

Endoscopic Endonasal Surgery at the Yaounde General Hospital-Cameroon: Case Study of 30 Operated Patients

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Abstract

Introduction: Endoscopic endonasal surgery is currently a validated therapeutic modality in most nasal sinus disorders. In developed countries, this practice is common and sees the indications constantly reviewed; In sub-Saharan Africa, this surgical technique is popularized. The external pathways are morbid and not very functional. In our daily practice at the Yaounde General Hospital (YGH), this technique is still in its infancy. Gradually it's entering our habits and sees its indications increases. Through this study, we are reporting readily available data from our experience. **Objectives:** The objective was to study the practice of endoscopic endonasal surgery in our setting. **Patients and Method:** This was a cross-sectional, descriptive, retrospective study. The site of study was the ear-nose and throat service of Yaounde General Hospital. The study was conducted from January 2013 to December 2020, for an 8 years basis. The sampling was consecutive. We included in this study all patients operated on for a nasal sinus disease by the endoscopic endonasal modality. We excluded patients with incomplete files, as well as those who had a complementary transfacial approach during the same operation. The data were collected on prepared questionnaire. Data analysis is done with ssp 23.0 software. **Results:** We recruited 30 cases, out of a total of 330 interventions carried out in our department. The prevalence of this surgery in our activity was 9%. Male and female had equal ratio of 50%. The most represented age group was 30 - 40 years (33.3%). All the patients had a facial sinus CT

scan, we did not note any anatomical variant as risk. Two patients of our sample size had a history of sinus surgery, treated externally. Chronic maxillary sinusitis was the surgical indication in 36.7%, followed by Killian antro-choanal polyps in 13.3%, nasosinus polyposis in 13.3% and all performed under general anesthesia. The most performed procedure was unilateral mean meatotomy with 43.33% followed by bilateral mean meatotomy with 20%, ethmoidectomy 13.3%, bimeatotomy 10%. The admission lasted for 2 days. 100% of patients had a previous nasal tamponade at the end of the intervention. The tamponade was removed on the second postoperative day in 100% of patients. 16.7% of patients presented with complications of low abundance postoperative bleeding. All patients noted clinical improvement over the initial symptoms postoperatively. **Conclusion:** Endoscopic endonasal surgery is experiencing slow but certain progress in our daily practice. The operated patients are young, chronic maxillary sinusitis is the main indication, the most performed procedure is the unilateral mean meatotomy. The operation goes uneventful with satisfactory prognosis. A study with a larger sample is necessary in order to refine our results. The practice remains limited by the technical platform, which needs to be strengthened, in order to optimize the practice.

Keywords

Endonasal Surgery, Sinus Pathologies, Yaounde

1. Introduction

Endoscopic endonasal surgery is currently a validated therapeutic modality in most nasal sinus disorders. The endoscopic endonasal surgery is a non-invasive surgery, the principle is to explore and treat the sinus pathologies without external route. We use for that: the endoscopic forceps, the screen, the optical and the camera. The procedure is made under general anesthesia, and we explore the sinus cavities through the screen. In developed countries, this practice is common and sees the indications constantly updating [1]. In sub-Saharan Africa, this surgical technique is popularized [2] [3]. Allowing saving on external routes, these external pathways are morbid and not very functional. In our daily practice at the Yaounde General Hospital (YGH), this technique is still in its infancy. Gradually it enters our habits and sees its indications increase. No report study has been done about this surgical approach in our country. With this study, we wanted to report data from our community, which is not readily available. Thus, we have made over 8 years of practice an inventory of this surgical modality at YGH.

2. Objectives

The general objective was to study the practice of endoscopic endonasal surgery in our setting. Specifically: 1) determine the prevalence of this surgery in the

overall surgical practice of the ENT department of the YGH, 2) give the epidemiological profile of the operated patients, 3) give indications of this surgery, 4) describe the surgical techniques, 5) draw up the outcome profile of these patients.

3. Patients and Methods

It was a cross-sectional, descriptive, retrospective study. The study ran from January 2013 to December 2020, or 8 years. The sampling was consecutive. We included in this study all patients operated on for a nasal sinus disease by the endoscopic endonasal modality. We excluded patients with incomplete files, as well as those who had a complementary transfacial approach during the same operation. We identified first all the patients operated by endoscopic endonasale approach. We prepare the technical sheet, concerning the epidemiological data, the clinical data, the type of endoscopic surgery done, and the outcome data of the patients. All the information was consigned in technical sheet. The data were collected on cards prepared for this purpose. Data analysis is done with ssp 23.0 software.

4. Results

We have compiled over our study period 30 cases, out of a total of 330 interventions carried out in the service.

Epidemiological data:

The prevalence of this surgery in our activity is 9%. The distribution of patients by sex was 50% for both sexes.

The most represented age group was between 30 - 40 years (33.3%) (**Table 1**).

Clinical data:

All the patients had a facial sinus CT scan, we did not note any anatomical variant at risk (**Figure 1**).

Two patients in the sample had a history of sinus surgery, treated externally.

Chronic maxillary sinusitis was the surgical indication in 36.7%, followed by Killian antro-choanal polyps in 13.3%, nasosinus polyposis in 13.3%, (**Table 2**).

All the procedures performed were performed under general anesthesia.

The most performed procedure was the unilateral mean meatotomy with 43.33% (**Table 3**), followed by the bilateral mean meatotomy with 20%. ethmoidectomy with 13.33%, bimeatotomy with 10% (**Figure 2**).

Table 1. Distribution of patient in relation to the age range.

