Morbidity and Patient Perception of Flexible Laryngoscopy

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ABSTRACT

Background: Despite the widespread use of flexible fiberoptic laryngoscopy (FFL) in both diagnosis and treatment of upper aerodigestive pathology, there is no prospective data on the utility, timing, patient perception, or potential morbidity of this procedure in the literature.

Methods: 250 consecutive patients presenting to a laryngology practice prospectively completed a survey after undergoing FFL querying demographics, discomfort and pain associated with anesthetic spray and scope placement, and overall perception of the examination. Concurrently, the laryngoscopist prospectively completed a survey reporting complications and nasal anatomic variations.

Results: Discomfort and pain ratings from both the anesthetic spray and scope placement were low. Discomfort and pain were equal between sexes, but females reported increased fear of examination. Anatomic abnormalities, usually of the nasal septum or turbinates, were encountered in 14.4%, and these patients reported increased discomfort and pain related to examination. No adverse events were reported.

Conclusions: Overall, FFL is well tolerated by most patients, with minimal risk of significant adverse complications. The presence of nasal anatomic abnormalities may predict increased discomfort with examination. In contrast to what is suggested in recently published guidelines regarding use of FFL in the workup of hoarseness, FFL does not seem to pose high risk or cause significant patient discomfort. This is the first prospective study to evaluate patient and clinician perception of flexible fiberoptic laryngoscopy.

INTRODUCTION

Flexible fiberoptic laryngoscopy (FFL) is a versatile tool, offering the otolaryngologist functions ranging from diagnosis of upper aerodigestive disorders to visual guidance for office-based procedures, and has become the workhorse examination maneuver in many laryngology practices. Nonetheless, the Clinical Practice Guideline: Hoarseness (Dysphonia)\(^1\) (CPG) suggested that in the absence of suspected serious underlying conditions, the potential risks of FFL may not outweigh its benefits. Furthermore, a recent survey of American Broncho-Esophagological Association (ABEA) members found that respondents performed FFL on average 12 days following their initial presentation for new voice complaints.\(^2\)

However, despite both widespread use of FFL as well as apparent concern about its potential for patient morbidity, to date no prospective studies have attempted to document actual risks of the procedure or patients’ subjective perceptions, experience, and tolerance of FFL. In addition, our personal experience suggests that the perceived morbidity of the procedure may be overstated.

In order to address this surprising gap in the literature, we conducted a prospective surveybased approach to attempt to quantify both the patient and clinician’s experience of flexible laryngoscopy, as well as the associated morbidities. We hypothesized that the risks of FFL are minimal, and therefore that deferral of this valuable diagnostic maneuver is only indicated in rare circumstances.

RESULTS

Study Population: All 250 patients completed the survey. Males and females were represented equally. Mean age was 48 years (range 18-95). The most common chief complaint was hoarseness (80%), followed by dysphagia, vocal health screening, globus, and cough (Figure 1).

Patient Ratings: Average discomfort from nasal spray was 2.98 (out of 10); discomfort from scope in the nose, 3.71 (Figure 2); pain from scope in the nose, 2.21; fear related to exam 2.68. Subgroup analysis revealed no differences between genders, except in fear of FFL (females > males, p = 0.0001). First-time examinees (25.2%) reported more fear than repeat examinees (3.87 vs 2.28, p = 0.0003) (Table 1). Most common patient-reported morbidities were gagging sensation (26%), pain in nose (17.2%), transient dyspnea (9%), and pain in throat (6.4%). No patient required additional intervention. No examinations required termination due to patient discomfort. Over 95% of patients felt that the examination was critical to the establishment of a diagnosis.

Clinician Ratings: no adverse events were reported. Anatomic variations were noted in 14.4% of patients, of which 89% were either nasoseptal deviation and/or turbinate hypertrophy. Patients with nasal anatomic variations had increased discomfort with both the nasal spray (3.33) and scope passage (4.97), as well as pain (3.19) and fear (3.86) regarding examination (p < 0.05 for all variables) (Table 2).

METHODS AND MATERIALS

Subjects. 250 consecutive patients referred to a tertiary care laryngology practice with a chief complaint of hoarseness, dysphagia, and/or cough. No patients meeting this criterion were excluded.

Laryngoscopy: Transnasal FFL was performed using Pentax VNL-1170 or 1190 nasopharyngoscopes (Pentax, USA). All patients received topical atropine 0.05% oxymetazoline and 4% lidocaine spray at least 5 min prior to FFL in the nostril deemed most patient by anterior rhinoscopy. The scope was dipped in water and passed along the nasal floor medially or inferior to the inferior turbinate.

Patient Survey: A single page survey queried (1) demographic information including prior laryngoscopy; (2) perceived discomfort, pain, and fear related to both anesthetic spray and laryngoscopy, measured on a 10 point scale; (3) specific morbidity including gagging, vomiting, throat pain, dyspnea, nasal pain; and whether the patient felt the exam was useful in their care.

Laryngoscopist Survey: The clinical performing FFL concurrently completed a survey assessing perceived complications and nasal or other anatomic variations that could make scope placement more difficult.

Blinding/Analysis: All surveys were administered and collected by a research assistant uninvolved in the patients’ care. Descriptive and statistical analyses utilizing chi-square coefficient, r-correlation, and paired t-tests were performed, where appropriate.

DISCUSSION

Effective utilization of endoscopic imaging tools is requires accurate understanding of patient perspectives and experience with them. Studies to this end have previously evaluated flexible bronchoscopy and transnasal esophagoscopy, among others,\(^3,4\) but to date no one has prospectively evaluated the patient experience with outpatient FFL.

Of the 250 patients surveyed, the majority experienced only mild to moderate discomfort related to scope placement, and although a minority of respondents did experience one or more patient-reported morbidity, none experienced a significant complication, nor did any patient require termination of the procedure.

Interestingly, discomfort ratings associated with the anesthetic spray were comparable to actual scope placement (2.98 vs 3.71). While not assessed in our study, it is likely that discomfort and pain related to scope placement would have been significantly higher if anesthetic spray had not been used, thus making a small amount of spray-related discomfort acceptable.

Subgroup analysis revealed that patients with nasal anatomic variants were more likely to experience discomfort with not only scope placement, but also with anesthetic administration. Women and first-time examinees reported more fear of FFL. These findings may guide the clinician in anticipating which patients may require additional counseling or preparation prior to FFL.

Despite the discomfort experienced by some patients, an overwhelming majority agreed that FFL was a critical part of their diagnostic assessment. No further querying was performed of the 5% who did not feel that FFL was helpful.

CONCLUSIONS

Overall, FFL is well tolerated by most patients, despite some discomfort associated with the procedure. While theoretical risks exist with any procedure, no adverse complications of FFL were seen in our study. Certain patient demographic and anatomic characteristics may predict which patients are more likely to experience discomfort, pain, or fear related to FFL. Almost all patients felt that FFL was a valuable diagnostic tool in their workup.

Given its overall patient tolerance and safety, we feel that in-office flexible laryngoscopy should not be delayed for fear of patient discomfort or complications.

REFERENCES