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Dysphagia in a diabetic patient

G Piédrola, E López, D Piédrola, G Plaza

A 42-year-old man presented with a four-day history of pharyngeal discomfort and slight difficulty swallowing. There was no history of shivering, fever, cough or expectoration. Since the age of 20, he had been taking insulin for type I diabetes mellitus.

On examination of his mouth in the Emergency Department pyorrhea was noted. There was also a fullness in the left cervical area, without other findings of interest. Indirect laryngoscopy showed no clear evidence of obstruction, or any other organic lesion in the endolarynx hypopharynx.

Investigations revealed a leucocytosis (20 000 l/mm with a left deviation), hyperglycaemia (333 mg/dl) with glucosuria greater than 1000 mg/dl, and ketonuria greater than 80 mg/dl. Arterial blood gas analysis revealed a pH 7.28 and HCO₃ of 13 mmol/l. An urgent computer tomography (CT) scan of the neck was carried out (figures 1 and 2).

Figure 1

Figure 2

Questions

- 1

What is the most likely cause of the CT changes?
- 2

What treatment would you advise?
- 3

What are the most frequent complications in this pathology?

Departments of
Endocrinology and
Otolaryngology,
Ramon y Cajal
Hospital, Ctra
Colmenar Km 9.100,
28034 Madrid, Spain
G Piédrola
E López
D Piédrola
G Plaza

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Answers

QUESTION 1

The CT scan showed an hypodense collection which was enhanced on contrast. The lesion extended: a) from the oropharynx by the left parapharyngeal space giving an effect of mass over the light of the pharynx and in the ipsilateral pyriform cavity, and b) by the retropharynx to the half line, continuing downwards to D1 and dissecting the thyroid gland and the sternocleidomastoid muscle, with an area of cellulitis. It constituted a deep neck space infection or a parapharyngeal abscess. The biochemical data showed evidence of metabolic acidosis together with a ketotic hyperglycaemic decompensation.

QUESTION 2

The treatment of parapharyngeal abscesses is parenteral broad-spectrum antibiotics, accompanied, if necessary, by surgical drainage of the abscess. The latter may cause vascular damage.¹ Antibiotic treatment alone is therefore advisable if the patient is seen in an early stage. External drainage of the abscess should be carried out when improvement is not seen after 48 hours of intravenous antibiotic treatment.² This will confirm the clinical diagnosis and may guide further antibiotic treatment. Treatment of the hyperglycaemic ketoacidosis is symptomatic.³

QUESTION 3

The most frequent complications of parapharyngeal abscesses are summarised in the box. Internal thrombophlebitis of the jugular vein is potentially fatal, as is damage to the carotid artery. Laryngeal oedema needs urgent intubation or a tracheotomy. Mediastinitis results from extension of the retropharyngeal abscess through the prevertebral region towards the posterior mediastinum. Other complications are less frequent.^{4,5}

Parapharyngeal abscess: complications
<ul style="list-style-type: none">• carotid erosion/massive haemorrhage• thrombophlebitis in the internal jugular vein• thrombosis of the cavernous bed• laryngeal oedema/obstruction of the air passage• mediastinitis• pneumonia/lung abscess• septicemia/multiorganic failure• neurological deficits (cranial nerve paralysis, Horner's syndrome)• pneumothorax/pneumomediastinum/subcutaneous emphysema

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Discussion

Deep abscesses of the neck often have a poor prognosis, in spite of antibiotic therapy, because diagnosis is frequently impossible until the course of the disease is well advanced. Approximately 30% of the patients present with an associated systemic disease, of which the most usual is diabetes mellitus, found in approximately 20% of cases.⁵ It has not been clearly established whether poor glycaemic control is an additional predisposing factor, although it is a presenting symptom in a large number of cases.⁵

Classically, it occurs most frequently secondary to a pharyngoamygdala infection, although abscesses associated with dental pathology or intravenous drug addiction are becoming increasingly common.⁶ It is characterised microbiologically as polymicrobial, often with coexistence of aerobic and anaerobic microbes. Gram-positive aerobic bacteria are common, especially *Streptococcus*, while anaerobic bacteria such as *Piptostreptococcus*, *Bacteroides* and *Fusobacterium* have also been reported.^{1,4}

One should always suspect the diagnosis when there is local infection and/or inflammation, dysphagia, neck rigidity and general symptoms.⁴ Otorhino-laryngeal exploration must be thorough and detailed; classical signs consist of a medial amygdala displacement and protrusion of the lateral pharyngeal wall, although clinical expression is frequently lacking. The laboratory findings (leucocytes with left deviation, etc) confirm the diagnosis in addition to the accompanying endocrinometabolic picture if the patient has diabetes mellitus. In fact, simply the presence of hyperglycaemic decompensation should make one consider the possibility of a hidden infection.³ CT scan of the neck is the definitive diagnostic tool,⁵ as it is for monitoring development once adequate treatment has been established.

In conclusion, when dealing with a diabetic patient with simple hyperglycaemic decompensation, whether ketotic or hyperosmolar, one should always look for a provoking cause. A high degree of clinical vigilance is necessary in these cases and apparently minor symptoms may give the vital clues to the final diagnosis.

Final diagnosis

Parapharyngeal abscess provoking a diabetic ketoacidosis.

Keywords: diabetes mellitus, deep neck abscess, parapharyngeal abscess

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