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ENDOSCOPIC TREATMENT OF A TRACHEO-OESOPHAGEAL FISTULA: ABOUT A CASE

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ABSTRACT
Tracheo-oesophageal fistula (TOF) is a rare complication of tumors, mainly lung and esophageal cancer. It is defined by a communication between the esophagus and the trachea or the bronchi. Its prognosis is linked to early treatment. Surgical treatment is well described, but remains very risky in this category of cancer patient; on this, endoscopic treatment with prosthesis fitting by rigid bronchoscopy presents the ideal alternative for a palliative and minimally invasive treatment. We report the case of a 52-year-old patient who was diagnosed with esophageal squamous cell carcinoma in 2017. She received radiochemotherapy. The consequences were marked by the installation of a dry cough concomitant with food intake. As part of her follow-up in radiotherapy, she underwent a thoraco-abdomino-pelvic CT scan, which objectified a Tracheo-oesophageal fistula, which is most likely post-radiation. As soon as the fistula was discovered, radiotherapy was suspended and the patient was admitted to our training for endoscopic treatment of her fistula. An endo-tracheal prosthesis was placed by rigid bronchoscopy and the consequences were good. Tracheo-oesophageal fistula is a serious complication of esophageal cancer; its diagnosis is confirmed by chest CT scan and supported by bronchial endoscopy. Tracheal endoptothesis placement is recommended to alleviate the complications of the fistula, and to guarantee a better quality of life.

KEYWORDS: Tracheo-oesophageal fistula, esophageal cancer, rigid bronchoscopy, endo-tracheal prosthesis.

INTRODUCTION

Tracheo-oesophageal fistula (TOF) are defined as communications between the esophagus and the trachea or its bronchi. These are rare but always complex clinical situations, requiring early diagnosis and treatment at an optimal time.[1] Esophageal or pulmonary carcinomas are the most frequent causes of trachea-oesophageal fistulas, which are secondary to tumors.

Due to the multiple complications secondary to the fistula, palliative treatment is necessary. Following the progress of endoscopy, the treatment which was initially surgical has been replaced by a less invasive, conservative and palliative endoscopic treatment; which is based on the placement of an endo-tracheal prosthesis to cover the fistula.

We report the experience of our service about a case of Tracheo-oesophageal fistula on esophageal cancer.

CASE REPORT

This is a 52-year-old patient, with no toxic habits and no particular notable history, who presented, in 2017, vomiting and dysphagia with a significant deterioration in her general condition. An upper digestive endoscopy was performed with several biopsies; the anatomo-pathological study had retained the diagnosis of squamous cell carcinoma of the esophagus. The patient benefited from radio-chemotherapy treatments, stopped in 2019, with a good evolution and remission of her clinical signs. The consequences were marked by the installation, a few months later, of total dysphagia, with the discovery of a stenosis of the middle 1/3 of the esophagus for which she benefited from several dilatations.

The current symptomatology is made up of an intermittent cough concomitant with food intake, with episodes of low abundance hemoptysis. Faced with this picture, her treating oncologist requested a Thoraco-Abdomino-Pelvic scan, which objectified a progression of her mediastinal mass with the appearance of a tracheo-oesophageal fistula. The patient was immediately referred to our training for management of her fistula.

On admission, the patient was eupneic, saturated at 93% on ambient air. The pleuropulmonary examination was

unremarkable, and there was no subcutaneous emphysema.

On the chest CT scan, (figure A, B): presence of a tracheo-oesophageal fistula on the posterior surface of the trachea with an estimated extent of approximately 5 cm.

Figure A: mediatisnal sections through the trachea and the esophagus showing the fistula communicating between the two of them.

Figure B: Axial sections through the tracheo-oesophageal fistula.

The patient was scheduled for a rigid bronchial fibroscopy with a placement of an endo-tracheal prosthesis.

The procedure was performed under sedation, in the presence of an anesthetist team. The procedure was performed using a rigid fiberscope (figures C, D, E).

FIGURE C

FIGURE D

FIGURE E

The initial exploration had objectified a fistula at the level of the middle 1/3 of the trachea, approximately 3 cm of length (Figure F).

Figure F: Tracheo-oesophageal fistula at the posterior wall of the middle 1/3 of the trachea, with an estimated extent of 3 cm.

After the objectification of the fistula, a cleaning aspiration was performed, and the placement of a 50mm/16mm endo-tracheal prosthesis was performed (figure G).