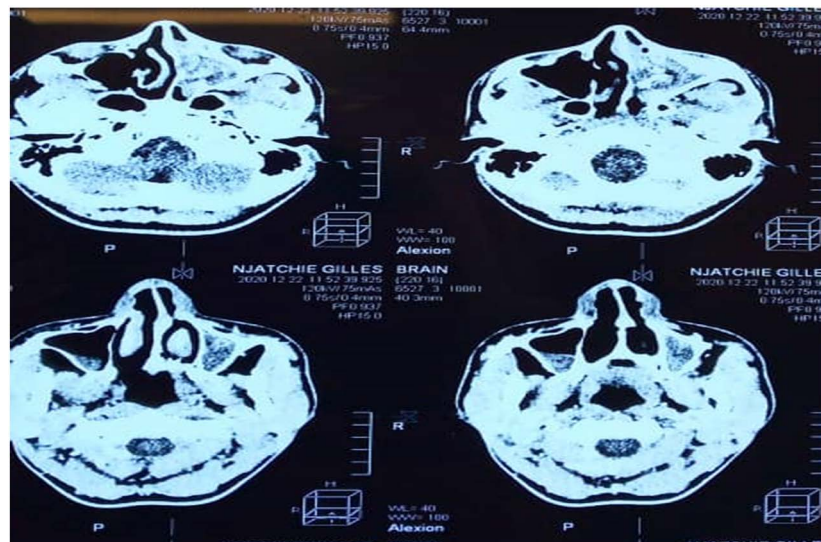
Age range (year)	N	%
20 - 30	8	25.7
30 - 40	10	33.3
40 - 50	7	22
>50	5	19
Total	30	100

Table 2. Distribution of patients in relation to the indications for surgery.

Surgery indication	N	%
Chronic maxillary sinusitis	11	36.7
Killian antro-choanal polyps	4	13.3
nasosinus polyposis	4	13.3
Pansinusitis	4	13.3
Chronic fungal maxillary sinusitis	3	10
Chronic sphenoidal Sinusitis	2	6.2
Others	2	6.2
Total	30	100

Table 3. Distribution of patients in relation to the surgical procedure performed.

Endoscopic surgical procedure	N	%
Unilateral mean meotomy	13	43.33
Bimeatotomy	3	10
Bilateral mean meotomy	6	20
Ethmoidectomy	4	13.33
Sphenoidectomy	2	6.6
Others	2	6.6
Total	30	100

**Figure 1.** CT-Scan of left chronic fungal maxillary sinusitis.Evolving data:

The length of hospital stay was 2 days in all patients in our sample. 100% of patients had a previous nasal tamponade at the end of the operation. The tamponade was removed on the second postoperative day in 100% of patients. 16.7% of patients presented complications of low abundance postoperative haemorrhage. All patients noted clinical improvement in their symptoms postoperatively.



Figure 2. Endoscopic view of resection of aspergilloma through left bimeatotomy.

5. Discussion

The aim of this preliminary work was to study the practice of endoscopic endonasal surgery in our environment. The prevalence found was less than 10% of all surgical activity in the department. This low prevalence is due to the novelty of this technique which is in the process of being acquired. Some sinus infections remain treated externally. The reason is that a few of surgeon are trained of this new technical approach, and the lack of the equipment and poor financials conditions. The number of patients recruited (30) can appear like small, but is a new surgical approach, who is performed in the Yaounde General Hospital. The same study made in another tropical similar country show less than 40 patients [2]. The distribution of patients by sex was equal, our results differ from those of Lengane et al, who found a female predominance [2] [3]. The mean age group in our series is between 30 - 40 years old, with 33.3%. Our results are similar to the data in the literature [2] [4].

Two patients had already been operated externally, it was Caldwell-Luc indicated for chronic maxillary sinusitis, but this intervention does not allow patency of the middle meatus, which was probably responsible for the recurrences [1]. Because the middle meatus should be open, to have a good functional result. That is one of the main advantages of endoscopic endonasal approach [1]. The commonest indication was chronic maxillary sinusitis, our results are similar to data in the literature [2] [3] [4].

The most performed procedure was the mean meatotomy, our results are similar to the literature [2] [3] [4]. One of the peculiarities of our series is the practice of bimeatotomy (20%), which is performed in chronic maxillary fungal sinusitis with good results, our results corroborate those in the literature [5]. The bimeatotomy is an endoscopic endonasale approach, where the middle meatus and the inferior meatus are open in the same time, the advantage is the better control of all maxillary sinus cavity, without external route. This procedure is par-

ticularly performing in maxillary foreign body (aspergilloma).

We practiced a 2-day hospitalization, which differs from certain studies carried out which practice an outpatient hospitalization [1] [2] [6]. These 2-day hospitalizations were motivated by the lack of experience of our team, and the limits of urban mobility of our patients in our setting. But it remains less than the external route, the remain in the hospitalization for a week. The main complication found is hemorrhage, which was found in 16.7%. This complication remains the most common in the literature [7]. The bleeding in our series had a favorable outcome.

The limitation of this study is the size of the sample who is small, but is the first study done in our environment concerning the endoscopic endonasal approach. Is a new approach, and the aim of this study was to give the preliminary results. Sure would need a complementary study to improve our results. The preliminary results are good, as all of the patients in the sample saw their symptoms improve.

6. Conclusion

Endoscopic endonasal surgery is making slow but certain progress in our environment. The operated patients are young, chronic maxillary sinusitis is the main indication, the most performed procedure is the unilateral middle meotomy. The operative consequences are simple. The results are good. A study with a larger sample is necessary in order to refine our results. The practice remains limited by the technical platform, which needs to be strengthened, in order to optimize the practice.

Conflicts of Interest

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

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