

IN THE NAME OF GOD



Clinical Problem Solving

INFECTIOUS + INTERNAL+ NEUROLOGY MEDICINE

PRESENTED BY: JAVAD ROSTAMPOUR , MD

CARDIOLOGY RESIDENT

AUGUST 2026

ID

32 YO MAN

Iranian

FROM ROBAT KARIM

MARRIED

JOB: A clothing salesman who was recently unemployed.

DATE OF ADMISSON : 15/03/1405

CHIEF COMPLAINT

FEVER & H/A & URINARY RETENTION

Present Illness

A 32-year-old male patient with no previous medical history presented with **fever, headache, and sweating** for a week.

During this week, he had visited the clinic twice and had been treated with azithromycin and ciprofloxacin, but had not improved. And he mentioned that his **headaches** had recently worsened. And it is felt all over the head.

Since the morning of his presentation, in addition to fever, headache, and sweating, he had also suffered from **urinary retention**.

There has been no significant change in urine output volume over the previous days.

Denied any flu-like symptoms, cough, dyspnea and exertional dyspnea or chest pain.

Denied any frequency, dysuria, flank pain or purulent discharge.

He denies any history of recent travel or contact with a patient.

Past medical history: NOTHING

Past Surgical History :NOTHING

Drug History : ciprofloxacin / azithromycin

No recent medication use except azithromycin and ciprofloxacin

Social History :?

She denies **smoking, alcohol consumption, and illicit drug use.**

Does not mention travel to other areas in recent months.

One serving of unpasteurized cheese in the last 6 months

No contact with any animal

Allergy History :No known drug allergies.

Family History : NOTHING MENTIONED

No mention of similar symptoms in the family

Review of Systems

General: Positive for **SWEATING** . Negative for recent significant weight loss

Dermatologic: Negative for rash, skin thickening or dry skin

Eyes : No visual disturbances, eye pain, redness, or dryness

Ear :No hearing loss, tinnitus, ear pain, or discharge.

Nose :No nasal congestion, rhinorrhea, epistaxis, or sinus pain .

Cardiovascular:

Negative for chest pain, palpitations, orthopnea, or syncope.

Respiratory:

Negative for cough, wheezing, hemoptysis, or pleuritic chest pain

Review of Systems

Gastrointestinal:

Negative for nausea, vomiting, abdominal pain, diarrhea, constipation, melena, or hematochezia, Regurgitation, heartburn, dysphagia

Genitourinary: Negative for dysuria, hematuria, urinary frequency, urgency, or change in urine output.

Musculoskeletal: Negative for myalgia, arthralgia, joint swelling, or morning stiffness.

Endocrine: Negative for recent heat or cold intolerance, polyuria, or polydipsia.

Hematologic: Negative for easy bruising or bleeding.

Neurologic: Positive for **H/A**

Negative for dizziness, syncope, focal neurologic deficits, or seizures.

Psychiatric: Negative for depression, anxiety, or sleep disturbance.

Physical exam

The patient appears **alert, oriented, ill and not toxic**

Vital Signs

Blood pressure: 115/75

Heart rate: 86

Respiratory rate: 18

Temperature: 38.5

Oxygen saturation: 96%

Skin:

Normal. No rash, or ulcers or local hottnes or redness

Head and Neck: Positive neck redor

The Conjunctiva is not pale, the Sclera is not icteric .The size of the pupils is normal and reactive .no Cyanosis of lips and mouth . no Jugular venous distention . No tenderness or redness on temporal ,periorbital or sinuses

Cardiovascular:

heart sounds were diminished with regular rate and rhythm.
No murmurs, rubs, or gallops. No heave or thrill

Respiratory:

Chest expansion normal . lungs clear to auscultation bilaterally.No wheezing, crackles, or rhonchi.

Abdomen:

Soft, non-tender, non-distended.

No organomegaly or ascites. No CVA tenderness

Extremities:

w/o edema. no acrocyanosis. No tenderness. Detectable and strong Symmetric pulses

Neurologic:

No focal neurologic deficits. Normal proximal and distal force. Negative SLR & Reverse SLR .

Differential Diagnosis ???

NEXT STEP

Laboratory Results

Test	Result	Unit
Blood Sugar	110	mg/dL
BUN	17	mg/dL
Creatinine	1.2	mg/dL
AST	23	U/L
ALT	22	U/L
ALP	87	U/L
T.protein	6.1	
Albumin	4	g/dL

Test	Result	Unit
WBC	11.5	$\times 10^3/\mu\text{L}$
Neutrophils	73.6	%
Lymphocytes	16.2	%
Hemoglobin	16.6	g/dL
RBC	5.03	$\times 10^6/\mu\text{L}$
MCV	95	fL
Platelets	206	$\times 10^3/\mu\text{L}$
PT	13	sec
INR	1.0	
PTT	27	sec
ESR	3	
CRP	0.5	mg/L
Sodium	137	mEq/L
Potassium	3.9	mEq/L

Test	Result	Unit
LDH	388	
U/A	PH:7 SG:1.010 BAC:Rare Wbc:1-2	

A **Foley catheter** was inserted and a large volume of urine was passed.

