

# Anatomic Eponyms in Neuroradiology: Head and Neck

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In medicine, an eponym is a word—typically referring to an anatomic structure, disease, or syndrome—that is derived from a person's name. Medical eponyms are ubiquitous and numerous. They are also at times controversial. Eponyms reflect medicine's rich and colorful history and can be useful for concisely conveying complex concepts. Familiarity with eponyms facilitates correct usage and accurate communication. In this article, 22 eponyms used to describe anatomic structures of the head and neck are discussed. For each structure, the author first provides a biographical account of the individual for whom the structure is named. An anatomic description and brief discussion of the structure's clinical relevance follow.

**Key Words:** Neuroradiology; eponyms; anatomy; anatomic variants; head and neck; medical history.

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## INTRODUCTION

During the interpretation of cross-sectional studies of the temporal bone, sinuses, skull base, and neck, the radiologist assesses dozens of eponymous anatomic structures, while possibly knowing nothing of the individuals for whom the structures are named. As our understanding of the anatomy of the head and neck and our imaging capabilities continue to improve with the passage of time, we also become more distantly removed from and frequently less familiar with the lives of those historic individuals whose prior work has helped build the foundation of modern medical science. Eponyms honor some of these individuals, most of whom led fascinating lives.

Although the reasons for which eponyms remain controversial are well documented (1–6), eponyms remain commonplace as a means to concisely convey complex concepts. Additionally, eponyms can add color to what at times is a dry science. Familiarity with eponyms facilitates correct usage and accurate communication.

Several articles have previously been published in the radiology literature on musculoskeletal (7–9), gastrointestinal (10,11), cardi thoracic (12–14), and vascular eponyms (15), and earlier work has discussed eponymous diseases of the head and neck (16). Although a recently published article has given attention to eponymous neuroanatomic structures of the brain, cerebral vasculature, and calvarium (6), no previous work

specifically intended for radiologists has focused on eponymous anatomic structures of the head and neck.

In this article, 22 eponyms used to describe anatomic structures of the head and neck are discussed. For each structure, the author first provides a biographical account of the individual for whom the structure is named. An anatomic description and brief discussion of the structure's clinical relevance follow.

## TEMPORAL BONE

### Arnold's Nerve

Friedrich Arnold (1803–1890) was born in Edenkoben in the German state of Rhine-Palatinate (17,18) and studied medicine at Heidelberg from 1821 to 1825 (17). Upon graduation, Arnold accepted a position at the Heidelberg Institute of Anatomy (17), where he stayed until accepting an appointment at the University of Zurich in 1834 (17). Arnold subsequently held faculty positions in Freiburg and Tübingen before ultimately returning to Heidelberg as full professor of anatomy and physiology in 1852, where he stayed until his retirement in 1873 (17). Considered one of the greatest and most accurate anatomic dissectors of his time (17,18), Arnold was the first to describe the auricular branch of the vagus nerve (19), the petrous temporal bone canal through which the nerve passes, and the otic ganglion, all of which bear his name (17,18). Arnold died in Heidelberg at age 87 (17).

Arnold's nerve, also known as the auricular branch of the vagus nerve, provides sensory innervation to the posterior aspect of the external auditory canal and posterior auricle (20,21). The nerve passes from the jugular foramen through the mastoid canaliculus (Fig 1) to reach the mastoid segment of the facial

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**Figure 1.** Arnold's nerve. Axial noncontrast cone beam computed tomography image of the left temporal bone demonstrates the mastoid canaliculus (arrow), through which Arnold's nerves passes from the jugular foramen (J) to reach the mastoid segment of the facial nerve canal (asterisk).

nerve canal (22). Along the course of Arnold's nerve are paraganglia, from which jugular foramen paragangliomas may arise (23). Arnold's nerve is believed to account for the ear pain associated with laryngeal cancer (24), as well as Arnold's ear-cough reflex, which has been observed in 2%–4% of patients (21,25) and in which mechanical stimulation of the external auditory canal evokes a cough (21).

### Bill's Bar

William "Dr. Bill" House (1923–2012), often referred to as the "Father of Neurotology" (26), was born in Kansas City, MO, and moved to Whittier, CA, at age 3, where he grew up on a ranch (27). House earned a doctorate in dentistry from the University of California, Berkeley (26,27), and after fulfilling a 2-year obligation to the Navy, House studied medicine at the University of Southern California School of Medicine (26,27) before completing his residency in otolaryngology at the Los Angeles County Hospital (26). Although the vertical crest of the bone at the superior aspect of the internal auditory canal fundus is named after House (28), he is best known for inventing the first Food and Drug Administration-approved cochlear implant (27,29). House also helped develop auditory brainstem implants, placing an electrode onto the cochlear nucleus of an adult with type 2 neurofibromatosis in 1979 (30). Other accomplishments include introducing the surgical microscope to ear surgery (27), developing the translabyrinthine and middle fossa craniotomies for vestibular Schwannoma resection (26,31), and pioneering the endolymphatic subarachnoid shunt as a surgical treatment for Meniere's disease (26,27). House cured astronaut Alan Shepard's debilitating vertigo with this procedure, which



**Figure 2.** Bill's bar. Axial noncontrast cone beam computed tomography image of the right temporal bone at the level of the superior internal auditory canal demonstrates Bill's bar (arrow) dividing the canal into an anterior portion (F), through which the facial nerve and nervus intermedius pass, and a posterior portion (SV), through which the superior division of the vestibular nerve passes.

allowed Shepard to subsequently command the Apollo 14 mission to the moon in 1971 (26,27). In fact, Shepard invited House and his wife to watch the Apollo 14 launch at Cape Canaveral and told House through a radio headset that "I'm talking to you through the ear that you operated on" (29). House married and fathered two children (27). He died at home in Aurora, OR, of metastatic melanoma at age 89 (27).

Bill's bar (Fig 2), also referred to as the vertical crest, is a ridge of bone consistently located at the superior aspect of the internal auditory canal fundus (32). Bill's bar and the transversely oriented falciform crest divide the internal auditory canal into anterosuperior and posterosuperior quadrants (32). The facial nerve and nervus intermedius of Wrisberg course anterior to Bill's bar and the superior division of the vestibular nerve courses posteriorly (33). Bill's bar facilitates proper identification of these cranial nerves during skull base surgery.

### Fallopian Canal

Gabriele Fallopio (1523–1562) was born in Modena, a small town in Southern Italy (34,35). Fallopio's father was a soldier and died of syphilis when Fallopio was 10 years old (34). After initially studying the humanities, Fallopio turned his academic attention to medicine (35), independently studying the texts of Galen and, under the guidance of Niccolo Machella (34), performing dissections in his hometown on animals and executed criminals (35). After more formally studying medicine in Ferrara and teaching anatomy in Pisa (34,35), Fallopio

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