Analysis of Tracheostomies Among the Critical Care Patients: Percutaneous versus Open Surgical Technique

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ABSTRACT

Objective: Evaluate the indications for performing a tracheostomy across the spectrum of all trauma and pulmonary critical care patients.

Methods: All consecutive patients who underwent a tracheostomy procedure spanning four years within a tertiary care hospital. Clinical and demographic data was used to evaluate indications, outcomes, and differences between the open and percutaneous tracheostomy populations.

Results: A total of 1333 tracheostomies were performed on 1302 patients. This included 452 (34%) open surgical versus 881 (66%) percutaneous dilatational technique. There was a significant difference in age or short-term complications between the two groups. The average length of hospital stay was 21 days, indifferent among the two groups. The majority of the total tracheostomies were performed by the surgical services, in comparison to pulmonary critical care services. The average number of days per patient were 21 versus 253 (19%), respectively. Approximately 26% of all discharged patients had a related ER visit (respiratory or tracheostomy-related) within a year.

Conclusion: A majority of tracheostomies at our tertiary care trauma hospital are performed by surgical services. Both groups have similar short-term safety and complication rate. Our surprisingly high ER return rate suggests possible deficiency in pre-discharge teaching and care arrangements. Prospective studies are needed to determine long-term complications.

RESULTS

A total of 1302 patients underwent a combined number of 1333 tracheostomies spanning four consecutive years in our hospital. 452 (34%) underwent open tracheostomies compared with 881 (66%) with percutaneous tracheostomies. The age of the entire group was 53, without any significant difference between the two groups. A majority of the cases were performed by surgical services (81%) with the trauma surgical care team comprising the majority of this group. The pulmonary critical care team performed 19% of all tracheostomies, all percutaneous.

This majority of the patients were admitted via the trauma service, with average hospital stay of 21 days. Disposition of patients subsequent to their inpatient stay included skilled nursing facility, inpatient rehabilitation, and home (equally representing 20% each). There was no significant difference in the short-term complications among the two groups. Tracheal stenosis was the most common long-term complication, significantly higher in the percutaneous group. Tracheal-related ER visit rate within one year of hospital discharge was 25%, without significant difference among the two groups.

DISCUSSION

A majority of the tracheostomies at our institution was by percutaneous method (66%). Multiple services are involved in the care of these patients. Tracheostomy is a more common long-term complication, higher in percutaneous group, suggesting the possibility of inadequate patient selection, or technical/procedural eliogry. How to prevent these ER visits in first year suggestive of possible insufficiency in teaching and/or follow-up care.

METHODS AND MATERIALS

A case series analysis was designed to retrospectively target all consecutive patients undergoing a tracheostomy procedure spanning four years beginning January 1, 2008. This included all adults undergoing both open surgical and percutaneous dilatational tracheostomies performed at a single metropolitan academic trauma hospital. The data collected included retrospective clinical and demographic data from the hospital medical records, in addition to post-procedural clinical follow-up data for six months.

The collected data was used to evaluate clinical and demographic trends and indications used in tracheostomy patients, differences in short and long-term complications, particularly the incidence of tracheal stenosis, in addition to disposition.

REFERENCES