

Università degli Studi di Perugia - Ospedale S.M. Misericordia
Clinica Neurologica - Direttore: Prof. Paolo Calabresi
Centro Cefalee



Case Report

Dr. GIOACCHINO DE VANNA

Roma, 1 Marzo 2019

CASE REPORT

- ✓ R.L.
- ✓ Man
- ✓ 77 years old

REMOTE MEDICAL HISTORY:

- ✓ High blood pressure since 60y
- ✓ IMA N-STEMI at the age of 69y
- ✓ Epithelioma in lower lid at the age of 65y

MEDICAL THERAPY:

- ✓ Furosemide 25 mg, ½ cp daily
- ✓ Enalapril 20 mg, 1 cp daily
- ✓ ASA 100 mg, 1 cp daily
- ✓ Nitroglycerin 10 mg, 1 patch 12 hours a day

FAMILY HISTORY: nothing relevant

RECENT MEDICAL HISTORY

20 DAYS BEFORE ADMISSION: EPISODE OF HEADACHE

Mean features:

- ✓ In the morning, to wake him up
- ✓ Prevalent in fronto-temporal and periorbital region on the right, with secondary olocranic diffusion
- ✓ Pulsating quality
- ✓ Severe pain intensity
- ✓ Photophobia
- ✓ Aggravation by or causing avoidance of routine physical activity
- ✓ Improvement with rest and dark
- ✓ Nausea and single episode of vomiting
- ✓ Headache remitted in 5-6 hours, without acute drugs

RECENT MEDICAL HISTORY

NEXT DAY

- ✓ Headache, to wake him up
- ✓ Fronto-temporal and periorbital region on the right
- ✓ Pressing and pulsating quality
- ✓ Moderate pain intensity
- ✓ Photophobia, nausea and vomiting
- ✓ Aggravation by or causing avoidance of routine physical activity and head movements
- ✓ Improvement with rest, but not responsive to paracetamol and ibuprofen

CONTINUOUS, EVERY DAY HEADACHE UNTIL THE DAY
OF RECOVERY

RECENT MEDICAL HISTORY

RELEVANT DATA → 1 week before the recovery

- ✓ Nocturia + pollakiuria
- ✓ Episodes of diplopia on the right lateral gaze, that occurred occasionally, lasting few minutes



ACCESS TO EMERGENCY ROOM

PHYSICAL EXAMINATION: normal

- ✓ Blood pressure 155/85 mmHg
- ✓ 85 bpm
- ✓ Feverless

NEUROLOGICAL EXAMINATION: normal

in particular no meningeal signs, normal ocular motility and no autonomic symptoms

...but...

he reported diplopia lasting few minutes on the right lateral gaze



RED FLAGS

- ✓ Headache that peaks in severity in less than five minutes
- ✓ New headache type versus a worsening of a previous headache
- ✓ Change in previously stable headache pattern
- ✓ Headache that changes with posture (e.g. standing up)
- ✓ Headache awakening the patient
- ✓ Headache precipitated by physical activity or Valsalva manoeuvre (e.g. coughing, laughing, straining)
- ✓ First onset ≥ 50 years of age
- ✓ Neurological symptoms or signs
- ✓ Trauma
- ✓ Fever
- ✓ Seizures
- ✓ History of malignancy
- ✓ History of HIV or active infections





LABORATORY TESTS

BLOOD TESTS:

- ✓ Blood count, renal and kidney function: normal
- ✓ ESR = 32 (nv 2-15)
- ✓ CPR = 1.7 mg/dL (nv 0-0.8)
- ✓ TSH = 0.031 μ UI/mL (nv 0.350-5.500)
- ✓ FT3 = 2.73 pg/mL (nv 2.30-4.20), FT4 = 1.39 ng/dL (nv 0.80-1.76)
- ✓ Sodium levels = 148 mEq/L (nv 136-146)

URINALYSIS:

- ✓ SPEC GRAVITY = 1.003 (nv 1.005-1.025)

IMAGING

TEMPORAL ARTERIES ULTRASOUND: nothing relevant

CAROTID ULTRASOUND: nothing relevant

BRAIN CT SCAN:

“... non recent focal lesions...multiple small post-ischemical injuries in the white periventricular substance, bilaterally. Diffused cerebral atrophy, predominantly at cortical level. Inflammatory material occupies completely the right sfenoidal sinus...”

