HOW RHINOPHYMA DEVELOPS: A CASE REPORT

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Abstract:

Rhinophyma, or bulbous nose as commonly called, is a skin disease that causes a large, bulbous and reddish nose. The exact cause of this condition is unknown, most authors consider it to be a subtype of rosacea. According to the National Rosacea Society, more than 16 million Americans have this disease. Rhinophyma is identified as subtype three of rosacea, and it forms gradually over several years. Rhinophyma is characterized by hypertrophy of nasal skin, with hyperplasia and fibrosis of the sebaceous glands and connective tissue. There is a combination of neurovascular and immune disturbance is thought to be involved, causing inflammation, fibrosis, and neovascularization. A 83-year-old male presented to the surgery clinic with advanced condition of bulbous nose.Fig.2. The patient has a normal life, taking normal food, normal marriage life and normal children, he was working as a military on the Malaysian Navey with No DM or hypertension or hyperlipidemia. No history of other medical diseases. No surgical past history. Observed bad smell from his nose and having very heavy hairs in his nostrils. Complete physical examination was performed. It revealed no abnormality in the function of any system. Local examination showed hypertrphic bulbous nose Grade III Rhinophyma. Nostrils were full of thick hairs, with bad smell coming from the mouth and nose. Investigations included C/S test for discharge and from nostrils. Other general preoperative investigations as patent is considered old, confirmed being free of any medical disorders. Patient was operated under general anesthesia to remove the bulky soft tissue and use local nasolabial flaps to cover the defect (Fig3). After 12 months, revision of the flaps for debulking and refining is performed. Patient was satisfied by the result after debulking of the flap.

Keywords: Rhinophyma, rosacea, infection.

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1. Introduction

Rhinophyma, or bulbous nose as commonly called, is a skin disease that causes a large, bulbous and reddish nose. The exact cause of this condition is unknown; most authors consider it to be a subtype of rosacea. According to the National Rosacea Society, more than 16 million Americans have this disease. Rhinophyma is identified as subtype three of rosacea, and it forms gradually over several years. Rhinophyma is characterized by hypertrophy of nasal skin, with hyperplasia and fibrosis of the sebaceous glands and connective tissue. There is a combination of neurovascular and immune disturbance is thought to be involved, causing inflammation, fibrosis, and neovascularization (1,2,3). What causes hypertrophy of skin appendages and subcutaneous tissue? Many causes were mentioned as allergy, alcohol intake, H Pylori infection, ultraviolet rays or autoimmune but no certain cause is to be blamed. The exact process of development of the disease is still not described. The author could conclude a cause for development of the disease in this report (3,4).

Rhinophyma is a skin disorder that causes a large, red, and bumpy (or bulbous) nose. Some authors consider it to be a subtype of rosacea (a common, chronic inflammatory skin condition). According to the National Rosacea Society, more than 16 million Americans are affected by this disease. Rhinophyma is identified as subtype three of rosacea, and it forms gradually over several years. It shows hypertrophy of the sebaceous glands with peri-glandular fibrosis and leucocytic infiltration. Immune complexes and growth factors are demonstrated also. Demodex mites were blamed also to be the cause. In our case it was not seen. Spicy foods, alcohol, and hot beverages were traditionally thought to trigger flushing in patients with rosacea. However, most evidence does not support dietary factors playing a central role in the pathogenesis. Moreover, certain medications, such as amiodarone, topical steroids, nasal steroids, and high doses of vitamins B-6 and B-12, may cause flares for patients with rosacea (4,5).

An inflammatory infiltrate may exist in a perivascular and/or a perifollicular location; however, evidence is conflicting regarding which location predominates. In our case report we could discover a strong possible cause of development (5,6). How is the severity of rhinophyma classified?

Rhinophyma, along with other forms of phymatous rosacea, is graded on a clinical scale of severity from 1 to 3 (1).

- Grade 1: prominent follicular openings with no skin thickening
- Grade 2: prominent follicular openings with mild skin thickening
- Grade 3: prominent follicular openings, skin thickening and overactive sebaceous glands and nodular nasal contour

1.1 Grading of Rhinophyma

Several authors propose scaling systems to grade the severity and features of rhinophyma (Table 1). Clark et al proposed a classification system based on distribution and degree of involvement of the disease.

Freeman describes a classification system that grades rhinophyma by degree of severity.

El-Azhary et al proposed a grading system of minor, moderate, and major rhinophyma based on the degree and presence of hypertrophy and lobules present; this grading system is used most often in treatment studies.33 Wetzig et al developed the Rhinophyma Severity Index (RHISI), which numerically scales the disease based on degree of skin thickening, presence of lobules and fissures, and secondarily presence of prominent asymmetry, cysts, or vessels. These grading systems communicate severity of disease but do not guide a particular treatment modality (12).

1.2 Pathogenesis of rhinophyma how tissue overgrow.

Pull et al 2000 described the pathogenesis of tissue hypertrophy and over growth, and Payne et al 2006 explained the mechanism of excessive fibrosis happening in rhinophyma (6,7).

Classification and Grading of Rhinophyma Freeman (14).

Group	**Description**
1	Involvement of nasal tip only – “lobular” nose
2	Involvement of distal half of nose, nasal tip, and ala
3	Involvement of distal half of nose, nasal tip, and alar nodules
4	Generalized involvement of the nose, including the nasal bridge and Naso facial sulci

Clark et al 1990 (15)	
Group	Description
1	Involvement of nasal tip only
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Freeman, 1970 (14)

Early Vascular Type

Localized Tumor; Early

Diffuse Enlargement; Moderate

Diffuse Enlargement; Extensive

Diffuse Enlargement; Extensive with Localized Tumor

El-Azhary et al , 1991 (17)	
Group	Description
Minor	Telangiectasias and mild thickening or texture change on nose.
Moderate	Thickening of the nose and early formation of lobules.
Major	Both nasal hypertrophy and lobules.

