

# Closed preservation rhinoplasty as a method of choice in patients with congenital deformation of the nose.

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**BACKGROUND:** This article presents a modern approach to the treatment of patients with unexpected anomalies and deformities of the external nose, which provides for the restoration of anatomical integrity and its functions, as well as the achievement of a possible aesthetic result.

**Materials and research methods:** At the Maxclinic Plastic Surgery Clinic from 2019-2021. operated on 21 patients with congenital deformities of the external nose, 3 men, 18 women aged from 3 to 35 years.

**Results and discussion:** When eliminating congenital deformities of the external nose, we used closed rhinoplasty with preservation of the ligamentous apparatus of the tip of the nose.

**Conclusions:** all the operated patients had a positive result, in all cases it was possible to achieve an improvement in the functional and aesthetic state. The use of closed rhinoplasty for deformations of the external nose is in no way inferior to the open technique to obtain a more beautiful and harmonious nose shape compared to the initial one. It is important to remember that operations on the structures of the nose should have not only aesthetic, but also functional effects.

**KEY WORDS:** Rhinoplasty, closed rhinoplasty, congenital nose deformities, secondary nose reconstruction.

## Introduction

An absolute indication for reconstructive surgery is a violation of the configuration of the nose in combination with a violation of nasal breathing, a severe deformity of the tip of the nose. Most often they are caused by a violation of the anatomical structure in the form of a curvature of various parts of the nose, most often in 90% of cases the right lateral cartilage is deformed, it is short compared to the left side and thinned, S-shaped deformity of the nasal septum, thickening of the nasal shells that make up the internal structures of the nose [1, 2, 3,]. At the moment, many techniques for reconstructing congenital deformities of the nose have been described and exist, but in the past few years, the so-called "Closed Rhinoplasty" has taken a leading position, preserving the anatomically important structures of the nose, which explains the relevance of this technique [4].

## Methods

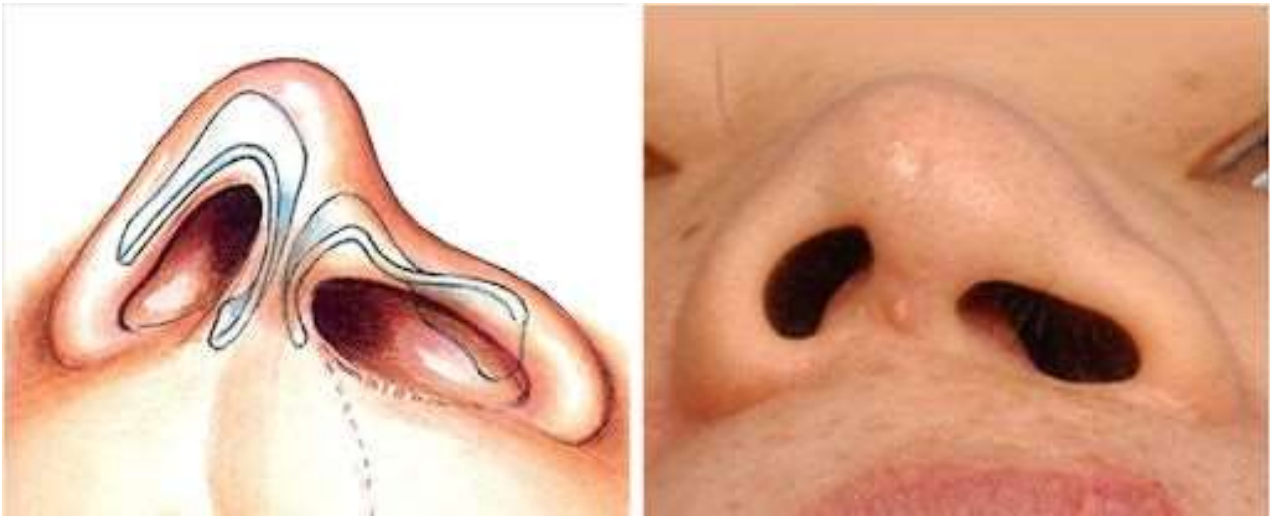
In the clinic "Plastic surgery Maxclinic" for the period from 2019-2021. we operated on 21 patients with congenital deformities of the external nose, 3 men, 18 women, aged from 3 to 35 years. Clinical manifestations are most often expressed as a curvature or flattening of the nasal pyramid with a displacement

of the axis in any direction, deformation of the cartilaginous structures of the tip of the nose (Fig. 1).

