




Research Article

Open Access Journal



Auricular L Graft as a Method of Extension of the Nasal Septum

Chiara Theresa Norato Ortiz^{1*} , Juan Sebastián Rivas García², Ana Cristina Eraso Rodríguez³, Ana Madeleine Quiñones Gonzalez⁴, Edder Armando Pulido Arias⁵, Maria Camila Navarro Mansilla⁶, Manuela Díaz Valenzuela⁷, María María Bernal Espitia⁸

Corresponding Author: Chiara Theresa Norato Ortiz

¹General Physician, Fundación Universitaria Sanitas, Bogotá

²General Physician, Universidad del Sinú

³General Physician, Fundación Universitaria San Martín, Cali

⁴General Physician, Corporación Universitaria Uniremington

⁵General Physician, Universidad Pedagógica y Tecnológica de Colombia - UPTC, Tunja

⁶General Physician, Universidad Libre, Barranquilla

⁷General Physician, Universidad Pontificia Bolivariana

⁸Intern Physician, Universidad del Sinú, Montería

Abstract:

Plastic surgeries are performed in order to correct conditions in various body areas, defects related to accidents, trauma or birth defects, among these procedures is rhinoplasty, an area of facial cosmetic surgery that represents a challenge when it comes to practiced, this is considered one of the most performed practices in the field and at the same time of greater demands, among the procedures performed is the range of procedures specifically aimed at correcting the defects of the nasal septum "rhinoseptoplasty", by means of grafts, the The graft that is used most frequently is the autologous cartilage graft, which, in addition to being used as a filler, also has the necessary resistance to provide structural support, achieving an extension of it, thus correcting present anomalies, various studies and case reports have shown favorable results, when performing on tervetions using this method, The graft of auricular origin is harvested using different techniques depending on the amount of tissue that needs to be replaced, always trying to maintain the pre-surgical auricular anatomy. This type of graft is very useful in secondary rhinoplasties in which septal cartilage was developed in the first stage, this being no longer an option as a donor area, the use of "the L-shaped septal extension" is an alternative that should be widely used. used in the treatment of cases that require reconstruction and extension of the nasal septum, which is manifested in satisfactory results for the patient. These will be preserved over time, improving the aesthetic and functional status of the patient.

Keywords: Rhinoplasty, septal extension, atrial graft

Copyright : © 2021 The Authors. Published by Medical Editor and Educational Research Publishers Ltd. This is an open access article under the CC BY-NC-ND license (<https://creativecommons.org/licenses/by-nc-nd/4.0/>).



Introduction

Plastic surgeries made with the aim of correcting or perfecting various areas of the body, which in turn after performing said procedure these areas are more attractive and functional for him or the patient, corrections made either by the patient's own desire, errors in previous surgeries or defects accidentally acquired

over time and even defects from birth, among this wide range of procedures we find the well-known and practiced plastic surgery focused especially on the nose or also called rhinoplasty, this is one of the most recognized aesthetic surgeries and performed in the field of plastic surgery and is considered one of the most rigorous and precise

Auricular L Graft as a Method of Extension of the Nasal Septum

aesthetic-facial procedures that represents the most challenges when performed in this field (1).

The alterations to be treated in functional and aesthetic rhinoplasty are mainly concave nasal dorsum, deep base, saddle and even the nose is flattened, which represent a challenge when correcting any of these alterations and more specifically a mostly detailed procedure where Net alterations of the nasal septum called rhinoseptoplasty are corrected. These may correspond to variable anatomical or post-traumatic sequelae where reconstructing the shape and height of the nasal dorsum without the presence of irregular contours are usually the main goal, to correct such changes the filler used is important, for which there are currently many types of grafts. In this case, it is important to understand the properties and interactions of the graft with the underlying tissue, since this will affect the medium and long-term results, and to achieve this, the relationship between the aesthetic surface, underlying anatomical structures and factors must be understood. functional to maintain a patent airway (1,2).

