ABSTRACT

Objectives: Office-based tracheoscopy represents a favored alternative to the use of the operating room (OR) or other resource-intensive environs. This article examines the cost effectiveness of performing in-office tracheoscopy on selected patients at a large tertiary referral center.

Methods: Patients were selected using a database review search of all patients undergoing office-based and inpatient or ambulatory OR-based tracheoscopy during December 2012 to July 2013. Patients were matched for age, race, insurance coverage, medical comorbidities, indication for surgery, and operative course. Operative reports, demographic, medical and financial data were reviewed.

Results: A significant difference in procedural expenditures was discovered between office-based and OR and ambulatory-based patients. At our institution, physician reimbursements for tracheoscopy of patients with Medicare are $383.10 for office-based and $167.02 for hospital-based procedures. In general, current reimbursement stratagems for procedures involving patients with Medicaid and Medicare provide greater payment for outpatient tracheoscopy than inpatient or specialty center procedures. On average, office-based patients were charged $1,478.4 less than controls and reimbursements for office-based tracheoscopy were roughly four times greater than OR procedures, with average reimbursements per procedure of $196.5 and $50.2 respectively. The mean insurance bill for OR-based patients was $2310.30 (SD = 665.6) whereas office-based patient’s were billed a mean of $831.90 ($D = 781.3). This data illustrates a significant difference between the two cohorts (p = 0.003). The mean reimbursements for individual procedures were $50.2 (SD = 72.31) for OR-based patients and 196.5 (SD = 176.6) for office-based patients. This relationship was not significant (p = 0.077). In both cohorts examined, there were no operative complications, similar medical comorbidities and clinical indications for the operative procedure.

METHODS AND MATERIALS

Seven office-based patients with a mean age of 56 years old (range from 32 to 77) underwent tracheoscopy/bronchoscopy (CPT code 31622). Four were males and three were female. One patient identified as Black, 3 as Multiracial, 2 as White, and 1 patient of unknown race. These patients held a range of insurances, including Medicare (3), Medicaid (2), CMO HIP (1), and United Healthcare (1). Seven patients in the OR control group. Patients in this cohort had a mean age of 41.4 years (range from 12 to 70). Three were male and four were female. Three controls were Multiracial, 1 Asian, 2 White, and 1 was of unknown race. The OR-based control patients held similar insurance policies as the study group. The patients had a wide range of comorbidities, including but not limited to diabetes mellitus, hypertension, hyperlipidemia, human immunodeficiency virus, Hepatitis C, obstructive sleep apnea, asthma, and dementia. After thorough chart review, it was determined that no medical comorbidity influenced the preoperative planning, operative course or outcome of the tracheoscopy/bronchoscopy. Operative reports, demographic, medical and financial data were reviewed. Both cohorts were compared using t-test to assess for statistical significance. To confirm proper patient matching for gender and race, chi-squared test was used to confirm no difference between groups.

Tracheoscopy was performed in an office setting 5cc of 4% lidocaine was given by nebulizer to anesthetize the larynx and trachea. The nasal cavity was anesthetized and decongested with a combination of lidocaine and oxymetazoline. A fiberscope is used to visualize the anterior and posterior nasal cavities, the nasopharynx, hypopharynx, larynx, and trachea to the level of the carina.

RESULTS

During endoscopy’s fledgling years, procedures with the rigid endoscope were better tolerated in the operating room with the patient under general anesthesia. However, with the advent of the flexible endoscope and advances in fiberoptic lighting and image transfer, these procedures became more amenable to the outpatient setting. Office-based tracheoscopy represents a favored alternative to the use of the operating room (OR) or other resource-intensive environs for selective cases. The relative ease and safety of performing this procedure in the comfort of a clinic setting provides a welcome change to the scheduling difficulties and financial constraints incumbent to ambulatory or inpatient surgical centers. In his 2006 article in Chest, Dr. William Lunn highlights the convenience of office-based bronchoscopy and cites the success of our pulmonary colleagues in their movement towards office endoscopy. While our pulmonary colleagues have utilized office-based bronchoscopy in their evaluation of lower airway pathology, in recent years, untested dynamic examination of the subglottis and trachea has been performed by otolaryngologists using transnasal tracheoscopy. In some centers, this method has become standard for evaluating the pathology of the tracheobronchial tree and has greatly attenuated the indications on rigid bronchoscopy and computed tomography.

While a number of studies in the pulmonology and otolaryngology literature describe the safety and methodology of office-based bronchoscopy and tracheoscopy, to our knowledge there does not exist a cost analysis comparing office-based and OR-based tracheoscopy. This article examines the cost effectiveness of performing in-office tracheoscopy on selected patients at a large tertiary referral center.

CONCLUSIONS

Our data illustrates that office-based tracheoscopy is substantially less expensive than operating room or ambulatory-based tracheoscopy and has similar rates of complications. Admittedly, the small number of patients undergoing this procedure limits the power of our study and reimbursement comparisons for office versus OR-based tracheoscopy did not achieve statistical significance. This is likely due to the large standard deviation compared to the two groups, and would achieve statistical significance with a larger study population. Regardless, the difference in reimbursement between the two groups represents a large financial benefit to the patient and physician alike for the office-based procedures.

In addition to the direct financial benefits of in-office tracheoscopy, there are also added, indirect, benefits. For example, an in-office procedure generally takes less time than an OR-based procedure with its incumbent complexity in organization. Additionally, the lack of anesthesia obviates the need for patients to receive preoperative clearance or for patients to take undue time away from work or rely on a family member or colleague for transportation, thus increasing overall productivity for the patient and benefiting society.

REFERENCES


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Costs and Benefits of Office-Based Tracheoscopy

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