POTT'S PUFFY TUMOUR

Our encounter with this uncommon condition

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ABSTRACT

Although relatively well known in the ENT sphere, Pott's puffy tumour (PPT) is rarely encountered in practice following the advent of antibiotics. It is a subperiosteal abscess secondary to osteomyelitis of the frontal bone which in turn is typically associated with chronic frontal sinusitis. It presents with forehead swelling and the peak age of presentation is in adolescence, with the incidence in adults being much lower. The need for urgent management is due to the potential for life-threatening intracranial extension through the posterior table or diploic veins. However, extension inferiorly into the palpebra and orbit has been described.

Here we describe a case of PPT managed in our centre, highlighting the potential indolent presentation of the condition, and the need for a high index of suspicion with prompt intervention.

INTRODUCTION

Pott's puffy tumour was first reported by Sir Percival Pott In 1760. It is a subperiosteal abscess due to osteomyelitis of the frontal bone which is usually associated with chronic frontal sinusitis and/or head trauma. [1] It typically presents as a forehead swelling in adolescents. It can be complicated by periorbital cellulitis as well as intracranial infection. [1] While the true incidence is unknown, it has become rare in the antibiotic era. Given the potential complications prompt surgical intervention is warranted. [2] Investigation is via imaging with CT or MRI. While the latter demonstrates intracranial complications better, this may not be readily available. [3] The most commonly cultured organism is streptococcus but the abscess tends to be polymicrobial, necessitating a broad antibiotic coverage. [1] Differential diagnoses include scalp abscess, Langerhan's histocytosis of frontal sinus, and squamous cell carcinoma of frontal sinus. [4] Management includes long-term antibiotics as well as percutaneous and endoscopic surgery. [5]

CASE

A 78 year old man presented with a 2 to 3 month history of fluctuating headache, right frontal swelling, and right upper eyelid swelling. He had been treated by a general practitioner with courses of oral flucloxacillin. He had intermittent nasal congestion and was systemically well. He was referred to ENT when a CT demonstrated frontal osteomyelitis associated with an overlying abscess and upper lid abscess. Inflammatory markers were normal. He was started on IV ceftriaxone. When aspiration was attempted no material was obtained. 10 days later he proceeded to transcutaneous and endoscopic sinus surgery with drainage of abscess. The upper eyelid abscess with drained. With trephination of the frontal sinus extensive new bone was found and the frontal sinus outflow tract was closed requiring it to be reopened by curettage and drilling. A spiral drain was secured between the frontal sinus and nasal cavity. No organisms was grown from pre-operative and operative samples. Histology shows chronic osteomyelitis. A further 10 days of IV amoxicillin and clavulanic acid was given followed by a 6 weeks of oral amoxicillin and clavulanic acid.

