

Prevalence of different nasal orifice morphology in female patient with skeletal Class I malocclusion

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ABSTRACT

Aim: The aim of this study was to determine the prevalence of deviated nasal morphology in female patient with skeletal Class I malocclusion. **Introduction:** Asymmetries of the face, dentition, and jaws are usually due to the growth disturbances and are common occurrences in the general population. They are often recognized and treated by orthodontists. Many believe that the nasal orifice is symmetrical between the right and left side, but it is not true, so the current study is to determine the difference in nasal orifice between the right and left side in female patient reporting to Saveetha Dental College and Hospital. **Materials and Methods:** The sample selection consists of only adult female patients with skeletal Class I malocclusion from 18 to 35 years old. Exclusion criteria were determined by the absence of previous history of fracture in the face region, syndromes, and craniofacial anomalies. Full facial view, standardized photographs were taken to evaluate the difference between the shape of the right and left nasal orifice. **Results:** The reason of the study is to determine whether differences nasal orifice is seen in female patient with skeletal Class 1 before orthognathic surgery. **Conclusion:** The conclusion of the study is differences, nasal orifice between the right and left side is seen in female patient with skeletal Class 1 malocclusion.

KEY WORDS: Nasal morphology, Nasal orifice, Orthodontics, Orthognathic surgery, Skeletal Class 1

INTRODUCTION

Dental and skeletal asymmetries happen in high recurrence in orthodontic populaces. Specifically, persistent frequently presents with asymmetric sagittal molar connections alongside high frequencies of asymmetry in overjet, overbite.^[1] The nose should shape some portion of the assessment of patients for whom we plan orthognathic medical procedure.^[1] Modifying the situation of the maxilla with orthognathic medical procedure produces changes to the nasal appearance and capacity. A portion of these could be gainful and ought to be permitted to occur for a more refined tasteful result.^[2] For example, where pre-operative interalar remove is diminished, the progression of the maxilla with orthognathic medical procedure will enlarge the interalar separate, creating a desired impact. Orthognathic Le Fort 1 osteotomy, a surgery performed to amend the feel of midface. A portion

of the inconveniences of this medical procedure are discharge, loss of sensation due to facial nerve harm, change in the state of opening prompting slanted nose, and snoring.^[3,4] Change in the shape of nasal hole is the most widely recognized confusion and a standout among the most discernible entanglements that are created amid the Le Fort 1 osteotomy. While most patients are experience orthognathic medical procedure for esthetic purposes, stylish enhancements are regularly went with minor tasteful contained. The explanation behind the examination is to decide contrasts in nasal hole among right and left in female patient with skeletal Class I malocclusion.^[5]

MATERIALS AND METHODS

The sample selection considered only female adult patients with skeletal Class I malocclusion from 18 to 35 years old. Exclusion criteria were determined by the absence of previous history of fracture in the face region, syndromes, and craniofacial anomalies. Full facial view, standardized photographs were taken to evaluate the difference between the shape of the right and left nasal orifice.

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The data were tabulated and results analyzed according to the study.

RESULTS

For the population studied, nasal orifice varied between the right side and to the left side. In the sample evaluated, it was evidenced the most of individuals presented relative asymmetry corresponding to 90% of individuals.

Analysis of data did not show symmetry between the right and left orifice. It was found that the right orifice has different shapes with 0.3% of population having narrow oval, 0.44% having wide oval, 0.01% having round, and 0.03% having triangular shape. It was found that the left orifice has different shapes with 0.2% of population having narrow oval, 0.26% having wide oval, 0.04% having round, and 0.01% having triangular for different patient. No symmetrical shape was seen between the right and left nasal orifice in any of the patient.

Shape of the nasal orifice	Number of difference		Percentage	
	Right	Left	Right	Left
Narrow oval	13	10	0.3	0.2
Wide oval	14	12	0.44	0.26
Round	1	3	0.01	0.04
Triangular	4	1	0.03	0.01



DISCUSSION

The current perspective of orthodontic and orthopedic treatments is linked to the esthetic, and previous studies reveal that the symmetry presents a definitive and significant influence in the facial look.^[6]

Facial symmetry refers to a state of harmony in which both sides of face are well balanced. On the opposite, the term asymmetry is used when there is an imbalance in the dentofacial complex, affecting the proportions the structures. The nose plays a dominant role in facial esthetics due to its location exactly in the middle of the face.^[6] According to earlier studies,^[7,8] linear measurements of the nose were statistically significantly different in males than females. Nasal length and nasal height were larger in males.

