Rhinolaryngoscopy by Family Physicians

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A case series is presented consisting of 210 symptomatic patients evaluated by family physicians using fiberoptic rhinolaryngoscopy. The case series is analyzed to evaluate patient tolerance of the procedure, to measure the time required for the procedure, and to explore the clustering of diagnostic findings as they relate to presenting symptoms.

Family physicians performed the examinations in an average of 4.4 minutes, with a median discomfort score of 2 on a scale of 0 to 10. A change in the diagnostic assessment or management plan following examination occurred in 90% of cases. Laryngeal pathology was identified in 73% of patients with chronic hoarseness, 60% of patients with both chronic hoarseness and nasal symptoms, and 3% of patients complaining of chronic nasal symptoms only. Nasal polyps or purulent drainage from the sinus ostia were found in 28% of patients with chronic nasal symptoms, 30% of patients with both chronic hoarseness and nasal symptoms, and 2% of patients with chronic hoarseness only. Incomplete examination (because of gagging) occurred in only 1 of 210 cases.

This study demonstrated high diagnostic yield, rapid acquisition of technical skill, minimal patient discomfort, significant impact on diagnosis and management, and minimal time required for examination. **J Fam Pract 1990; 31:49-52.**

Examination of the nasopharynx and larynx, prompted by pertinent patient complaints, remains an elusive skill for the primary care physician.[1] Acquiring skills in flexible fiberoptic rhinolaryngoscopy[2] represents a potential solution,[3] and introducing necessary equipment into the family physician's office can be accomplished at a cost comparable to that for flexible sigmoidoscopy. A preliminary case series of 66 patients has suggested that family physicians may rapidly acquire the necessary skill to complete examinations in an average of 4.6 minutes, with patient discomfort rated at 2 on a scale of 0 to 10, and a change in diagnosis or management following 92% of the procedures.[4]

The initial case series has been extended to include 210 patients. The data have been analyzed to reaffirm the predictions of the initial series of 66 cases. Also, a larger sample size now allows exploration of diagnostic yield related to presenting patient complaint.

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METHODS

The series, including 66 cases published in a preliminary report,[4] represents 210 consecutive procedures performed by residency-trained board-certified family physicians between November 11, 1985, and January 15, 1988. Patients with symptoms referable to the nose, pharynx, or larynx were enrolled in the study at the request of their primary physicians. The intention of the primary physician was to accomplish a satisfactory examination for purposes of patient care. The study was sanctioned by the Institutional Review Board, and informed consent was obtained.

The three authors performed 198 examinations, and 12 examinations were performed by other participating physicians within their teaching practices. Data collected at the time of the procedure included indications, findings, physician-rated patient tolerance, difficulties encountered, and time required. Patient discomfort was rated by the physician on a scale from 0 to 10, indicating from "no discomfort" to "severe discomfort."

A more complete data form introduced during the case series assessed patient-rated tolerance. Included with the data form was a standard open-ended interview inquiring of the primary physician the presumptive differential diagnosis and the usual management for this differential

TABLE 1. FINDINGS IN PATIENTS WITH CHRONIC HOARSENESS

Findings	Number
Significant lesions	
Laryngitis	22
Carcinoma	3
Leukoplakia	3
Vocal nodule	3
Cord paralysis	2
Cord granuloma	1
Senile cord dysfunction	1
Candida of larynx	1
Cord thickening	1
Phlegm pooling	1
Sinus ostia purulence	1
Normal examinations	16
Total examinations	58

diagnosis; these questions were repeated after the procedure was performed. The primary physicians were residents or faculty in family medicine who delivered continuity care to the patient and who were present for the examination. Patients answered yes or no to the query, "If your doctor explained to you that you would need to have this test again some time in the future, would you agree to have it done?"

The technique of fiberoptic rhinolaryngoscopy has been described elsewhere.[3] Briefly, the 3.7-mm fiberoptic rhinolaryngoscope is gently introduced into the nostril, the nasal passages are inspected, and the instrument is then advanced to obtain a clear view of the vocal cords and other laryngeal structures before it is withdrawn.

Data on change in diagnosis and treatment related to the examination were analyzed by comparing the preexamination and postexamination responses of the primary physician, looking for any of the following events: confirmation of a suspected diagnosis, addition of a diagnostic possibility to the differential diagnosis, explanation of a symptom, deletion of a diagnostic possibility from the differential diagnosis, ruling out a diagnosis, adding or deleting a treatment modality, and adding or deleting a further diagnostic test or consultation.

RESULTS

Chronic hoarseness, chronic rhinitis, suspected chronic sinusitis, and chronic postnasal drip were the most frequent indications, and more than one of these were present in many patients. These indications were categorized as "nasal symptoms," "hoarseness," or "hoarseness and nasal symptoms."

TABLE 2. FINDINGS IN PATIENTS WITH CHRONIC NASAL SYMPTOMS

Findings	Number
Significant lesions	
Nasal polyps	20
Sinus ostia purulence	6
Vocal nodule	2
Laryngitis	1
Minor lesions	
Rhinitis and/or septal deviation	51
Normal examinations	9
Total examinations	89

Potentially significant diseases of the larynx included vocal nodules, leukoplakia, vocal polyps, carcinoma of the vocal cord, paralysis of the vocal cord, laryngitis, and other lesions. Potentially significant findings were identified in 73% of patients with chronic hoarseness, 60% of patients with both chronic hoarseness and nasal symptoms, and 3% of patients complaining of chronic nasal symptoms only.

