The Laryngoscope
Lippincott Williams & Wilkins
© 2007 The American Laryngological,
Rhinological and Otological Society, Inc.

Utility of History and Physical Updates for Ambulatory Otolaryngic Surgery

Scott L. Lee, MD; Salvatore Taliercio, MSIV; Ashar Ata, MBBS, MPH; Jessica Clayton, MD; Steven M. Parnes, MD

Objectives/Hypothesis: Preoperative assessment is intended to identify anesthetic risk and a patient's appropriateness to undergo a proposed surgery. The timing of these assessments varies among institutions. In our ambulatory surgery center, preoperative reassessments were initially performed within 30 days of surgery (group A). Recently, this changed to require reassessments within 7 days of surgery (group B). Now, the policy mandates a preoperative reassessment within 24 hours (group C). We evaluate whether there are differences in surgical cancellations based on these new reassessment intervals.

Study Design: Retrospective operative log and chart review.

Methods: We identified 1,108 cases representative of group A. The rate of surgical cancellations for this group was compared with that of the 3,705 cases in group B and the 1,060 cases in group C. Differences were evaluated with a χ^2 test.

Results: Total cancellation rates for groups A, B, and C were 3.0%, 3.3%, and 3.9%, respectively ($P = .51$). Cancellations secondary to a history and physical examination findings during these preoperative reassessment periods were 0.81%, 0.38%, and 0.66% for groups A, B, and C, respectively ($P = .15$).

Conclusions: Cancellation rates for patients undergoing ambulatory otolaryngic surgery based on preoperative reassessment intervals of 30 days, 7 days, and 24 hours were similar.

Key Words: Ambulatory surgery, preoperative testing.

***Laryngoscope,* 118:165–168, 2008**

INTRODUCTION

National health care expenditures totaled $1.9 trillion in 2004, almost triple the rate of inflation.[1] Spending is expected reach $4 trillion by 2015.[2] Administrative bureaucracy, increased litigation, demand for the latest technology, and unnecessary preoperative testing are some contributing factors to escalating health care expenditures.[3,4] This study examines a population of patients determined by otolaryngologist to be appropriate candidates for ambulatory surgery. Considerations include patient comorbidities, estimated duration of anesthesia, the planned surgical procedure(s), and the anticipated morbidity of these procedures. Our hospital policy requires that, prior to surgery, physicians must update each patient's history and physical (H&P) findings. The timing of these updates are becoming progressively more stringent and evolved from within 30 days to within 7 days, and they are now required within 24 hours of surgery. We questioned, in having already performed a recent (within 30 days) office H&P in patients deemed healthy enough for ambulatory surgery, whether completing another H&P within 7 days or 24 hours would serve to better identify more patients unfit for surgery.

MATERIALS AND METHODS

The institutional review board approved this project. A retrospective review of the operative cancellation record at our institution's ambulatory surgical facility was performed. January 2002 to December 2002 (group A) was selected as a representative period when preoperative reassessments were acceptable if they were performed within 30 days of surgery. January 2003 to December 2004 was a period when the preoperative reassessment time requirements varied. These cases were thus excluded. January 2005 to December 2006 (group B) was a period when H&P updates were required within 7 days of surgery. January 2007 to May 2007 (group C) represents the current requirement that preoperative reassessments be performed within 24 hours of surgery. Thus, every patient was either evaluated in the office within the previous 30 days, 7 days, or 24 hours. Otherwise, a new H&P update was performed on the day of surgery.

The H&P updates involve obtaining an interval history; reviewing medications and allergies; assessing vital signs; performing focused head and neck, cardiovascular, and pulmonary examinations; and reviewing relevant imaging and laboratory

From the Division of Otolaryngology–Head and Neck Surgery (S.L.L., S.M.P.), Albany Medical Center, Albany, New York, U.S.A.; Albany Medical College (S.T.), Albany, New York, U.S.A.; the Department of Surgery (A.A.), Albany Medical College, Albany, New York, U.S.A.; and St. George's University (J.C.), Bayshore, New York, U.S.A.

Editor's Note: This Manuscript was accepted for publication July 23, 2007.

Presented at the Combined Otolaryngology Spring Meeting (COSM), Triological Society: San Diego, California, U.S.A., April 26–29, 2007.

