A Computerized Study of Nose Morphology in Egyptians

**Thesis submitted for partial fulfillment of the Master
Degree in General Surgery**

Presented by

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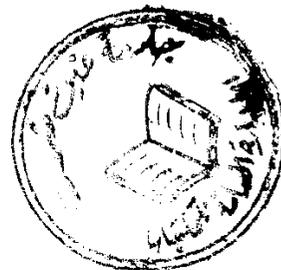
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List of Abbreviations

<CR: angle of columellar rotation

<NF: naso-facial angle

<NP: angle of nasal projection

A: point A

ANS: anterior nasal spine

Ba: Basion

Cd: Condylion

CL: columellar length: SN-CL

CLJ: columella-lobular junction

FH: Frankfurt horizontal

G: gnathion

Gb: glabella

LFH: lower facial height

LNH: lower nasal height: Prn-SN

Ls: labrale superius

Me: soft tissue menton

Na: Nasion

NFr: naso-frontal angle

NL: nasal length: Na-Prn

NL: naso-labial angle

Or: Orbitale

Pg: pogorion

Ph: philtrum

PNS: posterior nasal spine

Po: Porion

Rh: rhinion (greatest prominence of nasal dorsum)

RP: radix projection

RT: radix to tip

SN: subnasale

St: stomion

STB: supra-tip break point

T: pronasale (nasal tip)

TNH: total nasal height: Na-SN

TP: tip projection

UFM: upper facial height

UNH: upper nasal height: Na-Prn

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Introduction and Aim of the Work

INTRODUCTION

Ever since man has tried to define the different components of beauty in order to be able to create it, he has searched for formulas and measurements of beauty *(Bell, 1865)*. Many artists attempted at making studies and designs for the creation of ideal beauty, as Da Vinci, Durer, Camper, Cuvier, Lavater, Lebrun and Polyclitus. The most relevant of all was that of Polyclitus who laid down the golden rule which has been used from the sculptor's own time till the present day.

Inspite of the efforts of the artists to discover these formulas, most plastic surgeons have lagged in their diligence to make use of such concepts in their work *(Aubery and Freidel, 1952)*. Furthermore the training in aesthetic appreciation in the surgeon's curriculum is nil *(Gonzalez, 1962)*.

Gonzalez in 1962 was interested in the measurements in order to enhance beauty. He used 2 imaginary guidelines on the face with the prime purpose of creating what he has chosen to call a quantitative principle for the study of the human profile. As defined, the Frankfurt or horizontal line extends from the upper margin of the external auditory meatus to the lower orbital ridge. The vertical line extends downwards from the nasion, a fixed point on the facial frame, to meet the horizontal line at a right angle. It is interesting to observe

that in the Greco-Latin culture, the idea of facial beauty was developed within an architectural pattern that falls within these two reference lines of the face.

Tamish and Fahmy *(1987),* aimed at getting more information about nose morphology in groups with different craniofacial patterns, and it's influence on profile convexity. This was based on measurements on lateral cephalograms.

Guyuron in 1988 discussed the role of life size photographs and soft tissue cephalometric analysis, to enable the plastic surgeon to draw an aesthetically pleasing and very proportionate profile outline of the nose. He measured the proportions of the front view on the majority of the patients. The difference between the patient's nasal outline and the planned nasal definition was then measured and expressed in quarters of millimeters, to give the surgeon a very precise numeric guide to surgery. Later he investigated the soft tissue response rate to the skeletal and soft tissue alterations following a rhinoplasty.

Lastly, Byrd and Hobar in 1993 described a method for determining the aesthetically proportionate nasal length, tip projection and radix projection. This was done mainly by direct clinical measurements. Life size photographs and computer images were used to validate

the aesthetic change but were not the most essentially used for the analysis.

Although the nose is a dominating feature of the face and greatly influences the degree of profile convexity and beauty, one does not observe it in isolation *(Wisth, 1973).* Intuitively, it is related in the observers eyes to the forehead, supraorbital rims, medial canthi, orbits, maxilla, lips and the chin *(Wisth, 1972).* The stature or height of the patient must also be considered. For example, the small highly sculpted nose on a taller person is an incongruous as the large nose on a person of small stature *(Daniel, 1984).*

It is said that it takes at least 5 years for the average plastic surgeon to start achieving satisfactory and somewhat predictable rhinoplasty results *(Sheen, 1978).* The major contributing factor for this is the lack of clearly defined, geometrically oriented and scientifically transferable aesthetic data which is the main goal of our study.

Aim of the Work

Obtaining measurements of the nose in randomly selected Egyptian faces, in order to study the Egyptian nose morphology. This can be used for planning the necessary correction in cases of rhinoplasty, to reach the best possible results.