Potentially significant diseases of the nasal passages included nasal polyps or purulent drainage from the sinus ostia. One or both of these findings occurred in 30% of patients with both chronic hoarseness and nasal symptoms, 28% of patients with chronic nasal symptoms, and 2% of patients with chronic hoarseness only.

The specific findings are displayed in Tables 1 through 3. Findings of rhinitis or septal deviation, which may be generally demonstrated without the aid of the fiberoptic endoscope, are listed under the heading "minor lesions."

The average time required for an examination was 4.4 minutes. In one case of 210 (0.5%), the vocal cords could not be visualized because of gagging.

TABLE 3. FINDINGS IN PATIENTS WITH BOTH CHRONIC HOARSENESS AND NASAL SYMPTOMS

Findings	Number
Significant lesions	
Laryngitis	10
Nasal polyps	6
Leukoplakia	1
Sinus ostia purulence	1
Vocal nodule	1
Minor lesions	
Rhinitis and/or septal deviation	3
Normal examinations	2
Total examinations	20

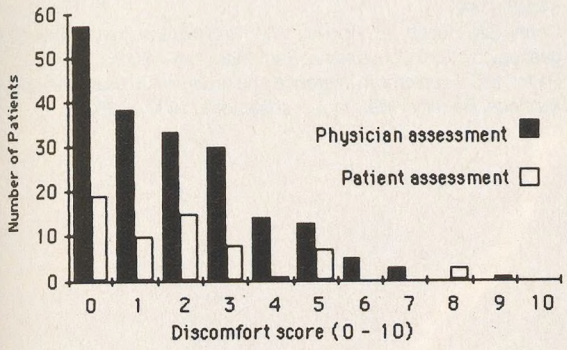

Figure 1. Histogram showing physician-rated patient tolerance compared with patient-rated discomfort assessment in response to rhinolaryngoscopy. The scale 0 to 10 indicates "no discomfort" to "severe discomfort."

Discomfort as rated by the examining physician is displayed in Figure 1. The median rating of all patients was 2. The subset of 65 patients who were asked to rate their own discomfort also had a median rate of 2. This subset was not selected by the examining physician but was determined by addition of the question to the protocol during the study. All but one responded that they would agree to have the examination again if so advised by their physician.

A subset of 60 cases included data on diagnostic assessment and management before and after the procedure. Two authors included these data routinely (97% of their cases). A change in either diagnostic assessment or management plan occurred in 90% of 60 cases. A change in diagnostic assessment alone occurred in 82% of these cases, while a change in management plan alone occurred in 69%. Change in management plan occurred in 81% of 31 cases with hoarseness, 57% of 21 cases with nasal symptoms, and 75% of 8 cases with both hoarseness and nasal symptoms. Changes in management plan occurred in 40% of 10 patients with minor lesions as defined in Table 2. Changes in management plans occurred in 57% of 7 patients with hoarseness and normal examinations.

DISCUSSION

Conclusions based on this study should acknowledge certain limitations in study design. No provision was made in this series for testing interexaminer reliability. Video endoscopy equipment, which would allow such testing, was not available to the investigators for most procedures during this series.

Patient discomfort rated by the physician is subject to bias. Nevertheless, both physician-rated and patient-rated discomfort are of significance, and both scores agreed well in this series.

Changes in diagnostic impression and management plan determined by the standard open-ended interview represent a crude estimate of the usefulness of rhinolaryngoscopy. The standard open-ended interview represents an accepted method of naturalistic inquiry and allows such an estimate to be obtained without the complexity and cost of a randomized controlled study.[5] That such information is available for only 60 patients must be acknowledged as a limitation of this study. The finding of change in management plan for 40% of patients with minor lesions and 57% of patients with normal examinations suggests that eliminating diagnoses from consideration by rhinolaryngoscopy has an impact on management.

A diagnostic technology must stand not only on its own merits (sensitivity, specificity, diagnostic accuracy) but also on the manner in which it relates to the needs of a patient population, the decision-making characteristics of the health care provider, and pragmatic considerations pertaining to the office setting. The impetus for family physicians to adopt fiberoptic rhinolaryngoscopy, a technique with an established role in the hands of the specialist, depends on the accuracy, usefulness, and acceptability of the technique in the family practice setting. This case series represents a preliminary step in answering some necessary questions before general recommendations can be made.

Acceptability to both physician and patient is evidenced by low discomfort score, brief time required for each examination, and extremely high rate of completing the examination. Future work should address issues of economic impact.

Usefulness is evidenced by the high diagnostic yield in certain symptomatic patients and the high rate of change in diagnostic and management decisions following endoscopy. Future studies should address the advantages and disadvantages to the patient of this cognitive process occurring in the office of the primary physician rather than in the office of the specialist.

Accuracy of the technique in the hands of a given family physician cannot be determined from this series. Accuracy in identification is related to adequate magnification and light, adequate visualization time, experience, skill, and the specific lesion in question. Accuracy with the fiberoptic endoscope far exceeds that which may be obtained with rigid telescope or angled-mirror techniques, given comparable experience in both methods. Diagnostic accuracy of family physicians relative to otolaryngologists may be compared in future studies in a diagnosis-specific manner. The present case series may assist in choosing the specific lesions for such inquiry.

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