



Rhinophyma: Presentation of Clinical Case and Treatment Methodology

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Abstract

The aim of this report is to present a rare case of gigantic rhinophyma treated surgically at the clinic of plastic reconstructive and aesthetic surgery, Medical University, Sofia. The article comments on etiology, epidemiology, histopathological picture and current trends of treatment for advanced rhinophyma cases. Connection between rhinophyma and rosacea is also discussed. The patient history, general and local status is presented as well as utilized surgical approach and postoperative result. Various types of contemporary treatment of rhinophyma are described briefly. In conclusion, based on literature and the result of the case presented, we consider our surgical approach to be reproducible in achieving good aesthetic and functional results and markedly less expensive and demanding than most of the alternatives.

Keywords: Rhinophyma; Rosacea; Telangiectasia

Introduction

Rhinophyma is a rare benign tumor-like disease in the region of the nose. The disease mainly affects male Caucasian patients at the age between 40 and 80. Clinically the condition is manifested by extreme growth of the soft tissues in the region of the nose, which can lead in more serious cases to disfiguring deformation. The disease progression is slow, it continues for many years. In the most serious cases, there are problems associated with breathing mechanics and feeding of the patients, aside from the expressed aesthetical deformity. Historically, rhinophyma cases could be found in the paintings by famous artists in the middle ages. The term was initially implemented by Hebra in 1845, and it is derived from Greek "rhis" ('nose) and "phyma" (growth). The disease is also known under other names such as: pseudo-elephantiasis of the nose, cystadenofibroma, fibroma molluscum, acne hypertrophica, whiskey nose etc [1].

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Clinical-pathological characteristics of the rhinophyma

Usually the rhinophyma affects encompasses and is restricted to the lower half of the nose, similar to slowly growing tumor-like mass. It starts as hypertrophy of the subcutaneous fatty tissue and the sebaceous glands. Gradually big, lobular, soft tissue masses are formed, covered by atrophic epidermis and big dilated pores. Telangiectatic vessels could also be seen along the uneven surface, which make the nose look reddish-purple in color. Usually the cartilage structure of the nose is intact. The accumulation of seborrhic secretion in the wide pores and between the lobules is common and is associated with unpleasant (fetid) smell.

The microscopic investigation of preparations from patients with rhinophyma shows two main groups of changes, based on the disease stage. The first group includes those that are typical for the more common and usually lighter form, which based on pato-morphological characteristics, corresponds with fully expressed form of rosacea, but unlike rosacea it shows well expressed sebaceous hyperplasia [2]. The severe forms of rhinophyma are differentiated by completely different histological image. There is distinct dermal thickening, the follicle-sebaceous structures are missing and there are sclerotic collagen bundles with abundant quantity of mucin and spread-out telangiectasia. The majority of the interstitial cells are sensitive to XIIIa factor. As a whole the histology picture in the severe form of rhinophyma shows great similarity to the one in elephantiasis, caused by chronic lymphedema.

Treatment methods in rhinophyma

Currently in the clinical practice there are different therapeutic approaches to treating rhinophyma, where surgery takes primary place. The surgical treatment itself is characterized by variety of applied techniques and materials. Among them are: Electrocautery [3], cold and

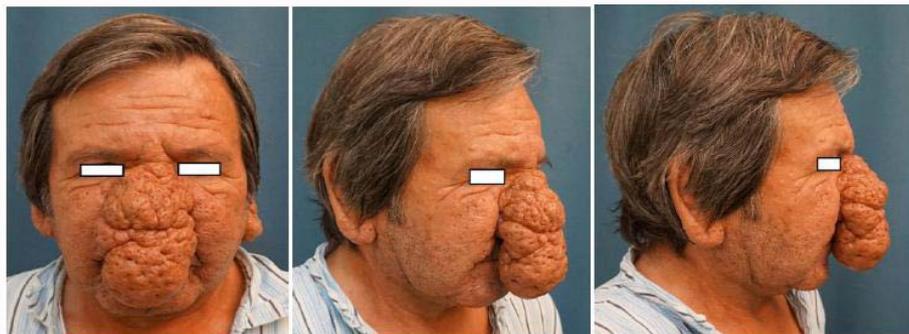


Figure 1A: Pre-operative condition of the patient.