THE SECONDARY HEADACHES

- 5. Headache attributed to trauma or injury to the head and/or neck
- 6. Headache attributed to cranial and/or cervical vascular disorder
- 7. Headache attributed to non-vascular intracranial disorder
- 8. Headache attributed to a substance or its withdrawal
- 9. Headache attributed to infection
- 10. Headache attributed to disorder of homoeostasis
- 11. Headache or facial pain attributed to disorder of the cranium, neck, eyes, ears, nose, sinuses, teeth, mouth or other facial or cervical structure
- 12. Headache attributed to psychiatric disorder

ICHDIII 11.5 HEADACHE ATTRIBUTED TO DISORDER OF THE NOSE OR PARANASAL SINUSES

Description: Headache caused by acute rhinosinusitis and associated with other symptoms and/or clinical signs of this disorder.

Diagnostic criteria:

- A. Any headache fulfilling criterion C
- B. Clinical, nasal endoscopic and/or imaging evidence of acute rhinosinusitis
- C. Evidence of causation demonstrated by at least two of the following:
 - 1. headache has developed in temporal relation to the onset of rhinosinusitis
 - 2. either or both of the following:
 - a) headache has significantly worsened in parallel with worsening of the rhinosinusitis
 - b) headache has significantly improved or resolved in parallel with improvement in or resolution of the rhinosinusitis
 - 3. headache is exacerbated by pressure applied over the paranasal sinuses
 - 4. in the case of a unilateral rhinosinusitis, headache is localized and ipsilateral to it
- D. Not better accounted for by another ICHD-3 diagnosis

TREATMENT: ANTIBIOTIC THERAPY

Ceftriaxone 2 g i.v. once a day + Moxifloxacin oral 400 mg once a day

AFTER 3 DAYS OF ANTIBIOTIC THERAPY

- Persistence of headache, partially responsive to i.m. diclofenac
- Persistence of Diplopia (neurologic examination: right partial III and right VI cranial nerve palsies)
- Fever (38°C) and increase of inflammation indices
- Polyuria and Polydipsia

RED FLAGS

- ✓ Headache that peaks in severity in less than five minutes
- ✓ New headache type versus a worsening of a previous headache
- ✓ Change in previously stable headache pattern
- ✓ Headache that changes with posture (e.g. standing up)
- ✓ Headache awakening the patient
- ✓ Headache precipitated by physical activity or Valsalva manoeuvre (e.g. coughing, laughing, straining)
- ✓ First onset ≥ 50 years of age
- ✓ Neurological symptoms or signs
- ✓ Trauma
- ✓ Fever
- ✓ Seizures
- ✓ History of malignancy
- ✓ History of HIV or active infections





