



BRIEF COMMUNICATION

Endoscopic Electrocauterization for Congenital Pyriform Sinus Fistula Treatment in Paediatrics. Case Series[☆]



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KEYWORDS

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Abstract Pyriform sinus fistulas are rare anomalies of the branchial arches. Most of them are located on the left side. They extend from the apex of the pyriform sinus of the hypopharynx to the thyroid gland or adjacent tissues.

The diagnosis is suspected in the presence of acute suppurative thyroiditis or recurrent cervical abscesses, and is confirmed by endoscopic visualisation of the fistula hole. The traditional treatment consists of excision of the fistulous tract, with or without thyroid lobectomy, by cervical approach. However, less invasive alternatives that obliterate the path of the fistula have been developed, such as endoscopic electrocautery.

We describe our experience with 7 patients with this condition, who were treated with endoscopic cauterization using radiofrequency electrocautery, and we evaluate the effectiveness and safety of the treatment performed.

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PALABRAS CLAVE

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Electrocauterización endoscópica para el tratamiento de las fístulas congénitas del seno piriforme en pediatría. Serie de casos

Resumen Las fístulas del seno piriforme son anomalías infrecuentes de los arcos branquiales. La mayoría se localizan en el lado izquierdo y se extienden desde el ápex del seno piriforme de la hipofaringe hasta la glándula tiroidea o el espacio peritiroideo.

El diagnóstico se sospecha ante la presencia de tiroiditis aguda supurada o abscesos cervicales laterales recurrentes, y se confirma mediante la visualización endoscópica del orificio de la fístula. El tratamiento clásico consiste en la exéresis del trayecto fistuloso por vía cervical, con o sin lobectomía tiroidea. Sin embargo, se han desarrollado alternativas menos invasivas y con menos riesgos de complicaciones que obliteran el trayecto de la fístula, como la electrocauterización endoscópica.

Describimos nuestra experiencia con 7 pacientes que presentaban esta afección, tratados con cauterización endoscópica utilizando electrobisturí de radiofrecuencia, y evaluamos la eficacia y la seguridad del tratamiento realizado.

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Introduction

Pyriform sinus fistula (PSF) is a rare congenital anomaly caused by incomplete obliteration of the third or fourth pharyngeal bursa during the seventh week of gestation.^{1,2} A more recent theory about the origin of the malformation suggests that it derives from the thymopharyngeal duct.²⁻⁴

Clinically this causes suppurating acute thyroiditis and recurring lateral cervical abscesses.⁵ In the newly born it manifests as a compressive cervical mass that may hinder breathing and swallowing.⁵ Diagnosis is confirmed by direct laryngoscopy that makes it possible to visualise the fistula orifice in the pyriform fossa.^{4,6-8} An oesophagogram is useful to show the trajectory of the fistula, although it may give rise to false negatives.

Classically this condition is managed by treating the acute exacerbation with systemic antibiotics and by draining the abscess, followed by surgical resection of the fistula trajectory using a cervical approach.^{1,7} With the aim of reducing the morbidity of open surgery, different endoscopic techniques have been developed during the past 18 years to obliterate the fistula orifice. Monopolar diathermy cauterisation is the technique that is used most often.^{7,9}

Methods

7 patients with congenital PSF were examined retrospectively. They were treated endoscopically by the Respiratory Endoscopy Department over an 11 year period (September 2004–September 2015).

The variables analysed were patient sex, fistula location, age at the start of the symptoms and at the time of diagnosis, clinical manifestations, the diagnostic techniques used, the endoscopic treatment used, complications, the duration of follow-up and evolution.

The larynx and hypopharynx were examined endoscopically with a flexible fiberscope (3.5 mm) and local anaesthesia in the surgery, and with a rigid endoscope (5 mm) under general anaesthetic in the operating theatre, with the possibility of electrocauterisation if the diagnosis was confirmed. Images were recorded digitally.

Treatment consisted of the obliteration of the fistula orifice using radio-frequency electric scalpel cauterisation. Under general anaesthetic and with the patient in supine decubitus, cervical hyperextension and tracheal intubation, both pyriform sinuses are visualised using a laryngoscope and rigid 0° 5 mm optics. The laryngoscope is suspended to expose the pyriform fossa. Once the orifice of the fistula has been confirmed, a sheathed metal guide is inserted through it. The trajectory is obliterated using diathermy (Kairos Minicomp electrosurgical unit[®]), from distal to proximal, at an intensity of 15 W until the mucus is seen to take on a white colouration. Antibiotic prophylaxis is administered (a 50 mg/kg/dose of ampicillin-sulbactam) intraoperatively.

Hospital discharge was permitted after 6–8 h observation. A normal oral diet was prescribed together with analgesics according to need (ibuprofen 10 mg/kg/dose).

The results were measured while taking into account the absence of clinical recurrence, the closure of the fistula orifice and the presence of complications.

All the patients were systematically subjected to a flexible fiberoscopy with local anaesthesia one month after the endoscopic electrocauterisation, with clinical check-ups every 3 months during the first year and annual check-up afterwards.

Results

There were 4 male patients (57.1%) and 3 female patients (42.9%) with PSF, aged from 11 months to 13 years old at

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