Reminder of important clinical lesson

A disappearing left-sided neck mass

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Summary

The patient was a 48-year-old man who presented to the emergency department with complaints of a left-sided painful neck mass, which changed in size relative to ingestion of meals. He denied voice change, fever, chills, weight loss, dysphagia and hoarseness. Physical examination was unremarkable. CT scan demonstrated a 3.9 mm calculus of the submandibular gland duct. Therapeutic sialendoscopy was successfully performed.

BACKGROUND

The patient was a 48-year-old man with complaints of a painful left-sided neck mass with intermittent enlargement for 2 weeks. He denied voice change, which may occur with laryngeal cancer. If this is suspected, MRI should be performed.¹

The incidence of symptomatic sialolithiasis in England, as occurred in this patient, is between 27.5 and 59 cases per million per year.²

Only 20% of sialoliths are radiotransparent, and therefore ultrasound, which has a sensitivity of 81% and a specificity of 94%, is the diagnostic tool to be considered first. Magnetic resonance sialography is a technique allowing for volumetric reconstruction, which also reliably detects salivary glandular stones.^{3 4}

Diagnostic sialendoscopy, which can be performed under local anaesthesia, is an effective and safe procedure consisting of progressive dilatation of the gland papilla with irrigation of Stensen's duct. It permits removal of the stone.^{3 5}

Submandibular gland removal results in high rates of complication and the indication for this surgical procedure because of sialolithiasis is unclear.⁶

CASE PRESENTATION

The patient was a 48-year-old man who presented to the emergency department with complaints of left-sided neck pain and enlargement after eating for a period of 2 weeks. Treatment with antibiotics was unsuccessful and cultures of the throat were negative. After meals, a golf ball-sized mass appeared on the left side of the patient's neck, which gradually diminished in size. The patient denied voice change, weight loss, fever, chills, diminished appetite, body aches, dysphagia, shortness of breath or foul taste in his mouth. There was no tooth pain, bleeding or tenderness of his gums, tongue swelling or hoarseness. The patient denied trauma.

His medical history included hypertension and non-insulin-dependent diabetes.

The patient lived alone, smoked half a pack of cigarettes per day and did not drink alcohol or use cocaine.

Medications included atenolol 25 mg per day and metformin hydrochloride 1000 mg two times per day.

Physical examination revealed an obese man in no distress. Pulse was 63, blood pressure 155/81, respiratory rate 22 and temperature 36°C. No lesions or masses were identified in the oral cavity or neck.

Postprandial examination was positive for a tender, soft 5 cm by 5 cm mass inferior to the mandible on the left side of the neck.

INVESTIGATIONS

Laboratory examinations were unremarkable.

CT scan (figure 1) revealed a 3.9 mm sialolith in the left submandibular gland duct.

TREATMENT

A therapeutic sialendoscopy was performed for removal of the stone.

OUTCOME AND FOLLOW-UP

The patient did well following the therapeutic sialendoscopy.

DISCUSSION

Aetiology of salivary gland disease includes infection, inflammatory processes, tumours and cysts.

Painful masses of the salivary gland may be caused by inflammatory disease or obstruction. Painless masses include cysts, neoplasms and lymph nodes, although neoplasms may cause a dull, aching sensation. If neoplasm is suspected, MR imaging is the preferred radiological modality.¹

The formation of sialoliths starts with secretory inactivity in a normal gland, followed by the accumulation of sialomicrooliths, the ascension of microbes into the main duct with inflammatory cellular exudates and the compression of surrounding parenchyma. This then leads to greater proliferation of microbes, worsening inflammation, fibrosis and partial obstruction of the large duct. Finally, there is stagnation of calcium-enriched secretory material in the large duct with formation of a stone as calcium precipitates.²

Sialolithiasis is not commonly seen in the emergency department. In patients with salivary gland enlargement and pain which is exacerbated by meals, however, this

Figure 1 CT Scan of patient revealing 3.9 millimeter stone of submandibular gland duct.

diagnosis is strongly suspected. Diagnosis of stones of the submandibular gland causing obstruction may be made based on physical examination and history. Plain radiographs are not reliable to confirm the presence of sialoliths. Ultrasound, which has a sensitivity of 81% and a specificity of 94%, is a better diagnostic tool, but accuracy is operator dependent. Magnetic resonance sialography is an excellent radiological modality allowing for volumetric reconstruction, which reliably detects salivary glandular stones.^{3 4}

Sialolithiasis is the most common aetiology of salivary gland disease. There is an association with nephrolithiasis, hyperparathyroidism and IgG4-related sclerosing disease, which is auto-immune. There is a much greater incidence of stones in the submandibular gland or its duct than in the sublingual or parotid glands. Usually there are single stones in the submandibular gland or its duct. The secretory glycoprotein in the parotid gland is not acidic and its secretory granules, therefore, have lower concentration of sequestered calcium resulting in the lower incidence of sialoliths.²

Lithotripsy has been successfully used to treat stones of the salivary glands. Sialendoscopy, which can be performed under local anaesthesia, is also a safe and effective technique consisting of progressive dilatation of the gland papilla with irrigation of Stensen's duct. It permits removal of the stone.^{3 5}

Submandibular gland removal results in high rates of complication and the indication for this surgical procedure because of sialolithiasis is unclear.⁶

Learning points

- ▶ Clinical history strongly suggests the diagnosis of salivary gland obstruction.
- ▶ Submandibular gland disease usually results from sialolithiasis.
- ▶ Ultrasound diagnosis has a sensitivity of 81% and a specificity of 94%, but accuracy is operator dependent.
- ▶ Magnetic resonance sialography is an excellent radiological diagnostic technique allowing for volumetric reconstruction which reliably detects salivary glandular stones.
- ▶ Therapeutic sialendoscopy is a safe and effective procedure that may be performed under local anaesthesia.

Competing interests None.

Patient consent Obtained.

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