

# *Sinus Retrospective Analysis of Surgeries in a Hospital School*

## *Análise Retrospectiva de Cirurgias Rinossinusais em um Hospital Escola*

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### SUMMARY

**Introduction:** The ENT is a medical specialty that covers 4.4% of all doctors in São Paulo, with a variety of surgical procedures distributed between pharynx, nose, ear and larynx. Knowing the profile of a reference service in otolaryngology allows for a better organization, scaling the volume of care and surgeries, providing better training to the student and resident physician.

**Objective:** To describe the profile of sinonasal surgery and patients to them in the department of otolaryngology and head and neck surgery at a teaching hospital.

**Method:** We conducted a cohort study of cross-sectional retrospective study with review of 872 charts of patients undergoing surgery Sinus between January 2006 and December 2008. Used questionnaires, seeking sex, age, surgical diagnosis and surgery.

**Results:** Of 872 patients studied, 45.4% were female and 54.6% male, ranging in an age group 40-80 years (mean 29.8 years). The main surgical diagnoses were: nasal septum deviation (n=457), nasal deformity after trauma (n=287), enlarged turbinates (n=153), rhinosinusal polyposis (n=73), chronic sinusitis (n=32). Among the most frequently performed surgical procedures include: septoplasty (n=388), rhinoplasty (n=215), FESS (n=131), intra-turbinal cauterization (n=114), reconstructive rhinoplasty (n=73), turbinectomy (n=43), turbinoplasty (n=55). It is emphasized that patients may have received more than one surgical diagnosis and realized more than one surgery, depending on the alert.

**Conclusion:** We present the volume and diversity of Sinus surgeries performed in our department, contributing to the scarce scientific literature on this type of case.

**Keywords:** nose diseases, nose, nose neoplasms; rhinoplasty; otorhinolaryngologic surgical procedures

### RESUMO

**Introdução:** A otorrinolaringologia é uma especialidade médica que abrange 4,4% do total de médicos paulistas, tendo uma variedade de procedimentos cirúrgicos distribuídos entre faringe, nariz, ouvido e laringe. O conhecimento do perfil de um serviço de referência em otorrinolaringologia permite a sua melhor organização, dimensionamento do volume do atendimento e das cirurgias realizadas, proporcionando uma melhor formação ao aluno e ao médico residente.

**Objetivo:** Descrever o perfil das cirurgias nasossinusais e dos pacientes submetidos a elas no departamento de otorrinolaringologia e cirurgia de cabeça e pescoço de um hospital escola.

**Método:** Foi realizado estudo de coorte histórico com corte transversal retrospectivo, com revisão de 872 prontuários de pacientes submetidos a cirurgias rinossinusais entre janeiro de 2006 e dezembro de 2008. Utilizado questionário próprio, buscando sexo, idade, diagnóstico cirúrgico e cirurgia realizada.

**Resultados:** Do total de 872 pacientes analisados, 45,4% eram sexo feminino e 54,6% sexo masculino, variando em uma faixa etária 4 a 80 anos (média de 29,8 anos). Os principais diagnósticos cirúrgicos foram: desvio septo nasal(n=457), deformidade nasal pós-trauma (n=287), hipertrofia de conchas nasais (n=153), polipose rinossinusal(n=73), rinossinusite crônica(n=32). Entre os procedimentos cirúrgicos mais frequentemente realizadas, estão: septoplastia (n=388), rinosseptoplastia (n=215), FESS (n=131), cauterização intra-turbinal(n=114), rinoplastia reparadora(n=73), turbinectomia(n=43), turbinoplastia (n=55). Ressalta-se que os pacientes podem ter recebido mais de um diagnóstico cirúrgico e realizado mais de uma cirurgia, dependendo da indicação.

**Conclusão:** Apresenta-se o volume e a diversidade de cirurgias rinossinusais realizadas em nosso serviço, contribuindo com a escassa produção científica sobre esse tipo de casuística.

**Palavras-chave:** doenças nasais, nariz, neoplasias nasais, rinoplastia, procedimentos cirúrgicos otorrinolaringológicos.

