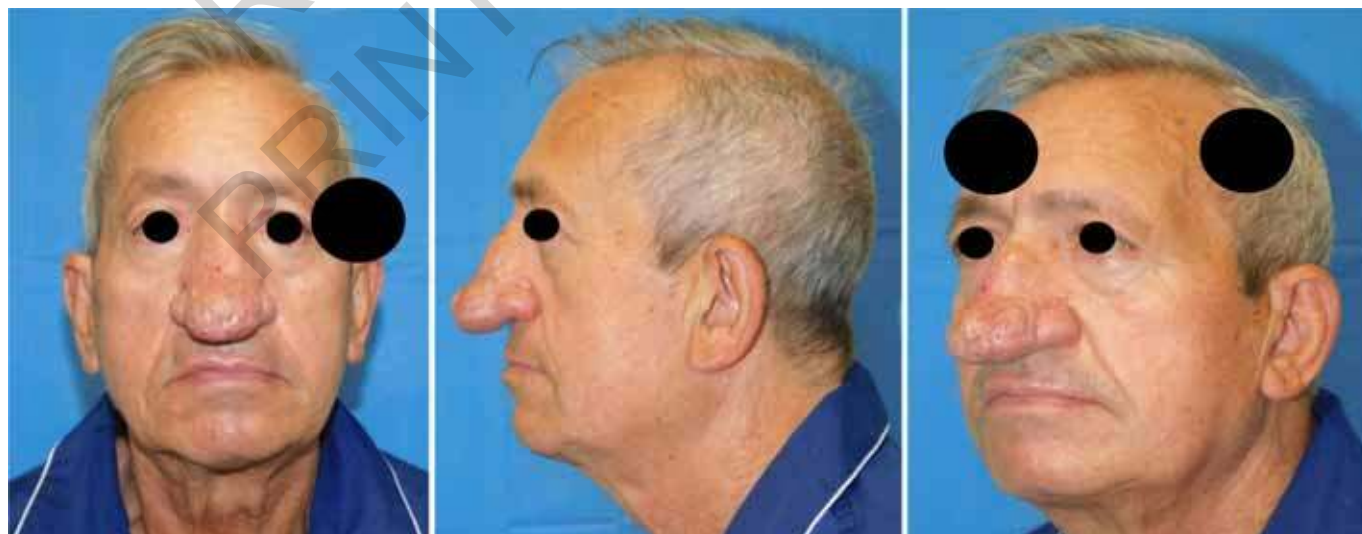


Fig. 1: Pre-operative photographs of a patient affected by rhinophyma.



Fig. 2: Surgical removal of the rhinophyma and remodeling of the nose using a Microdebrider.



Fig. 3: Photographs of the same patient after 25 months follow up.

Discussion

Rhinophyma is a rare disease, as demonstrated in the literature. This pathology affects mainly middle-aged and elderly people, men more frequently than women, particularly Caucasians.

It is a disease that develops slowly over time and most patients report having this condition for many years. However, it is a condition that causes not only a disfiguring alteration of the face but, in addition, the growth of the phimatous tissue on the nasal tip and on the nostrils can determine a nasal obstruction under the weight of the exuberant tissue.

There are multiple surgical techniques for the treatment of rhinophyma such as scalpel excision, electrosurgery or laser surgery. Each of these has its own unique combination of advantages and disadvantages⁵⁻⁸.

The use of a Microdebrider is well known in endoscopic sinus surgery (ESS). It is a surgical device that through the use of the microcannulins inside it, and a rotating

and sharp counter-cannula, sucks and cuts the tissue to be removed. It provides a valuable aid in numerous surgical procedures, like functional ESS, polypectomy, turbinate reduction surgery and septal surgery⁹.

To our knowledge, there are few articles recommending this technique for rhinophyma.

In our practice we have used microdebrider for the advantageous combination of ease of use, precision and speed of surgery.

The Microdebrider, through its sucking system, maintains a wide window in the operative field. It allows a precise and rapid sculpture of the nose, especially the concave surfaces of the nostrils, guaranteeing acceptable esthetic results. In these areas, the microdebrider is held in position and rotated about its long axis to reproduce a smooth concave curve/transition.

Furthermore, it has a suction irrigation channel through the lumen of the blade and this helps to maintain a clear field during the surgery, reducing aerosol of blood.

It is possible to control the speeds of the instrument. Using the low oscillating speeds the rate of debridement

is increased, while with higher speeds the debridement rate is reduced but the accuracy is increased.

The extreme manageability of the instrument does not require a long learning curve.