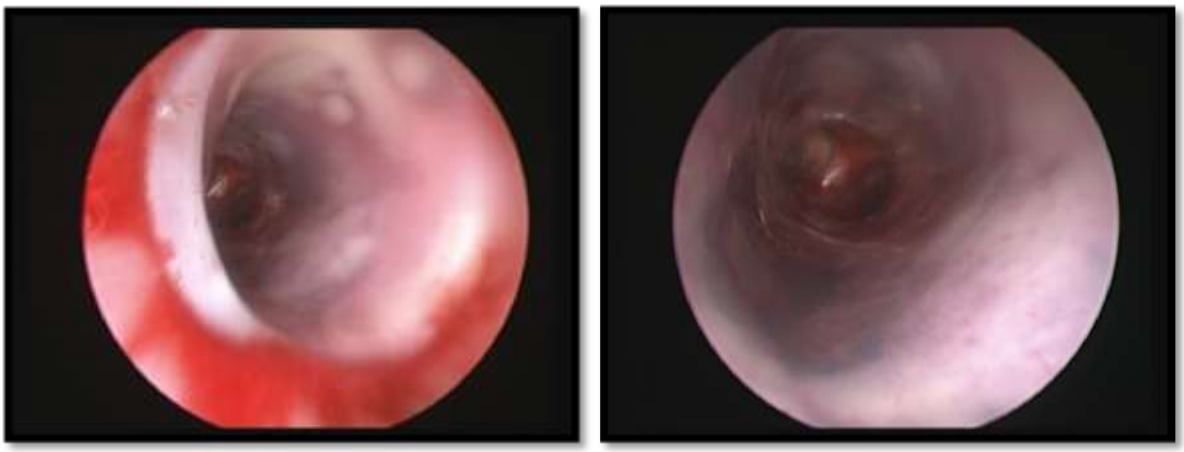

Figure G: placement of the endo-tracheal prosthesis covering the entire extent of the fistula.

The endoscopic follow-up was simple: improvement in saturation, no hemoptysis, and no more cough concomitant with food intake.

The patient was nebulized with normal saline solution, every 2-3 hours, to keep the bronchitis sputum fluid and not to stick to the prosthesis and end up obstructing it.

A control with flexible fibroscopy was done after 48 hours: the prosthesis was in place, and a cleaning aspiration around the prosthesis was done.

The patient was discharged under a nebulizer at home and abundant drinks.

DISCUSSION

Tracheo-esophageal fistula (TOF) is a rare complication of tumors, found mainly in lung or esophageal cancer, and occurs mainly after radiotherapy or chemotherapy. Its location is generally between the trachea and the esophagus.[1] Neoplastic fistulas represent approximately 50% of all acquired TOF.[11]

It is a relatively rare complication, affecting between 5 and 15% of patients with esophageal cancer.[2] It is a serious complication that occurs at an advanced stage of cancer and is life-threatening.[2–8] The results of complications explain the importance of early and optimal treatment. Indeed, malnutrition and frequent inhalations of liquids and food lead to severe lung infections and a rapid deterioration in general condition. Most patients die within six weeks of the appearance of the fistula if no treatment is instituted.[two, 3, 9–12]

The main clinical manifestations of tracheo-esophageal fistula are dry or productive cough, which is punctuated by eating food, or more rarely hemoptysis following the bleeding fistula, which is the case of our patient. Sometimes, we can be faced with an array of recurrent pulmonary infections or recurrent pulmonary abscesses.[11]

Radiological imaging and mainly chest CT-scan can visualize the fistula, this is the case in our patient; and can specify the parenchymal damage caused by the fistula.[2,4,11]

The diagnosis of tracheo-esophageal fistula is confirmed by bronchial fibroscopy, which remains the most effective means. It determines the condition of the surrounding tissues, and also characterizes the site of this fistula and classifies it according to the size of the orifice[13]

- Punctiform for the orifice that does not allow a closed biopsy forceps to pass
- Medium for the orifices allowing a closed biopsy forceps to pass through, but not allowing visibility of the bronchi
- Large for the orifice whose diameter made it possible to see the bronchial tree from the esophagus.

The early discovery of a tracheo-esophageal fistula in a cancer patient is essential for the initiation of appropriate treatment. This palliative treatment aims to interrupt this communication between the esophagus and the respiratory tree. It is underpinned by three imperatives: avoid any possibility of passage from the digestive tract to the aerial tree; fight against Broncho pulmonary infection and local peri-fistular infection; ensure clinical and biological stabilization.[14]

Surgical treatment is described, but remains very risky in this category of cancer patient, so endoscopic treatment with prosthesis placement presents the ideal alternative for palliative and minimally invasive treatment.

According to the literature, the placement of endoprostheses would be the most beneficial palliative approach, contributing to the disappearance of patients' symptoms in nearly 80 to 90% of cases, and providing a significant improvement in their quality of life. The laying of the double prosthesis would have a better result.[2,9,11]

CONCLUSION

Tracheo-esophageal fistula is a late but serious complication of esophageal cancer.

The treatment, which remains palliative at this stage, must solve the two problems of pulmonary contamination and malnutrition. The establishment of a Esophageal and/or tracheal endoprosthesis, easily performed on patients who are often in poor general condition, improves their quality of life.

Endoscopic treatment of benign FOT involving the placement of metal esophageal prostheses.

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