Send correspondence to Dr. Scott L. Lee, MD, Division of Otolaryngology—Head and Neck Surgery, Albany Medical Center, 35 Hackett Boulevard, MC 41 Albany, NY 12208-3420. E-mail: leesl@mail.amc.edu

DOI: 10.1097/MLG.0b013e3181565989

Copyright © The American Laryngological, Rhinological and Otological Society, Inc. Unauthorized reproduction of this article is prohibited

TABLE I.
Total Number of Cancellations and Those Based on Preoperative Reassessments.

Reassessment Period (within)	Cancellations		Operated	Total Scheduled Cases
	New H&P Finding	Other Reasons		
Group A: 30 days	9	24	1,075	1,108
Group B: 7 days	14	110	3,581	3,705
Group C: 24 hours	7	34	1,019	1,060

Preoperative reassessment periods are within 30 days for group A, 7 days for group B, and 24 hours for group C. Cancellations because of new history and physical (H&P) update and number of patients who canceled for other reasons are as indicated.

findings. This is in addition to the anesthesiologist evaluation of a patient's medical, surgical, and anesthetic history, laboratory findings, and physical examination. The total number of cancellations and those based on preoperative reassessments are summarized in Table I.

The χ^2 test was used to determine whether the proportion of overall cancellations and the cancellations because of a new H&P finding were similar in the three groups. Statistical software, STATA 9.2 (Statacorp, College Station, TX, 2006), was used for this analysis.

RESULTS

Surgeries included otologic procedures such as tympanotomy tube placement, tympanoplasty, tympanomastoidectomy, ossicular chain reconstruction, and cochlear implantation; sinonasal procedures such as septorhinoplasty, endoscopic sinus surgery; naso-oropharyngeal procedures such as adenotonsillectomy and uvulopalatopharyngoplasty; aerodigestive procedures such as esophagoscopy, laryngoscopy, and vocal fold medialization; oncologic procedures such as local excision, lymphadenectomy, and thyroid lobectomy; and trauma procedures such as open and closed reduction of maxillofacial fractures.

There were a total of 1,108 cases representative of group A, 3,705 cases for group B, and 1,060 cases in group C. In group A, the preoperative reassessment requirement was within 30 days of surgery. There were a total of 33 (3.0%) cancellations. Seven charts did not document the cause of case cancellation. Five patients cancelled because of a self-reported illness. Four patients, or the parents of pediatric patients, cancelled the procedure prior to arrival. Three patients did not show up for the procedure. Three did not comply with nothing by mouth (NPO) status. Three were cancelled because of the surgeon's scheduling request. Two patients did not obtain medical clearance as instructed. One procedure was rescheduled at the nonambulatory facility. The final nine patients were cancelled subsequent to a new (within 30 days) H&P finding. These included febrile illness, upper respiratory tract infections (URIs), history of significant blood loss from another recent operation, and abnormal laboratory findings.

In group B, the preoperative reassessment period was within 7 days of surgery. There were 124 (3.3%) cancellations. Eighteen patients lacked documentation for the cause of case cancellation. Thirty-one patients canceled because of a self-reported illness. Eighteen did not comply with NPO status. Twelve did not show up for the procedure. Six were cancelled by the patient or by the parent of pediatric patients. Six patients had unresolved documentation or consent issues. Five did not obtain medical clearance to undergo the procedure. Five were cancelled because of the surgeon's scheduling conflict. Four patients experienced resolution of their surgical conditions. Three did not discontinue their anticoagulation medications. One was rescheduled because of equipment failure, and one was cancelled intraoperatively. The remaining 14 patients were cancelled subsequent to a new H&P finding discovered within the 7 days preceding surgery. Reasons included acute tonsillitis, fever, URIs, asthma exacerbation, positive pregnancy tests, hyperglycemia, and one patient had a positive test for cocaine.

