■ CASE STUDY

Tracheal Diverticulum: A Case Report

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Tracheal diverticulum is a clinical entity rarely reported in the literature. It results from a congenital or acquired weakness of the tracheal wall. Most tracheoceles cause few symptoms and are well tolerated. Diagnosis is often based on computerized tomography (CT) scan findings.
We describe a case of a middle-aged male presenting nonspecific pharyngeal discomfort. A diagnosis of tracheal diverticulum was made based on a cervical CT scan.

Key words: Tracheal diverticulum. Computerized tomography. Tracheal wall

Divertículo traqueal: presentación de un caso

El divertículo traqueal es una entidad clínica raramente descrita en la literatura. Su origen es una debilidad congénita o adquirida de la pared traqueal. La mayoría de los divertículos traqueales producen poca clínica y son bien tolerados. La base del diagnóstico es los hallazgos radiológicos obtenidos por tomografía computarizada.
Presentamos el caso de un varón de mediana edad al que, por molestias faríngeas inespecíficas, se diagnostica divertículo traqueal mediante tomografía cervical.

Palabras clave: Divertículo traqueal. Tomografía computarizada. Pared traqueal.

INTRODUCTION

Tracheal diverticulum or tracheocele is an air cavity situated behind the trachea secondary to a congenital or acquired weakness of the tracheal wall.

It is a rare clinical entity, although its incidence in a series of autopsies may reach 1%.[1]

Using the terms "tracheal diverticulum" or "tracheocele" we carried out a bibliographical search on MEDLINE. From 1953 to January 2006, we have only found 13 articles referring to tracheocele and 19 on tracheal diverticulum. Of these articles, only 9 belonged to journals in our speciality.

The scarcity of publications on this entity is partly due to its rarity and partly to its few non-specific symptoms, which hinders the diagnosis.

We report here the case of a male patient, 50 years of age, who presented non-specific pharyngeal discomfort and was diagnosed as having right tracheal diverticulum by means of a computerized tomography (CT).

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CLINICAL REPORT

A 50-year-old male came to the otorhinolaryngological department at our hospital due to the sensation of an extraneous body at the level of the right hypopharynx lasting for 3 months. He did not report coughing or any other symptom. The only item of interest in his personal history was a recent operation for appendectomy, performed with general anaesthesia and without any incidents during endotracheal intubation. As the otorhinolaryngological examination was apparently normal and the clinical signs were so little specific, we requested a gastro-oesophageal barium transit study as an initial complementary test.

Barium transit was normal, which discarded lesions such as Zenker's diverticulum. But the patient insisted on the continued presence of discomfort in the right hypopharynx, therefore a CT scan of the neck was requested.

The CT scan provided the diagnosis. In the right subclavicular region, at a posterior paratracheal location, we identified a well-defined air image measuring 2 cm on its largest diameter, highly indicative of a tracheal diverticulum (Figure). The chest CT discarded other similar lesions at the bronchial level.

In order to try to view the orifice communicating between the diverticulum and the trachea, we performed a second high-resolution cervical CT scan with forced inspiration and expiration, but the volume of the tracheal diverticulum did not vary and it was not possible to locate any communication.

After consulting the little literature available on this entity, we opted for conservative treatment, as the tracheal

diverticulum was small and of little clinical importance in an adult patient.

Approximately 7 months after the onset of the symptoms, the patient has reported a spontaneous improvement in the pharyngeal discomfort and has been asymptomatic for the last year.

DISCUSSION

There is no clear distinction in the publications consulted between the terms tracheal diverticulum and tracheocele. We have used the term tracheal diverticulum as this is the nomenclature most commonly used in the most recent publications.

Where agreement seems more apparent is that there are congenital and acquired forms of tracheal diverticula. For some authors, the congenital variety is the result of an embryonic anomaly and may contain normal tracheal elements on its walls such as muscle or cartilage.[2,3] The acquired forms, however, related to chronic bronchopulmonary disease and tracheal surgical procedures,[4,5] seem to correspond to a simple external invagination of the tracheal mucosa through a herniary orifice on the weakened muscle wall of the trachea.

Another difference described between the acquired and congenital forms of tracheal diverticula lies in the size of the orifice communicating with the trachea, larger in acquired forms, and narrow in congenital ones.[2] In the latter, it may be impossible to identify them even during surgical dissection.[6]

Our patient has no history of chronic bronchopulmonary disease nor tracheal surgical procedures. In addition, with regard to the diverticulum, we were unable to identify the communication with the trachea using high-resolution CT scan and its volume did not change during the forced breathing manoeuvres, all of which is compatible with a very narrow communication orifice. These 2 arguments, the absence of history and the narrowness of the communication, point to the congenital origin of our tracheal diverticulum.

As in most of the literature consulted, the tracheal diverticulum in our patient was located on the right of the trachea. Left tracheal diverticula are much rarer.[1,4]

The clinical presentation of tracheal diverticula is non-specific. The most frequent symptoms are pharyngeal discomfort and coughing, with or without expectoration. The exceptional complications described include recurrent laryngeal paralysis due to compression,[7] the appearance of pneumomediastinum following difficulties in endotracheal intubation,[8] and dyspnoea due to a sternal diverticulum in an infant.[9]

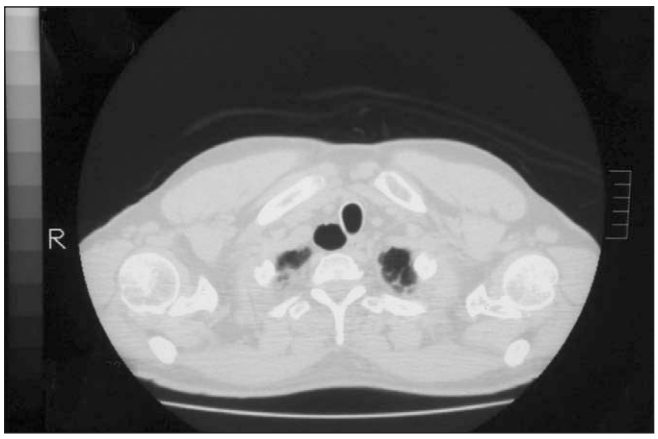

Figure. Image from a cervical CT scan. Tracheal diverticulum, 2 cm in diameter, located in the right subclavicular region.

Diagnosis is basically confirmed radiologically using CT.[2] Bronchoscopic examination may be useful to try to view the orifice of the diverticulum. A barium oesophagogram excludes an oesophagic diverticulum in adults or a tracheo-oesophagic fistula in children.

There is no consensus regarding the treatment of tracheal diverticula. In general, conservative medical treatment of the symptoms is proposed. Surgical treatment is reserved for larger-sized diverticula for aesthetic purposes,[6] paediatric cases with severe respiratory symptoms,[9] or more symptomatic presentations with frequent concomitant infections.[10]

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