## INTRODUCTION

The Otolaryngology is the medical specialty that covers 4.4% of doctors in São Paulo (1), with 2450 professionals working in the state of Sao Paulo, according to the 2007-2008 census conducted by the Brazilian Association of Otorhinolaryngology and Cervico-Facial (2). In the country in 2003 by the National Health System were performed 80,030 surgical procedures otorhinolaryngological (3). Of these, 45.6% were in the pharynx, nose 28%, 14% in the ear, and 12.4% in the larynx. Sinus between surgeries, 60% were men and 40% in women. The age distribution of this type of surgery is presented with the following range: 1.2% were under 4 years, 2.7% between 5 and 9 years, 23.5% from 10 to 19 years, 51% between 20 and 39 years, 16.8% between 40 and 59 years, and 4.8% over 60 years, thereby revealing a male profile, and young adult patients undergoing surgery Sinus in the country.

In private practice, on the other hand, the Sinus surgeries are the most frequently performed procedures, followed by the procedures performed in the pharynx (3).

Knowing the profile of a reference service in otolaryngology allows better organization of the service. Also, when it comes to a teaching hospital, the size and knowledge of the volume of care and surgeries performed provides a better characterization and consequent better training to students and medical residents.

This paper aims to describe the profile of Sinus surgery and patients submitted to them by the SUS in the otorhinolaryngology department of the Hospital de Base, São José do Rio Preto / SP.

## METHOD

Was conducted a cohort study of cross-sectional, with review of 872 charts of patients undergoing surgery Sinus, between 2006 and 2008, the Department of Otolaryngology and Head and Neck Surgery, Faculty of Medicine of Sao Jose do Rio Preto - FAMERP.

The charts were selected by searching through the central data processing (CMP) of the Base Hospital. We used keywords to identify the Sinus surgery practiced in the period between 2006 and 2008 as "septoplasty", "rhinoplasty", "FESS", "intra-cauterization turbinal", "turbinate", "turbino-plasty", "surgery Caldwell-Luc", "surgery for epistaxis, "among others.

A questionnaire was used in very specific records,

featuring sex, age, surgical diagnosis and surgery. There were no exclusion criteria. All surgeries were performed sinonasal added to the study, however, only the main ones were described in detail to facilitate understanding by the reader.

The research project was submitted to the Ethics Committee in Research of the institution and approved as protocol number 6209/2007.

## RESULTS

Of the total 872 patients analyzed, 45.4% were female and 54.6% were male. The average age was 29.8 years, ranging in age range from 40 to 80 years. Of this total, 625 patients (69.4%) had a single indication for surgery, while 247 (30.6%) had more than one indication nasal surgery (Tables 1 and 2).

The main surgical diagnoses were: I) deviated nasal septum, with 457 patients, mean age of 28.1 years (5-70 years), of which 39.4% were women and 60.6% men; II) posttraumatic nasal deformity (DNPT) with 287 patients, mean age of 26.7 years (14-65 years), of which 65.5% were women and 34.5% men; III) hypertrophy of turbinates , with 153 patients, mean age of 28.5 years (8-69 years), of which 37.3% were women and 62.7% men; IV) nasal polyposis, with 73 patients, mean age 41 3 years (9-67 years), of which 34.3% were women and 65.7% men; V) chronic rhinosinusitis, with 32 patients, mean age 30 years (4-66 years), of which 37.5% were women and 62.5% men (Table 3).

1139 surgical procedures were performed during this period, with 631 patients in the surgeries were isolated (72.3%) and 241 (27.7%) had one or more associated with nasal surgery. In the same period were carried out 64,875

**Table 1. Gender distribution.**

Gender	N	%
Male	476	54,6
Female	396	45,4

**Table 2. Age group distribution.**

Age group	Number of patients	Male Sex	Female Sex
0 - 9 years	22 (2,5%)	16	6
10 - 19 years	195 (22,3%)	121	74
20 - 39 years	447 (51,3%)	213	234
40 - 59 years	175 (20,1%)	102	73
60 years or more	33 (3,8%)	24	9

outpatient consultations, with a ratio of 1.75% of sinonasal surgery of the total demand (Table 4).

The prevalence of the following: I) septoplasty in 388 patients, mean age of 28.2 years (5-70 years), of which 34.8% were women and 65.2% men; II) rhinoplasty in 215 patients, mean age 27.1 years (14-61 years), of which 62.8% were women and 37.2% men; III) functional endoscopic sinus (FESS), in 131 patients, mean age of 37.3 years (40-70 years), of which 37.5% were women and 62.5% men; IV) intra-cauterization turbinal in 114 patients, mean age of 26.3 years (10-61 years), of which 28% were female and 72% men; V) Restorative rhinoplasty in 73 patients, mean age of 26.6 years (17-65 years), of which 76.7% were women and 23.3% men; VI) turbinectomy in 43 patients, mean age 33.4 years (90-70 years), of which 39.6% were women and 60.4% men; VII) turbinoplasty in 55 patients, mean age of 29.3 years (16-69 years), of which 51% were women and 49% men; VIII) other.