CFS EXAMINATION

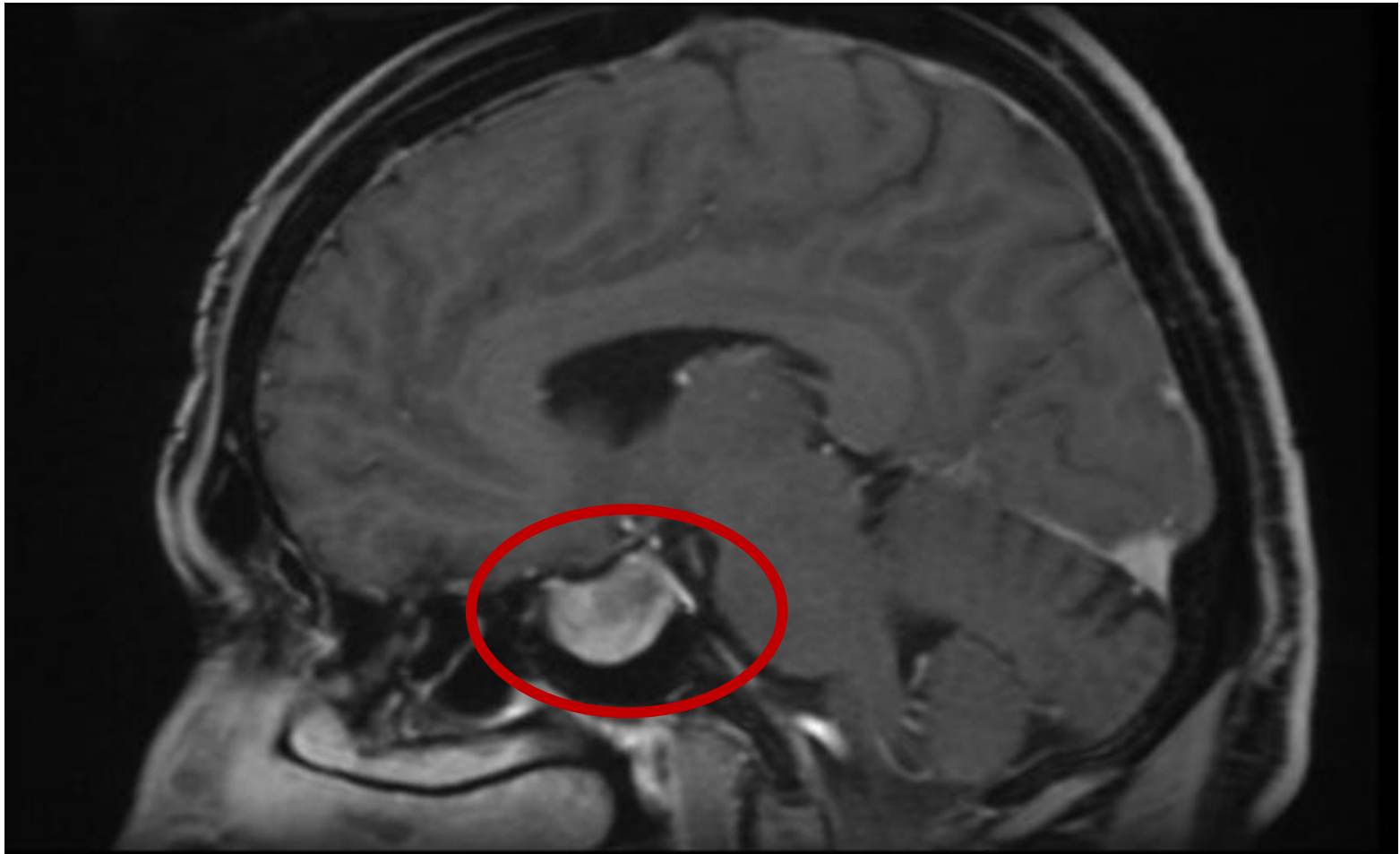
- Protidorrachia, glicorrachia: normal
- Absence of cells
- Cultural for Bacteria: negative

BRAIN M.R.I WITH CONTRAST

“... The Sellar region and the right cavernous sinus are valued by a signal alteration with intensity similar to that of the gray substance in all the sequences that mask the content of the sellar excavation and is associated with modest enlargement of the cavernous sinus. At the level of the right half of the sphenoid sinus and the omolateral posterior ethmoidal cells, abundant amounts of inflammatory material are detected..”

“... On T1 post- contrast images there is a **slightly irregular enhancement in the sellar region, predominantly on the half right of the adenohypophysis, the pituitary stalk as well as the ipsilateral cavernous sinus**... There is also a flogistic mucosal thickening of the right sphenoid and posterior ethmoid sinus. There is no obstruction of the cavenous sinus, an absence of superior ophthalmic vein dilation..”

