# بسم الله الرحمن الرحيم

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تم رفع هذه الرسالة بواسطة / مني مغربي أحمد

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

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# Assessment And Surgical Correction Of The Long Nose

**THESIS**

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***Amr Ossama Ahmed Mohamed Abdelhamid***

# List of Contents

# List of figures

# List of Tables

# List of Abbreviations

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| SMAS | Superficial muscular aponeurotic system |
| LLC | Lower lateral cartilage |
| ULC | Upper lateral cartilage |
| LL | Lower lateral |

# Abstract

**Introduction**: The long nose represents one of the most undesirable features in facial aesthetics that may lead to disturbance in the harmony of the face. Despite being a common feature, review of the surgical literature shows that little attention has been given to analyze, evaluate and manage the long nose.

**Aim of work:** Identify the causes of long nose in the Egyptian population and proposed a surgical algorithm for correction of the long nose deformity.

**Methodology:** Fifty patients with long nose deformity were recruited in this study. Assessment to identify cause of long nose in addition to pre-operative measurements of nasal length, projection, nasolabial and nasofrontal were recorded and compared with the postoperative measurements after surgical correction with the proposed algorithm.

**Results:** Multifactorial causes contribute to the long nose deformity. Most common cause in our study is lack of nasal tip support in 94% of the cases, this was due to either long weak inferiorly oriented lower lateral cartilages in 35 patients or short weak medial crura in 12 patients. 76% of the cases had an under-projected tip in association with the long nose deformity. Our proposed surgical algorithm shows highly significant statistical difference between the pre-operative and post-operative nasal length as well as nasal tip projection.

**Conclusion:** Multiple factors contribute to the long nose deformity. Egyptians most commonly have a long nose with under-projected tip due to lack of nasal tip support. Following a Surgical algorithm in rhinoplasty is helpful stepwise approach to plan for surgery however each operation must be tailored accordingly to each patient.



**Keywords:** Rhinoplasty, long nose, droopy tip

# Introduction

Rhinoplasty is considered one of the most complex cosmetic surgical procedures performed today, since it is characterized by an intricate interplay between form and function. The prerequisite for successful execution of this challenging procedure is a thorough understanding of the nasal anatomy and physiology ***(Momeni and Gruber, 2016)***.

Moreover, comprehensive clinical analysis and definition of goals, preoperative preparation, precise operative execution, postoperative management, and critical analysis of one's results are considered essential principles for successful rhinoplasty ***(Rohrich and Ahmad, 2014)***.

The long nose represents one of the most undesirable features in facial aesthetics that may lead to disturbance in the harmony of the face. Despite being a common feature, review of the surgical literature shows that little attention has been given to analyze, evaluate and manage the long nose ***(Ali et al., 2011)***.

To treat any form of long nose, the surgeon must understand the nasal tip support mechanisms and accurately analyze the underlying anatomic abnormalities contributing to the development of such feature ***(Benlier et al., 2006)***.

A critical analysis of the facial proportions and landmarks including the radix, nasal dorsum, nasal length, tip rotation, and tip projection is essential to the accurate identification of the underlying cause of the long nose ***(Sajjadian and Guyuron, 2009)***.

Several factors may contribute to the development of the long nose. It may be due to either a long septum that invades the lip or dislocation of the alar cartilages downward from the aponeurotic attachments to the septal angle. An absent or shallow nasofrontal angle also gives the illusion of a long nose ***(Ali et al., 2011)***.

In their work ***Benlier, et al in 2006***, classified the long nose into two types. Type one has a long septum that invades the lip, but the ligamentous attachments of

the alar cartilages to the septal angle are adequate. In this case, the long nasal septum and long upper lateral cartilages displace the alar cartilage complex inferiorly ***(Foda, 2003)***.

On the other hand, type 2 long nose is caused by dislocation of alar cartilages downward from the aponeurotic attachments to the septal angle. There is a lack of continuity between the tip of the nose and the septal angle on a digital palpation test ***(Benlier et al., 2006)***.

Different studies normalized the long nose by shortening the cartilaginous septum ***(Sedwick et al., 2005) (Hubbard, 2000)***. In his work, Guyuron is acknowledged to have presented the subject of the dynamics of the nasal structures as well as dynamics after rhinoplasty. With respect to the long nose, he emphasized that the dorsal hump, shallow radix, and drooping of the nasal tip dynamically present the individual with a long nose and that correction of these deformities dynamically normalizes the nose ***(Guyuron, 2000)***.