In group C, the preoperative reassessment period was within 24 hours of the procedure. There were 41 (3.9%) cancellations. Three did not have adequate documentation of the cause of cancellation. Fifteen were canceled by the patient or by the parents of a child. Six patients did not comply with NPO status. Five did not show up for the procedure. One patient had a self-reported illness. One patient cancelled because of a surgeon's scheduling request. One patient had documentation problems. One was rescheduled for the nonambulatory center. One was cancelled because equipment necessary for his surgery was not available. The remaining seven cases were cancelled subsequent to new H&P finding discovered within 24 hours preceding surgery. Reasons included streptococcal pharyngitis, delirium tremens, URIs, hyperglycemia, and a positive pregnancy test.

In summary, there were a total of 33 (3.0%) cancellations in group A, 124 (3.3%) in group B, and 41 (3.9%) in group C. Cancellations secondary to a new preoperative H&P finding for groups A, B, and C were 9 (0.81%), 14 (0.38%), and 7 (0.66%), respectively. The number of cancellations based on a new H&P finding relative to the total number of cases ($\chi^2 = 3.74$, $P = .15$) and the total number of cancellations relative to the total number of cases ($\chi^2 = 1.33$, $P = .51$) were not statistically different (Fig. 1).

DISCUSSION

Ambulatory surgery strives to provide patients with efficient quality care and rapid recovery from effective analgesia and reduce the risks associated with surgery and anesthesia.[5,6] Advantages of day surgery are numerous and benefit the patients clinically, health care providers professionally, and the government economically.[6] As the number of elective ambulatory procedures increases,

Copyright © The American Laryngological, Rhinological and Otological Society, Inc. Unauthorized reproduction of this article is prohibited

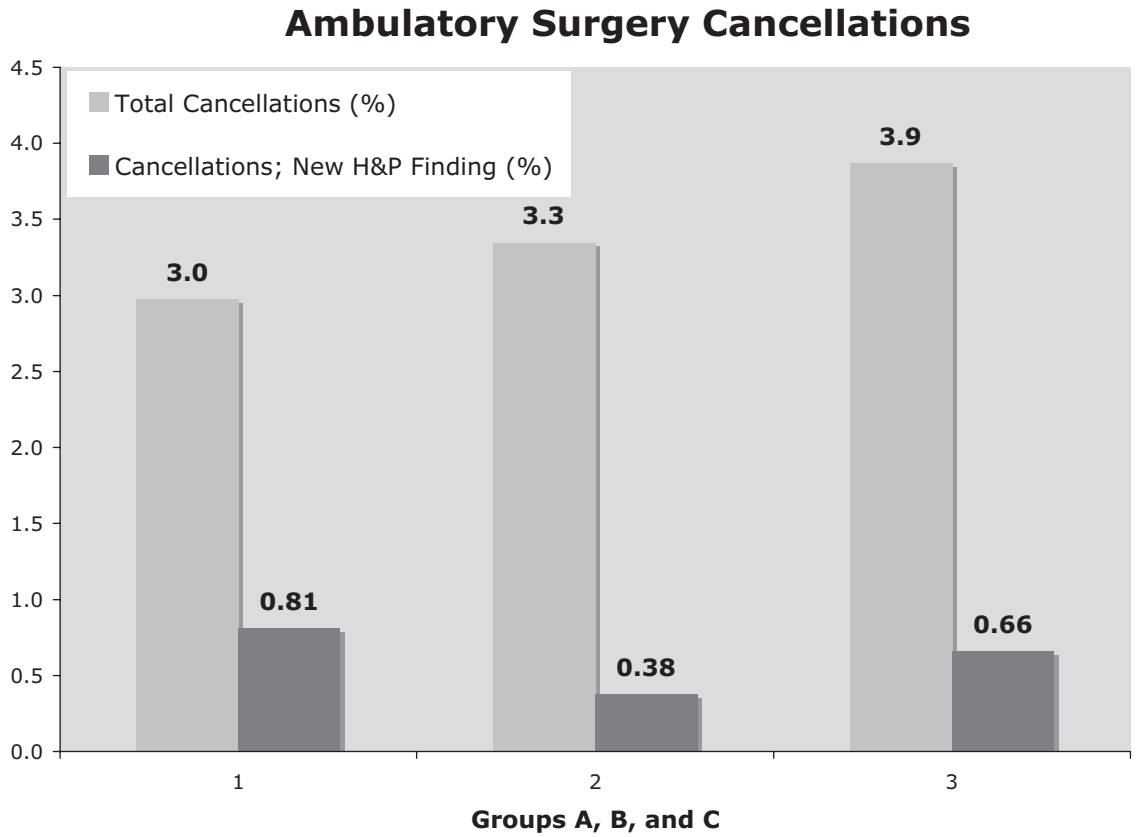

Fig. 1. Total number of cancellations ($\chi^2 = 1.33$, $P = .51$) and cancellations based on new history and physical (H&P) findings ($\chi^2 = 3.74$, $P = .15$) compared. Data are reported as percentages of total number of cases. Data did not demonstrate any statistically significant differences.

