The Surgical Treatment of Rhinophyma–a Case Report

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Background: Rhinophyma represents an advanced stage of rosacea, chronic cutaneous inflammatory disorder of the pilosebaceous unit with unknown etiology and primarily affects the central face, predominantly the nose region. Significant psychosocial effects are associated with the disease. The diagnosis is made according to the physical exam and pathohistological findings. Rhinophyma occurs more often in middle aged and older male patients. **Objective:** The aim of this article was to present the cause of rhinophyma, clinical characteristics, surgical treatment and postoperative results. **Case report:** We present the case of a 60-year-old male patient with rhinophyma, who was successfully treated surgically at the Clinic of Plastic and Reconstructive Surgery. **Conclusion:** There is no gold standard treatment for rhinophyma. However, surgical treatments, such as scalpel excision, dermabrasion, cryosurgery, argon laser, carbon dioxide laser, and electrocautery, have been used.

Keywords: rhinophyma, rosacea, nose, surgery.

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1. BACKGROUND

Rhinophyma is an advanced stage of rosacea affecting the nasal soft tissues and resulting in disruption of the nasal architecture, disfigurement of the nasal aesthetic units and in most severe cases in airway obstruction (1). Rosacea presents with flushing, nontransient erythema due to increased capillary reactivity with dilated blood vessels, papules, pustules and telangiectasias mainly localized in the central region of the face (1). Over time, the soft tissue structures become enlarged, hypervascularized with sebaceous hyperplasia resulting in a bulbous, oily appearance of the nose (1, 2).

The underlying disorder appears to be a reduction in vascular tone with a tendency towards excessive vasodilation triggered by factors such as abrupt changes from cold to heat, exposure to the sun and UV-A radiation, alcohol, very hot or spicy foods, and stressors. Other possible causes include immune system activation and infestation by skin mite *Demodex folliculorum*, which is known to live within the sebaceous unit (1, 3, 5). Rosacea is suspected to be related to infection with Helicobacter pylori bacteria, but the theory remains controversial. A possible pathophysiological mechanism would be that H. pylori can stimulate the immune system to produce a large number of inflammatory mediators, which would cause the onset or worsening of rosacea inflammation (4).

Rhinophyma symptoms can cause anxiety and psychological distress in some people (1). It is mostly seen in men aged 50-70 years (6). The diagnosis is made according to the physical exam and pathohistological findings and the final diagnosis is made after the pathohistological evaluation (7).

2. OBJECTIVE

The aim of this study is to present the etiology of rhinophyma, clinical characteristics, surgical treatment and postoperative results.

3. CASE PRESENTATION

A 60-year-old male patient underwent surgical treatment of skin changes on the nose that had persisted for the past 6 years. The patient is non-smoker, non-alcoholic, with no breathing problems and without chronic medical therapy. Due to the appearance of his face, he was often exposed to unpleasant questions. The clinical examination revealed oily, thickened skin on the nose with enlarged nasal wings, enlarged pores, uneven facial texture and redness (Figure 1). There was also a round lump on the right nostril, approximately 2.5 x 1.5 cm in size, the same color as the surrounding skin.

A diagnosis of rhinophyma was made and after preoperative preparation the surgical treatment was per-

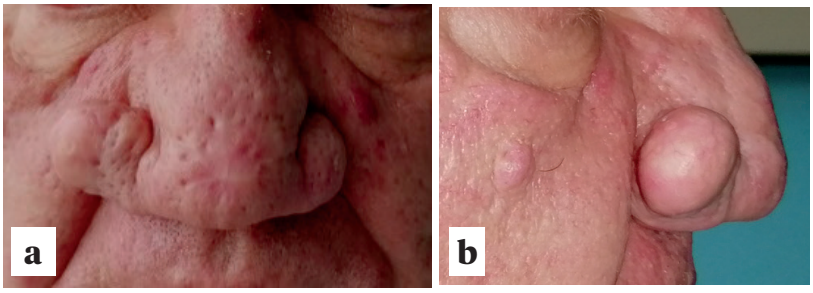

Figure 1. Preoperative clinical examination; front view (a), side view (b)

