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Experience of Percutaneous Dilatational Tracheostomy by using Grigg's Technique in Siriraj Hospital

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Abstract

Background: Percutaneous dilatational tracheostomy (PDT) was increasingly performed after the commercial kit was available in 1985. Several studies showed that PDT was equivalent to surgical tracheostomy considering perioperative and long-term complications and PDT was more cost effective and provide greater feasibility in terms of bedside capacity and nonsurgical operation.
Material and Method: The data of patients who were performed PDT at Division of Respiratory Disease and Tuberculosis, Department of Medicine, Faculty of Medicine Siriraj Hospital were retrospectively reviewed since March 2007 to December 2011. All procedures were done at bedside in intensive care unit or general ward of internal medicine under intravenous anesthesia. PDT was performed by using Griggs' technique. This technique is based on Seldinger guidewire technique and uses the guidewire dilator forceps (GWDFs) to enlarge the hole in the trachea under flexible bronchoscopic visualization.
Results: Ninety-one patients were enrolled with a mean age of 68 years old (range 17-100). Majority of patients had American Society of Anesthesiologist (ASA) classification 3. The most common indication for tracheostomy was failure to wean from the mechanical ventilator (68 patients; 74.7%). Fifty-two procedures (57.1%) were done at intensive care unit and 39 procedures (42.9%) were done at general ward of internal medicine. Mean duration of procedure was 18 minutes (range 5-90). The rate of perioperative complication was 11.0%. Five patients (5.5%) had desaturation and all of them were improved by short disruption of the procedure for ventilatory support. Three patients (3.3%) had moderate bleeding and one (1.1%) had excessive bleeding that were stopped by electrocauterization and pressure compression. There was 1 serious perioperative complication that was accidental extubation. No perioperative or postoperative mortality that related to procedure was found.
Conclusion: PDT is a safe procedure and can be performed easily and rapidly at the bedside either in intensive care unit or general ward with closed monitoring. Proper patient selection and attention to technical detail are necessary in maintaining low complication rates.

Keywords: Percutaneous dilatational tracheostomy, PDT, Tracheostomy, Griggs' technique, Seldinger, Guidewire dilator forceps

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