

# Sinonasal Polyposis: About 60 Cases at Fann University Hospital Center, Senegal

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## Abstract

**Introduction:** Sinonasal polyposis (SNP) is a chronic inflammatory disease of the mucosa of the nasal cavities and facial sinuses. It is characterized by an oedematous, multifocal and bilateral degeneration of the nasosinus mucosa, which originates in the lateral masses of the ethmoid, where it causes the formation of smooth, gelatinous, translucent and pyriform polyp lesions. The objective of this study was to review epidemiological, clinical, paraclinical data and evaluate the results of endoscopic surgical treatment. **Patients and Methods:** This is a retrospective study on 60 patients followed at the ENT department of the Fann National University Hospital Center, from January 2010 to December 2015. All patients with sinonasal polyposis were included in the study. **Results:** The average age of our patients was 38 years and the sex ratio (M/F) was 0.8. In the patients' histories, we found 18% asthma and 10% Widal's disease. The average consultation time was 8.5 years. All patients had consulted for nasal obstruction; rhinorrhea was bilateral and found in 67.7% of cases, with olfactory disorders accounting for 50%. The CT scan performed in 58% of cases made it possible to specify the extent of the lesions; the involvement of the ethmoidal sinus was constant and extended to the other sinuses except in 2 cases. All patients had received medical treatment with local corticosteroids. Endoscopic surgical treatment was initiated in 43% of cases after failure of corticosteroid-based medical treatment. The evolution under treatment marked by the reappearance of symptoms that increased each month. At one month postoperatively, all clinical symptomatology had improved with the exception of olfactory disorders, which persisted in 3 pa-

tients. At 12 months we noted 12 cases of reappearance of nasal obstruction. **Conclusion:** SNP is a disease of little known etiology. The diagnosis is almost always clinical. Endoscopic surgery remains a recourse to medical treatment. For good local control, patients should be more respectful of good compliance with corticosteroid therapy.

## Keywords

Sinonasal Polyposis, Endonasal Endoscopic Surgery, CHNU Fann

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## 1. Introduction

Sinonasal polyposis (SNP) is a chronic inflammatory disease of the mucosa of the nasal cavity and facial sinuses.

It is characterized by an edematous, multifocal and bilateral degeneration of the nasal mucosa, which originates at the level of the lateral masses of the ethmoid, where it leads to the formation of smooth, gelatinous, translucent and pear-shaped polypous lesions called polyps [1].

The diagnosis is based on clinical arguments: anosmia (smell disorders), facial pain, nasal obstruction, rhinorrhea, sneezing. Examination of the nasal cavity reveals the presence of bilateral, translucent, “grape-shaped” polyps, very characteristic [2].

CT assesses the extent of the sinonasal involvement.

Treatment is primarily medical with good local corticosteroid therapy which can be interspersed with general corticosteroid therapy. It has been shown to be effective in improving sinus symptoms and quality of life and, to some extent, reducing the size of polyps [3].

Endoscopic surgical treatment is reserved for very extensive forms or those resistant to medical treatment; however it does not guarantee the absence of recurrence.

We present an analysis of the epidemiological, clinical, paraclinical and therapeutic profile of a series of 60 patients followed for SNP during the period from January 2010 to December 2015, in the ENT department of the Fann University Hospital.

## 2. Patients and Methods

This is a retrospective and monocentric study covering a series of 60 patients followed in the otolaryngology department of the Fann National University Hospital Center, from January 2010 to December 2015. All patients with nasal polyposis were included in the study.

The diagnosis was clinical with the presence of bilateral and translucent nasal polyps. CT was requested for all patients (could or could not be done) and was mandatory if surgery was planned.

Endoscopic endonasal surgery was performed under video assistance. We used endonasal endoscopic surgery forceps.

The parameters studied were age, sex, medical history, clinical signs, imaging results and therapeutic elements.