Compared with cold steel reduction it is difficult to precisely reproduce the gently flowing convex and concave contours of the nose. This technique tends to cause more bleeding onto the surgical field, which needs to be controlled with bipolar diathermy to be able to precisely sculpt the nose.

Electrocautery excision has greatly improved haemostasis however but is more difficult to be precise during the nasal tissues sculpturing. The dermabrasion in sequential 2 mm thick layers allows rapid and extremely precise reduction of the nasal tissues that otherwise will be very difficult. As far as we know from the literature, this is the first case described where a collagen membrane has been used to promote the healing phase during the post-operative care of rhinophyma.

Condress® (Abiogen Pharma, Italy) is a non-allergenic product, a freeze-dried basic type I collagen, extracted from the equine Achilles tendon.

Collagen plays a key role in wound healing and the use of heterologous collagen-based devices has become widespread in recent years ¹¹.

Its mechanical action provides a structural support, helping to provide a supporting structure as a scaffold for the recovery of the loss of substance to control the differentiation, migration and synthesis of numerous cell proteins favoring the physiological formation of fibroblasts, granulation tissue and native collagen facilitate the contact of platelets and coagulation factors favor the capillary neoformation, neoangiogenesis and hemostasis.

The protein accelerates the migration and deposition of the fibroblasts inside the extracellular matrix, and stimulates angiogenesis, the formation of granulation tissue, and the remodeling of the wound.

Native heterologous collagen type 1, with triple helix structure produces effects superimposable to those of tissue collagen.

Heterologous collagen has proved to be biocompatible and represents a valid option for the treatment of chronic and acute wounds.

Due to its characteristics, once applied to the wound, it forms a gel that is then slowly reabsorbed by the tissue, promoting the physiological wound repair mechanism.

It finds specific use in many situations, including the treatment of skin lesions of a varied etiology, such as accidental or surgical wounds, venous stasis ulcers and bedsores.

Unfortunately this surgical technique has a limitation: the availability of specific instrumentation; it could be considered a source of additional costs when compared with conventional surgery. However, endoscopic tools are now available in almost all operating rooms and its use is intended for many other surgical procedures. The cost of disposable blades for each patient is around 100 euros.

The cost of reusable blades is 300 euros.

Based on this experience, the use of a Microdebrider (Storz®), in combination with the Condress®, allows the surgeon to obtain a nose sculpted precisely, particularly at the level of the nasal wings, which are a particularly delicate region to treat, reducing bleeding and allowing contextual coagulation.

Conclusion

As far as we know this is the first report of the treatment of rhinophyma using a Microdebrider (Storz®) followed by the application of Condress®. In our opinion this is a safe procedure, easy to learn, which seems to guarantee a valid and effective surgical option for the treatment of this condition.

We were able to obtain a satisfactory and stable esthetic result with a long term follow-up of 25 months.

Unfortunately, this is only a case report, and further studies are needed to confirm our preliminary results.

Riassunto

BACKGROUND: Il rinofima è una condizione patologica rara e benigna che colpisce il naso. Può essere localizzato o generalizzato causando una deformità nasale, principalmente dei 2/3 inferiori del naso. Clinicamente, il rinofima è caratterizzato dallo sviluppo aberrante della vascolarizzazione della pelle del naso. Il naso diventa particolarmente sensibile, e anche un trauma esterno minimo può causare sanguinamento.

Diversi metodi di trattamento sono stati descritti nel corso degli ultimi anni, ma la chirurgia rimane ancora il gold standard. L'obiettivo è quello di ottenere una riduzione del tessuto anormale, mediante debulking e fine rimodellamento seguiti da emostasi e una cura postoperatoria molto attenta. Riportiamo un caso di rinofima trattato con il Microdebrider e medicato con medicazione avanzata in collagene (Condress®).

CASO CLINICO: Un uomo di 70 anni con una diagnosi di rinofima è stato ammesso al Dipartimento di Chirurgia Maxillo-Facciale dell'Università "Federico II" di Napoli. Il paziente ha subito un debridement di rinofima, combinando dermabrasione e decorazione, utilizzando un Microdebrider (Storz®). Dopo l'intervento chirurgico, la ferita è stata coperta con una medicazione avanzata, una spugna di collagene equina (Condress®) applicata alla fine della procedura e regolarmente durante il controllo di follow-up per promuovere il processo di guarigione.

CONCLUSIONE: Dopo 2 mesi il paziente è completamente guarito senza complicazioni e senza alcun segno di recidiva, ottenendo un buon risultato estetico e funzionale. Dopo 25 mesi di follow-up il risultato è ancora stabile.

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