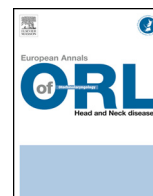




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International consensus

International survey and consensus (ICON) on ambulatory surgery in rhinology



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ARTICLE INFO

Keywords:

Rhinology
 Sinus surgery
 International consensus
 Day-case surgery
 Ambulatory care

ABSTRACT

Objectives: Day-case surgery is the gold standard to several surgical procedures in Rhinology. However, few data and guidelines have been published except in the Anglo-Saxon countries and France. The aim of this survey was to propose a list of issues arising during day-case surgery in order to analyze the different constraints encountered around the world.

Material and method: It was a prospective multicenter international email survey. The method was based on the formalized expert consensus methodology. A list of 11 issues was based on literature data and was sent by e-mail to 265 key opinion leaders (KOL) who attended the IFOS congress.

Results: The response rate was 20% from 27 countries without statistical difference between continents concerning the score on each item. The mean age of KOL was 50 ± 10 years. Their mean length of experience was 21 ± 10 years. Issues in relation with technical resources and experience showed that the last time at which ambulatory surgery in the day is possible was 4:00 PM but responses varied depending the availability of technical resources. Bleeding or hematoma occurred most frequently between the third and fourth postoperative day whatever the surgical procedure. A strong agreement and consensus was obtained concerning the nasal packing, septal contention and their schedule of removal which were not a contraindication of day-case. Also 75% of participants were agreeing with a therapeutic education program to improve the performance of postoperative care and decrease readmission rates. A relative agreement without consensus were obtained for the distance between the day-case unit and home, the role of surgery duration and the impact of anticoagulant and/or antiplatelet drugs in overnight admission and readmission rates.

Conclusion: Practice varies widely owing to local organization constraints and the availability of a dedicated day-case unit seems to be the main limiting factor.

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1. Introduction

The ambulatory surgery improves patient and family satisfaction, optimizes organizational and technical resources to be more efficient, and reduces healthcare and health insurance costs. It also maintains and improves the quality and safety of care by limiting exposure to nosocomial infections and reducing waiting time for treatment [1]. The last IFOS congress was a good opportunity for

delegates from around the world to share experience in ambulatory care in rhinology. Indeed, few data and guidelines have been published on this subject except in the Anglo-Saxon countries and France, yet health systems vary considerably in terms of public/private funding, technical resources, geographical difficulties, population size and epidemiology of rhinologic diseases [2–4]. This organization of ambulatory care requires dedicated infrastructure and staff to meet national objectives that range from 66 to 75% depending on the country [1,5]. All indications considered, just over 46% of rhinologic surgical procedures were performed in 2015 in France on a day-case basis and only 34% of sinus surgery [6]. These rates can only be increased gradually, taking into account

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risk assessment and control. Therefore, a few months before the IFOS congress in Paris, the rhinologic scientific committee invited key opinion leader attendees to participate in an international survey of practices concerning outpatient rhinologic surgery. The aim was to propose a list of issues arising during day-case surgery in order to analyze the different constraints encountered around the world. This list of issues was based as much as possible on literature data.

2. Method

This survey was promoted by the French Society of Otorhinolaryngology, Head and Neck surgery and the task was entrusted to the French Rhinologic Society. The method was based on the formalized expert consensus methodology suggested by the French Health Authority and clinical consensus statement proposed by Rosenfeld et al. [7,8]. The Development Group (DG) comprised six international experts who defined the scope of the consensus statement. After a review of the literature through a bibliographic research in the Pubmed and Medline databases, they established a list of 11 questions that had to correspond to concrete, frequent and controversial clinical situations. Each question was followed by a Likert scale (Appendix 1) and the form was sent by e-mail to 265 key opinion leaders (KOL) who attended the IFOS congress. Each member of the quotation group was asked to fill in the scale for each statement and write a very short paragraph based on the literature or an expert opinion to justify his or her quotation. Next, the number of members who choose the same level of agreement was counted. For each level of agreement, the mean and extreme quotation values were defined: a statement between 7 to 9 points was considered as a strong agreement, between 4 to 6 points as a relative agreement and between 1 to 3 points as a disagreement. A consensus was defined if the mean score of statement was ≥ 7.00 points with less than one outlier, a near consensus was defined if the mean score was ≥ 6.50 points and outliers ≤ 2 and no consensus in other cases.

