

Case Report

Referred Headache of Rhinogenic Origin in the Absence of Sinusitis

Dean Michael Clerico, M.D.,¹ Robert Fieldman, M.D.²

SYNOPSIS

Nasal signs and symptoms commonly accompany cephalgia in some headache syndromes. Head pain associated with sinusitis is also fairly well-recognized. However, referred cephalgia of rhinogenic origin, in the absence of sinonasal symptoms or disease, is poorly understood. We report a case of a patient with chronic and severe headache for whom neurological and neurosurgical evaluation failed to reveal an etiology, but who possessed an intranasal anatomical variant (without sinusitis). Her headache resolved after endoscopic nasal surgery. We discuss the mechanisms of such referred pain, and the recent technological advances that made the diagnosis and treatment of this disorder possible.

Key words: Referred pain, rhinogenic headache, substance P, concha bullosa, sinus endoscopy

Abbreviations: CT computed tomography, SP substance P, EBV Epstein Barr virus

(*Headache* 1994; 34:226-229)

INTRODUCTION

The concept of referred pain is not new, but referred cephalgia from non-inflamed, non-diseased nasal and sinus structures has not been well-recognized or described. Neurologists and otolaryngologists agree that acute and chronic sinusitis may cause headache.¹⁻⁴ The diagnosis of sinus headaches is usually obvious, due to the associated nasal and sinus symptoms (nasal discharge, post-nasal drip, cough, pressure in the face, tenderness over the paranasal sinuses).⁵ Some common headache syndromes are associated with nasal signs and symptoms, such as rhinorrhea in cluster headaches⁶ and olfactory disorders in migraines.⁷ The concept that headache pain may be referred from the nasal cavity, in the absence of sinonasal signs or symptoms, seems at first un-

likely. Nevertheless, we report a patient with chronic and at times severe headaches, who failed to improve with medical therapy, but who via nasal endoscopy and coronal CT scanning was shown to have pneumatized middle turbinates (so-called "concha bullosa"). Extensive areas of mucosal contact between her nasal septum and middle turbinates resulted. Such areas of pressure and contact, we theorize, resulted in local trauma to the mucosa and the release of substance P (SP), a neuropeptide and mediator of pain in peripheral nerve terminals.⁸ The resultant pain was not felt in the nasal cavity at the point of contact, but rather referred to other sites. The patient's headache completely resolved after endoscopic intranasal partial middle turbinectomy. We discuss the recent research that has helped elucidate the phenomenon of referred pain and its proposed mechanism. We also comment on the modern medical technology that has enabled the clinician to better identify intranasal and sinus abnormalities.

CASE REPORT

A 27-year-old female health-care professional gave a three-month history of sudden-onset headache. Initially she experienced pain only on waking that worsened on head movement. After several days, she then noticed generalized "head discomfort" throughout the day, with pain increasing toward evening and loss of the pain on movement she had at first. The pain, which she described as throbbing and at times stabbing, generally started deep in the head and was poorly localized, but then radiated to both temples and behind both eyes. Her past medical history is significant for: 1) inhalant allergies diagnosed as a child (she has not had significant allergy symptoms for 4 or 5 years); 2) head trauma at age six years, at which time she sustained a skull fracture that required evacuation of a hematoma; 3) migraines starting at age 13 and ocular migraines at age 15, from which she still occasionally suffers (she stated that her recent onset head pain was different in nature and intensity than her migraines); 4) chronic fatigue syn-

¹Department of Otorhinolaryngology-Head and Neck Surgery, Hospital of the University of Pennsylvania, 3400 Spruce St., Philadelphia, PA 19104

²101 Old Short Hills Rd., West Orange, NJ 07052

Address all correspondence to: Dean Michael Clerico, M.D., Department of Otorhinolaryngology-Head and Neck Surgery, Hospital of the University of Pennsylvania, 3400 Spruce Street, Philadelphia, PA 19104

Accepted for publication: June 6, 1993