The staging of SNP cases was done according to Rouvier [4] which differentiates the stages:

Stage 0: no visible polyps

Stage 1: polyps located in the middle meatus

Stage 2: polyps not extending beyond the inferior turbinate

Stage 3: polyps reaching the floor of the nasal passages

Stage 4: polyps extending beyond the floor of the nasal passages

All patients received medical treatment with local corticosteroids and some of them had to be treated surgically. The appointment schedule was set for each month, then each 3 months, then each 6 months and finally each year depending on progress. A control CT scan was requested around the 3rd month postoperatively.

All data was collected on the basis of consultation forms and hospitalization records. They were reported on data collection sheets then analyzed using SPSS software.

### 3. Results

The average age was 38 years with extremes of 11 and 88 years. We had identified 33 women and 27 men. The sex ratio (M/F) was 0.8. In the history, we had 6 elements of co-morbidities (Figure 1) in 29 patients; the association with asthma was 18% while Widal disease was present in 10% of cases.

The average consultation time was 8.5 years. Nasal obstruction was present in 83.3% of cases. Rhinorrhea was bilateral and found in 67.7% of cases, smell disorders (anosmia, hyposmia, cacosmia) represented 50%. The complete symptomatology is summarized in Figure 2. Anterior rhinoscopy found in 75% of cases

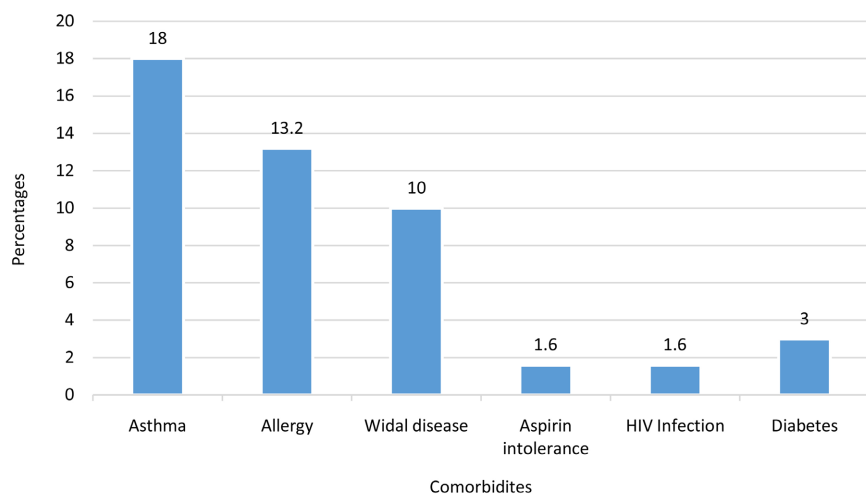
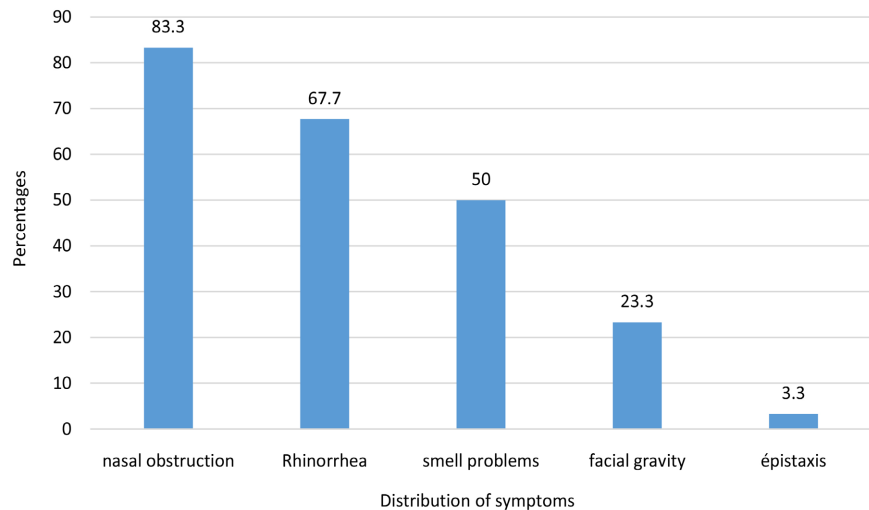


Figure 1. Comorbidity elements.