Figure 1B: Result from surgical treatment and controlled epithelization, 45 days after surgery.

hot knife [4], CO₂ or argon lasers, dermabrasion [5], radio- and cryotherapy, complete layer excision of the skin, graft reconstruction or free skin autografts etc. [6-8]. Laser treatment is widely used in the recent years [9,10]. An investigation by Goon et al. [11] showed that the application of combined Erbium-yttrium-aluminium-garnet (YAG)/CO₂ laser overcomes most of the disadvantages of the rest of the methods. While the different methods of laser therapy show statistically good results in the light and moderate cases of rhinophyma, as far as the most advanced forms are concerned the results are still questionable. Redett et al. [12] demonstrated very good results after excisional surgical treatment with Goulian dermatome under lens magnification. The depth of the excision preserves the base of the sebaceous glands, which according to the authors allows for spontaneous re-epithelization with minimal formation of cicatrices. The cases with gigantic rhinophyma are fortunately very rare, but their treatment could pose a problem. According to some authors optimal aesthetic results could be achieved after tangential excision and controlled epithelization [13]. Similar result in an advanced case could also be achieved by electrocautery resection and covering the defect with silver-impregnated xenograft, which acts like a biological dressing and acierates the regeneration process through epithelial over-cover [14]. In all cases of the most severe rhinophyma, where clinically it is defined to be the terminal phase of the chronic “acne rosacea”, the treatment of choice is the surgical excision in one or another form [8,15].

Case Presentation

We are presenting the case of a male patient aged 58, whose diagnosis when admitted was rhinophyma. Medical history includes data, reported by the patient about gradual considerable growth of the nose, continuing for the last 4-5 years. The reason to seek medical

help is the severe difficulty he experiences during eating, as well as the difficulty in breathing. The patient reported chronic use of moderate quantities of alcohol, with no other accompanying bad habits, nor accompanying diseases. From local status examination of the face showed highly expressed deformity of the outer nose (Figure 1A), on behalf of hypertrophy of the soft tissues, subcutaneous layer and the skin, where the skin is roughly lobulated and has darker pigmentation. There are wide pores and cracks long the surface. The skin in the neighboring nasolabial region shows similar image with marks for induration. We planned and performed surgical treatment of the patient comprising excision of the tumor-like formation affecting the soft tissues in the region of the tip and the ridge of the nose. We did radical surgical resection by means of standard “cold” scalpel in supra-perichondrial and supra-periosteal aspect. After completing the thorough hemostasis, we treated the revealed defect by applying greasy dressings with epithelo-tonic material (Bactigras). We changed dressing every 2-3 days until the end of the third week after the surgery and then once-twice weekly after this period. We established complete epithelization at the 45th post-operative day, and we consider we can report very good esthetic end result from the provided treatment (Figure 1B).

Co-relative association between rhinophyma and rosacea

It has been established that rhinophyma in lots of cases is associated with the skin disease: Rosacea. There are four main forms of rosacea [16]. The most common is the 1st type-erythrotelangiectatic rosacea. The symptoms include reddening of the face, especially after continuous stimuli like emotional anxiety, hot beverages, alcohol and spicy food, as well as during cold or hot weather or cold or hot bath. The dilated blood vessels of the skin and the edema of the face are typical. In the second type-glandular rosacea, male patients with thick fatty skin prevail, where there are edematous papules and

pustules of the skin, ranging from 0.5 cm to 1 cm. Often nodulocystic lesions could be seen as well. The 3rd type is the phymatous rosacea, which typically shows morphology of rhinophyma with generalized growth of the soft tissues of the outer nose. Macroscopically nodules could be seen as well as thickenings of the skin as well as overall enlargement of the nose. In very rare cases the phymatous rosacea could also engage the chin (gnatophyma), the ears (otophyma) or the forehead (frontophyma). The 6th type-ocular rosacea is a rare one, where engagement of the eyes and the eye-lids. Typical symptoms are reddening of the eyes, dryness of the eyes, inflammatory changes and telangiectasias.

Generally, the slowly progressing growth of the soft tissues - the so called "phymas", predominantly in the region of the nose, less often in the region of the chin and the ears is defined to be the final stage of rosacea. Four main forms of rhinophyma are defined based on the clinical-pathological principle: Glandular form, actinic form, fibrous form and fibroangiomatic form. The leading treatment is the surgical one, but the systemic treatment is applying isotretinoin [17].

Medical treatment of the rosacea also includes application of tetracycline antibiotics like doxycycline and the medication called ivermectin. The skin reddening episodes are treated with topically applied alpha-agonists like brimonidine and less often with oxymetazoline.

Peeling procedures with alpha-hydroxy acids are also taken into consideration. Laser therapy is more widely applied within the complex treatment, especially of the lighter forms of rosacea and rhinophyma. The dietary and life regime have considerable importance for alleviating the symptoms, specifically avoiding triggering factors such as: excessive exposure to sunlight, emotional stress, chronic abuse of alcohol etc.

Conclusion

The presented method of surgical treatment of advanced case of rhinophyma shows the efficacy of the therapy both in functional and esthetic aspect. In comparison to the alternative treatments used in the modern practice, the technique that we used does not require special set of instruments or expensive laser equipment. Treating the excision defect with stage-by-stage greasy dressings gives an important advantage of lack of donor morbidity, which is present with techniques, relying on plastic surgery with free skin to cover the defect. As a disadvantage of the technique we established the necessity for a more prolonged post-operative period needed for treating the wound and its complete epithelization. Within the context of modern methods of treating rhinophyma, we consider that the treatment option described by us is very appropriate alternative when there is adequate motivation of the patient.

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