There is no simple routine standard surgical technique suitable for every patient with a long nose. However, the surgical approach must be tailored according to each patient.

# Aim of Work

1) Identify different causes of the long nose and the incidence of each cause in the Egyptian population.
2) Measurements of nasofrontal angle, nasolabial angle, nasal projection in relation to nasal length and nasal length in relation to midfacial height pre and post operatively.
3) Establish a treatment algorithm for correction of the long nose.

# Review of literature

## Anatomy

A complete understanding of the nasal anatomy forms the foundation for successful rhinoplasty. Systematic and detailed analysis of nasal anatomy and knowledge of normal variance are critical factors in creating an appropriate and realistic surgical plan ***(Sajjadian and Guyuron, 2010)***.

Nasal anatomy could be divided into several categories including the skin and soft tissue envelope, nasal septum, lateral nasal walls, bony pyramid, cartilaginous vault, and nasal tip. Moreover, the external areas of the nose can be divided into aesthetic subunits which include the dorsum, nasal sidewalls, ala, tip, columella and soft tissue triangle ***(Steele and Thomas, 2009)***.

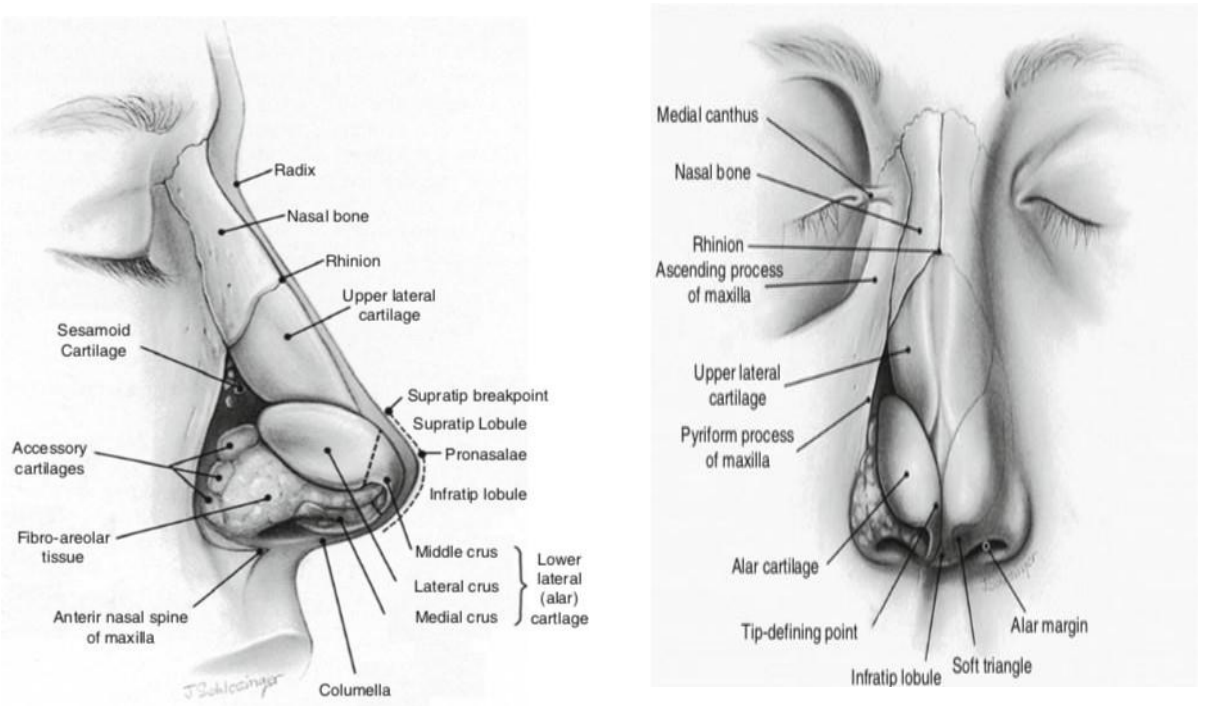


*Fig 1. Frontal and lateral views of the nose. Note the changes of thickness of skin on the lateral view of the nose* ***(Daniel, 2004)****.Courtesy of Jaye Schlesinger, Ann Arbor, MI )*

## Skin

Assessment of skin thickness is extremely important in preoperative planning as it can significantly affect the outcome. Skin is thickest near the glabella then thins out toward the middle vault, where it is the thinnest in the area of the rhinion, which corresponds to the nasal bone and upper lateral cartilage junction, and then gets thicker again at the nasal tip ***(Steele and Thomas, 2009)***.