CASE REPORT

Teary eyes due to 21 pence?

Phui Yee Wong,¹ Tze Choong Charn,¹ Andre Ismail,² Taran Tatla¹¹Department of Ear, Nose and Throat Surgery, Northwick Park Hospital, London, UK²Department of Ophthalmology, West Hertfordshire Hospitals NHS Trust, Hertfordshire, UK

Correspondence to

Phui Yee Wong,
phuiyee_wong@yahoo.co.uk

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SUMMARY

A woman in her late 70s with chronic bilateral epiphora under ophthalmology review was referred to our department for dacryocystorhinostomy after punctoplasty and detection of nasolacrimal duct obstruction. A CT scan of the paranasal sinuses for preoperative planning revealed complete opacification of the right maxillary, anterior ethmoid, frontal and sphenoid sinuses, left septal deviation and an incidental finding of foreign bodies in the right anterior nasal airspace. She proceeded with functional endoscopic sinus surgery (FESS) and removal of foreign bodies. To our surprise, a partially eroded 20 pence and 1 penny coin were found and removed from her right nasal airway. There was no history given about foreign bodies in her nose. Her symptoms improved postoperatively.

BACKGROUND

Epiphora is a clinical term to describe excessive tearing, which is a common ophthalmic condition. Causes of epiphora can be multifactorial and it is important to elicit a thorough history alongside a full clinical examination to help the clinician identify the main source of the problem.¹ We present an unusual case of chronic epiphora who was referred to ear, nose and throat (ENT) surgeons to be considered for dacryocystorhinostomy (DCR), a procedure to treat nasolacrimal system obstruction indicated in patients with chronic epiphora refractory to conventional treatment.² The surprising incidental radiology and intraoperative findings highlight the importance of taking a thorough history, carrying out a clinical examination and involving other specialty early on if necessary, in establishing the cause for the symptoms. However, the background of psychiatric disorder in this particular patient made the process of diagnosis more challenging than usual.

CASE PRESENTATION

A 78-year-old woman with a background of bipolar disease presented initially to an ophthalmologist with a history of chronic bilateral epiphora for several years associated with stinging sensation in both eyes (figure 1). She also had right-sided nasal blockage with rhinorrhoea for several years. She gave no history of trauma, surgery or instrumentation to the eyes or nose. She had been diagnosed with bilateral lacrimal punctal stenosis and had undergone bilateral punctoplasties, which was unsuccessful in resolving her symptoms. Diagnostic lacrimal syringing eventually revealed 50% nasolacrimal duct obstruction in the right and 100% nasolacrimal duct obstruction in the left. The patient was referred to the ENT department to be

considered for DCR, a procedure to bypass a blocked lacrimal sac or nasolacrimal duct.

On examination, the patient had bilateral watery eyes with visual acuity of 6/24 in the right and 6/18 in the left eye. Anterior rhinoscopy revealed inflamed nasal lining of both nasal cavities with large amounts of mucous secretions bilaterally. Owing to the mucous secretion, it was difficult to visualise the patency of the nasal activity. Flexible nasendoscopy was not performed, as the patient did not tolerate the procedure.

INVESTIGATIONS

A CT scan of the patient's orbits and paranasal sinuses, which was requested for preoperative planning for DCR, showed complete opacification of the right maxillary, frontal and anterior ethmoid sinuses with mucosal disease extending through the infundibulum to completely surround the osteomeatal complex. The ethmoid labyrinth was expanded giving the appearance of nasal polyposis. The septum was also deviated to the left. There was minimal disease in the left-sided sinuses. To our surprise, there was an incidental finding of two foreign bodies within the right anterior nasal airspace (figure 2).

DIFFERENTIAL DIAGNOSIS

- ▶ Foreign body in the right nasal cavity obstructing nasolacrimal duct drainage resulting in epiphora
- ▶ Lacrimal punctum or canaliculus stenosis
- ▶ Chronic rhinosinusitis with incidental finding of foreign body

TREATMENT

In view of the CT scan findings, the patient proceeded with functional endoscopic sinus surgery (FESS). A dark-coloured mass (figures 3 and 4) was found in the right middle meatus with significant surrounding mucosal inflammation and erosion of

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Figure 1 Right watery eyes.

Figure 2 Coronal view CT: orbit and paranasal sinuses revealed complete opacification of the right maxillary and anterior ethmoid sinus by mucosal disease extending through the infundibulum to completely surround the osteomeatal complex; minimal septum is also deviated to the left and an incidental finding of a foreign body within the right anterior nasal airspace.

the right middle turbinate. The mass was tightly wedged in and removal was challenging; however, it was successfully removed after several attempts. To our amazement, the mass was found to be a partially eroded 20 pence nickel coin and a 1 pence copper coin with corroded edges (figures 5 and 6). These wedged coins resulted in an indentation in the right middle meatus (figure 7). The bony middle turbinate was preserved and a biopsy was sent for histological examination. Right middle meatal antrostomy was performed and the right anterior ethmoid air cells and bullae were opened. The patient also had a blood test for serum nickel and copper. She was started on topical nasal steroids and nasal douche postoperatively.