With anterior rhinoscopy, a displacement of the quadrangular cartilage in the distal section is observed, usually in the opposite direction from the displaced axis of the nose. CT shows an S-shaped deformity in the bone-cartilaginous section of the septum with the formation of ridges. At the same time, the more intense the patient's desire to inhale through the nose, the more difficulties the air flow experiences due to its turbulence in the zone of bone protrusions. In 11 patients, hypertrophy of the inferior turbinates was observed. The latter do not fulfill their function in full, so the patient often complains of a runny nose, crusting, frequent stuffiness and dryness in the nose.

## Results and discussion

When correcting congenital deformities of the external nose, we used closed rhinoplasty with preservation of the ligamentous apparatus of the nasal tip. The operation was started by intranasal approach with mobilization of the submucosal-subperiosteal part of the lower alar cartilages. Then, submucosal-subperiosteal mobilization of the quadrangular cartilage and bone structures of the nose was performed throughout. The greatest difficulties were

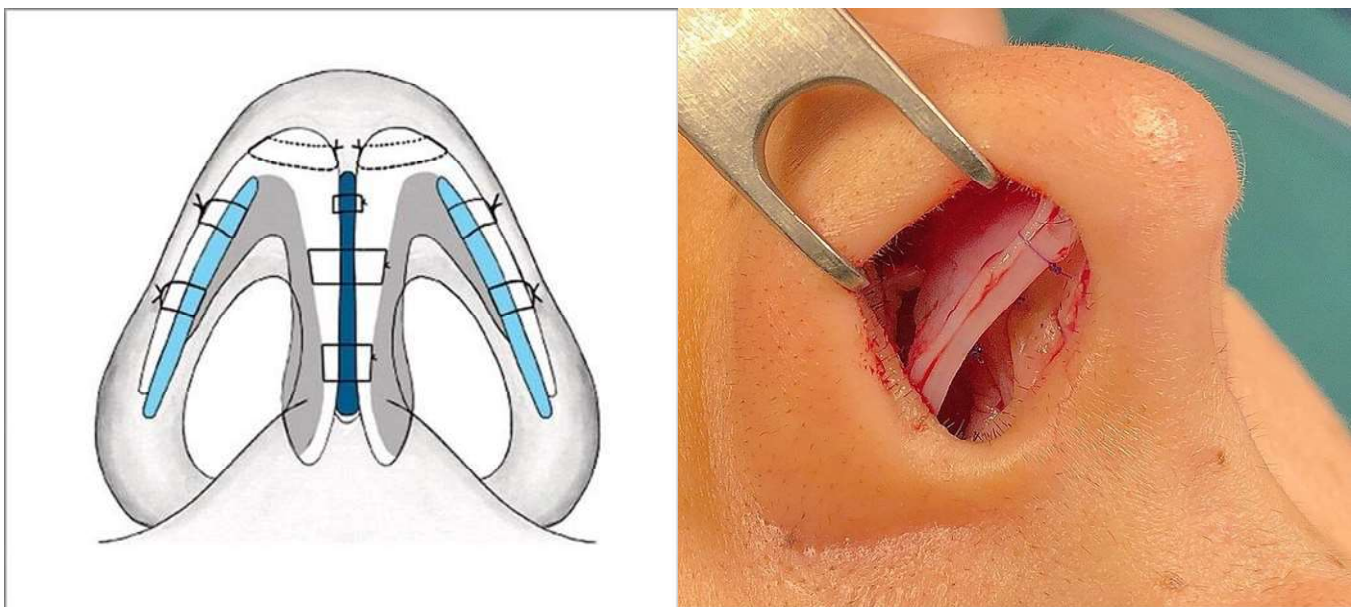


**Figure 1.** Curvature and flattening of the pyramid of the nose with a side axis shift.

experienced in the mobilization of osteo-cartilaginous structures in the area of the nasal floor, where they often form a bulging conglomerate. Despite careful preparation of tissues, the mucous membrane in this place often breaks. They removed conglomerates, bone spikes, i.e. those formations that provide turbulence of the air flow using septoplasty according to the G. Killian method. The quadrangular