Blood and urine cultures were immediately sent and a **lumbar puncture** was performed for CSF analysis.

meropenem, acyclovir, and vancomycin were started with suspicion of meningoencephalitis until the results of the analysis were ready.

CSF analysis

Test	Result
appearance	clear
color	colorless
wbc	380 Seg: 10% Lymph:90%
RBC	<5
Glucose	40
Pro	132
LDH	65

Due to the **lymphocytes dominance** in the analysis, **ceftriaxone and vancomycin were discontinued** and

a **brain MRI** was performed, which did not show evidence of lesion or encephalitis.

Due to the normality of inflammatory factors and normal EEG and lack of bizzare behavior, **acyclovir was also discontinued** after 2 days.

Serology was also sent to rule out **brucellosis**.

Due to the young age, **VDRL** was checked.

سونوگرافی کامل شکم و لگن

کبد دارای ابعاد نرمال و اکوی پارانشیم افزایش یافته است (کبد چرب گرید ۱)
کیسه صفرا دارای ضخامت جداری طبیعی است و داخل آن سنگ و مشاهده نگردید.
دیامتر مجاری صفراوی داخل و خارج کبدی طبیعی است. ورید پورت و CBD دیامتر نرمال دارند.
طحال به دیامتر ۹۱ میلی متر رویت شد .

بررسی پانکراس و پارائورت به علت پرگازی مقدور نمی باشد.
کلیه راست با طول ۱۰۰ میلی متر و ضخامت پارانشیم ۱۵ میلی متر و کلیه چپ با طول ۹۸ میلی متر و ضخامت پارانشیم ۱۴ میلیمتر مشاهده شدند. ابعاد و اکوی پارانشیم کلیه ها نرمال هستند.
در حد حساسیت سونوگرافی در هر دو کلیه سنگ حجیم و هیدرونفروز و هیدروویورترونفروز مشهود نیست.
مثانه خالی حاوی کاف سوند فولی رویت شد.
مایع آزاد در شکم و لگن مشهود نیست.

BRAIN MRI

A few high -signal foci on T2/FLAIR are noted in supratentorial white matter in both cerebral hemispheres (nonspecific)

The interhemispheric fissure is centered on the midline .The cerebral ventricles are of normal size and shape .No abnormalities are seen in the basal ganglia, corpus callosum, or thalamus.

The brainstem and cerebellum show no abnormal finding. The bilateral cerebellopontine angles and the internal acoustic meatus appear normal. The sella and pituitary are normal. The supra and parasellar structures are unremarkable.

The paranasal sinuses, mastoid air cells and orbital contents are unremarkable.

BRAIN MRV

MRI of the venous cranial vessels demonstrates a superior sagittal sinus of normal caliber with normal arrangement of draining superficial cerebral veins.

The transverse and sigmoid sinus presents normal caliber and usually shows slight symmetry between the right and left Sides.

The great cerebral vein and inferior sagittal sinus appear normal.

The other evaluable deep cerebral veins are normally developed and patent.

No Venous segments contain flow voids or filling defects.

The other evaluable portions of the neurocranium show no abnormalities.

Impression: The cranial venous vascular system appears normal.

NEXT STEP

Due to the persistence of fever and sweating and lymph dominance of the previous spinal fluid, a repeat LP was performed after 72 hours.

ACE	18	IU/L (8-65)
HLA B51	NEG	—
C3	136	90-180
C4	24	9-36
RF	NEG	
WBC	12.7 Seg:86 Lymph:9.7	
Hb	15.2	
MCV	96	
PLT	215	
BUN	12	
Cr	0.9	
AST	19	
ALT	17	
ALKP	97	
Na	140	
K	4.6	
CRP	1	
B/C (24 & 48h)	NEG	
U/C	NEG	

color	Colorless & semiclear
wbc	190 Seg:5% Lymph:95%
RBC	10
Pro	78
Sugar	68

Csf Direct smear: few WBC/ **No** bacteria seen/**no** cryptococcus neoformans seen
cytology: Rare degenerated atypical cells seen.