In rhinoplasty, the most frequently used graft is the autologous cartilage graft, in addition to being used as a filler, it also has the necessary strength to provide structural support. Its consistency can be modified by crushing and applying to surfaces that barely cover the tissues, without risk of crushing (2). Cartilage can be removed from the diaphragm, ear, or ribs. The diaphragm is the most used because it has the advantage that it can be used in the same surgical area. (3)

The correction of these alterations of the nasal septum corrected with an extension of the same by means of a composite L-shaped atrial graft will allow you to obtain an excellent result that not only improves the defect, but also maintains good long-term results (3,4)

The "l-shaped articulated graft for septal extension" is an alternative to consider to treat cases that require reconstruction and extension of the nasal septum, the result obtained has been satisfactory and has been maintained over time, it is a procedure carried out carried out by means of

an open rhinoplasty, where a septal extension graft is placed, for projection and support of the tip (the graft taken from the ear adapted to that of the nasal septum, leaving an "L"). At the level of the alar cartilages, a resection of the portion is performed, this also turns out to be an easily reproducible technique, without the inconveniences of visible scars, additional risks such as pneumothorax or painful postoperative periods, when compared with the costal cartilage graft. The resulting scars in the auricle are of acceptable aesthetics and with a camouflage favored by the anatomy of the site. The main advantage is considered to be its low complexity in terms of the applicability of the technique, its low risk of complications and less possibility of absorption of the cartilaginous structures of the nasal pyramid. (5.6)

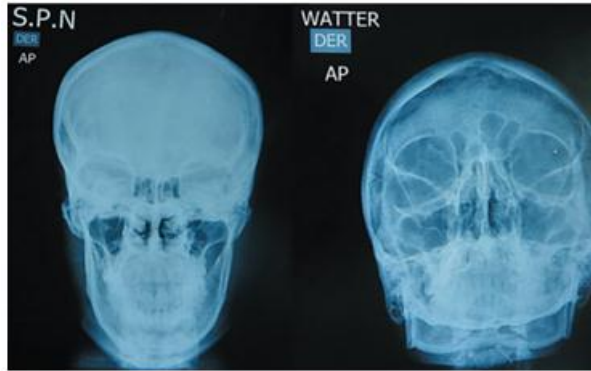
Methodology:

To carry out this article, a bibliographic search was carried out in various databases such as Elsevier, Scielo, Medline, pubmed, ScienceDirect and Ovid, thus selecting original articles, case reports and bibliographic reviews from 2008 to 2021, but more extensive bibliographies were used. old 1972-1995 due to its weight and information necessary to carry out this work, in Spanish and English using MeSH terms: rhinoplasty, septal extension, ear graft: and and or. Thus including all the documents that will deal with L-shaped auricular graft as a method of extension of the nasal septum and information related to it, the data found were between 10-30 records, thus using 15 articles for the preparation of this document.

Results:

In a study carried out in Colombia, the autologous graft of auricular cartilage was used as an alternative to correct structural alterations such as sequelae due to absorption of grafts after primary rhinoplasty, either due to deviations of the nasal tip, and even the partial or total absence of septal cartilage and a support loss. A radiograph of the face with Watter projection was requested from the patient, which reported a septal deviation to the right (Image 1) (7).

Auricular L Graft as a Method of Extension of the Nasal Septum



Taken from: L-shaped ear graft for extension of the nasal septum: technique for reconstruction of nasal septum defect with conchal cartilage graft, Rev Col Plastic and Reconstructive Surgery.

Image 1. X-ray of the face in AP with Watters projection, deviation of the septum to the right is observed.

Taking into account the X-ray, they decided to perform an open rhinoplasty technique, where a septal extension graft was placed, for projection and support of the tip (The articulated graft in "L" format of septal extension, was fixed with

transfixing stitches with PDS 5-0, 1.2 cm). In the immediate postoperative period, the patient showed an improvement and a marked improvement in the deviation was demonstrated, mainly in the projection and support of the nasal tip, which was the objective of the surgical technique. In the late postoperative period 10 months after the intervention, the patient persisted with adequate support and good projection of the nasal tip, without complications during this period such as nasal valve insufficiency or deviations. The patient referred to being satisfied with both the functional and aesthetic results (image 2).



Taken from: L-shaped ear graft for extension of the nasal septum: technique for reconstruction of nasal septum defect with conchal cartilage graft, Rev Col Plastic and Reconstructive Surgery.

Image 2. On the left, it is recorded prior to performing the first procedure. At the central

level, there is evidence of a follow-up at 8 months from the first surgical stage, where deviation to the right with retraction of the right nasal valve is observed. And in the right image, the 8-month follow-up of the second surgical procedure was recorded with sustained results over time.