Surgeries of this study were conducted by the department of otolaryngology residents under the supervision of the teacher's specialty. The second year residents (R2) underwent the septoplasty, burning intra-turbine, turbinectomy and turbinoplasties, leaving the other surgeries under the responsibility of R3 and R4 (Table 5).

Of 33 patients aged 60 years or more, 72.7% were male and 27.3% female, mean age 66.4 years (60-80 years). The main surgical diagnoses were: I) nasal septal deviation in 11 patients (28.6%); II) nasal polyposis in 7 patients (24%). The most common surgical procedures in this age group were: I) FESS performed in 14 patients (42.4%) and II) septoplasty in 9 patients (27.3%).

Among children (younger than 15 years), we found 74 patients, 66.2% male and 33.8% female. The average age was 11.08 years (4-14 years). The main

**Table 3. Major surgical diagnoses found.**

Surgical diagnosis	Number of patients	Average of age	Male Sex (%)	Female Sex (%)
Nasal septal deviation	457	28,1	60,6	39,4
Posttraumatic nasal deformity	287	26,7	34,5	65,5
Turbinate hypertrophy	153	28,5	62,7	37,3
Nasal polyposis	73	41,3	65,7	34,3
Chronic Rhinosinusitis	32	30	62,5	37,5

**Table 4. Number of patients who underwent surgery alone or associated with, among the most frequent.**

Surgery	Number of patients	
	Isolated surgery	Associated surgery
Septoplasty	205	183
Septorhinoplasty	208	7
FESS	79	52
Cautery intra-turbinal	5	109
Reconstructive Rhinoplasty	67	6
Turbinectomy	5	38
Turbinoplasty	9	46

**Table 5. Major surgeries.**

Surgery	Number of patients	Average of age	Male Sex (%)	Female Sex (%)
Septoplasty	388	28,2	65,2	34,8
Septorhinoplasty	215	27,1	37,2	62,8
FESS	131	37,3	62,5	37,5
Cautery intra-turbinal	114	26,3	72	28
Reconstructive Rhinoplasty	73	26,6	23,3	76,7
Turbinectomy	43	33,4	60,4	39,6
Turbinoplasty	55	29,3	49	51

surgical diagnoses were: I) nasal septal deviation in 47 patients (63.5%); II) nasal turbinate hypertrophy in 13 patients (17.5%); III) chronic rhinosinusitis, in 7 patients (9.5%). The most common surgical procedures were: I) septoplasty in 46 patients (62.1%), FESS in 17 patients (23%).

## DISCUSSION

In Brazil, in 2003, the total of 22,396 surgeries performed Sinus within the SUS, the most accomplished was the reduction of bone fracture of the nose (28.8% of total), followed by septoplasty (25%), rhinoplasty (15.3%) and turbinectomy (11%) (4). The picture is different when compared with the profile of a private clinic. If the surgeries on SUS prevail in the pharynx, with 45.6% of the total, followed by nasal surgery, with 28% (2), in private surgeries are practically equal to the nasal pharynx, with 34% and 33% respectively In a recent study. Moreover, the main procedure was rhinosinusal turbinectomy, with or without septoplasty, representing a third of all ENT procedures performed (3).

In this service, septoplasty represented 34% of Sinus surgery in the period, followed by rhinoplasty (18.9%), FESS (11.5%) and intra-turbinal cauterization (10%). Among the indications for surgery, the nasal septal deviation was present in 52.4% of patients, followed by nasal deformity after trauma (32.9%), turbinate hypertrophy (17.5%) and nasal polyposis (8.3%). Unlike surgical volume in private practice in our department prevails septoplasty.

Note that 25% of nasal surgeries performed are considered cosmetic surgery of the face (rhinoplasty and reconstructive rhinoplasty), which demonstrates an important feature of the service studied, preparing thus the resident to another model for action.