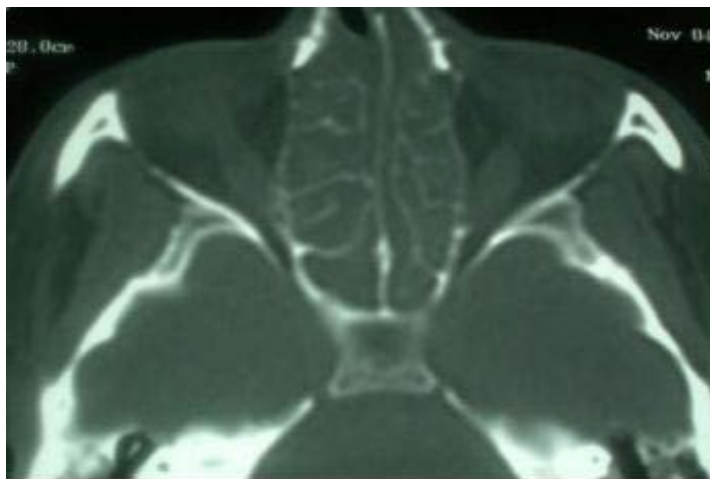


**Figure 2.** The distribution of symptoms.

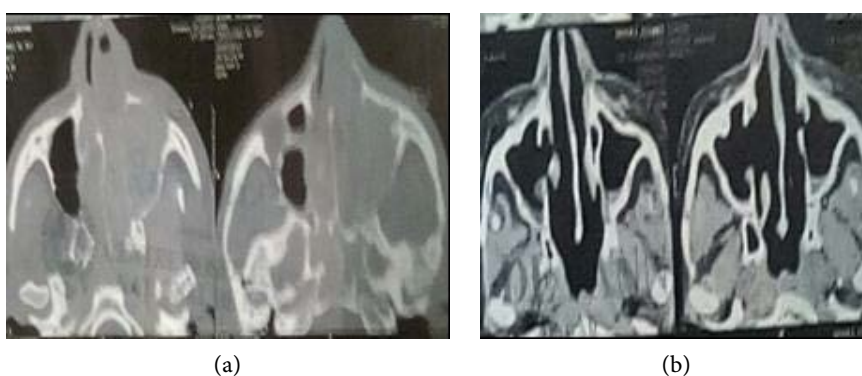
the presence of bilateral, pale and translucent polyps. Furthermore, we noted: hypertrophy of the inferior turbinates (15%), septal deviation (3.3%). Optical examination was performed in 36 patients (60%). The staging of SNP cases was distributed as follows: stage 0 (2.8%), stage 1 (11.1%), stage 2 (47.2%), Stage 3 (38.9%). Stages 2 and 3 accounted for 86.1%.

CT was performed for 35 patients (58.33%), including all operated patients) **Figure 3.** Bilateral involvement of the ethmoid sinus was constant. In 33 patients, the ethmoidal involvement was extended to the other sinuses (**Table 1**). CT also showed a blowing of the ethmoid sinus septum in 3 patients as well as 2 cases of septal deviation.

All patients had received medical treatment based on corticosteroids administered locally. Oral corticosteroid therapy in a short course of 10 days was used when no regression of nasal polyps was observed, without exceeding 4 courses per year. Antibiotics, antihistamines and nasal wash solutions were used on a case-by-case basis. After 01 year of corticosteroid therapy without notable regression of the polyps, we proceeded with a surgical treatment by endoscopic route for certain patients. Endoscopic surgical treatment involved 26 patients (43.3%). This involved a functional ethmoidectomy associated with opening of the other sinuses depending on the extension. Two cases of septoplasty were also performed in the same operating time. Postoperatively, patients used physiological saline solutions for nasal washing; local corticosteroid therapy was continued and patients were informed of the risk of recurrence when corticosteroid therapy was stopped. Progress was assessed based on clinical signs during postoperative appointments (**Table 2**). Within 30 days postoperatively, all of the patients' symptoms had disappeared with the exception of 3 cases of olfactory disorders. Six cases of recurrence of nasal polyps were recorded after 12 months of postoperative follow-up. Those lost to follow-up represented the twelfth month postoperatively. Control CT was performed in only one patient (**Figure 4**).