Auricular L Graft as a Method of Extension of the Nasal Septum

Peck described complete bilateral cartilage replacement, using a graft of auricular cartilage and nasal septum. However, they are not block grafts, require multiple sutures, and are weakened in places to shape and mimic alar cartilage. Therefore, they are more likely to move and lose shape in the immediate postoperative period during scar retraction.

Pereira et al. carried out an anatomical study on cadavers, with the aim of evaluating and comparing the dimensions and shapes of the alar cartilages with the inferior structures of the auricular cartilages, which served to perform a block resection of the tragus, isthmus and concavo cavo, to the pillars medial pillars, union of the medial and lateral pillars, and lateral pillars. Despite the anatomical variations, there was similarity between all the cartilages that were extracted en bloc, which presented a similar format to the ipsilateral alar cartilage (8).

This procedure can be used for repairs of independent sections of the nasal structure, complete bilateral reconstruction of the wings and cases of congenital deformities, in which there are deficiencies in the projection of the nasal tip. This problem is often encountered by plastic surgeons and is often seen in Binder's syndrome (9).

This technique has the advantages of a block graft without the need for stitches or weakening of the cartilage used to mold. This reduces the possibility of deformities secondary to retraction in the late postoperative period, has a low rate of resorption, and flexibility is similar to that of nasal cartilage. Also, the shape, size, and thickness are ideal for alar cartilage replacement (10).

Discussion:

Rhinoplasty today is considered one of the most challenging procedures in facial plastic surgery, since it requires high precision in order to achieve the best results and, even so, it has a revision rate and reoperation needs of 8 % to 15%. Among the aspects that must be taken into account in performing a rhinoplasty, the support and sustenance of the nasal structure, mainly the tip, are highlighted, ensuring that it preserves its format, definition and projection after surgery. (eleven).

It is considered the first option according to the nasal reconstruction and structuring scales, due to its elasticity and firmness, in addition to being

favoured by its location, the graft of septal origin is mainly useful in primary rhinoplasty. However, on several occasions it has been shown that simply harvesting the graft can weaken the cartilaginous septum, losing its density and stability. Therefore, if there is a preexisting weakness, the use of this as a donor area will be questioned (12).

It is important to know that the auricular concha graft has better results due to its similar histological characteristics, and that in secondary (revision) rhinoplasty, the cartilage of the nasal septum is often missing, which is generally the cartilage of choice. Therefore, it may be necessary to obtain alternative graft material from the rib or ear. The costal cartilage provides a large volume of material, but requires a second operative field and exposes the patient to increased morbidity and complications. Therefore, auricular cartilage is an attractive alternative when a modest amount of graft material is needed and when nasal septum cartilage is depleted. The goal, then, is to maximize the amount of atrial cartilage harvested while limiting complications and maintaining the preoperative appearance (14,15).

The graft of auricular origin is extracted using various techniques depending on the amount of tissue that is necessary to replace, always trying to maintain the pre-surgical auricular anatomy. In secondary rhinoplasties, in which septal cartilage was used in the first surgical stage, this type of graft is more useful, but it is not the first option as a donor area.

The auricular conchal cartilage allows us to take different types of graft depending on the case. One of its characteristics is that it presents similarities to the septal graft, such as the same rates of infection, deformity, extrusion, resorption, and scar retraction. The rib graft, on the other hand, tends to present a higher rate of deformation and resorption than the previous ones mentioned. Rib grafts have a certain degree of asymmetry due to cartilage memory, and their use is proportionally associated with a higher risk of complications (12).

Several authors state that nasal reconstruction is one of the oldest aesthetic procedures performed in plastic surgery, which has two important components: aesthetics and function, which must be managed in an interdisciplinary group to obtain the most optimal result. possible.

Auricular L Graft as a Method of Extension of the Nasal Septum

Conclusion:

Rhinoplasty, considered one of the most rigorous practices in the field of plastic surgery, is used to correct functional and aesthetic defects, mainly concave nasal dorsum, deep base, saddle and even the nose is flattened, which represent a challenge to When correcting any of these alterations and specifically those that are directly related to the nasal septum, to intervene and correct these alterations it is necessary to use auricular cartilage grafts taken in order to make an extension of it and thus correct alterations. Presently, the use of this procedure "articulated graft of "L" format for septal prolongation" is an alternative that should be widely considered to treat cases that require reconstruction and prolongation of the nasal septum that will allow satisfactory results for both the surgeon and the patient. the patient and that these in turn are maintained over time, I improve the aesthetic and functional conditions of the patient.

