Aesth Plast Surg (2019) 43:284–286
https://doi.org/10.1007/s00266-018-1224-9

LETTER TO THE EDITOR

Measuring Projection of Nasal Tip with Syringe in Rhinoplasty

Chen Zhang[1]

Received: 23 August 2018 / Accepted: 4 September 2018 / Published online: 21 September 2018

Abstract Preoperative and intraoperative assessments are very important for surgeons to plan or regulate tip projection. But how to measure the tip projection is a difficult problem even with a ruler or on full-size pictures. In this paper, the author introduces a method to measure the nasal tip projection with a remodeled syringe.

Level of Evidence V This journal requires that authors assign a level of evidence to each article. For a full description of these evidence-based medicine ratings, please refer to the table of contents or the online instructions to authors www.springer.com/00266.

Keywords Preoperative assessment · Nasal tip projection · Rhinoplasty · Syringe

Rhinoplasty is one of most common cosmetic surgeries in China. In Asia, particularly in East Asians, the nasal tip is usually under projected. So most Asian patients go to see their cosmetic surgeons for a higher nasal bridge and tip projection [1–4]. Preoperative and intraoperative assessments are very important for surgeons to plan or regulate tip projection. But measuring tip projection is a difficult problem even with a ruler or on full-size pictures. After much thinking and many tries, I had an idea to remodel a 60-ml syringe for measuring tip projection. The plunger can move freely in the barrel if the rubber on the head of the plunger is removed. So the barrel can be changed into a holder and a ruler, while the plunger can be changed into a movable leveling rod (Fig. 1).

First, a 60-ml plastic syringe is prepared and the plunger is withdrawn from the barrel. Then, the bottom and Luer-lock tip of the barrel are removed. In this way, the barrel of the syringe is turned into a tube. The distal part of the tube is cut in half from its bottom to the scale of 30 ml, and the part without a scale is snipped off the barrel. Secondly, the rubber head of the plunger is taken off so that it can move freely in the barrel. In this case, a 60-ml plastic syringe is changed to a meter ready for measuring tip projection (Fig. 2).

Before the measurement, the Frankfort plane is marked on the patient's cheek. Then, the patient lies on the bed with the Frankford plane perpendicular to horizontal plane. To measure the tip projection, the distal end of the master's holder is placed at the junction between the alar and cheek. The plunger is inserted into barrel from its upper opening, and the plunger is allowed to fall on to the nasal tip freely. When the head of plunger touches the tip of the nose, it levels at a scale of the barrel. The distance between the scale and the distal end of meter holder can be measured by a ruler, and the result is the projection of the nasal tip (Fig. 3, Mov.1).

Tip projection is the distance from the tip of the nose to the most posterior point of the nasal-check junction. It can be evaluated by drawing a line from the alar–cheek junction to the tip of the nose [5]. How to measure the distance in everyday clinical work? Webster invented a device called a projectometer for the measurement of nasal tip projection [6]. But the ruler is complicated and the result cannot be read out directly from the scale of the ruler.

Electronic supplementary material The online version of this article (https://doi.org/10.1007/s00266-018-1224-9) contains supplementary material, which is available to authorized users.

✉ Chen Zhang
neilzhang@sina.com

[1] Institute of Plastic Surgery, Dalian University, No 10, Campus Drive, Dalian Economic Technological Development Zone, Dalian 116622, Liaoning, China

Fig. 1 The remodeled syringe is ready for measuring nasal tip projection

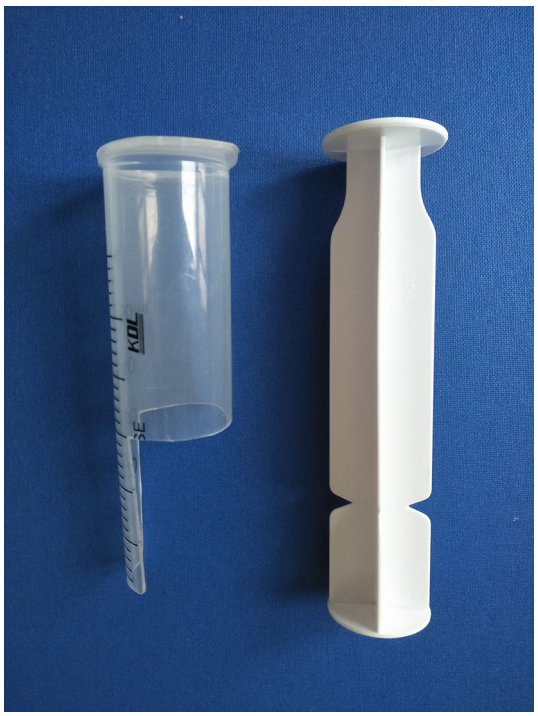

Fig. 2 The separated parts of the remodeled syringe

Calculation is required to get the result. Guyuron developed a technique of full-scale life-size photography using marker/stickers and a ruler at the side of the face as an index for magnification [7]. It is easier for doctors to measure tip projection; however, it is not easy for doctors to use the technique during the operation. Three-dimensional (3D) photographs, facial computed tomography scans and computer imaging software for profile photograph analysis increase much costs due to purchasing

Fig. 3 The remodeled syringe is used to measure the nasal tip projection

expensive instruments. And they face the same problems as full-scale life-size photography [8–10].

Syringes are very common in every clinic. They are sterile and typically packaged individually in airtight plastic. Doctors can prepare the device preoperatively and package it again for sterilizing. So, this homemade device can be used to measure the nasal tip projection pre or during operation. I used this device to evaluate my patients perioperatively and follow up them postoperatively. It helped me a lot to improve my procedure results and patient satisfactory rate in rhinoplasty.

Acknowledgements The Korean College of Cosmetic Surgery has paid the author's air tickets and hotel expense for attending the 2017 annual meeting. The author has no financial interest in any of the products, devices mentioned in this manuscript.

Compliance with Ethical Standards

Conflict of interest No potential conflict of interest relevant to this article was reported.

References

1. Lam SM (2009) Asian rhinoplasty. Semin Plast Surg 23:215–222
2. Jang YJ, Alfanta EM (2014) Rhinoplasty in the Asian nose. Facial Plast Surg Clin North Am 22:357–377
3. Jin HR, Won TB (2016) Rhinoplasty in the Asian Patient. Clin Plast Surg 43:265–279
4. Li D, An Y, Yang X (2016) An overview of Asian rhinoplasty. Ann Plast Surg 77(Suppl 1):S22–S24
5. Gunter JP, Rohrich R, Adams WP (2007) Dallas rhinoplasty, 2nd edn. Quality Medical Publishing, Inc., St. Louis, pp 8–117

6. Webster RC, Davidson TM, Smith RC (1977) Practical suggestions on facial plastic surgery—how i do it. External marking in rhinoplasty planning. Laryngoscope 87:126–133
7. Guyuron B (1988) Precision rhinoplasty. Part I: the role of life-size photographs and soft-tissue cephalometric analysis. Plast Reconstr Surg 81:489–499
8. Jayaratne YS, Deutsch CK, Zwahlen RA (2014) Nasal morphology of the Chinese: three-dimensional reference values for rhinoplasty. Otolaryngol Head Neck Surg 150:956–961
9. Tollefson TT, Sykes JM (2007) Computer imaging software for profile photograph analysis. Arch Facial Plast Surg 9:113–119
10. Moon KM, Cho G, Sung HM (2013) Nasal anthropometry on facial computed tomography scans for rhinoplasty in Koreans. Arch Plast Surg 40(5):610–615