**Figure 3.** CT of the sinuses of the face in axial section.



**Figure 4.** Control CT before (a) and after (b) endoscopic surgery.

**Table 1.** Sinus extensions.

CT (extensions)	Numbers	Percentages
Affect of the ethmoid sinuses	35	100
Extension to the maxillary sinuses	6	17.14
Extension to 3 sinuses	11	31.42
Extension to more than 3 sinuses	17	48.57

**Table 2.** The evolution of the symptomatology according to follow up.

Evolution	<1 months	3 months	6 months	12 months	>12 months	
<b>Nasal obstruction</b>	0 case	4 cases	1 case	7 cases	10 cases	
<b>Smell problems</b>	Dysosmia	0 case	4 cases	1 case	4 cases	3 cases
	Unchanged	3 cases	3 cases	3 cases	3 cases	2 cases
<b>Rhinorrhea</b>	0 case	2 cases	5 cases	6 cases	9 cases	
<b>Relapse</b>	0 case	0 case	3 cases	4 cases	6 cases	
Lost view	7 cases	13 cases	18 cases	22 cases	22 cases	

## 4. Discussion

### 4.1. Epidemiological Aspects

SNP is a disease of adults in their forties [4] [5]. There appears to be no predominant sex [5]. The incidence has reached 4% of the population in recent years [1] [6].

It is accepted that SNP occurs most often in patients with asthma and aspirin intolerance. The prevalence of SNP is higher in asthmatics (7%) than in the general population (4%) [7].

The Widal or Samter triad (for the Anglo-Saxons) defined by the association (SNP + Asthma + aspirin intolerance) is a particular clinical form of SNP. Aspirin intolerance is seen in 0.3% to 0.9% of the general public, but the prevalence increases from 3% to 20% among asthmatics and up to 30% to 40% among asthmatics with SNP [8]. In our study we found 1.6% aspirin intolerance; the frequency seems to be underestimated. Indeed, the diagnosis was retained during questioning and not proven by aspirin provocation tests which were avoided due to the risk of accidents.

The notion of allergy has long been considered as a factor favoring the appearance of SNP, but in a recent study [5] this notion is no longer retained. Currently, research is focusing on the potential responsibility of local production of enterotoxins by *Staphylococcus aureus* which is present in 70% of patients with SNP [9] [10]. When SNP is diagnosed in children, it is then appropriate to look for a secondary cause such as cystic fibrosis, Kartagener's disease or ciliary dyskinesia [1].

### 4.2. Clinical and Paraclinical Aspects

The symptomatology is classically dominated by bilateral nasal obstruction and smell disorders [11]. These symptoms strongly influence quality of life and are assessed by the "SinoNasal Outcome Test 16" (SNOT-16) quality of life questionnaire, which appears to be a reliable test [12]. The presence of bilateral translucent polyps similar to grapes makes the diagnosis. These polyps are better visualized with the 30° optic if they are ethmoid in location [1]. In our series, optical examination was carried out in 60% of cases; patients who did not benefit from it had stage 2 or 3 polyps visible on anterior rhinoscopy.

CT is essential in the assessment of a SNP. It made it possible to specify the extension, to help in decision-making regarding the surgical procedure and constituted an element of surveillance.

CT performed preoperatively is also useful to assess possible anatomical abnormalities in the SNP. Among these anomalies, we have spontaneous dehiscences of the lamina papyracea responsible for a herniation of the contents of the orbit into the ethmoid cavity, differences in height between the 2 roofs of the lateral masses of the ethmoid, intra-sphenoidal prolapses of the internal carotid artery, the protrusion of the optic nerve into the sphenoid sinus [1].