OUTCOME AND FOLLOW-UP

The patient was reviewed 7 weeks after surgery. Rhinorrhoea and right nasal obstructive symptoms had completely resolved. She reported a good sense of smell and absence of any further nasal symptoms. The epiphora had improved but still persisted, worse on the left compared with the right side, which is

Figure 3 Intraoperative endoscopic view of the right nasal cavity with a dark-coloured mass in the right middle meatus.

Figure 4 Another intraoperative endoscopic view of the right nasal cavity with a dark coloured mass found in the right middle meatus.

consistent with the initial diagnosis of bilateral nasolacrimal duct obstruction.

Anterior rhinoscopy of the patient's nose revealed good airflow through both nostrils with rhinitic nasal mucosa. There was minimal scar tissue between the right inferior turbinate and septum but a clear view through to the middle meatal antrostomy on the right. There was no evidence of polyps or mucopus.

The middle meatal biopsy revealed chronic inflammatory changes. The patient's blood test for serum nickel and copper came back negative. The findings of the procedure were explained to her in clinic. She was unable to recall at anytime putting these coins into her nose. She was seen by the ophthalmologist postoperatively, and was offered the definitive management option of DCR surgery for the underlying problem of nasolacrimal duct obstruction, but she did not feel her symptoms were severe enough for surgery. She was then discharged from ophthalmology and ENT care back to her general practitioner.

DISCUSSION

Epiphora occurs due to disruption between production and drainage of tears. The three main mechanisms that can contribute to epiphora are primary overproduction of tears, obstructed

Figure 5 One pence coin with corroded edges found in the dark coloured mass in the right middle meatus.

Figure 6 Twenty pence coin found in the dark coloured mass in the right middle meatus.

drainage of tears or secondary overproduction of tears. Primary overproduction of tears is not common and is usually due to a neurogenic cause or is idiopathic. Secondary overproduction of tears is usually caused by ocular surface disorders such as ocular surface irritation or dryness. This ocular condition often stimulates hyperlacrimation. Any obstruction or stenosis at the punctum, canaliculi or nasolacrimal duct can be caused by toxic medications, postradiotherapy, trauma, recurrent inflammation or autoimmune diseases. Neoplastic lesions can also cause nasolacrimal duct obstruction. Therefore, identification of the cause and site of obstruction causing epiphora is very important as this helps with deciding the management plan.^{3 4}

In this case, all our patient's nasal symptoms resolved completely after removal of the foreign bodies in the right nasal cavity, but epiphora persisted although it was improved. Epiphora in this patient is most likely due to a combination of lacrimal punctal stenosis and nasolacrimal duct obstruction. There is also a possibility that she may have had allergic rhinoconjunctivitis.

From the intraoperative findings of corroded coins, we suspect these coins had been in situ for many years. As a result, the patient had developed features of allergic rhinoconjunctivitis. In most cases of epiphora, thorough history taking and

Figure 7 Intraoperative view of the right middle meatus indentation after removal of the foreign bodies.

clinical examination are key to finding the source of the symptoms, as causes of epiphora can be multifactorial. Important diagnostic clues can be drawn from detailed history such as unilateral versus bilateral epiphora, ocular discomfort, sinus disease, previous surgery or trauma to midface, previous lacrimal sac inflammation, nature of discharge and history of foreign body in nose or eyes.³ In this case, it was more challenging than usual as the patient gave no history of a foreign body despite being specifically asked about it. Clinical examination was also difficult, as the patient did not tolerate flexible nasendoscopy, which would have pointed the clinicians toward the correct diagnosis prior to imaging. Although the patient has a background of bipolar disease, her disease has been stable over the past few years. Therefore, this case highlights that the diagnosis of a foreign body in the nasal cavity obstructing the nasolacrimal drainage should be considered as a cause of epiphora associated with nasal symptoms.

This case also highlights the importance of multidisciplinary management of refractory epiphora. Despite planning for DCR surgery, the preoperative CT scan revealed unexpected foreign bodies in the nasal cavity contributing to the patient's symptoms. This reminds us of the importance of involving members of other disciplines or specialties, such as ENT specialists, early on in these types of cases to help with diagnosis and management of refractory epiphora.

The key to managing chronic epiphora successfully is to determine the main contributory causes of the symptoms through thorough history taking, clinical examination and, possibly, adjunct imaging. This will result in appropriate treatment, which may involve clinicians of other specialties such as ENT specialists.

Learning points

- ▶ A foreign body in the nasal airway should be considered in patients presenting with epiphora, particularly in patients with a psychiatric history.
- ▶ It is important to consider imaging in patients with chronic epiphora.
- ▶ Early involvement of a multidisciplinary team in management of refractory epiphora is important.
- ▶ Key to successful management of epiphora is identification of the causes of the condition and treatment given accordingly through thorough history taking and clinical examination of the patient.

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Competing interests None.

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