Regarding the septoplasty procedure most often performed this service were operated on 388 patients. The distribution between the sexes, with a slight predominance in men, and the average age in their 30s was similar to that found in other studies (5.6). The deviated septum, which included 457 patients, had a mean age of 28.1 years, 60.6% male and 39.4% female. In a study sponsored by OLIVEIRA et al. (7), which showed prevalence of deviated septum in 60.3% of volunteers rated passers, there was a different gender profile of the study. Of the 322 patients with a deviated septum, surgery or not, 59% were women and 41% men.

The second most common surgery performed in rhinoplasty, addressed 215 cases. Again there was a predominance of young people, with an average age

below 30 years. The gender distribution was significantly higher among women (62.8%), similar to that found by OROPEZA et al. (8), whose prevalence in women was 56%.

The third most common procedure was the functional endoscopic sinus (FESS), involving patients with a higher mean age (37.3 years). In another analysis (9), even though they were selected only patients with fungal rhinosinusitis, we see also the highest average age (mean 40.6 years). In this case there was no statistical difference between the sexes, unlike the Met, which was predominant in males.

The FESS is used in most patients with hypertrophic turbinates, nasal polyposis, polyp of Killian, chronic sinusitis and other clinical and surgical situations.

Evaluating the 153 patients resistant to medical treatment and were operated for hypertrophy of the turbinates by FESS or by another procedure, the mean age was 28.5 years with significant predominance of males (62.7%). CINTRA et al. (10) found very similar average age in this study (28 years), but without predominance of either gender.

The nasal polyposis, present in 73 patients had a mean age of 41.3 years, consistent with the literature (11), confirming that this is a rare disease in children and adolescents. COUTO et al. (12) described a male predominance, accounting for 62.9% of subjects, very similar to our study (65.7%).

Regarding the 32 patients with chronic rhinosinusitis, the average age was 30 years, with 62.5% men and 37.5% women. GEMINIANI et al. (13) indicate a mean age of 40 years and balance the distribution between men, 51.5% and women 48.5%.

As for the polyp of Killian, the 10 patients studied, the average age was 21.3 years (9-45 years), 60% below 20 years, 30% female and 70% men. FRANCHE et al. (14) show similar mean age, 27.5 years (7-75 years), but was most prevalent in females, with 58.6%. Since Davis et al. (15) indicate a higher recurrence rate below 20 years, representing about 70% of patients, and prevalence in males (1:1.3).

Rhinoplasty restorative surgery to the fifth most prevalent in the present study, is also prevalent in young adults, but with a wide prevalence in women, according to the presented by PATROCÍNIO et al. (16).

Another common procedure in daily practice of otolaryngologists is the turbinectomy, effective treatment

for nasal obstruction secondary to hypertrophic rhinitis, which in this study, was prevalent in individuals over age 30 and male, unlike the findings of BARBOSA et al. (17), whose average age was 25 years, and no predilection for sex. However, the study that evaluates only patients who were diagnosed with rhinitis, which could explain this difference.

There were just 11 cuts in this service performed nasal fractures during the study period (82% in males and 18% female) with a mean age of 24.1 years (range 18 to 53 years), similar to that found by MONTOVANI et al. (18) One explanation for this small number of procedures would be the notification of nasal trauma, as often repair these fractures occur in the halls of the emergency room physician. It is noteworthy that, of the reduction of nasal fracture in this hospital is performed by another specialty, which reduces the volume of assistance to the otorhinolaryngology team.

It is noticeable, 10 patients with severe epistaxis in the period, with a mean age of 49.5 years (19-80 years), with absolute predominance in males (90%). SANTOS et al. (19) also indicate that higher average age for surgical cases of epistaxis, with a mean of 50.9 years (32-78 years) and male prevalence, with 67% of cases.

## CONCLUSION

It is concluded that the main surgical diagnosis polyps in this study was performed deviated nasal septum, septoplasty surgery being performed more. The patients are mostly young and male, having been in most cases, only an indication for surgery.

Contributes to, that way, with the scarce scientific literature on this type of study.