3. Results

Fifty-two KOL from 27 countries out of the 265 contacted filled in the form. The response rate was 20% and the distribution was as follows: 57% of responses from Europe, 16.5% from North and South America, 16.5% from North Africa and Middle East and 10% from Asia and Russia. There was no significant difference between continents concerning the score on each item. The mean age of KOL was 50 ± 10 years and their mean length of experience was 21 ± 10 years. All types of establishments were represented: private, public hospital or both.

Issue 1: "is the distance between the home and the hospital a limiting factor in ambulatory care?". Mean score = 5.9 ± 2.4 pts – Median score (IQ25–75) = 7(3–8) pts. Relative agreement - no consensus.

There are few data in the literature on this issue. Since 2010, according to the French Society of Anesthesia guidelines, the distance between the hospital and the patient's place of residence, and the duration of transport, are not contraindications of ambulatory care [9]. Depending on the country, it seems important to adapt this rule owing to the great heterogeneity in geographic situations worldwide, available medical structures like a medical hotel close to the hospital, and emergency and general practitioners. However,

in a previous study of the assessment and risk management for septo- and septorhinoplasties, 20% of 424 patients who underwent surgery lived more than an hour from the hospital without any postoperative history contraindicating ambulatory care a posteriori [10]. The referring surgeon must check that the patient and his family have sufficient understanding of the procedure, that a telephone is available at home and that the patient will be accompanied at discharge and the following night. Recently, Gengler et al. showed in a retrospective series of 924 outpatients that a distance > 50 km from the hospital was not a cause of unanticipated admission [11].

Issue 2: "anticoagulants are not a contraindication for day-case surgery". Mean score 4.6 ± 2.4 pts – Median score (IQ25–75) = 5(3–7) pts. Relative agreement no consensus.

Forty five percent of the quotation group members did not agree while 25% were neutral and 30% almost or completely agreed to operate with anticoagulation in day-case surgery. Of course, the terms anticoagulant and antiplatelet drug need to be defined here because during the last IFOS congress several KOL stated that 75 or 100 mg of aspirin was not an absolute contraindication for day-case surgery because the risk of postoperative hemorrhage is not increased. In a recent prospective study to assess the feasibility of ethmoidectomy in day-case surgery, Oker et al. did not include patients with hemostatic disorders or those taking anticoagulant and/or antiplatelet therapy [12]. Only one patient suffered from a postoperative epistaxis at D0 [12]. It is very difficult to know in the studies whether patients were on anticoagulant or antiplatelet drug. Al-Hussaini et al. showed in a retrospective study that 23 patients out of 256 (9%) were admitted overnight after septoplasty owing to nasal bleeding with or without packs in situ. None of them needed any further nasal packing, blood transfusion or surgical revision. However, among the patient with co-morbidity (ASA > 1), 23% were re-admitted in comparison to 7% of the patients with no medical co-morbidities, with a relative risk of 3.37 [13]. The complications due to nasal bleeding observed by Lehot et al. occurred exceptionally at D0 (1 of 424 patients) but they are observed most often after removal of the nasal packing at D2 and after D4 [10]. In this study, 8 patients were on antiplatelet drug without postoperative consequence. Bleeding within the first six postoperative hours can be managed in the ambulatory department and perhaps require staying overnight, which is not the case for nasal bleeding or septal hematoma that occur later. This specific postoperative chronology is the cause of 2 to 13.4% of unexpected readmissions [14–16].

Unlike septoplasty, endoscopic sinus surgery was found to lead to 2.4% postoperative (< 24 h) epistaxis requiring packing, 0.3% of orbital hematoma and 0.2% of postoperative hemorrhage requiring transfusion [17]. Bhattacharyya et al. reported that 1.25% of patients remained in hospital for supervision and 3.15% were readmitted during the days following surgery, in 50% of cases due to hemorrhage [16], whereas Ramakrishnan et al. reported 0.76% of epistaxis requiring transfusion [18]. Hopkins et al. in the UK showed the clear limitations of middle antrostomy performed in day-case surgery due to intra- or post-operative hemorrhage that was related to anticoagulation therapy (antiplatelets, vitamin K inhibitors), which is an absolute contraindication for day-case surgery in patients requiring anticoagulation therapy at an effective dose. Likewise, early postoperative epistaxis is a contraindication for discharge from a day-case unit [19].

