
Tracheoesophageal fistula diagnosis during open tracheostomy

Sir,

Tracheoesophageal fistula (TEF) is a complication of prolonged mechanical ventilation,^[1-4] and the diagnosis is not always performed before tracheostomy.

Therefore, TEF predisposes to appearance of recurrent respiratory infections, respiratory failure, and increased risk of death.^[5] The size of the lesion and its location determine the clinical severity, urgency, choice of treatment, and prognosis.^[6,7,8]

We evaluate retrospectively in a cross-sectional study carried out for a period of 1 year the incidence and

management of TEF diagnosed during the tracheotomy of patients, indicated by prolonged mechanical ventilation in two secondary public hospitals in São Paulo State, Brazil. The diagnosis of TEF was based on identification during the realization of open tracheotomy in patients with no signs or symptoms of fistula.

A total of 393 tracheotomies were held during the periods March 2015 to March 2016 [Table 1].

TEF was identified as a complication in three (0.76%) patients [Table 2]. Once the diagnosis of TEF was held during the open tracheostomy procedure without previous signs or symptoms, we opted for conservative conduct in

Table 1: Profile of patients undergoing tracheotomy

Sex	Total (%)	Age (average years)	Orotracheal tube time (average days)
Male	181 (46.05)	48.8 (minimum 16 maximum 85)	16 (minimum 3 maximum 20)
Female	212 (53.95)	60.9 (minimum 14 maximum 98)	15 (minimum 2 maximum 19)

Table 2: Patients with tracheoesophageal fistula as a complication

Patient	Age	Disease	Causes of ICU	Outcome
Patient 1	16	DM	Indeterminate focus sepsis	Spontaneous resolution
Patient 2	59	DM/SAH	Cardiovascular	Death
Patient 3	78	DM/SAH	Cardiovascular	Death

DM: Diabetes mellitus, SAH: Systemic arterial hypertension, ICU: Intensive Care Unit

all cases due to the associated amenities at the time of diagnosis. One of them had spontaneous resolution, and two of them died of causes not related to TEF.

The incidence of this complication in patients with long-term mechanical ventilation revolves around 0.3%–3%;^[5] in this study it was 0.76%. The clinical manifestations differ depending on the patient's respiratory status; individuals in mechanical ventilation may present signs of air leakage, despite the hyperinflation of the cuff, until abdominal distension associated with hydrofoil noises at the same time of rhythmic ventilation, tracheobronchial contamination with food and digestive secretions, and bronchopulmonary suppuration.^[9]

If a TEF is suspected, we proceed with a bronchoscopy. In case of doubts, a blue methylene solution can be instilled through a nasoesophageal probe.^[9]

However, because some associated symptoms are nonspecific, weak, or even nonexistent,^[3,10] it is possible that a TEF can be identified only during a tracheotomy, as happened with our patients. Open tracheostomy can make diagnosis in surgical time, without any previous signs or symptoms, not as easy as the percutaneous puncture tracheostomy.

The risk of installing the cannula in “false path” during the procedure exists, and cannot be considered despicable, because the less attentive surgeon may not think of this diagnosis at the time of the procedure by placing the patient at risk.

TEF without diagnosis in prolonged oro-tracheal tube patients increases the risk of false route during the introduction of the tracheostomy cannula. If the surgical team is prepared and makes quickly the fistula diagnosis at the surgical time, routine endoscopies or bronchoscopies preoperatively may not be performed, because the low incidence does not justify, but we would need more studies for that statement.

Although the spontaneous TEF healing has already been reported, conservative management is seldom used.^[8,11,12] Therefore, once diagnosed, we should proceed to programming surgical correction as the treatment of choice.^[13,14] However, we must consider the patient's prognosis. If unfavorable, surgery should be contraindicated.

The ideal time for the surgery is established when the patient no longer requires mechanical ventilation and when the comorbidities of TEF are tracked^[6,15,16] because of the high risk of complications from poor wound healing and recurrence of fistula until the occurrence of mediastinitis and postoperative death.^[17-19]

Therefore, in case of the impossibility of weaning from mechanical ventilation, most authors suggest adopting palliative measures promptly to prevent complications, such as the removal of nasogastric tube, gastrostomy for feeding and drainage, enterostomy, use of atropine to inhibit production of saliva, and use of high headboard.^[13,15,20] Esophageal and tracheal stents have been used as an option in those patients.^[21]

In conclusion, we suggest attention at the surgery moment; fistula diagnosis at the surgical time occurred in 0.76% of tracheostomies – all in DM patients – and the conservative conduct was the most appropriate.

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Conflicts of interest

There are no conflicts of interest.

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