



Contents lists available at ScienceDirect

# International Journal of Pediatric Otorhinolaryngology Extra

journal homepage: [www.elsevier.com/locate/ijporl](http://www.elsevier.com/locate/ijporl)

## Case Report

# Bilateral pneumosinus dilatans of the sphenoid sinuses causing visual loss

Andrew T. Voglewede<sup>1,\*</sup>, Jeb M. Justice<sup>2</sup>

Department of Otolaryngology, College of Medicine University of Florida, Gainesville, FL, United States

### ARTICLE INFO

#### Article history:

Received 11 June 2015

Accepted 10 August 2015

Available online 9 October 2015

#### Keywords:

Pneumosinus dilatans

Sphenoid sinus

Acute visual loss

### ABSTRACT

The purpose of this paper is to discuss the rare presentation of pneumosinus dilatans (PDS) of the sphenoid sinuses in a pediatric patient manifesting as acute visual loss, and his successful treatment with surgical intervention.

A total of 29 cases of sphenoid sinuses in the literature were reviewed.

11 patients (37.93%) were classified as having idiopathic disease. 22 patients (75.86%) presented with visual loss as their chief complaint. All 3 patients with idiopathic PDS that underwent sphenoidotomy had resolution of their symptoms.

When symptomatic sphenoid sinus PDS is diagnosed, endoscopic sphenoidotomy should be considered as primary treatment.

© 2015 Elsevier Ireland Ltd. All rights reserved.

## 1. Introduction

Pneumosinus dilatans (PSD) represents hyperpneumatization of one or several of the paranasal sinuses without bony erosion. It is a rare phenomenon that was first reported by Meyes yet named by Benjamin in 1918 [1,2]. The etiology of PSD is unknown, however, it exists in association with several other disease processes, including: anterior skull base and optic nerve sheath meningiomas, port-wine stains, hydrocephalus, arachnoid cysts, prolonged CSF shunting, Melnick–Needles Syndrome, and Klippel–Trenaunay–Weber Syndrome [3–19]. Bachor et al. report that PSD of the sphenoid sinus may be an early finding of a meningioma at the tuberculum sellae or the planum sphenoidale [20].

PSD most commonly involves the frontal sinus (63%), followed by the sphenoid sinus (24%), maxillary sinus (20%), and the ethmoid sinuses (19%) [21]. Patients may be asymptomatic, but when present, symptoms of PSD are typically dependent upon the specific sinus or sinuses involved and may include craniofacial deformity, headache, visual loss, exophthalmos [20,22–26]. Visual disturbance is most commonly seen when PSD affects the sphenoid sinus.

The purpose of this report is to present a rare case of sudden progressive unilateral vision loss in the setting of sphenoid PSD that was successfully reversed with endoscopic operative intervention and to review the available literature on sphenoid PSD.

## 2. Case

A 9 year-old male with a known history of amblyopia of the left eye was referred to the UF Ophthalmology Department for rapidly progressive visual loss on the left side. In their clinic he was noted to have 20/20 vision on the right and 20/100 on the left, as well as significant, bilateral papilledema. The patient was admitted to the hospital and MRI/MRV were performed and demonstrated right greater than left papilledema without additional findings of increased intracranial pressure or venous thrombosis. However, upon further review, the bilateral sphenoid sinuses were found to be enlarged with impingement and narrowing of the canalicular segment of both optic nerves. Otolaryngology was consulted and a stealth compatible CT maxillofacial/sinus was obtained (Fig. 1). This demonstrated bilaterally enlarged sphenoid sinuses without mucosal thickening and bilateral optic nerves traveling within a bony canal on a mesentery through the sinuses. No intracranial lesions like meningiomas or arachnoid cysts were visualized. The patient was subsequently taken to the OR for bilateral endoscopic sphenoidotomies. During surgery, the optic nerves were visualized traversing through the sphenoid sinuses within a bony canal (Fig. 2). The patient had an uneventful postoperative course and reported improved left-sided vision the following morning. Repeat ophthalmologic examination on post-operative day 1 demonstrated bilateral 20/20 vision.

\* Corresponding author. Tel.: +1 276 492 9093/828 264 4545;

fax: +1 828 264 4544.

E-mail address: [atv3w@virginia.edu](mailto:atv3w@virginia.edu) (A.T. Voglewede).

<sup>1</sup> Dr. Andrew Voglewede is currently in private practice with Blue Ridge Ear, Nose and Throat, Inc. in Boone, NC.

<sup>2</sup> Dr. Jeb Justice is an assistant professor of Otolaryngology at the University of Florida, specializing in rhinology and skull base surgery.

