

## Conidiobolomycosis – A Case Report

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### Abstract

Conidiobolomycosis is a chronic fungal infection of the subcutaneous tissue of nose and paranasal sinuses often with facial disfigurement. This article presents a case of rhinofacial conidiobolomycosis with disabling disfigurement requiring an extensive and radical management approach and a challenging nursing care.

**Key words:** Conidiobolomycosis, rhinofacial, case report, nursing management.

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### I. Introduction

Conidiobolomycosis is a rare chronic subcutaneous mycosis or fungal infection of nose and paranasal sinuses with middle aged male preponderance in tropical countries like Africa and South-East Asia. It often manifests as a painless swelling over the midline of the face, commonly termed ‘Rhinofacial Conidiobolomycosis’.

Conidiobolomycosis is caused by a saprophytic fungus, ‘Conidiobolus coronatus.’ *C. incongruus* and *C. lamprauges* are also known to cause human disease, all of which can survive in soil and dried vegetables for a long period of time.<sup>1,2</sup>

### Epidemiology

Conidiobolomycosis is endemic in Asia but is under reported due to lack of clinical suspicion and mycological facilities in health care setups.<sup>3</sup> It affects males predominantly. Male: female is 8:1. Agriculture and other outdoor workers have been infected most often. Majority of infections are reported in individuals living and working out-doors in the wet, tropical forests of Africa.<sup>4</sup>

### Transmission

The fungus is transmitted by inhalation or inoculation.<sup>5</sup> Inhalation of fungal spores that are implanted in the nasal mucosa or from a minor trauma such as an insect bite.<sup>4</sup> History of chewing tobacco leaves, pond bathing, and cattle rearing have also been implicated.

### Clinical manifestations

- Conidiobolomycosis, most commonly presents as chronic sinusitis zygomycosis. The infection spreads to facial and subcutaneous tissues and paranasal sinuses. Nasal stuffiness, nasal discharge, sinus pain, epistaxis and nasal obstruction are common.
- Facial swelling and subcutaneous nodules in the eyebrows, upper lip, and cheeks may give the appearance of a hippopotamus or tapir described as facial elephantiasis.<sup>6</sup> Lymph node invasion with severe disfigurement has been reported.<sup>4</sup>
- The nasal mucosa below the inferior turbinate is predominantly affected and appears as a uniform nasal swelling forming a centrofacial deformity.<sup>1</sup>

### Diagnosis

Biopsy and culture of subcutaneous or submucosal tissue.<sup>4</sup>

### Treatment

- Treated with anti-fungals like Potassium iodide, Co-trimoxazole, Amphotericin B, Ketoconazole, Itraconazole and fluconazole.
- Tab. Itraconazole 100mg thrice a day for eight months and Itraconazole 400mg/day and ten drops of saturated solution of potassium iodide, three times a day has been found effective.<sup>3</sup>
- Monotherapy or combination therapy with voriconazole, terbinafine have been successful.<sup>5</sup>
- While many can be treated with medications, some may require surgery to remove nodules and reconstruct.<sup>4</sup>

## II. Case Report

Mr. J, a 22 year old man, presented with complaints of swelling of his nose, upper lip and forehead for four years. The swelling gradually progressed to involve the root of the nose, the upper lip and the cheeks bilaterally as shown in figure 1. He also complained of anosmia, nasal block associated with mucinous discharge and holocranial headache. He lived in a village and gave history of rearing cattle.

### Diagnosis and treatment of Mr. J

His culture & biopsy report showed growth of *Conidiobolus coronatus* from posterior nasal mass. Tissue from left posterior tonsillar pillar and from nasal mass showed Conidiobolomycosis. He was diagnosed with rhinofacial Conidiobolomycosis and was started on anti-fungals – Posaconazole and Flucystosine. But he did not continue the treatment and was lost to follow up. Two years later, the lesion worsened, and he presented with progressive disease and was started on Terbinafine and Posaconazole. Six months later, he had minimal improvement in voice and swelling, so Terbinafine was stopped and Tab. Flucystosine 1gm QID along with Syr. Posaconazole 400mg BD was continued.



Figure 1: Before the surgery

### Surgical management of Mr. J

The swelling increased to 4X3cm over the glabella, with skin over the swelling appearing normal and ill defined swelling over the root of the nose, the bridge, nasal ala, upper lip and right side of the lower lip. CT scan reported asymmetrical enhancing diffuse mucosal thickening involving left lateral nasopharynx with inferior extension to left lateral oropharynx and left palantine tonsil. Heterogeneously enhancing soft tissue density wall thickening was noted in bilateral external nostrils involving cartilaginous part and fibrofatty alar tissue and mucosal thickening in bilateral ethmoid sinuses.

Surgical debulking and free flap reconstruction was done. He underwent excision of Conidiobolomycosis of the midface; bilateral paramedian forehead flap, left cheek advancement flap, right submental flap, left radial artery free forearm flap and tracheostomy under general anaesthesia as shown in figure 2.