the challenges of creating systems that allow for a timely review of patient health information will continue to grow.[7] Many institutions now face a new challenge of keeping pace with the increasing number of day surgeries and the volume of preoperative testing. Some institutions have used computer algorithms to minimize unnecessary preoperative tests, whereas others are switching to nurse-led preoperative assessments.[8–10]

Preoperative assessments attempt to address whether a patient is in optimal condition for surgery and to identify medications or health conditions that may unexpectedly increase perioperative morbidity.[11] Additionally, preoperative testing is intended to help minimize cancellations and surgical delays. However, it is estimated that up to 70% of preoperative testing is unnecessary.[5] Studies suggest that avoiding laboratory testing unless indicated by H&P findings would save the United States $2.9 to 4.3 billion annually.[4,11]

In a study at the Cincinnati Children's Hospital, anesthesiologists attempted to meet the demands of preoperative assessments with the assistance of nurse practitioners (1 anesthesiologist with 6 nurse practitioners). They found no difference in outcomes when compared with an anesthesiologist-only preoperative assessment.[10] Another study compared whether nurses, after given a 40 hour training program, could perform preoperative assessments in the pediatric population as well as senior house officers. This randomized, controlled trial involved 595 children, and the blinded anesthesiologists found no difference between nursing evaluations and those performed by the senior house officers.[9] These studies may speak to the skills of the nurses and nurse practitioners or they may simply reaffirm that most preoperative testing is unnecessary.

Preoperative reassessments are generally required within 30 days of a surgical procedure.[12] However, individual hospitals may require more stringent evaluations. Our ambulatory surgery center used the 30 day criteria until approximately 2005, when preoperative reassessments were required within 7 days. In 2007, this requirement changed to within 24 hours. The authors could not obtain any documentation, verbal or written, as to why such policy changes were necessary. We questioned, having performed a recent office H&P in patients deemed healthy enough for ambulatory surgery, whether completing another H&P within 7 days, or even 24 hours, would better identify patients unfit for elective otolaryngic surgery.

In this study, we reviewed 5,873 cases scheduled for ambulatory otolaryngic surgery at a single institution. The number of patients who met criteria for group A was 1,108; 3,705 patients for group B; and 1,060 cases for group C. We found no differences in the overall surgical cancellation rate or in the cancellations that resulted from a shorter preoperative reevaluation time requirement. It appears that many of the cancellations based on new H&P findings by the otolaryngologist were also those discovered

Copyright © The American Laryngological, Rhinological and Otological Society, Inc. Unauthorized reproduction of this article is prohibited

by the anesthesiologist evaluation. Examples include patients with febrile illness, URIs, asthma exacerbation, delirium tremens, and abnormal or unexpected laboratory findings (hyperglycemia, positive pregnancy tests, and positive test for cocaine). Only the patients with acute tonsillitis and pharyngitis in this study were separately diagnosed by the otolaryngologist and cancelled as a result. Whether these two patients could have proceeded with surgery uneventfully remains unknown. The data suggest that repeating the H&P as dictated by hospital policy adds little to the anesthesiologist preoperative evaluation. Furthermore, many of the cancellations based on new H&P findings appear to be ones that may be identified with telephone questionnaires and a review of the laboratory findings. Application of such measures, perhaps by the nursing staff, may reduce costs and delays in the ambulatory surgery center.

The finding that reevaluations at 24 hours did not increase the cancellation rate suggests that patients selected for ambulatory surgery are generally in good health. These data also suggest that the surgeon's decision to schedule such patients for day surgery is appropriate. The cancellations based on H&P updates were less than 1% in all groups. Physicians would have to reevaluate 123 patients in group A, 263 in group B, and 152 in group C to find one patient that may not be fit for ambulatory otolaryngic surgery. Whether these numbers justify the time and cost of such frequent preoperative reevaluations remains debatable.