Wright	Neg	
Coombs wright	Neg	
2ME- Wright(IgG)	Neg	
VDRL	Neg	
PPD test	neg	
Procalcitonin	Neg	

Assays-Autoimmune Diseases

Test	Result	Unit	Reference Range
SSA (RO) Ab	1.02	Au/ml	< 12 Normal 12-18 Equivocal >18 positive
Anti-SSB (LA) Ab	1.6	IU/ml	Negative : less than 12 Borderline : 12 - 18 Positive : more than 18
Anti Lupus anti coagulant IgG	26.6	Sec	31 - 44
Anti Beta 2 Glycoprotein (IgG)	1.4	IU/ml	Negative : less than 12 Borderline : 12-18 Positive : more than 18
ANCA	1.8	Au/ml	Negative : less than 12 Borderline : 12 - 18 Positive : more than 18
Anti MPO (P-ANCA)	0.7	IU/ml	Less than 5.0
Anti PR3 (C-ANCA)	0.6	IU/ml	Less than 10
Anti ds-DNA	7.92	IU/ml	Negative : < 100 Positive : > 100
Anti Cardiolipin Ab (IgG)	0.8	GPLU/mL	Negative : less than 12 Borderline : 12 - 18 Positive : more than 18
Anti Cardiolipin Ab (IgM)	0.9	MPLU/mL	Negative : less than 12 Borderline : 12 - 18 Positive : more than 18
F.ANA	0.45	Index	Negative : <1.0 Borderline : 1.0-1.2 Positive : >1.2
Anti Beta 2 Glycoprotein (IgM)	1.0	IU/ml	Negative : less than 12 Borderline : 12-18 Positive : more than 18

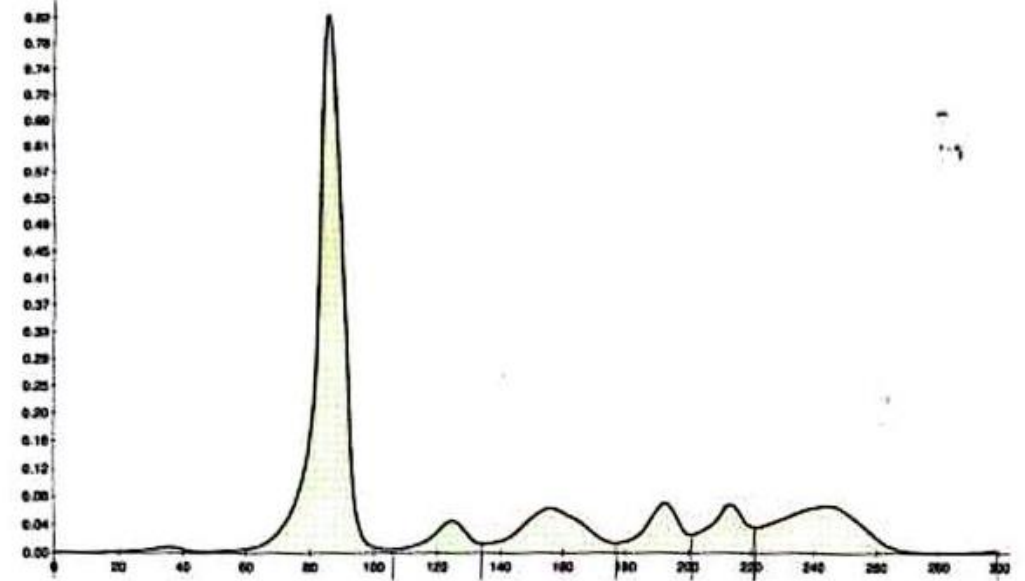
Immunoassays-HIV&Hepatitis panel

Test	Result	Unit	Reference Range
HBs Ag	Non reactive	Index	Up to 0.89 : Non Reactive 1.28 - 2.52 : Low Reactive 2.6 - 9.0 : Reactive
HCV- Ab	Non reactive	Index	Non Reactive <1 Reactive >1

This result confirmed by chemiluminescent Assay method.(CLI)

This result confirmed by Immunofluorescent Assay method.

Serum Protein Capillary 3 OCTA Electrophoresis



Fractions	%	Ref. %	g/dl	Ref. g/dl
Albumin	55.0 L	55.8 - 66.1	4.4	3.5 - 5.2
Alpha 1	4.6	2.9 - 4.9	0.4	0.1 - 0.3
Alpha 2	11.4	7.1 - 11.8	0.9	0.6 - 1.0
Beta 1	6.9	4.7 - 7.2	0.6	0.2 - 0.7
Beta 2	6.8 H	3.2 - 6.5	0.5	0.2 - 0.5
Gamma	15.3	11.1 - 18.8	1.2	0.8 - 1.6

Total Protein: 8

A/G Ratio : 1.22

ment :