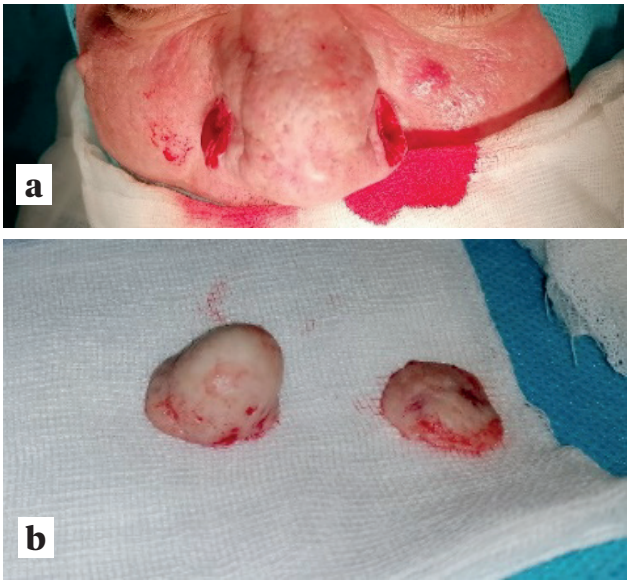

Figure 2. Tangential excision of thickened nasal wings (a), excised samples for pathohistological analysis (b)

formed under general anesthesia. The thickened parts of the nasal wings were excised tangentially and sent for pathohistological analysis. The edges of the wounds were thinned with a diamond drill (Figures 2 and 3). Cartilage and bone remained intact. The wounds were bandaged with vaseline gauze which was removed 7 days after surgery.

The early postoperative course was uneventful and no analgesic therapy was required. Granulation tissue and crusts formed (Figure 4).

Excised skin changes were pathohistologically verified as rhinophyma. The entire early postoperative course was without complications (Figure 5). The aesthetic results were very satisfactory judging by the patient's opinion. At the follow-up examination, two years after the operation, the disease did not return.

4. DISCUSSION

Rhinophyma, first described in 1845 by Ferdinand von Hebra is an advanced stage of rosacea (1, 8). The soft tissue hypertrophy leads to disruption of the nasal architecture and in severe cases to obstruction of the airways and swallowing difficulties. Although nose is the most common site of such painless skin changes, hypertrophy can manifest itself on other parts of the face. These include the region of the chin (gnatophyma), the region of the forehead (metophyma) and ears and eyelids (otophyma and blepharophyma) (9). Diagnosis is made according to the physical exam. Despite the unique appearance of rhinophyma, some other diseases can also be considered in the differential diagnosis. These are basal cell carcinoma that can be hidden within the deformed nodular skin, squamous cell carcinoma, sebaceous adenoma, carcinoma of the sebaceous glands and angiosarcoma and less common as sarcoidosis, skin lymphoma and facial eosinophilic granuloma (1). Significant psychosocial effects are associated with the disease (1). Among all psychiatric co-morbidities rosacea patients exhibit the highest risk for phobic disorder, followed by obsessive-compulsive disorder, major depressive disorder and bipolar disorder (10). Many patients experience a diminished quality of life in terms of social outcomes (11). Corrective surgery provides social and psychological benefits to people with facial disfigurement.

There are surgical and non-surgical methods of treatment. Several treatment modalities have been used for the management of rosacea in order to prevent rhinophyma including topical medications, systemic drugs, lasers and light-based therapies with variable results and in case of rinophyma the most commonly employed treatments include scalpel excision, resection with heated knives, dermabrasion, electrosurgery and lasers, specifically carbon dioxide and erbium:yttrium-aluminum-garnet (Er:YAG) (12). The main complication

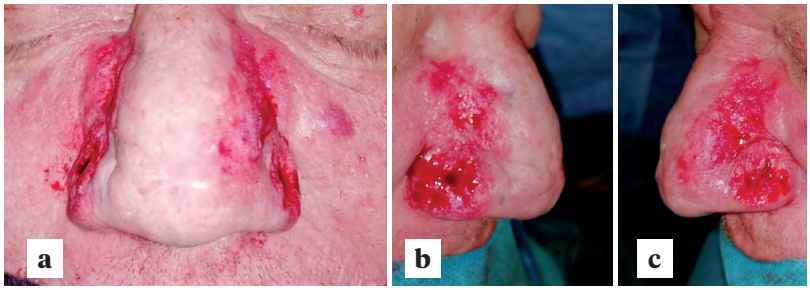

Figure 3. Intraoperative findings; front view (a), right profile (b), left profile (c)

Figure 4. Fourth postoperative day; right profile (a), left profile (b)

