



TENSION-TYPE HEADACHE MIMICKING INTRACRANIAL HYPERTENSION

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ABSTRACT: Tension-type headache (TTH) is the most common primary headache disorder. Intracranial hypertension (ICH), especially idiopathic intracranial hypertension (IIH), is a secondary cause of headache that can threaten vision if not promptly diagnosed and treated. To review the clinical phenotype, pathophysiology, diagnostic overlap, and management considerations of TTH-like headaches in the context of elevated intracranial pressure. Narrative synthesis of classification criteria, clinical studies, and recent literature on headache phenotypes in intracranial hypertension. Headache in IIH can mimic TTH and migraine phenotypes, lacking unique clinical features, thus complicating diagnosis. Comprehensive evaluation including neuroimaging, fundoscopic examination, and cerebrospinal fluid pressure measurement is crucial. TTH-like headache may represent symptomatic headache attributed to intracranial hypertension. Awareness of subtle distinguishing features and appropriate diagnostic workup is critical to prevent delayed diagnosis and adverse outcomes.

KEYWORDS: tension-type headache; idiopathic intracranial hypertension; secondary headache; intracranial pressure; headache classification

Introduction

Headache disorders are among the most common neurologic complaints encountered in clinical practice. Tension-type headache (TTH) is the most prevalent primary headache disorder globally. In contrast, intracranial hypertension represents a secondary neurological condition characterized by sustained elevation of intracranial pressure (ICP) that can lead to visual loss and other neurologic sequelae if untreated.

While classical descriptions of headaches in intracranial hypertension include throbbing or pressure-like pain with positional worsening and associated visual or auditory symptoms, clinical presentations can be heterogeneous. Emerging evidence shows that headache phenotypes in conditions like idiopathic intracranial hypertension (IIH) may overlap with primary headache disorders, including TTH and migraine, complicating diagnosis and management.

CLASSIFICATION AND DEFINITIONS

Tension-type headache (TTH)

According to the International Classification of Headache Disorders, 3rd Edition (ICHD-3), TTH is defined by:

- Bilateral location
- Pressing or tightening (non-pulsating) quality
- Mild to moderate intensity



- No aggravation by routine physical activity
- Absence of nausea and vomiting; photophobia or phonophobia may be present but not both simultaneously. This disorder is subdivided into infrequent episodic, frequent episodic, and chronic forms.

Idiopathic Intracranial Hypertension (IIH)

IIH is a disorder of elevated ICP without an identifiable intracranial mass or structural lesion and is diagnosed when cerebrospinal fluid (CSF) pressure is elevated ($>250\text{--}280$ mm H₂O) in the context of normal CSF composition and neuroimaging findings typical of elevated ICP, such as empty sella or posterior scleral flattening. Clinical criteria also consider temporal relation to ICP changes and associated symptoms.

PATHOPHYSIOLOGY

Tension-Type Headache

TTH is thought to involve peripheral myofascial sensitivity and central nervous system processing abnormalities. Chronic TTH may be driven by central sensitization and dysfunctional pain inhibitory mechanisms.

Headache in Intracranial Hypertension

Increased ICP can activate trigeminovascular nociceptive pathways via mechanical stretching of pain-sensitive structures (dura, venous sinuses), venous congestion, and altered CSF dynamics. These mechanisms can generate pressure-type, diffuse headaches.

Phenotypic Overlap

Headache phenotypes in IIH are not distinct; prospective studies show that headaches in IIH can appear tension-type-like, migraine-like, or unclassifiable. Thus, phenotype alone is insufficient to differentiate primary TTH from headache due to elevated ICP.

CLINICAL PRESENTATION

Headache Characteristics

Headache in IIH:

- May be bilateral and diffuse
- Often pressure-like rather than throbbing
- Can be mild to moderate and chronic
- May be exacerbated by physical activity or Valsalva maneuvers
- In a large cohort, tension-type or probable TTH phenotypes were identified in up to ~25% of IIH patients.

Symptoms suggestive of intracranial hypertension include:

- Papilledema



- Transient visual obscurations
- Diplopia (often abducens nerve palsy)
- Pulsatile tinnitus
- Nausea/vomiting

DIAGNOSTIC APPROACH

Clinical Red Flags

- Signs that raise suspicion for a secondary cause include:
- New, progressive headache in adulthood
- Resistance to standard TTH therapies
- Visual or neurological symptoms
- Headache worsening with positional or Valsalva changes

Neuroimaging

Magnetic resonance imaging (MRI) with venography helps exclude structural pathology and venous sinus thrombosis. Imaging signs such as empty sella and flattening of the posterior globe support the diagnosis of IIH.

CSF Pressure Measurement

Lumbar puncture with opening pressure measurement is the gold standard for confirming intracranial hypertension in the absence of contraindications.

MANAGEMENT

Treatment of Intracranial Hypertension

- Weight management in IIH
- Acetazolamide and other diuretics
- Therapeutic lumbar punctures
- Surgical options (CSF shunting, optic nerve sheath fenestration) in refractory cases
- Effective ICP control often improves headache and prevents progression of visual loss.

Symptomatic Headache Treatment

Standard approaches for TTH (e.g., NSAIDs, stress reduction, physical therapy) may be used adjunctively but should not replace targeted IIH treatment.

CONCLUSION

Headache in intracranial hypertension can phenotypically resemble tension-type headache, presenting a diagnostic challenge. Clinicians must use a structured evaluation and maintain a high index of suspicion for underlying secondary causes in atypical or refractory cases.



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