cartilage fragment extracted during septoplasty is modeled intraoperatively in the form of flat plates. After mobilization of the alar cartilages, reimplantation of own cartilaginous strata (previously removed from the septum) is carried out between the medial crura of the lower alar cartilages and into the area of the deformed lateral alar cartilage, lengthening it, which contributes to the elasticity of the cartilaginous section of the nasal skeleton, preventing floatation and eliminating deformity tip of the nose (Fig. 2).

Restoration of the shape of the nose in 9 patients was additionally achieved by lateral osteotomy and reposition of the skeleton of the external nose, without which it is impossible to obtain positive aesthetic results (Fig. 3). Of the 9 patients with osteotomy, one patient was limited to mobilization on one side only. After osteotomy, the skeleton of the external nose is displaced to the median position due to finger pressure. After suturing, the nasal cavity was plugged for 24 hours. To prevent cicatricial narrowing of the nasal vestibule in 7 patients, we used silicone formers (Fig. 4).

The external nose was fixed with a thermoplastic splint for 10 days in patients with osteotomy. Functional (free breathing through the nose, improved sense of smell) and aesthetic results of interventions in the vast majority of cases were good. The length of stay of patients was 1 bed-days.



**Figure 2.** The plates were reimplanted between the medial crura of the lower alar cartilages and in the region of the deformed lateral crus of the alar cartilage.





**Figure 3.** The patient before and after secondary rhinoplasty with a closed method after 1 month with lateral osteotomy.

