Abstract

OBJECTIVE: To compare the diagnostic yield, safety and cost between biopsies of laryngopharyngeal tumor performed in an office setting with those performed in the operating room under general anesthesia.


METHODS: In-office biopsies were performed using flexible nasolaryngoscopy with cup forcep biopsies taken via the working channel in patients in whom cancer was strongly suspected. Patients, whose in-office biopsies were non-diagnostic or suspected to be false negative, were taken to surgery for biopsy and served as the control group.

RESULTS: 12 patients fit the selection criteria and had in-office biopsies attempted. One patient could not tolerate the in-office biopsy. Seven of the 11 in-office biopsies performed were diagnostic for squamous cell carcinoma. The average cost for an in-office biopsy was $2053.91. Five of these patients required further biopsy in the OR at an average cost of $9024.47. There were no significant complications reported in any of the procedures.

CONCLUSIONS: In patients with strongly suspected laryngopharyngeal cancer, in-office cup forcep biopsies were 64% diagnostic. When compared to the operating room, in-office cup biopsies of laryngopharyngeal tumor are as safe and considerably more cost effective.

Methods and Materials

This study is a retrospective Institutional Review Board approved review of charts from Boston Medical Center of patients who were examined for laryngopharyngeal tumors between 2006 and 2008. Office biopsies were done using Olympus channelled flexible nasolaryngoscope. Topical anesthesia (2% pontaine) was applied to the laryngopharynx prior to the biopsy. Flexible cup forceps were passed through the instrument channel of the endoscope to obtain the tissue sample. For a given patient, a minimum of 2 and preferably 3 cup forcep biopsies were performed.

Results

There were 8 males and 4 females in this patient cohort with an average age of 62.5 years. Eleven in-office biopsies were successfully completed, with 7 of them being diagnostic for squamous cell carcinoma. Certain morphologic tumor features made in-office biopsies easier to perform. In general, exophytic tumors were easier to biopsy than those that were ulcerative. Also, tumors whose surface was perpendicular to the endoscope, rather than tangential, allowed for a better purchase with the cup biopsy forceps. All 4 of non-diagnostic biopsies were of endophytic tumors where the most readily accessible tissue was in a plane that was tangential to the biopsy forceps.

The remaining 4 patients, who had non-diagnostic in-office biopsies, underwent operative biopsies. The primary reason for non-diagnostic in-office biopsies was that biopsies were too superficial. None of the patients undergoing in-office biopsies suffered from laryngospasm, excessive bleeding or swelling resulting in airway compromise. Similarly, the operative biopsies were performed without complications.

Costs for an in-office biopsy included the facility and professional otolaryngology charges. On average, the charges for in-office biopsies were $2053.91 per patient. The cost for the operative biopsy was significantly more at $9024.47 per patient (p-value of 0.001). The operative biopsy costs were the sum of anesthesia charges, operating room overhead, surgeon professional fees, and post operative care charges.

Conclusions

In laryngopharyngeal tumors that can be fully visualized in the clinic and in whom the patient is willing and able, in-office biopsies and cancer staging can be performed safely with a diagnostic yield rate of 64% in our series of 11 patients. Exophytic tumors and those whose surface is perpendicular, rather than tangential, to the endoscope are easier to biopsy in the clinic setting. Finally, in-office biopsies were significantly cheaper than those performed in the operating room ($2053.91 and $9024.47, respectively).

References