The relative agreement obtained here is in accordance with the French Otorhinolaryngology Society Guidelines [4]: "Only patients free of hemorrhage risk factors are eligible for sinonasal day-case surgery" and "Due to the hemorrhage risk inherent in sinonasal surgery, day-case management should not be proposed to

patients with a hemostatic disorder or taking anticoagulant and/or antiplatelet therapy". However recently, Gengler et al. showed that nasal bleeding preventing discharge from a day-case structure seems to be rare at D0 and D1, without any statistical difference between antithrombotic drugs: this treatment were prescribed in 46 patient out of 924 sinonasal outpatient procedures [11]. The authors did not show negative impact in selected patient.

Contrary to the antithrombotic drug, the pre-operative administration of systemic steroids provokes a statistically significant mean reduction in blood loss of 28 ml, although the clinical impact of such a minor reduction is debatable [20,21]. Corticosteroids are not used routinely before surgery and only for very selective extensive polyposis.

Issue 3: duration of surgery may be a risk factor for readmission. Mean score 4.6 ± 2.2 pts. Median score (IQ25-75) = 5 (3–7) pts. Relative agreement - no consensus.

Few studies have taken the duration of surgery into account. However, as in France, the British regulations specify that the operating time should not exceed one hour and a half [9] [www.chirurgie-ambulatoire.org]. Recently, a 2-year retrospective chart reviewing 924 outpatients who underwent sinonasal procedures showed that surgery lasting at least 80 min was a negative predictive factor of readmission [11]. Unlike sinus surgery, the duration of naso-septal surgery does not seem to influence the postoperative period and the overnight admission rate [10], nor does the level of difficulty of the surgery [13].

Issue 4: within an outpatient setting, endoscopic sinus surgery is a more frequent cause of unexpected hospital readmission compared to septoplasties and septorhinoplasties. Mean score 4.3 ± 2.5 pts. Median score (IQ25-75) = 3 (2–7) pts. Relative agreement - no consensus.

To date, there has not been any comparative study on this issue. Most of the group members considered that there is no difference, 19% were neutral, and more than a quarter thought that endoscopic sinus surgery leads to unexpected readmission more often. The latter opinion is in accordance with a recent monocentric comparative chart review showing that patients who had undergone endoscopic sinus surgery had a higher risk of unexpected readmission (OR 5.51; 95%CI 2.19–13.8) [11]. A recent cross-sectional analysis of multi-state ambulatory surgery and hospital databases in US showed that 5.0% of patients had a revisit after sinonasal surgery due to bleeding (23.0%), acute pain (3.7%), and fever/dehydration (3.8%). Among the visits, 1% and 17.9% underwent a procedure to control bleeding at the first and second revisits, respectively. The postoperative hemorrhage rates for septoplasty alone, endoscopic sinus surgery alone, and endoscopic sinus surgery with septoplasty were 1.4%, 0.9%, and 1.4%, respectively ($P=0.001$) [22]. On the other hand, a recent prospective observational study on 74 endoscopic sinus surgical procedures showed that 23% of patients reported light bleeding to the nurse at D1 that did not require any revisit or readmission [12].

Issues in relation with technical resources and experience

Issue 5: on a time scale (hours), up to when in an operating day do you think ambulatory care is possible? Mean score 5.1 ± 2.9 pts. Median score (IQ25-75) = 6 (3–7) pts.

The last time at which ambulatory surgery in the day was considered possible is 4:00 PM (the end of the surgery) but responses varied depending on whether the operation was possible the morning or at the beginning of the afternoon, and on the time the recovery room closes. The group also seemed to agree that supervision cannot be for less than 4 hours and is usually 6 hours. A recent prospective study showed that the mean delay between end of surgery and first stand-up was 4.37 ± 1.3 hours, and between end of surgery and first meal was 4.1 ± 1.3 hours [12]. During the IFOS round table, the panelists mentioned that supervision time varies between countries. This difference is due to the fact that the time of the last general anesthesia for planned outpatients depends on the technical resources available, the existence of dedicated infrastructure for ambulatory care, the closing time of the recovery room and the outpatient unit, and whether or not a dedicated hotel is close to the hospital. The duration of the delay is closely related with patient satisfaction and not with the date of unexpected events like nasal bleeding.

