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### Case report

## Pharyngeal perforation during therapeutic endoscopy procedure. Case report<sup>☆</sup>

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#### ABSTRACT

The pharynx is a musculomembranous tube common to the upper respiratory tract and the initial segment of the GI tract. Any endoscopic therapeutic procedure requires the participation of a competent anesthetist to secure the patency and control of the airway, upon the induction of general anesthesia that blocks the protective reflexes and hence prevents the passage of the GI contents into the lower respiratory tract. The endoscopist is required to be cautious in the use of the technique to accomplish the objective.

A clinical case of a failed endoscopic therapeutic procedure presenting subcutaneous emphysema, suggestive of a perforation is discussed. In order to define the topography and to make a differential diagnosis of the lesion, a clinical signs sequence is conducted that revealed a perforation of the posterior pharynx, then confirmed using endoscopic imaging. An algorithm is suggested to make the differential diagnosis between an intra and an extra-glottic perforation.

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#### Perforacion faringea durante procedimiento endoscópico terapéutico. Informe de caso

#### RESUMEN

La faringe es un conducto muscular membranoso que es común a las vías respiratorias superiores y a la parte inicial del aparato digestivo, por lo que los procedimientos

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endoscópicos-terapéuticos requieren de la competencia del anestesiólogo, para la permeabilización y control de la vía respiratoria una vez que los reflejos protectores queden ausentes al inducirse la anestesia general, y de esta manera evitar el paso del contenido digestivo a la vía respiratoria inferior. Al mismo tiempo el endoscopista debe emplear una técnica cuidadosa que permita lograr el objetivo propuesto. Se expone un caso clínico que posterior a procedimiento endoscópico-terapéutico fallido presenta enfisema subcutáneo; que sugiere una perforación. Para determinar latopografía y diagnóstico diferencial de la lesión se conduce a un análisis mediante la secuencia de signos clínico; los cuales ponen de manifiesto una perforación de la faringe posterior, que es confirmada mediante métodos imagenológicos y endoscópicos. Se propone un algoritmo para el diagnóstico diferencial entre una perforación intraglótica y extraglótica.

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## Introduction

The pharynx is a musculomembranous tubular structure vertically positioned from the base of the skull down to the sixth cervical vertebra. This organ is shared by the upper respiratory tract and the initial segment of the GI tract and comprises three segments or levels: the rhinopharynx (upper segment), the oropharynx (middle segment), and the hypopharynx or laryngopharynx (lower segment).<sup>1,2</sup> The pharynx participates in the respiratory function, deglutition, phonation and immunology. The pharynx allows for the passage of air from the nostrils and the mouth to the larynx and serves as a duct for transporting food from the oropharynx to the esophagus. The muscular structure of the pharynx plays a key role in deglutition to propel the alimentary bolus and protect the nasal and laryngeal airway.<sup>1-3</sup> Orotracheal intubation is a means to isolate the airway from the GI tract and prevent the passage of the GI contents into the lower airway, particularly under special circumstances such as "full stomach" emergencies and general anesthesia with loss of the protective reflexes in patients undergoing GI tract surgery.<sup>4</sup>

The case of a patient under general balanced anesthesia with orotracheal intubation for endoscopic retrograde cholangiocystopancreatography (ERCP) is discussed. A traumatic lesion developed during the diagnostic-therapeutic procedure on the posterior wall of the pharynx, which resulted in subcutaneous emphysema. A clinical analysis of the sequence of events was performed to establish the etiologic, topographic and differential diagnosis of the complication.

## Case report

This is a female, 84-year old patient diagnosed with hepatitis and obstructive jaundice. The patient was evaluated by general surgery and internal medicine, and the gastroenterology service was asked to do an ERCP to determine the presence of extrahepatic biliary tract obstruction. The patient was initially assessed by the anesthesiology service to establish the perioperative approach. Several comorbidities were identified and the patient was classified as ASA-3. The preoperative examination indicated the following findings:

## Mucus membranes with jaundice

Decompensated high blood pressure – the patient was evaluated by internal medicine and preoperative antihypertensive treatment was prescribed with captopril 25 mg every 12 h and oral hydrochlorothiazide 25 mg per day until the BP was normalized.

- Mucus membranes with jaundice.
- Decompensated high blood pressure: the patient was evaluated by internal medicine and preoperative antihypertensive treatment was prescribed with captopril 25 mg every 12 hours and oral hydrochlorothiazide 25 mg per day until the BP was normalized.
- Additional medication: oral cholestyramine 4 g/day, IV ranitidine 50 mg every 12 h.
- Physical-neurological examination: aware, able to follow verbal orders, no sensitive or motor disorders.
- Altered hepatic enzymes: alanine aminotransferase – Glutamic-Pyruvic Transaminase GPT, aspartate aminotransferase – glutamic oxaloacetic transaminase GOT, alkaline phosphatase, total and direct bilirubin.
- Alkaline phosphatase: 990 (39–117 U/l), ALT-GPT: 89 U/l (0–41 U/l), ASAT-GOT: 72 U/l (0–38 U/l), Total bilirubin: 8 mg/dl (0–1 mg/dl), Direct bilirubin: 7.1 mg/dl (0–0.3 mg/dl).
- Altered renal function tests: elevated Creatinine that then dropped and normal blood urea nitrogen (BUN).
- Initial serum Creatinine: 2.2 mg/dl (0.7–1.2 mg/dl).
- Change in Creatinine 2nd day: 1.5 mg/dl.
- Complete blood count (CBC): mild anemia, normal leukocyte and platelet count.
- Hemoglobin: 9.8 g/dl (12.5–18 g/dl).
- Hematocrit: 29% (36–54%).
- C-reactive protein: 96 mg/l (<1 mg/l) increased.

Other tests performed were normal: rest ECG, chest X-ray, thrombin and thromboplastin times, arterial gases, electrolytes, blood glucose and troponins. The predictors evaluated showed no airway difficulties.

Due to the increased risk of perioperative morbidity and mortality, the family is educated on the possibility administering conservative treatment to the patient rather than doing an invasive procedure. However, the family insists on

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