The weaknesses of this study include its retrospective nature, single institution and subspecialty inclusion criteria, and consequently the limited generalizability of these data. A prospective study randomizing patients to different preoperative H&P reassessment times may provide a more accurate trend analysis to determine an optimal preoperative testing period. However, such prospective studies would not be possible because they would conflict with institutional policy. Despite this conflict, the authors believe that it is important to continually assess whether certain policies actually improve patient care or simply increase costs and administrative bureaucracy. We invite similar studies to evaluate other policies governing health care delivery and from other specialties and at separate institutions. This information is critical to health care reform, cost management, and future policy making.

An examination of the complication rates at this ambulatory surgery facility may also improve our understanding of preoperative reassessments. However, such analyses would need to carefully consider possible confounding factors such as patient comorbidities, procedure type, surgeon and anesthetist experience, trainee and student involvement, anesthesia agents, duration of anesthesia, and many other factors. Finally, an interim cost analysis of hospital policies may help to better allocate limited health care resources. For example, a patient's perception of safety should not be a source of hospital competition. Rather, it should encourage health care policy makers to evaluate clinical outcomes to support their policy making. This information could help determine whether a preoperative reassessment within 24 hours of ambulatory otolaryngic surgery is excessive from both the clinical and economic perspectives.

CONCLUSIONS

Cancellation rates for patients undergoing ambulatory otolaryngic surgery based on preoperative reassessment intervals of 30 days, 7 days, and 24 hours were similar. The economic impact of such hospital mandates remains unknown. Future studies to examine other surgical specialties and complication rates would help to address whether 24 hour preoperative reassessments are excessive.

BIBLIOGRAPHY

1. Smith C, Cowan C, Heffler S, Catlin A. National health spending in 2004: recent slowdown led by prescription drug spending. *Health Aff* 2006;25:186–196.
2. Borger C, Smith S, Truffer C, et al. Health spending projections through 2015: changes on the horizon. *Health Aff* 2006;W61:W61–W-73.
3. Cognetti DM, Reiter D. The implications of "pay-for-performance" reimbursement for otolaryngology—head and neck surgery. *Otolaryngol Head Neck Surg* 2006;134: 1036–1042.
4. Haug RH, Reifeis RL. A prospective evaluation of the value of preoperative laboratory testing for office anesthesia and sedation. *J Oral Maxillofac Surg* 1999;57:16–22.
5. Garcia-Miguel FJ, Serrano-Aguilar PG, Lopez-Bastida J. Preoperative assessment. *Lancet* 2003;362:1749–1757.
6. Smith I, Cooke T, Jackson I, Fitzpatrick R. Rising to the challenges of day surgery targets. *Anaesthesia* 2006;61: 1191–1199.
7. Pasternak LR. Preoperative screening for ambulatory patients. *Anesthesiol Clin North Am* 2003;21:229–242.
8. Parker BM, Tetzlaff JE, Litaker DL, Maurer WG. Redefining the preoperative evaluation process and the role of the anesthesiologist. *J Clin Anesth* 2000;12:350–356.
9. Rushforth H, Burge D, Mullee M, Jones S, McDonald H, Glasper EA. Nurse-led paediatric pre operative assessment: an equivalence study. *Paediatr Nurs* 2006;18:23–29.
10. Varughese AM, Byczkowski TL, Wittkugel EP, Kotagal U, Kurth D. Impact of a nurse practitioner-assisted preoperative assessment program on quality. *Paediatr Anaesth* 2006;16:723–733.
11. Cassidy J, Marley RA. Preoperative assessment of the ambulatory patient. *J Perianesth Nurs* 1996;11:334–343.
12. Joint Commission on Accreditation of Healthcare Organizations: Assessment of Patients. *1996 Comprehensive Accreditation Manual for Ambulatory Care.* Oakbrook Terrace, IL: Joint Commission on Accreditation of Healthcare Organizations, 1995:89–122.

Copyright © The American Laryngological, Rhinological and Otological Society, Inc. Unauthorized reproduction of this article is prohibited