Although there are very few studies evaluating nasal orifice morphology, there are several studies on nose length and other associated parameter in a study by Naidoo *et al.*^[9] Nose length and depth were larger in males of South Indian. According to Lew KK *et al.*^[10]

the nasal height was statistically larger in male of three ethnic background of Nigerian population in comparison with females. Nasal tip protrusion was statistically significantly greater in females. However, a study by Alcalde *et al.*^[11] all of the linear measurements were greater in Italian males than female. Jayaratne *et al.*^[12] reported that midcolumella length, but not exactly nasal tip projection, was the only parameter which was not greater in Chinese males. None of the linear measurement had statistically significant differences among various skeletal malocclusions. Garib^[13] reported that nasal length and nasal inclination relative to SN line were similar in all sagittal malocclusions. When correlated with maxillary skeletal discrepancy, nasal length had insignificant correlation with SNA angle and N perpendicular distance to a point.^[9] Nasal orifice asymmetry has been found to be present equally in both genders.^[9]

Controversy still remains regarding the different morphology of the nasal orifice. In the sample evaluated in this study, most of individuals evaluated presented differences in the right and left nasal orifice morphology.

CONCLUSION

The conclusion of the study is differences, nasal orifice between the right and left side is seen in female patient with skeletal Class 1 malocclusion.

REFERENCES

1. Katsumata A, Fujishita M, Maeda M, Arijji Y, Arijji E, Langlais RP, *et al.* 3D-CT evaluation of facial asymmetry. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2005;99:212-20.
2. Ramirez-Yañez GO, Stewart A, Franken E, Campos K. Prevalence of mandibular asymmetries in growing patients. *Eur J Orthod* 2011;33:236-42.
3. Silva NC, Aquino ER, Mello KC, Mattos JN, Normando D. Orthodontists and laypersons' perception of mandibular asymmetries. *Dent Press J Orthod* 2011;16:38Xe1.
4. Severt TR, Proffit WR. The prevalence of facial asymmetry in the dentofacial deformities population at the University of North Carolina. *Int J Adult Orthodon Orthognath Surg* 1997;12:171-6.
5. Subtelny JD. A longitudinal study of soft tissue facial structures and their profile characteristics, defined in relation to underlying skeletal structures. *Am J Orthod* 1958;45:481-507.
6. Burstone CJ. Integumental contour and extension patterns. *Angle Orthod* 1959;29:93-104.
7. Bowker WD, Meredith HV. A metric analysis of the facial profile. *Angle Orthod* 1959;29:149-60.
8. Gulsen A, Okay C, Aslan BI, Uner O, Yavuzer R. The relationship between craniofacial structures and the nose in Anatolian Turkish adults: A cephalometric evaluation. *Am J Orthod Dentofacial Orthop* 2006;130:131.e15-25.
9. Naidoo LC, Miles LP. An evaluation of the mean cephalometric values for orthognathic surgery for black South African adults. Part II: Soft tissue. *J Dent Assoc S Afr* 1997;52:545-50.
10. Lew KK, Ho KK, Keng SB, Ho KH. Soft-tissue cephalometric norms in Chinese adults with esthetic facial profiles. *J Oral Maxillofac Surg* 1992;50:1184-9.

11. Alcalde RE, Jinno T, Orsini MG, Sasaki A, Sugiyama RM, Matsumura T, *et al.* Soft tissue cephalometric norms in Japanese adults. *Am J Orthod Dentofacial Orthop* 2000;118:84-9.
12. Hwang HS, Hwang CH, Lee KH, Kang BC. Maxillofacial 3-dimensional image analysis for the diagnosis of facial asymmetry. *Am J Orthod Dentofacial Orthop* 2006;130:779-85.
13. Garib DG, Raymundo JR, Raymundo MV, Raymundo DV, Ferreira SN. Tomogra Kiacomputadorizada de feixecônico (cone beam): Entendendo este novo método de diagnóstico por imagem com promissora aplicabilidade na ortodontia. *Dent Press Ortod Ortop Facial* 2007;12:139X56

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