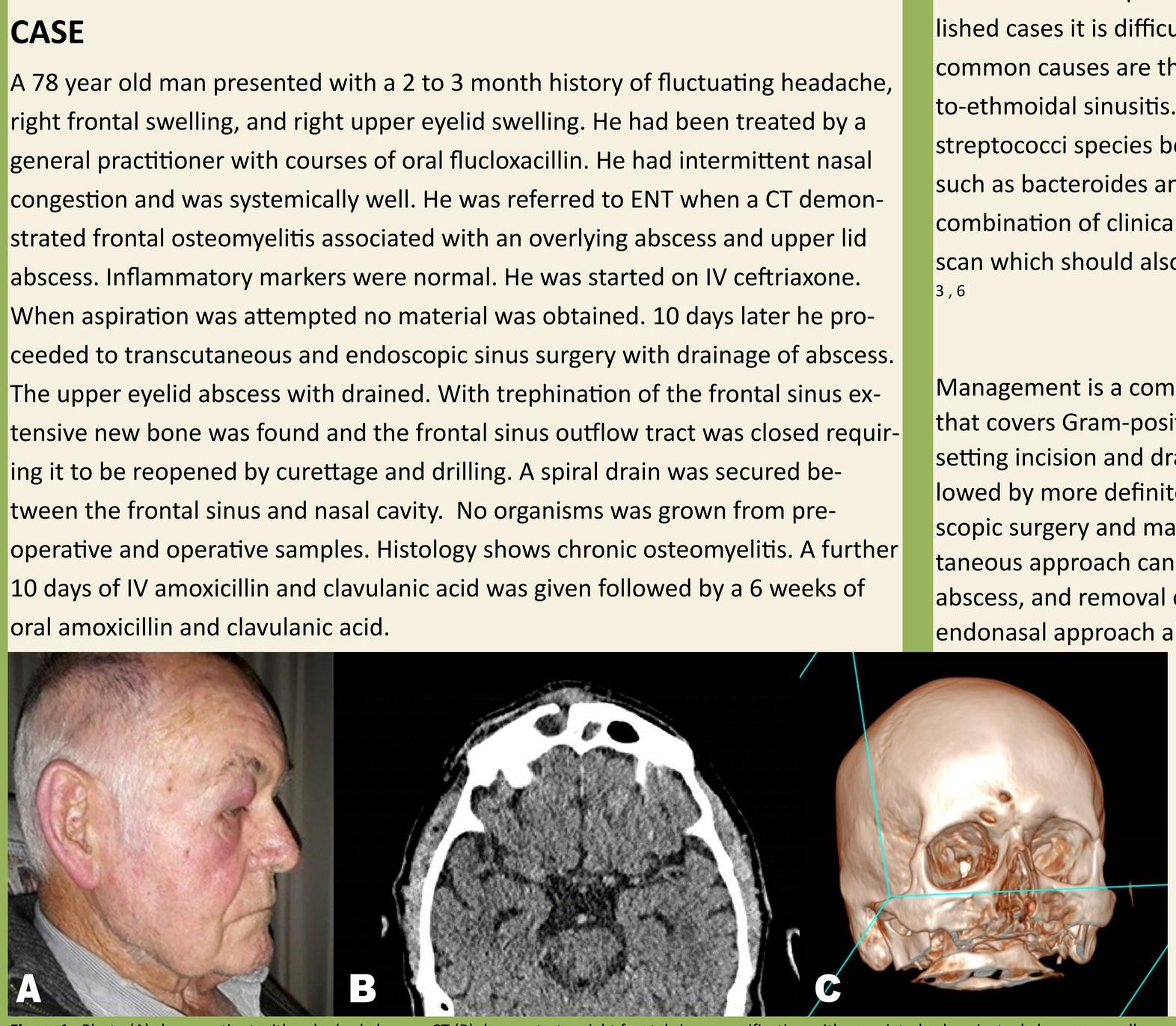

Figure 1. Photo (A) shows patient with palpebral abscess. CT (B) demonstrates right frontal sinus opacification with associated subperiosteal abscess as well as new bone formation in the frontal sinus. Picture (C) is a 3D reconstruction of the CT showing the dehiscences of the frontal sinus

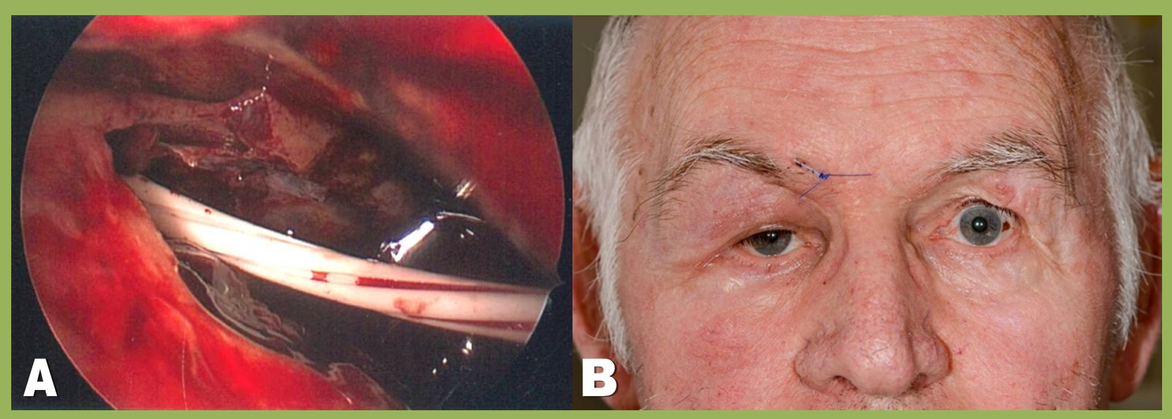

Figure 2. Endoscopic view (A) of drain placed into widened frontonasal duct. Post-operative photo (B) shows resolution of palpebral abscess, forehead swelling, and suture securing drain.

DISCUSSION

PPT presents with a fluctuant forehead swelling and usually also a headache, fever, and nasal discharge. [1] Of most concern is the potential for intracranial complications such as epidural abscess, subdural empyema, and thrombophlebitis. [1-4] This can occur either via direct extension or through venous drainage from diploic veins that communicates with dural venous sinuses. These cases may present with lethargy, nausea and vomiting, drowsiness, and even seizures. [2] Other complications include palpebral cellulitis, orbital cellulitis, and sinocutaneous fistula. [2-4] This case represents a relatively indolent presentation of Pott's with no significant sinusitis history. It was treated, as is commonly described in the literature, as a skin infection without sustained improvement.

While only a few cases of PPT have been described in children and adolescents, even fewer are reported in the adult population. [2, 4] Given the paucity of published cases it is difficult to ascertain the exact incidence or its recent trends. The common causes are thought to be trauma and untreated or partially treated fronto-ethmoidal sinusitis. [2, 6] While the infection tends to be polymicrobial, with streptococci species being the most commonly cultured organism, anaerobes such as bacteroides and fusobacterium may also be found. [1] Diagnosis is via a combination of clinical presentation, raised inflammatory markers, and CT or MRI scan which should also include the brain to assess for intracranial complications. [3, 6]

Management is a combination of a 6-8 week course of broad-spectrum antibiotics that covers Gram-positive and anaerobic bacteria, and surgery. [1,2] In the acute setting incision and drainage or needle aspiration may be useful. [2] This can be followed by more definite treatment with a combination of percutaneous and endoscopic surgery and management of any intracranial complications. While a percutaneous approach can facilitate assessment of the frontal sinus, drainage of the abscess, and removal of diseased mucosa and bone from the sinus, an endoscopic endonasal approach alone has been performed successfully. [5,7]

CONCLUSION

PPT is rare, typically occurring in children and adolescents. It is even rarer in adults. The presentation may be relatively indolent, especially when partially treated by antibiotics. A high index of suspicion is required, with prompt intervention to avoid potentially life-threatening intracranial complications.

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