TEST	RESULT	NORMAL	METHOD	SAMPLE
<i>Aspergillus fumigatus</i>	Undetectable	Undetectable	Real Time PCR	CSF
<i>Aspergillus flavus</i>	Undetectable	Undetectable	Real T	
<i>Aspergillus terreus</i>	Undetectable	Undetectable	Real T	
<i>Aspergillus niger</i>	Undetectable	Undetectable	Real T	

CS Scanned with CamScanner

MOLECULAR ANALYSIS REPORT FOR MENINGITIS PANEL BACTERIAL/FUNGA

PATHOGENS	RESULT	NORMAL	SAMP
<i>Neisseria meningitidis</i>	Undetectable	Undetectable	CS
<i>Listeria monocytogenes</i>	Undetectable	Undetectable	CS
<i>Streptococcus pneumoniae</i>	Undetectable	Undetectable	CSF
<i>Haemophilus influenzae</i>	Undetectable	Undetectable	CSF
<i>Cryptococcus neoformans</i>	Undetectable	Undetectable	CSF
<i>Mycobacterium tuberculosis complex</i>	Undetectable	Undetectable	CSF

CS Scanned with CamScanner

MOLECULAR ANALYSIS REPORT FOR MENINGITIS PANEL VIRAL

VIRUS	RESULT	NORMAL	SAMP
<i>Herpes Simplex Virus 1 (HSV 1)</i>	Undetectable	Undetectable	CSF
<i>Herpes Simplex Virus 2 (HSV 2)</i>	Undetectable	Undetectable	CSF
<i>Cytomegalovirus (CMV)</i>	Undetectable	Undetectable	CSF
<i>Epstein-Barr Virus (EBV)</i>	Undetectable	Undetectable	CSF
<i>Varicella-Zoster Virus (VZV)</i>	Undetectable	Undetectable	CSF

CS Scanned with CamScanner

NEXT STEP

Two weeks after the onset of symptoms, the patient still has fever, headache, severe sweating, and urinary retention. **lower back and Bilateral limb pain, predominantly unilateral**, has also been added to the patient's symptoms.

LP was performed again and a **hematology consultation** was performed, where a **PBS** was requested and CSF **flowcytometry** was performed.
A **lumbar MRI** was performed due to leg pain with unilateral preference.
Echocardiography has performed and endocarditis ruled out.

Pbs	Aniso Poikilo	Mild Mild
Flowcytometry	CD7+	
WBC	10.2	
Hb	13.7	
MCV	98	
PLT	213	
BUN	19	
Cr	0.8	
AST	17	
ALT	29	
ALKP	87	
Na	135	
K	4.5	
CRP	1	
B/C (24 & 48h)	NEG	
U/C	NEG	

color	Colorless & clear
wbc	30 Seg:10% Lymph:90%
RBC	5
Pro	50
Sugar	55

Wright	Neg	
Coombs wright	Neg	
2ME- Wright(IgG)	Neg	
Procalcitonin	Neg	

BRAIN MRV

Multislice, multiplanar and multisequence MR images showed the following:

Mild right side scoliosis is seen. Early stage of degenerative change in lower cervical levels are noted

Mild neural foraminal stenosis in C5-C6, C6-C7, C7-T1 levels are noted.

Disc dehydration: none
Posterior and posterolateral disc displacement

C2-3 disc: none

C3-4 disc: none

C4-5 disc: none

Bones and bone marrow: normal

Cervical cord: normal

Craniocervical junction: normal

Paravertebral soft tissue: unremarkable

MRIMultislice, multiplanar and multisequence MR images showed the following:

Disc dehydration: none

Posterior and posterolateral disc displacement:

Bones and bone marrow: normal

Thoracic cord: normal

Paravertebral soft tissue: unremarkable

Thoracic spine curve: normal

Evidence of edema in paraspinal muscles of L5-S1 level due to recent LP procedure.

Disc dehydration: nonePosterior or posterolateral disc displacement:

L4-5 disc: none

L3-4 disc: none

L2-3 disc: none

L1-2 disc: none

T12-L1 disc: none

T11-T12 disc: none

Distal cord and conus medullaris: normal Paravertebral soft tissue-unremarkable

NEXT STEP

Wright	1/160	Positive$\geq$1/80
Coombs wright	1/160	Positive $\geq$ 1/80
2ME-Wright(IgG)	1/80	Positive $\geq$ 1/40

Imp: Neurobrucellosis

F/U

The patient was treated with **ceftriaxone, rifampin, and doxycycline** for one week, and the symptoms of **headache, fever, and sweating improved, and he only had urinary retention**. Due to the lack of consent for repeated LP, **CIC and phenazopyridine**(as recommended by the urologist) **were recommended**, and he was discharged with **cotrimoxazole, doxycycline, and rifampin**.

After 4 days, the patient's urinary retention also resolved.

با تشکر از توجه شما