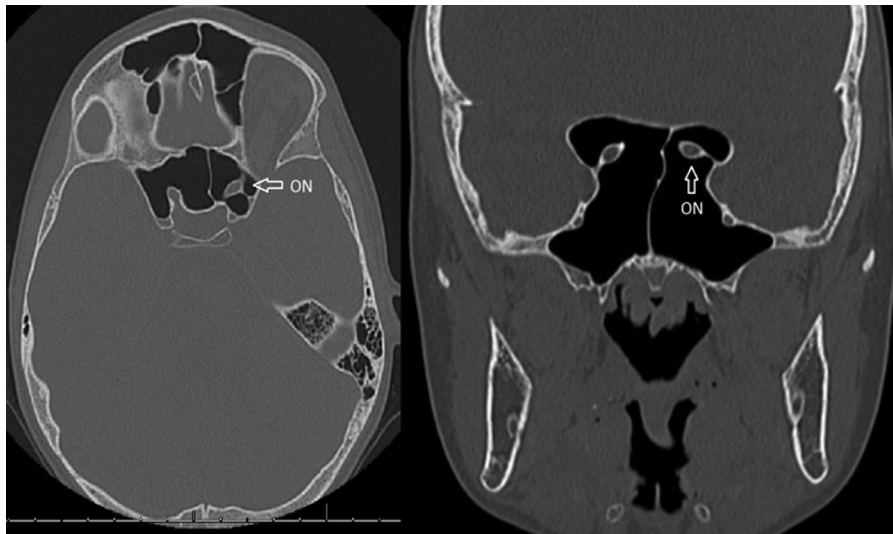


Fig. 1. Axial and coronal CT images of the patient. ON, optic nerve.

### 3. Methods

A Pubmed Search was performed using the keywords: pneumosinus dilatans, sphenoid. All available English literature pertaining to PSD of the sphenoid sinuses was reviewed and analyzed. Additional studies identified through article review were used to expand the number of available reports. A total of 29 cases of pneumosinus dilatans involving the sphenoid sinuses were identified (Table 1). 18 (62.07%) were males and 11 (37.93%) were females with an age range of 13–73 (mean age – 34.58, median age – 28). All calculations and tables were created using Microsoft Excel 2010 (Microsoft Corporation, Remond, WA).

### 4. Results

11 patients (37.93%) with PSD had no associated medical conditions and were classified as idiopathic (Table 2). This was followed closely by meningioma with 10 patients (34.48%). The other associated disease processes were much less common: Arachnoid Cyst (3 patients, 10.34%), Hydrocephalus (2 patients, 6.90%), Sickle Cell Disease (1 patient, 3.45%), Klippel–Trenaunay Syndrome (1 patient, 3.45%), Melnick–Needles Syndrome (1 patient, 3.45%).

The overwhelming majority of patients reviewed had visual loss as their chief complaint (22 patients, 75.86%). Headache was the major complaint in 6 patients (20.69%). Finally, 3 patients (10.34%) were asymptomatic, 3 patients (10.34%) complained of loss of smell and 2 patients (6.90%) suffered from complaints of chronic sinusitis or nasal allergy (i.e. nasal obstruction, thick nasal discharge, “sinusitis”) (Table 3).

Surgical intervention was discussed in approximately half (16/29) of the cases reviewed. The remaining case reports either described a specific reason that surgery was not performed (e.g. symptoms failed to progress, PSD was an incidental finding and was asymptomatic) or there was no mention of treatment at all. In idiopathic cases of PSD undergoing sphenoidotomy, 100% (3/3) had resolution of symptoms. The other 13 patients underwent some form of craniotomy and 3 of 13 (23.07%) had significant improvement and the remainder had only temporary improvement, no improvement, worsening of symptoms, or no follow-up was recorded.

### 5. Discussion

Pneumosinus dilatans is a rare disease process involving the paranasal sinuses. The term was originally coined by Benjamins in

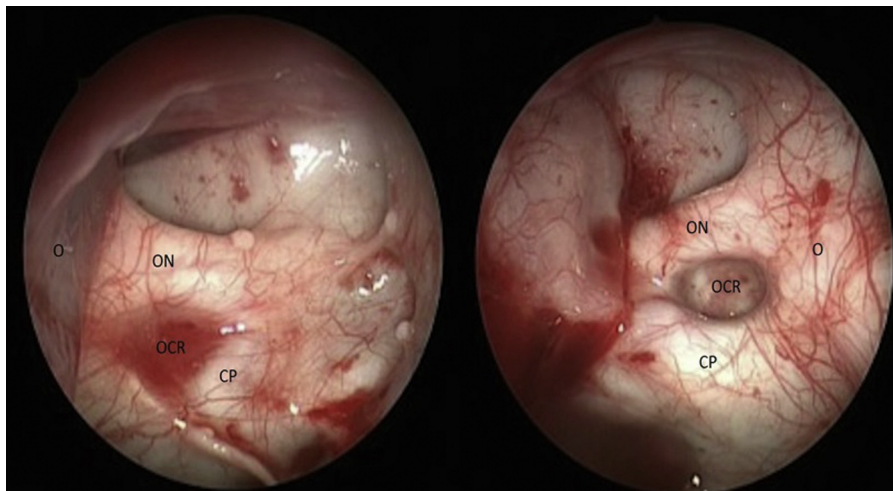


Fig. 2. Intraoperative view of right and left sphenoid sinuses respectively. O, orbit; ON, optic nerve; OCR, optiocarotid recess; CP, carotid protuberance.

Download English Version:

<https://daneshyari.com/en/article/4115920>

Download Persian Version:

<https://daneshyari.com/article/4115920>

[Daneshyari.com](https://daneshyari.com)