

Tracheostomy in Patients Who Need Mechanical Ventilation: Early or Late? Surgical or Percutaneous? A Prospective Study in Iran

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Abstract Tracheostomy can be performed surgically or by percutaneous (percutaneous dilatory tracheostomy, PDT) methods, and it may be used early or late. In a 3-month follow-up, all patients who underwent tracheostomy in Semnan in 2013 were evaluated for complications of tracheostomy considering the method used and the timing of operation. A total of 55 patients underwent tracheostomy (26 cases surgery, 29 cases PDT, 30 cases early, and 25 cases late based on 14 days reference). The mean durations of operation were 19.19 ± 5.78 min in the surgery method and 4.7 ± 2.42 min in the PDT method ($P < 0.001$). The mean durations of the need for ventilator after the tracheostomy were 10.7 ± 9.25 and 18.6 ± 14.39 days in early and late tracheostomy, respectively ($P = 0.024$). The mean intensive care unit (ICU) stay were 12.70 ± 10.24 and 23.44 ± 18.49 days ($P = 0.014$) and the mean hospital stay were 16.04 ± 10.88 and 23.48 ± 18.47 days, respectively ($P = 0.100$). Short-term complications were observed in six cases (10.09 %) in the surgery group, including emphysema (two), bleeding (two), wound infection (one), and clot formation inside the tube (one). Only one complication (bleeding) occurred in one case in the PDT group. After 3 months, 21 patients survived. Compared with surgery, the most important advantage of the PDT method was its shorter duration of surgery. Nearly half of the patients underwent tracheostomy late, while the majority of the patients in the late group were referred from internal ICU. No major and minor complications were noted during the procedure, as well as no tracheostomy-related deaths were observed. Early tracheostomy was shown to be superior to late, reducing the time of mechanical ventilation and ICU or hospital stay.

Keywords Tracheostomy . Percutaneous tracheostomy . Complications . Long-term intubation