John DelGaudio and Leigh Sowerby emphasize that it is possible to get around this problem by proposing in-office care which is an alternative to the operating room. Due to the cost and the difficulty of operating room accessibility, this solution used in the US and Canada is possible for appropriately selected patients who can receive office-based rhinologic procedures [23,24]. Such in-office procedures were assessed in a retrospective series of in-office endoscopic drainage of mucoceles [25]. The procedures were well tolerated by patients under local anesthesia, with high success and low complication rates. The limitations were osteogenesis and separation of mucoceles.

Issues related to surgical experience

Issue 6: on a time scale (postoperative days), when do you most often see nasal bleeding after endoscopic sinus surgery that would rule out ambulatory care? Mean score 6.6 ± 3.6 pts. Median score (IQ25-75) = 9 (3–9) pts.

Issue 7: on a time scale, when do you most often see nasal bleeding or a septal hematoma after septoplasty or septorhinoplasty? Mean score 6.8 ± 2.9 pts. Median score (IQ25-75) = 8 (5–9) pts.

Regardless of the type of surgery, most participants considered that bleeding and hematoma occur most frequently between the third and fourth postoperative days. In a recent study, 27 patients out of 927 were unable to be discharged home on the same day. This was due to epistaxis in 7 cases, i.e. 0.7%. In the paramedical coordinator's telephone interview on day 1, moderate epistaxis controlled by simple nose-blowing was reported in 15% of cases [26]. After 924 surgical procedures including sinus and septal procedures, bleeding occurred 3 hours after surgery in 7 cases, in 3 at D1, and in 1 at D2, D8, D9, D16 and D17 [11]. In a prospective cohort of 74 sinus procedures, only 1 patient suffered from epistaxis at D0. In the same study, 16% (23 patients) reported light postoperative bleeding to the nurse at D1 and 8.3% (12 patients) reported it to the referent surgeon at D10. None of these patients required any further consultation [12].

Indeed, bleeding is the most frequent cause of re-admission in the literature [13]. Al-Hussaini et al. reported a 9% admission rate due to bleeding within the first 24 hours after septoplasty [13]. In a recent study to assess and manage the risk of epistaxis and/or hematoma in a series of 424 septoplasties, 0.24% required revision surgery for epistaxis within the first 6 postoperative hours, there were 11 cases of septal hematoma at day 4 and 5 at day 8 (3.6%) and 0.5% of septal abscess. Finally, 2 unexpected readmissions for pain and iterative vasovagal response were observed [10].

Issue 8: uni- or bilateral nasal packing or septal contention is not a contraindication for day-case management. Mean score 7.3 ± 2.1 pts. Median score (IQ25-75) = 8 (7–9) pts. Strong agreement and consensus.

Issue 9: scheduled nasal packing removal may be an obstacle for day-case management. Mean score 3.8 ± 2.5 pts. Median score (IQ25-75) = 3 (2–5) pts. Strong disagreement and consensus.

Almost all participants completely agree or not on these issues. These statements are in agreement with the previous published French guidelines concerning nasal packing and septal contention [4]. Indeed, only 20% of participants thought that it might be an obstacle. Some authors have shown that intranasal splints are associated with an increase in overnight admission rate but not with nasal packing [13,15]. Contrary to septoplasty procedure, certain KOL during IFOS congress suggested that for approximately 80 to 90% of patients after sinus surgery, packing and hemostatic agents are unnecessary and that less frequent use of packs facilitates same-day discharge and reduces patient discomfort. However, there are still significant variations in practice [19]. In a national comparative audit of 3128 surgical procedures in the UK, Hopkins et al. showed that nasal packing was used in 74% of cases and prevented earlier discharge due to removal at D1. The study showed that practices in the UK vary considerably. Furthermore, it did not find any association between extent of surgery and nasal packing. However, there was a correlation between extent of surgery and removal schedule [19].

Some clinicians now use absorbable nasal packing when bleeding occurs in 65% of surgical procedures [12]. These authors observed that when gelatin hemostat was needed, rebleeding was significantly higher at D1. Others showed that nasal packing was required in only 8% of cases after endoscopic surgery [27], unlike Gendler et al. who used nasal packing in 20% of cases with removal 3 hours after the end of surgery [11].