BRAIN M.R.I WITH CONTRAST



PLASMATIC OSMOLALITY

- 310 mOsm/L (275-295)

URINARY OSMOLALITY

- 230 mOsm/L (< 300)

ORMONAL SCREENING

- GH, PRL, ACTH, LH-FSH, PRL: normal

DIAGNOSIS OF CENTRAL DIABETES INSIPIDUS (CDI) IS BASED ON THE DEMOSTRATION OF

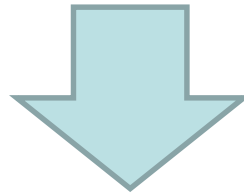
- Plasma hyperosmolality (>300 mosm/l) associated with
- Urine hypoosmolality (< 300 mosm/l or urine/plasma osmolality ratio < 1) and polyuria (urinary volume > 40 – 50 ml/kg/24H)


WATER DEPRIVATION TEST

Urine osmolality, mosm/kg		Diagnosis
after fluid deprivation	after DDAVP	
<300	>750	CDI
<300	<300	NDI
>750	–	PP
300–750	<750	? Partial CDI
		? Partial NDI
		? PP

MEASUREMENTS OF VASOPRESSIN: NOT ACCURACY

WATER DEPRIVATION TEST: POSITIVE FOR CDI



-  TSH
- CDI
- Fever persistence nevertheless antibiotic therapy
- Right partial III and right VI cranial nerve palsies



ICHD III 7.4.3 HEADACHE ATTRIBUTED TO HYPOTHALAMIC OR PITUITARY HYPER- OR HYPOSECRETION

- A. Any headache fulfilling criterion C
- B. Hypothalamic or pituitary hyper- or hyposecretion associated with pituitary adenoma has been demonstrated (including prolactin, growth hormone (GH), and/or adrenocorticotrophic hormone (ACTH), hypersecretion)
- C. Evidence of causation demonstrated by at least two of the following:
 - 1. headache has developed in temporal relation to onset of hypothalamic or pituitary hyper or hyposecretion
 - 2. either or both of the following:
 - a) headache has significantly worsened in parallel with worsening of the hypothalamic or pituitary hyper- or hyposecretion
 - b) headache has significantly improved in parallel with improvement in the hypothalamic or pituitary hyper- or hyposecretion
 - 3. headache is associated with at least one of the following:
 - a) disorder of temperature regulation
 - b) abnormal emotional state
 - c) altered thirst and/or appetite
- D. Not better accounted for by another ICHD-3 diagnosis

HEADACHE ATTRIBUTED TO HYPOTHALAMIC OR PITUITARY HYPER-OR HYPOSECRETION

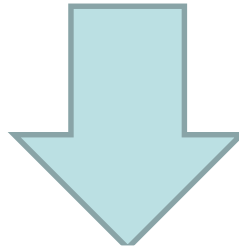
Headache is a common feature in pituitary tumors, occurring with a prevalence of 33-75%.

Forsyth and Posner suggested that dural stretch and cavernous sinus invasion may be considered as a main predicting factor for developing headache.

Dysfunction in a hypothalamic circuit which projects to the medullary dorsal horn, specifically the orexinergic system, which inhibits nociceptive processing through the trigeminal nucleus caudalis, may be one mechanism by which hypothalamic dysfunction may lead to the generation of certain primary headache disorders.

TREATMENT

- DESMOPRESSIN



REMISSION OF

- FEVER
- CDI
- plasma and urine osmolality normalized.

Università degli Studi di Perugia - Ospedale S.M. Misericordia
Clinica Neurologica - Direttore: Prof. Paolo Calabresi
Centro Cefalee



Case Report

"Red flags and secondary headache"

Dr. GIOACCHINO DE VANNA

Roma, 1 Marzo 2019