CASE STUDY

Tracheo-Colonic Fistula in a Patient Treated With Coloplasty

Fistula traquecolónica en un paciente tratado con una coloplastia

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Introduction

Acute oesophageal entities, such as oesophageal rupture or perforation, or anastomotic dehiscence may be seriously life-threatening for patients.1 They may force the surgeon to carry out, initially, the disconnection of the upper digestive tract and subsequently reconstruct the transit. This is a technically complex process with considerable morbidity. Tracheo-oesophageal fistulae (TOF) are a serious problem not only for patients, who may be in a life-threatening situation, but also for surgeons, as therapeutic resolution is complex, and the percentage of cases in which the fistula recurs is high. Surgical techniques for repairing TOF vary, and the surgical attitude adopted in this case and reported in this paper is exceptional.

Case Report

Male, 33 years old, suffered a traffic accident in 1998 with thoracic and cervical trauma, with oesophageal rupture requiring disconnection of the upper digestive tract and tracheotomy due to prolonged intubation. While at the ICU, the patient presented the complication of a tracheo-oesophageal fistula, which triggered surgery to exclude the upper digestive tract by means of a pharyngostomy linked to the left latero-cervical region and gastrostomy, after which attempts were made on several occasions to close the fistula using muscular plapets from the left sternocleidomastoid muscle (SCM). It was necessary to resect several tracheal rings. The laryngeal-oesophageal fistula recurred after several failed attempts with muscularplasty so it was decided, in view of the anatomical and functional status of the resulting larynx (unstructured and non-functional, as was the oesophagus), to perform a total laryngo-oesophagectomy with reconstruction through pre-sternal coloplasty, creating a pre-sternal extra-thoracic tract with the intention of differentiating the airway from the digestive tract, using an autonomous vascularized portion of colon.

The patient suffered from ulcerous colitis (UC) since infancy and, although colonic involvement was scant, the UC has been affecting more and more of the colon plasty since the surgery, leading to several admissions to the Digestive Department. There was a clinical correlation as there was distension of the neo-oesophagus in the exacerbations of UC and this improved along with his intestinal transit when the UC was treated. In the summer of 2010, he suffered various bouts of pneumonia and a further TOF was suspected. Fibroscopy gave a doubtful result because of the...
Figure 1  Axial CT slice: a fistulous tract begins 2 cm from the tracheostoma, surrounded by dense soft tissue, without formation of an abscess.

haustra, but it was confirmed by means of a cervical CT scan with contrast (Fig. 1). The patient was subjected to a supra-stomal cervicotomy, release of the trachea and peritracheal tissues, dissection of the fistulous tract, suturing of both orifices, suturing by planes and interposition of a right SCM muscle flap (Fig. 2). The patient was fed by means of a nasogastric catheter for 7 days. Since then, the patient’s clinical progress, as monitored at the otorhinolaryngology out-patient clinic, has been favourable.

Discussion

In this paper, we would like to present an exceptional case of TOF, due to the patient’s background, the surgical attitude, made necessary by laryngeal and oesophageal involvement, the recurrence of the TOF and the involvement of the colon plasty due to UC. Although the patient had spent a long period of time without TOF problems, the constant inflammatory component of UC caused the onset of a further TOF 12 years later.

Figure 2  Surgical image: after locating the fistulous tract, it was sutured and a muscle flap inserted using sternocleidomastoid muscle.

At the present time, acquired benign TOF are caused by iatrogenic lesions (tracheal intubation, tracheotomy, thoracic surgery, phonatory prostheses), oesophageal lesions, infections such as tuberculosis, syphilis and histoplasmosis, and the swallowing of caustic agents. Iatrogenic TOF following tracheal intubation are due to the erosion of the trachea and the oesophagus by part of the tracheotomy or orotracheal tube over the course of prolonged use of ventilation support. The use of phonatory prostheses is widespread and various series have been published on their results and complications. Patients with TOF pose a therapeutic challenge in that surgical repair has a high rate of morbi-mortality, as well as the risk of refistulization, close to 20%. Many authors have proposed to strengthen the closure of a TOF by interposing well vascularized tissue and a wide variety of muscle flaps have been described for this purpose. We opted for an SCM flap.

For the reconstruction of the upper digestive tract, it is possible to use several digestive structures. Classically, gastroplasty was indicated in the reconstruction due to malignant involvement, in order to reduce the morbi-mortality of the surgery; coloplasty was reserved for patients with benign involvement, because of the better functional outcomes. Some series published in recent years, however, have called these premises into question, arguing that gastoplasties present better long-term functionality and proposing gastroplasty as the first option. Other therapeutic possibilities, such as free flaps from the jejunum or colon and pediculate colon flaps, present technical disadvantages compared to gastroplasty. Coloplasty was the recourse most commonly used until a few years ago, as it was considered to have better long-term functionality. This may explain why, over a decade ago, it was decided to perform a coloplasty.

References