## BIBLIOGRAPHIC REFERENCES

1. Conselho regional de medicina do estado de São Paulo. Especialidades médicas no estado de São Paulo. Estudos Cremesp - Centro de dados do Cremesp. Disponível em: [www.cremesp.org.br](http://www.cremesp.org.br)
2. Associação Brasileira de Otorrinolaringologia e Cirurgia Cérvico-Facial. Censo 2007 - 2008. Disponível em: <http://www.aborlccf.org.br/imageBank/Censo%202007-2008.pdf>
3. Patrocínio LG, Barreto DM, Rodrigues LF, Patrocínio TG, Coelho SR, Patrocínio JA. Perfil do atendimento otorrinolaringológico em clínica privada. *Arq Int Otorrinolaringol.* 2007, 11(2):130-34.
4. Gouveia MCL, Lessa FJD, Rodrigues MB, Caldas Neto SS. Perfil de internamento por morbidade otorrinolaringológica com tratamento cirúrgico - Brasil, 2003. *Rev Bras Otorrinolaringol.* 2005, 71(6):698-04.
5. Caldas Neto S, Oliveira RL, Caldas N. Uso da cola de fibrina na prevenção de sangramento e hematoma pós-operatório em septoplastias. *Rev Bras Otorrinolaringol.* 2002, 68(5):635-38.
6. Caniello M, Passerotti GH, Goto EY, Voegels RL, Butugan O. Uso de antibióticos em septoplastias: é necessário? *Rev Bras Otorrinolaringol.* 2005, 71(6):734-38.
7. Oliveira AKP, Elias Junior E, Santos LV, Bettega SG, Mocellin M. Prevalência do desvio de septo nasal em Curitiba, Brasil. *Arq Int Otorrinolaringol.* 2005, 9(4):288-292.
8. Oropeza FJR, Marin FJS, Chávez MEH. Manejo de la base nasal mediante resección de husos de piel de la columnilla. *Acta Otorrinolaringol Esp.* 2006, 57:405-11.
9. Dall'Igna C, Palombini BC, Anselmi F, Araújo E, Dall'Igna DP. Rinossinusite fúngica em pacientes com infecção nasossinusal crônica. *Rev Bras Otorrinolaringol.* 2005, 71(6):712-20.
10. Cintra PPVC, Lima WTA. Comparação das técnicas de turbinectomia com laser de CO2 e laser a diodo. *Rev Bras de Otorrinolaringol.* 2003, 69(5):612-20.
11. Souza BB, Serra MF, Dorgam JV, Sarreta SMC, Melo VR, Anselmo-Lima WT. Polipose nasossinusal: doença inflamatória crônica evolutiva? *Rev Bras Otorrinolaringol.* 2003, 69(3):318-25.
12. Couto LGF, Fernandes AM, Brandão DF, Neto DS, Valera FCP, Anselmo-Lima WT. Aspectos histológicos do pólipó rinossinusal. *Rev Bras Otorrinolaringol.* 2008, 74(2):207-12.
13. Geminiani RJ, Vitale RF, Mazer AB, Gobbo HPC, Silva Neto JJ, Lima JCB. Comparação entre tomografia computadorizada e endoscopia nasal no diagnóstico de rinossinusite crônica. *Arq Int Otorrinolaringol.* 2007, 11(4):402-05.
14. Franche GLS, Granzotto EH, Borba AT, Hermes F, Saleh CS, Souza PA. Polipectomia endoscópica com meatotomia média como tratamento de pólipó antrocoanal. *Rev Bras Otorrinolaringol.* 2007, 73(5):689-92.
15. Freitas MR, Giesta RP, Pinheiro SD, Silva VC. Pólipó antrocoanal: revisão de dezesseis casos. *Rev Bras Otorrinolaringol.* 2006, 72(6):831-35.

16. Patrocínio LG, Patrocínio, JA. Uso de enxertos em rinoplastia. *Arq Int Otorrinolaringol.* 2001, 5(1):21-5.
17. Barbosa AA, Caldas N, Morais AX, Campos AJC, Caldas S, Lessa F. Avaliação da sintomatologia pré e pós-operatória de pacientes submetidos à turbinectomia inferior. *Rev Bras Otorrinolaringol.* 2005, 71(4):468-71.
18. Montovani JC, Campos LMP, Gomes MA, Moraes VRS, Ferreira FB, Nogueira EA. Etiologia e incidência das fraturas faciais em adultos e crianças: experiência em 513 casos. *Rev Bras Otorrinolaringol.* 2006, 72(2):235-41.
19. Santos RP, Leonhardt FD, Ferri RG, Gregório LC. Ligadura endoscópica endonasal da artéria esfenopalatina para epistaxe severa. *Rev Bras Otorrinolaringol.* 2002, 68(4):511-14.