Due to lack of resources, several of our patients did not have a follow-up CT

scan. But based on the symptoms and the examination of the nasal cavities, we were able to get an idea of the evolution after surgical treatment. But the disadvantage of postoperative monitoring without CT is the failure to recognize the reappearance of polyps in the sinus cavities, particularly the ethmoid.

### 4.3. Evaluation of Treatment Results

There is no preventive treatment for SNP and curative treatments aim to reduce the intensity of functional discomfort.

Medical treatment based on corticosteroids administered nasally offers excellent local control. Corticosteroids constitute the mainstay of conservative therapy for SNP both as primary treatment and to prevent recurrence [13]. Local corticosteroid therapy combined with oral corticosteroid therapy in short courses has shown effectiveness on nasal obstruction and anosmia, on the size of polyps and to a lesser degree on rhinorrhea [14].

However, corticosteroid therapy (especially orally) has multiple side effects including osteoporosis; the latter must be prevented by opting for surgery as early as possible when medical treatment is not effective [15].

Thus, when a certain number of patients see their symptoms persist in a disabling manner, despite the correct use of corticosteroids, we should opt for a much more radical method, namely surgery. In our study, surgery involved 26 patients (43%). Poor compliance with medical treatment—often denied by patients—as well as the low economic level of our patients would explain this observation.

In our practice, surgical treatment is reserved for cases of failure of medical treatment (corticosteroid resistance) after an average year of corticosteroid therapy as well as for advanced stages (3 and 4).

In very symptomatic patients resistant to corticosteroid treatments, surgical treatment can be proposed, the aim of which is not to cure the patient but to make the SNP more corticosteroid sensitive [14].

Functional ethmoidectomy was the surgical treatment option in our context. It consists of opening the ethmoid sinuses after removal of the polyps [1] [13].

However, other authors such as Deloire have opted for a polypectomy followed by corticosteroid therapy; according to the author, this method is well tolerated, effective in the medium term to improve the functional complaints of patients with SNP and does not require general anesthesia [14].

Radical ethmoidectomy or nasalization makes it possible to obtain a wide ethmoidal corridor to ensure ventilation and sinus drainage, but above all a wide diffusion space for local corticosteroid therapy [15].

SNP is known for recurrence. In our series, 6 cases of recurrence of nasal polyps were noted after 1 year of postoperative follow-up. In the literature, the evaluation of recidivism faces a problem of follow-up which generally does not exceed 20 weeks [14]. In our study, those lost to follow-up at 12 months represented 33%. Among the 67% followed at least 12 months after surgery, we



recorded 6 cases of recurrence of nasal polyps. These recurrences are attributable to poor compliance with post-operative corticosteroid therapy which would be linked to the low economic income of our patients; other patients stopped taking nasal corticosteroids when they noticed a disappearance of rhinological symptoms.

Our study has some limitations.

CT was missing for some patients who had financial difficulties. This could lead to false diagnoses of SNP in the 25% of patients who had not made one. Medication compliance has not been accurately quantified. Finally, the high number of people lost to follow-up at 12 months (22/35 cases) hampered follow-up beyond this period.

## 5. Conclusion

SNP is a benign but disabling pathology due to the intensity of the rhinological symptoms. Treatment is based on long-term corticosteroid therapy administered nasally; Surgery is reserved for advanced forms as well as cases of corticosteroid resistance. This article made it possible to analyze the profile of SNP in the ENT department of the University Hospital of Fann. The long consultation period (8.5 years) as well as the non-compliance with post-operative corticosteroid therapy was the determining elements. The lack of proper monitoring of our patients is linked to our developing country context. Thus our recurrence rate at 12 months (6/60 patients, or 10%) could be increased if we consider the number of patients who did not benefit from follow-up CT as well as those lost to follow-up.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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