Allergic Reactions Following Flexible Fiberoptic Laryngoscopy

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INTRODUCTION

Endoscopes are commonly employed in otolaryngology. They come in close contact with mucus membranes, but do not penetrate tissue, and therefore are considered semi-critical devices requiring high level disinfection. OPA a commonly used agent due to its favorable chemical properties and rapid cleaning time. However, side effects may include irritation of mucus membranes, headache, sneezing, and asthma-like symptoms. Allergic reactions to OPA have been described primarily in the urologic literature. Reports in the otolaryngology are rare and the majority of safety data are extrapolated from channel-containing gastroenterologic endoscopes. We report four new cases of significant allergic reactions after FFL. These cases are presented in the context of all reported cases, across disciplines.

METHODS

The medical records of patients who developed a significant allergic response after FFL were reviewed. Demographic information as well as diagnosis, number of endoscopies, type of reaction, allergy testing results, and corrective plans were extracted. A review of the literature was then performed to identify case reports/series of OPA allergies across disciplines.

RESULTS

Patient 1: A 76 year old male with surgically treated T1N0 glottic carcinoma and persistent leukoplakia underwent 19 FFL examinations over three years. Following his 20th endoscopy, he developed a diffuse pruritic rash, nasal obstruction, and throat tightness. He was treated with methylprednisolone and Benadryl. Subsequent exams caused progressive symptoms such as scrotal swelling, generalized urticaria, globus, and angioedema of the tongue and face. Workup was negative for lidocaine and mepivacaine allergy. Subsequent examinations have been uneventful with rigid transoral laryngoscopy.

Patient 2: A 70 year old male with a history of laryngeal cancer was treated with radiation therapy and surgery for recurrence. He underwent 10 surveillance FFLs prior to his first reaction, which was described as nasal obstruction and pharyngeal irritation. On subsequent examinations, lidocaine and pseudophedrine spray were avoided in an attempt to prevent a reaction, but he again was symptomatic including sensation of throat narrowing. All subsequent examinations have been performed using a sheath over the FFL without incident.

Patient 3: A 30 year old male with recurrent respiratory papillomatosis reported excessive sneezing lasting hours and congestion lasting five days after his 19th FFL. He subsequently underwent transoral examination with a rigid scope for diagnostic purposes without reaction. Prior to in-office angioloty laser management of his disease, which requires use of the flexible endoscope, the patient is pretreated with cetirizine and azelastine/fluticasone.

Patient 4: A 86 year old female had vocal fold dysplasia that developed into squamous cell carcinoma. On her sixth FFL, she had an anaphylactic reaction consisting of hives and tongue swelling requiring intramuscular epinephrine. She tested positive for OPA allergy with urticaria radiating to her upper arm beyond the test site. Subsequent examinations have been performed with a rigid transoral laryngoscope without complication.

DISCUSSION

We present four cases of severe allergic reactions to OPA after a minimum of five FFLs. Although the urologic literature documented allergic reactions only in patients with bladder cancer, the diagnoses are more varied in the otolaryngologic cases. There are several patient populations seen by the otolaryngologist that may require frequent surveillance with flexible endoscopy. In all of our cases, corrective plans were successful at allowing further monitoring of these patients. In one of the cases, disposable sheaths were employed on subsequent visits to avoid exposure to the endoscope altogether. Although this is allowed for ongoing surveillance, their use is limited by cost, accessibility, and compromise of imaging quality.

In the other three cases, we were able to employ transoral rigid laryngoscopes for ongoing surveillance. Interestingly, these scopes are processed in the same manner as the flexible scopes, yet did not cause any reaction in any of our patients over their subsequent visits. As prescribed by the manufacturer, our flexible scopes are rinsed with distilled water and alcohol. As an additional step, we have routinely soaked our flexible scopes in distilled water for several minutes prior to use.

Allergic reactions to chemical sterilants remain extremely rare, with only 13 reports in the literature. Awareness of the early signs of allergy (prolonged nasal congestion or sneezing following nasalaryngoscopy, as was seen in two of our cases), may allow practitioners to implement corrective plans prior to the development of a severe reaction. If one were to occur, it is important for otolaryngologists to be aware of the potential complication so that he or she can employ appropriate preventive measures and allergist referral.

REFERENCES


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Figure 1 OPA chemical formula.