Nasal packing is used frequently after septoplasty or rhinoplasty procedures and is often removed 2 days later [10,11]. While it was not a cause of readmission in one study [10], it was considered as a risk factor of unanticipated admission in another owing to pain or intolerance [11].

Issue 10: after endoscopic surgery, the accumulation of endonasal crusts causing nasal obstruction, purulence and pain is a frequent cause of readmission via the emergency room. Mean score 2.5 ± 1.8 pts. Median score (IQ25-75) = 2 (1–3) pts. Strong disagreement and consensus.

The group expressed strong disagreement on this issue and considered that this probability does not hampers day-case surgery. This is in accordance with the literature [11,12,19]. Oker et al. observed in postoperative management that 4.9% of patients at D10 and 1.9% at D30 required endoscopic debridement under local anesthesia. Pain at D1 was estimated to be 1.3 on the visual analog scale [12].

Issue 11: a therapeutic education program is needed to improve the performance of postoperative nose-washing and thus decrease readmission rates. Mean score 7.3 ± 2 pts. Median score (IQ25-75) = 8 (7–9) pts. Strong agreement and consensus.

75% of participants completely agreed that a therapeutic educational program would improve the performance of nasal irrigation, 19% were neutral and only 6% did not agree. There is overall consensus in the literature regarding the need to organize educational therapeutic programs but no study concerning nasal irrigation has yet been performed. However, several studies have shown that repeated preventive accurate pre- and post-operative information is very important in rhinology and other medical specialities to teach the patient what is significant bleeding or not [11,27,28]. Al-Hussaini et al. highlighted the need to standardize and define criteria of excessive postoperative bleeding or not to avoid disruption between patients and clinical staff [13]. A therapeutic educational program would improve advice delivered by health professionals and optimize postoperative care.

4. Conclusion

Practice varies widely owing to local organization constraints and the availability of a dedicated day-case unit seems to be the main limiting factor. This survey demonstrates the importance of patient selection. Experience and know-how seem to converge whatever the surgical procedure except for the distance between the day-case unit and home, the role of surgery duration and the impact of anticoagulant and/or antiplatelet drugs in overnight admission and readmission rates.

Disclosure of interest

The authors declare that they have no competing interest.

Acknowledgement

On behalf the French Society of Otorhinolaryngology, Head and Neck surgery and the French Rhinologic Society, the DG would like to thank all members of the grading group for their involvement in the project: Claus Bachert (Belgium), Vicheva Dilyana (Bulgaria), Martin Desrosiers and Leigh Sowerby (Canada), Baudouin Tomislav (Croatia), Viktor Chrobok and Jan Plzak (Czech republic), Kamel Reda (Egypt), Christian Debry, Jean-François Papon, Nadia Benmoussa, Justin Michel, Louis Crampette, Olivier Malard, Sébastien Vergez, Pierre-Louis Bastier and André Coste (France), Klaus Vogt (Germany), Evangelos Giotakis and Emmanuel Prokopakis (Greece), Ron Eliashar and Itzhak Braverman (Israël), Eugenio De Corso, Ignazio Tasca, Paolo Farneti, Mario Turri-Zanoni and Giancarlo Ottaviano (Italy), Kenji Kondo (Japan), Pierre Richard Abi Akl and Usamah Hadi (Lebanon), Frodita Jakimovska (Macedonia), Hector de la Garza (Mexico), Leila Essakali (Morocco), Ahmed Hesham (Oman), Francisco Salaverry (Peru), Joao Subtil (Portugal), Codrut Sarafoleanu (Romania), Sergei Karpischenko and Andrei Lopatin (Russia), Manuel Bernal and Jessica Santillan (Spain), Claudia Bühler and Basile Landis (Switzerland), Luo Sheng-Dean and Yen Ting Lu (Taiwan), Semia Sahtout (Tunisia), Valérie Lund (United-Kingdom), Nicolas Basuba, Richard Orlandi, John Del Gaudio and Sarah Wise (USA).

The authors would like to thank Dr. Ray Cooke for his careful linguistic assistance.

Appendix 1. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <https://doi.org/10.1016/j.anorl.2017.12.010>.

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