Post operatively, he needed airway assistance but was weaned off the ventilator by the 2<sup>nd</sup> post operative day. He was on antibiotics- Cefoperazone sulbactam and Metronidazole. Posaconazole and Flucystosine were continued. He was initially started on nasogastric feeds and then progressed to oral feeds. He had complaints of copious sputum and his chest x ray showed bilateral infiltrates. NPL scopy showed bilaterally mobile vocal cords with signs of aspiration and hence, was restarted on NG feeds. Swallowing therapy was initiated. The forehead flaps were divided, and he was started on Clindamycin and Levofloxacin. The tracheostomy was corked and subsequently decannulated at discharge.



Figure 2: After the surgery

Six months later, he complained of breathing difficulty due to narrowing of nostrils. He was also worried about the disfigurement of his face. Examination showed mild slurring of speech, and stenosed nostrils with a boggy lower lip. MRI Face and Neck showed abnormal thickening and hyperintensity extending across glottis into subglottic region. He underwent nasal augmentation rhinoplasty with right 9<sup>th</sup> costal cartilage and reduction of lower lip flap. Pharyngeal feeds were initiated, saline nasal drops, and warm saline gargles were administered. Daily wound care with saline dressings was done.

## III. Nursing management of Mr. J with Conidiobolomycosis

Nursing care includes preoperative preparation and counselling especially in case of disfigurement resulting in a disturbed body image, postoperative airway management, flap care and monitoring, nutrition, education on regular medications and follow up. Nursing management of Mr. J is discussed using nursing process approach.

1. **Nursing diagnosis:** Anxiety related to chronic disease, proposed surgery and its outcome

**Expected outcome:** Patient verbalizes reduced anxiety

**Interventions:**

- Explained the procedure to alleviate fear due to unknown.
- Explained the preoperative preparation, anaesthesia, surgery and post-operative management.
- Counselling him appropriately regarding goal setting and discussed feelings regarding disfigurement.

**Evaluation:** He verbalized reduced anxiety and at ease with the procedures.

2. **Nursing diagnosis:** Ineffective airway clearance related to pooling of secretions and edema of upper respiratory tract secondary to general anaesthesia and surgical intervention.

**Expected outcome:** Patent airway is maintained as evidenced by normal SPO<sub>2</sub>, ABG and lung sounds.

**Interventions:**

- Monitored for respiratory distress and patency of airway
- Oral and tracheal suctioning was done whenever needed.
- Tracheostomy care was given along with periodic inflation and deflation of cuff to prevent tracheal necrosis.
- Positioned in semi fowlers and provided steam inhalation, chest physio after weaning from the ventilator.
- Administered Oxygen as needed.

**Evaluation:** Airway patency was maintained as evidenced by a SPO<sub>2</sub> of 97-100%, normal ABG values, lung sounds and no signs of respiratory distress. He was weaned off ventilator and was comfortable in room air.

3. **Nursing diagnosis:** Imbalanced nutrition –less than body requirement related to inability to take oral feeds and tube feeds secondary to extensive oral and facial surgical procedure.

**Expected outcome:** Optimal nutritional status is maintained as evidenced by adequate oral intake and no malnutrition.

**Interventions:**

- Provided with Q2H naso-gastric tube feeds as per nutritional requirements.
- Progressed gradually to oral feeds till tolerated.
- Ensured meticulous oral hygiene after every feed.

**Evaluation:** Nutritional status was maintained with no signs of malnutrition.

4. **Nursing diagnosis:** Imbalanced verbal communication related to extensive oral surgery and reconstruction.

**Expected outcome:** Communication is maintained as evidenced by the patient's ability to communicate his needs.

**Interventions:**

- Discussed non-verbal cues and means of communication preoperatively.
- Provided with a communication board; pen and paper to express his needs.

**Evaluation:** He was able to communicate his needs by writing and using communication board.

5. **Nursing diagnosis:** Disturbed body image related to facial disfigurement secondary to disease and flap reconstruction.

**Expected outcome:** Normal body image is maintained as evidenced by a positive perception and absence of social isolation.

**Interventions:**

- Assessed his feelings toward disfigurement and perception about self.
- Introduced to other patients after flap reconstruction.
- Counselling about body image and coping.

**Evaluation:** He was able to cope well and did not exhibit social withdrawal.

6. **Nursing diagnosis:** Risk for injury related to complications-flap failure

**Expected outcome:** Complications like flap failure is prevented.

**Interventions:**

- Assessed the flap for colour, warmth, turgor and pulsations and blood flow using Doppler.
- Ensured no undue pressure is applied over the flap.
- Monitored and maintained PCV within the normal limits.
- Administered anti-coagulants to prevent thrombosis.

**Evaluation:** Complications were prevented as evidenced by healthy wound and flaps.

Mr. J tolerated oral feeds well. He had no difficulty breathing. Bilateral nasopharyngeal airway was removed on 10<sup>th</sup> post-operative day and he was discharged without any complications.

#### IV. Conclusion

Rhinofacial Conidiobolomycosis is an under diagnosed and a disfiguring disease which is usually treated with antifungals. However, a few patients may require extensive surgeries for excision and reconstruction for a better outcome. Nursing care is quite challenging owing to extensive reconstruction and body image is of a huge concern to patients. Nurses need to be aware of this infrequent disease and their role in

early detection and treatment, alongside supporting the patient to cope effectively.

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