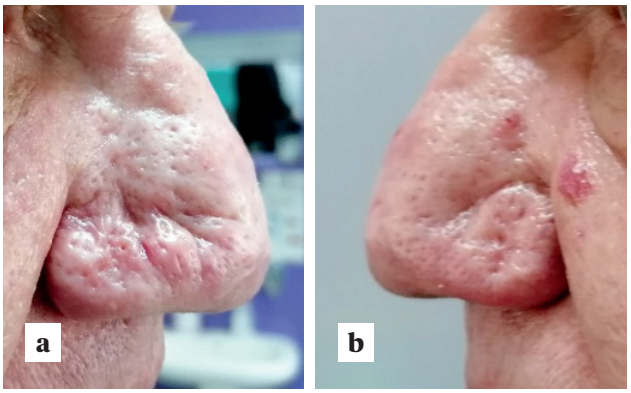

Figure 5. Two months postoperatively; right profile (a), left profile (b)

associated with complete excision of rhinophymatous tissue is excessive scarring which can be corrected with partial or tangential excision with preservation of underlying adnexal structures (12). The tip of the nose and the wings of the nose have the highest risk of scarring since the cartilage is closer to the dermis. Care should be taken not to perforate the nasal cartilage when using any excision technique (5).

In our case we first performed mass debulking with a scalpel, than we used a bone drill and diamond bur, which are used in bone surgeries, for contouring (1, 6). Excised skin changes were pathohistologically verified as rhinophyma which represents the final diagnosis. There were no complications or recurrence of the disease. The advantage of scalpel excision in combination with dermabrasion, compared to other techniques, is in precise tissue shaping and in low price, but not many hospitals are equipped with this device (13).

5. CONCLUSION

As a severe form of rosacea, rhinophyma is characterized by hypertrophy of the soft tissues of the nose and if not treated on time, it can lead to breathing and swallowing difficulties and also can present a serious cosmetic concern for patients, causing significant psychosocial stress and impairment of personal and profession life resulting in isolation and stigmatization of the person. There is no gold standard treatment for rhinophyma. However, surgical treatments, such as scalpel excision and dermabrasion have been used to treat rhinophyma. A dermabrader has the advantages of low cost and precise contouring around the nose.

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REFERENCES

1. Chauhan R, Loewenstein SN, Hassanein AH. Rhinophyma: Prevalence, Severity, Impact and Management. ClinCosmet Investig Dermatol. 2020 .
2. Farci F, Rapini RP. Sebaceous Hyperplasia. StatPearls Publishing; 2023.
3. Aróstegui Aguilar J, Diago A, Carrillo Gijón R, Fernández Figueras M, Fraga J, García Herrera A, et al. Granulomas en dermatopatología: principales entidades. Parte I. Actas Dermosifiliogr. 2021; 112: 682-704.
4. Yang X. Relationship between Helicobacter pylori and Rosacea: review and discussion. BMC Infect Dis. 2018 Jul 11; 18(1): 318. doi: 10.1186/s12879-018-3232-4.
5. Dick MK, Patel BC. Rhinophyma. Treasure Island (FL):StatPearls Publishing; 2023.
6. Ozbey, Rafet. A giant rhinophyma closing the airway: Case report. Annals of Medical Research. 2020.
7. Popa D, Osman G, Parvanescu H, Ciurea R, Ciurea M. The treatment of giant rhinophyma–Case Report. Current Health Sciences Journal. 2012.
8. Kang JK, Lee JS, Choi JH, Shin MS, Yun BM. Surgical treatment of rhinophyma using an ordinary bur. Arch Craniofac Surg. 2020 Aug; 21(4): 264-267.
9. Tambe SA, Nayak CS, Gala P, Zambare U, Nagargoje A. Management of Rhinophyma with Radio Frequency: Case Series of Three Patients. J Cutan Aesthet Surg. 2019.
10. Sharma A, Kroumpouzos G, Kassir M, Galadari H, Goren A, Grabbe S, Goldust M. Rosacea management: Acomprehensive review. J Cosmet Dermatol. 2022 May; 21(5): 1895-1904
11. Hung C-T., Chiang C-P., Chung C-H., Tsao C-H., Chien W-C., Wang W-M. Risk of psychiatric disorders in rosacea: a nationwide, population-based, cohort study in Taiwan. J Dermatol. 2019.
12. Dai R., Lin B., Zhang X., Lou Y., Xu S. Depression and anxiety in rosacea patients: a systematic review and meta-analysis. Dermatol Ther. 2021; 11(6).
13. Krausz AE, Goldberg DJ, Ciocon DH, Tinklepaugh AJ. Procedural management of rhinophyma: A comprehensive review. J Cosmet Dermatol. 2018 Dec; 17(6): 960-967. doi: 10.1111/jocd.12770. Epub 2018 Sep 17.
14. Kang JK, Lee JS, Choi JH, Shin MS, Yun BM. Surgical treatment of rhinophyma using an ordinary bur. Arch Craniofac Surg. 2020 Aug; 21(4): 264-267. doi: 10.7181/acfs.2020.00199. Epub 2020 Aug 20.