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Spontaneous cerebrospinal rhinorrhoea:

a guide for primary care

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INTRODUCTION

A 56-year-old female patient presented with a productive cough and intermittent fever for 3 weeks. On further questioning, she reported a nasal drip. She is a non-smoker. Prior to face-to-face assessment, she was screened for potential contact with coronavirus 19 (COVID-19). Of note, the patient reported symptoms consistent with COVID-19 but did not qualify for testing at that time. During the first face-to-face consultation, she was diagnosed with presumed viral illness and rhinitis. She was advised on self-care strategies and started on a steroid nasal spray.

EXAMINATION AND FURTHER PRESENTATIONS

The patient subsequently presented a further eight times over the next month. This was mostly telephone encounters due to the initiation of 'lockdown' and restrictions on face-to-face contact. The symptoms were not progressive. The fever settled and the cough became dry. Throughout, there was persistent rhinorrhoea, worse at night, forcing the patient to sleep upright. Examination was limited, given the nature of encounters, and only basic ear, nose, and throat (ENT) examination was carried out (limited intranasal examination). Bloods and chest X-ray were normal. The patient was referred to the respiratory department. During this time, the patient received multiple steroid nasal sprays, two courses of antibiotics, and oral steroids.

On her ninth presentation, it was noted that her nose was 'running like a tap'. By collecting the fluid in a universal container, a sample was obtained. The patient was discussed urgently with the ENT department, as there was concern this was a cerebrospinal fluid (CSF) leak. The result of the sample was positive for CSF. She had a CT and an MRI scan — both demonstrating no clear cause for the CSF leak.

The patient's symptoms resolved 3 months after the initial presentation with no intervention. As such, there was no further imaging obtained and she continues to have ENT follow-up.

DIAGNOSING SPONTANEOUS CEREBROSPINAL RHINORRHOEA

Rhinorrhoea is an extremely common presenting or coexisting symptom found in the general practice population. Generally, CSF rhinorrhoea is rare and usually due to trauma.[1] Spontaneous CSF rhinorrhoea accounts for only 3–16% and those without an identifiable cause are significantly rarer.[2] Research suggests that obesity, age, and female sex appear to play a role in the aetiology of the symptom,[3] with one paper suggesting that 70–94% of patients with spontaneous CSF leaks have a BMI >30.[4] This patient had a BMI of 35.6.

Diagnosis should be considered in patients with unilateral clear nasal discharge, often worsened by posture (head down).[1] Patients may report a salty taste and headache. The fluid may also be tested for glucose by dipstick.[5] It should be noted that this test has low sensitivity and specificity, and can be falsely elevated in viral upper respiratory tract infections and diabetes mellitus. However, a positive result may prompt investigation and referral to secondary care. Though traditionally considered 'spontaneous', this symptom may be related to raised intracranial pressure.[4] In a GP setting, assessment through history and examination including fundoscopy before referral to ENT may be appropriate.

To confirm CSF, the presence of tau protein (beta-2 transferrin) in the fluid is considered the gold standard.[1,6] In the UK, the centre for testing is based in Sheffield (accessed by sending samples to the local laboratory to forward). In secondary care, imaging of the head (computerised tomography [CT], magnetic resonance imaging [MRI], CT cisternogram)[7] may identify the source of the leak to allow surgical closure.

CSF rhinorrhoea poses a risk of meningitis (50%)[1] among other serious complications,[7] thus demonstrating the importance of early recognition and diagnosis. Meningitis, along with seizures and decreased consciousness,[7] may also be the presenting complaint. Therefore, in order to prevent further morbidity in this patient group, pneumococcal vaccination should be administered.

UNCERTAINTY AND COVID-19

This patient presented in the early stages of the pandemic and this certainly had a significant impact on both assessment and management. The patient was concerned she had caught COVID-19, though her presentation preceded access to testing, so this was never verified. In addition, the risk assessment prior to her initial encounter identified no contact with an 'at risk' country and assessment was initially face to face. In retrospect, there was probable exposure within her workplace (colleagues returning from abroad) and these countries were subsequently added to the 'high risk' list. If this patient presented in the current climate, approach to assessment and examination would be even more limited, reflecting the change in practice procedure in light of COVID-19. Because of the uncertainty regarding COVID-19, the staff had adapted their prescribing practice and were more cautious in their approach to assessment, referrals, and antimicrobial stewardship. In addition, due to alteration in practice triage and available staff, there was little continuity in this patient's care.

It will remain a tricky diagnosis to identify in a sea of rhinorrhoea in general practice. Awareness in the authors' practice has led to three more diagnoses of spontaneous CSF rhinorrhoea in a short period and time will tell if this is related to COVID-19.

Provenance

Freely submitted; externally peer reviewed.

Patient consent

The patient gave consent for publication of this article.

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