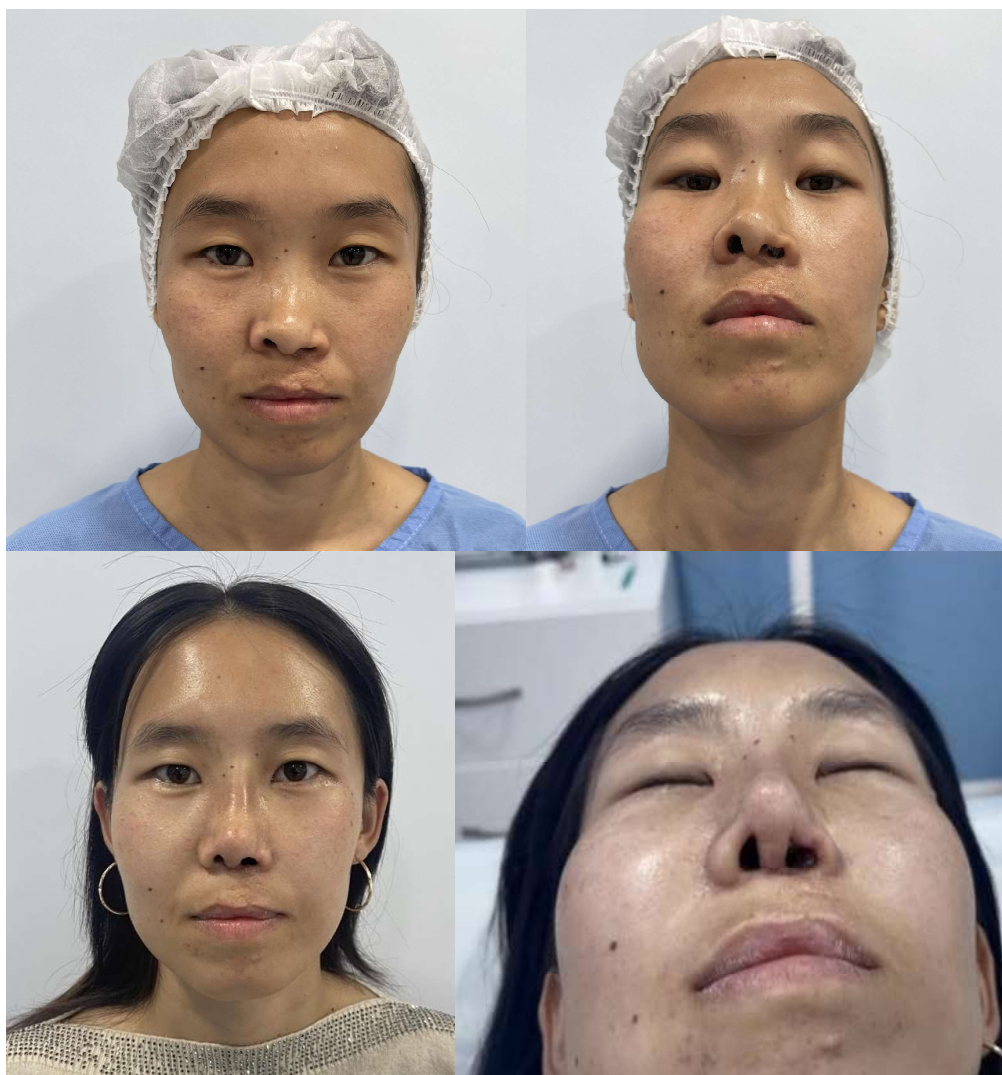


**Figure 4.** The patient before and after closed rhinoplasty using a silicone former.

### Conclusion

Restoration of nasal breathing was noted in 19 patients, and only 2 patients with moderate obstruction. The shape of the nose was restored in 20 patients (Fig. 5).

All operated patients received a positive result, in all cases it was possible to achieve an improvement in the functional and aesthetic condition.



**Figure 5.** The patient before and after closed rhinoplasty on her 20<sup>th</sup> day.

The use of closed rhinoplasty for deformities of the external nose is in no way inferior to the open method to obtain a more beautiful and harmonious shape of the nose compared to the original one. It is important to remember that operations on the structures of the nose should have not only aesthetic, but also functional effects. The nose is the central figure of the face, which determines its integral aesthetic perception. Its deformations lead to self-doubt, and in some cases to psycho-emotional disorders.

### Conflicts of interests

There was no conflict of interest during the study, and it was not funded by any organization.

### References

1. Slama M., Lalo J., Vaillant J. M. Changes in the nasal pyramid in osteotomy of the maxilla. *Ann Chir Plast Esthet*, 2013, Vol. 34, No. 4, pp. 317-322.
2. Waite P. D., Matukas V. J., Sarver D. M. Simultaneous rhinoplasty procedures in orthognathic surgery. *International Journal of Oral and Maxillofacial Surgery*, 2014, Vol. 17, No. 5, pp. 298-302.
3. Kinnebrew M. C., Emison J. W. Simultaneous maxillary and nasal reconstruction: An analysis of twenty-five cases. *Journal of Cranio-Maxillofacial Surgery*, 2016, Vol. 15, No. 6, pp. 312-325.
4. Виссарионов В.А., Мустафаев М.Ш., Тарчкова Э.М., Габуев И.К., Мустафаева С.М. - Особенности проведения ринопластических операций при деформациях носа после травм и односторонней ринохейлопластики - // Вестник последипломного образования в сфере здравоохранения, №2, 2020. – С. 5-10.

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