Rhinophyma Severity Scale (RHISI)36	
Score*	Description
0	No evidence of rhinophyma
1	Mild skin thickening
2	Moderate skin thickening
3	Strong skin thickening, small lobules
4	Lobules with fissures
6	Giant Rhinophyma
Extra point	Presence of strong asymmetry, multiple cysts or strong vessels

*Maximum score: 6 points. (13,14,15,16,17)

1.3 Patient

A 83-year-old male presented to the surgery clinic with advanced condition of bulbous nose. Fig.2. The patient has a normal life, taking normal food, normal marriage life and normal children, he was working as a military on the Malaysian Navey. Physical examination showed normal systems without any history of disease or medical disorders. Local examination showed marked hypertrophied soft tissue of the lower ½ of the nose with hugely enlarged and thick heavy hairs in both nostrils. The patient did not have any chronic medical disease or any other surgical problem. Patient was overweight with BMI is 30. No history of epigastric pain and no detection of Helicobacter infection. He denied alcohol or drug addiction. There was a bad smell from his nose.

Figure 1. Example of thick heavy hair in the nostrils (with permission)

Figure 2. Bulbous nose (Rhinophyma)

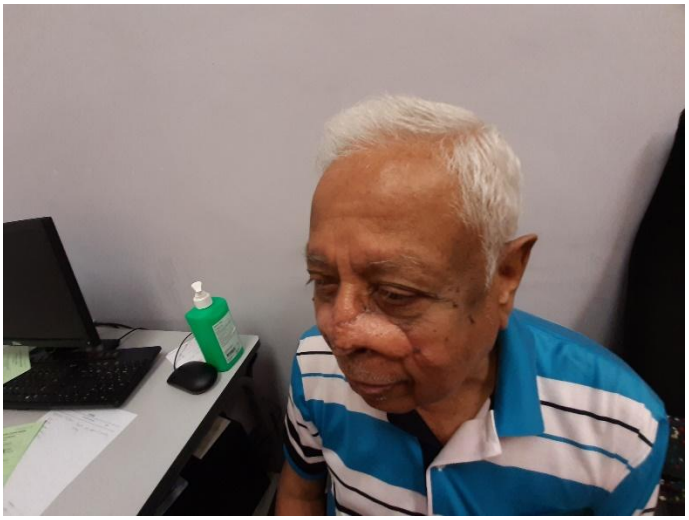

Figure 3. After first operation with local nasolabial flaps

2. Methods

Preoperative investigations including, complete blood count, serum biochemistry, swab from the nostril and from the glandular secretion over the nose. Operatively the author excised the hypertrophied skin and subcutaneous tissue. After removal of the hypertrophied soft tissue, we found hypoplastic cartilage. A swab was taken from both nostrils and from the wound with reconstruction by bilateral nasolabial rotation flaps.

Flaps are mobilized from both sides to cover the alae of the nose. Flaps seemed bulky and were left a period of one year. After one-year debulking minor procedure was performed to refine the flaps. Fig.4.

Figure 4. After debulking of the local flaps

3. Results

At the time of first operation for this patient, it was appearing unsatisfactory to the author and to the patient and to the attending staff. After one year follow up, the patient seemed to be happy from the semifinal result. After the second minor surgery the nose appeared much more beautiful and achieved convenience and happiness of the patient. Fig.4 is 1-year after the last surgery, where the patient appeared happier. Patient nose became clean and clear. Fig.5 is taken from the patient face book after his permission. He looks happy and satisfied.

Figure 5. Final appearance, 5 years after surgery

4. Discussion

The observation of signs before treatment as overriding of hypertrophied tissue on the nose and thick heavy hairs in the nostrils. Hairs were trimmed before starting surgery as a measure and a part of treatment. This case was treated by surgery excision of hypertrophied tissue and repair by moving local flaps to cover the nose. During resection of the bulbous hypertrophied soft tissue the author observed pus discharge coming from the hypertrophied glandular tissues. Culture sensitivity was performed confirmed growth of multiple microbes especially Pseudomonas aeruginosa. The author gave the proper antibiotics during and after surgery (11). With repeated follow up the author observed abnormally thick and heavy hairs in both nostrils as compared to other people, with a bad smell.

Immediately the author recalled the bacterial infection confirmed by the investigation. Instructions was given to the patient to clean and cut the hairs inside the nostrils regularly every week. Follow up later showed clean nose with no recurrence of hypertrophied tissue and the bad smell had disappeared. Result of surgery also was good as it is not preceded to reconstruct the nose using nasolabial flaps. The usual repair is by frontal flap and rotating it downwards. It is usually extensive operation and is done in many sessions.

Normally nasal hairs are important to filter the inhaled air, but if solid dirty material is retained it will be a medium for bacteria. Normal amount of nasal air is important. If the hairs are thick and heavy it will act as place where bacteria can multiply and start to extend the infection nearby. Other treatment methods as mentioned in the literature including dermabrasion, curettage, and laser ablation of the hypertrophied tissues and careful dressings with systemic antibiotics are published (13-16).

5. Conclusion

The cause of development of rhinophyma is infection. The infection is coming from inside the nose. Bacteria grow on humid dust particles trapped by heavy hairs in the nostrils. Types of bacteria are pseudomonas, staph, pneumococcus, and others. To avoid this infection, the author asked the patient to trim the heavy thick nasal hairs and keep his nose clean all the time. Occasionally the patient can use antibiotics cream. Other risk factors coexist as alcohol, fair skin, Scandinavian descend, maldigestion, and other.

Conflict of interest

Non

Acknowledgement

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