References:

1. Zapata A, Rodriguez D, Dávalos A, Manzur R, Injerto auricular en L para extensión del septo nasal: técnica para reconstrucción de defecto del septo nasal con injerto de cartílago conchal, *Rev Col Cirugía Plástica y Reconstructiva*, 2020;26(1):32-38
2. Casanueva F, Injertos de punta nasal en rinoplastía primaria, *Rev. Otorrinolaringol. Cir. Cabeza Cuello* vol.76 no.1 Santiagoabr. 2016. <http://dx.doi.org/10.4067/S0718-48162016000100004>
3. Calderon D, Tello M, Calderón D, Villavicencio E, Manejo quirúrgico de nariz mestiza con injerto de extensión septal, *Rev. cir. Santiago ago.* 2020, vol.72 no.4 <http://dx.doi.org/10.35687/s2452-45492020004606>
4. Tapia M, Santamaria A, Nueva alternativa para relleno y camuflaje de dorso nasal: Injerto mixto de L-PRF y cartílago, *Rev. Otorrinolaringol. Cir. Cabeza Cuello* 2018; 78: 235-244.
5. Palacio M, Santos I, Utilización del injerto compuesto de concha auricular en el tratamiento de la retracción alar, *Rev. Otorrinolaringol. Cir. Cabeza Cuello*, 2019 vol 29:2
6. Schulz S., M., & Salem Z., C. Reconstrucción auricular. *Cuadernos de Cirugía*, 2018. 17(1), 75-85. https://doi.org/10.4206/cuad.cir.20_03_v17n1-13
7. Alan Rodríguez M, MD; David Zapata C, MD; Andrés Dávalos D, MD; Ricardo Manzur A, MD, Ph.D. *Rev Col Cirugía Plástica y Reconstructiva*. 2020;26(1):32-3
8. Peck G. *Técnicas en rinoplastia estética*, 2ª ed. Filadelfia: Lippincott; 1990.
9. Pereira MD, Marques AF, Ishida LC, Smialowski EB, Andrews JM. Reconstrucción total del cartílago alar en bloque utilizando el cartílago de la oreja: un estudio en cadáveres. *Cirugía Plast Reconstr*. 1995;96(5):1045-52. DOI: <http://dx.doi.org/10.1097/00006534-199510000-00006>
10. Pereira MD, Andrews JM, Martins DM, Marques AF, Ishida LC. Reconstrucción total en bloque del cartílago alar utilizando cartílago autógeno de la oreja. *Cirugía Plast Reconstr*. 1995;95(1):168-72. DOI: <http://dx.doi.org/10.1097/00006534-199501000-00030>
11. Vito C Quatela., Andrew A Jacono. Structural Grafting in Rhinoplasty. *Facial Plastic surgery* 2002;18(4).
12. Lee M., Callahn S., Cochran S. Auricular cartilage: harvest technique and versatility in rhinoplasty. *American Journal of OtolaryngologyHead and Neck Medicine and Surgery* 2011;32:547-552
13. Akkus A., Eryilmaz E., Guneren E. Comparison of the Effects of columellar strut and septal extension grafts for tip support in rhinoplasty. *Aesth Plast Surg* 2013;37:666-673.
14. Cochran CS, DeFatta RJ. Injertos de cartílago tragal en rinoplastia: una alternativa viable en el paciente sin injerto. *Otolaryngol Head Neck Surg* 2008;138:166-9
15. Falces E, Gorney M. Uso de injertos de cartílago de oreja para la reconstrucción de la punta nasal. *Plast Reconstr Surg* 1972;50:147-52.

Ortiz, C. T. N. ., García, J. S. R. ., Rodriguez, A. C. E. ., Gonzalez, A. M. Q. ., Arias, E. A. P. ., Mansilla, M. C. N. ., Valenzuela, M. D. ., & Espitia, M. M. B. . (2022). Auricular L Graft as a Method of Extension of the Nasal Septum. *Journal of Medical Research and Health Sciences*, 5(4), 1955–1959. <https://doi.org/10.52845/JMRHS/2022-5-4-15>