Overview of tracheotomy procedures of speaking valves and of heat-moisture exchangers

Tracheotomy is a surgical procedure which is frequently performed to relief obstruction of airflow through the larynx and upper trachea. One of its main side-results is loss of essential functions including warming and filtering of air, coughing, smelling, tasting, swallowing and more devastatingly speaking. When a tracheotomy is present, exhaled air follows the path of least resistance and goes through the tube, reducing the vibratory movement of the vocal cords and hence limiting perceptual speech. A tracheotomy speaking valve redirects the air through the vocal cords, allowing speech. There are several speaking valves on the market including the Passy-Muir valve (Passy-Muir, Inc.), the Shiley Phonate™ valve (Mallinckrodt Medical) and the Montgomery speaking valve (Boston Medical Products) which are all flapper valves, which are based on a bias-closed membrane that is closed at all times and open only upon inspiration. The Shikani Speaking Valve is a novel speaking valve based on a ball design rather than a flapper design, which is improvement on the flapper speaking valves and is associated with a significantly lower airway resistance. The Shikani Heat Moisture Exchanger (HME) also has a novel HME designed to redirect airflow inside the HME in a turbulent fashion, which is extremely efficient. It has a highly efficient hygroscopic media made of porous reticulated ester-type polyurethane foam impregnated with calcium chloride) traps moisture and heat, and provides a very effective filter from unwanted particles. A unique feature of the Shikani Speaking valve and the Shikani HME is that they can be used in unison for the sake of speech and humidification, warming and filtration of air. This course is an overview and comparison of the different tracheotomy procedures and the different speaking valves and HME’s on the market.

Biography

Alan H Shikani did his Residency and Fellowship training in Otolaryngology-Head & Neck Surgery at the Johns Hopkins Hospital in Baltimore and is currently the Chief of Otolaryngology-Head & Neck Surgery at the LifeBridge Sinai Hospital and MedStar Union Memorial Hospital. He is also an active Member of many distinguished societies including the Alpha Omega Honor Medical Society, the Triologic Society, the American College of Surgeons, the American Academy of Otolaryngology and the American Rhinologic Society. He has published numerous articles and book chapters in the field of otolaryngology-head & neck surgery. He is the Inventor of the Shikani speaking valve and Shikani HME and the Founder of the Airway Company.

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