From: "ROOT" <root@sctimst.ac.in>
To: "ROOT" <root@sctimst.ac.in>
Date: 09/10/2024 07:40 AM
Subject: CPC Clinical Protocol 09.10.2024

Dear All,
Season's Greetings.
The next Wednesday CPC of the session will be held on **October 09, 2024** at 08.00 hours (IST) in **Lecture Theatre 1**, Nehru Hospital, PGIMER, Chandigarh.

The session will also be available on the Webex platform. Kindly follow the link below to join.
https://telemedicine.webex.com/telemedicine/j.php?MTID=mb8f5c93d0efe86e2ec7df721b3c21227

In case you join in thru WebEx, kindly **ensure that your microphone and camera are switched off** and **PLEASE DO NOT SHARE YOUR SCREEN**.

The Clinical handout of the case to be discussed is attached herewith.
The clinical protocol will be discussed by ***Dr. Kamalesh Chakravarty, Department of Neurology.*** Radiology will be discussed by ***Dr. Sameer Vyas.*** Autopsy pathology will be presented by ***Dr. Debajyoti Chatterjee.***

Yours sincerely,

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Regional Resource Centre, North
Department of Telemedicine
PGIMER, Chandigarh

Staff CPC Clinical summary (09/10/2024)

Patient Name: MD	DOA: 06/07/24	Clinician In charge: Prof Vivek Lal
CR No: 201502157258	DOD:12/08/24	Clinical discussant: Dr Kamalesh Chakravarty
Age/Gender: 40/F		Radiologist: Prof Sameer Vyas
R/O- Kushinagar, Uttar Pradesh		Pathologist: Dr Debojyoti Chatterjee

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Presenting complaints:

- Headache & vomiting -15 days
- Altered sensorium – 4 days

HOPI:

Jan-Feb 2015: Low grade fever, headache x 2 months followed by altered metal status. Evaluated at Gorakhpur as TBM. Started on ATT (HRZE) (13th March 2015) Fever subsided.
April 2015: Presentation to PGI with blurring of vision. CEMRI Brain: Obstructive hydrocephalus, leptomeningeal enhancement. Ethambutol stopped, Streptomycin and Dexamethasone added.
Aug 2015: Maintenance with HR, gradual recovery in vision (6/24 & 6/30), Dexa stopped Nov.
Sep 2016: Persistent headache, MRI- Hydrocephalus persists, Discrete lesions in B/L cerebral hemisphere, enhancing exudates in left sylvian fissure. HR continued with intermittent steroids.
May 2017: On/off headaches. MRI brain April 2018 reported normal. Headache treated symptomatically. ATT stopped (26 months).
Dec 2018-Jan 2019: Increased headache and recurrent vomiting. CT head- Hydrocephalus, CSF: TLC-40, Protein-147, Sugar-22, Restarted ATT (HRZS)+ steroids. Repeat CSF in June 2019, TLC 0, Protein-80, Sugar 40. Pyrazinamide stopped, maintenance HR +low dose steroid.
August 2019: Developed Blurred vision left eye. Thalidomide added to ATT and steroid in Nov.
February 2020: Paraesthesia in all 4 limbs. Thalidomide dose reduced, continued on HR.
September 2020: Worsening headache, difficulty in swallowing, speech changes x 2 weeks. ***Admitted (1st)*** Repeat CSF: **Rifampicin resistant TB**, underwent VP shunting, started on MDR-TB regimen (15th Oct 2020) Levofloxacin/Linezolid/ Clofazimine/ Cycloserine/ Bedaquiline + Steroids. Follow up MRI April 2021- Thick basal exudates altered signal intensity in medulla. Thalidomide added to MDR-TB regimen. Bedaquiline stopped (? when)
June-August 2021: Developed hearing loss, painful paraesthesia, numbness of fingers and toes, gait ataxia. Suspected to be drug induced (NCS -Normal), Sept 2021: MRI spine: Dense exudates around brainstem, cerebellum, spinal cord, syrinx on cervical part of cord. Started on monthly IV MPS for 3 months followed by oral steroids.
March 2022: Partially improved gait ataxia, persistent neuropathic symptoms. CEMRI Brain: Partial resolution of exudates around brainstem and cervico-medullary junction, cervical syrinx. Continued on MDR regimen (Linezolid/Levoflox/Clofazamine/Cycloserine/Thalidomide/steroid). Follow up MRI after 3 months- No interval changes. Steroid dose gradually reduced to 5 mg.
October 2022: Developed fever, pain abdomen. ***Admitted (2nd) to CD ward.*** Treated as Dengue shock syndrome, severe thrombocytopenia, ALI (Dengue IgM +ve) (Hb -6.9, TPC-11000)

December 2022: Persistent thickened sensation of palm and soles. CEMRI Brain: Exudates persisting only at base of brainstem and CVJ region syrinx persisting.
Feb 2023: ***Admitted (3rd)*** for generalized weakness. O/E: VA-6/60, Rt SNHL, Power Ul/LL-4/5, Hb-6.7. Diagnosed as anaemia of chronic disease. CEMRI: No interval changes. Continued on MDR regimen with oral steroids and thalidomide.
August- Sept 2023: Worsening sensory and cerebellar ataxia, hyperpigmentation, JPS impaired. (MDR stopped from outside for 2 weeks in August). CSF: TLC38, N60L40, S/P-46/318, **MTB-Trace, Rif resistance indeterminate**. Started on MDR regimen from 21st sept. (Delamanid, Ethionamide, Moxifloxacin, Bedaquiline, Clofazimine, Pyrazinamide)
Oct 2023: ***Admitted (4th)*** with fever and shortness of breath. On ventilator, tracheostomized. Possibility of atypical pneumonia / Interstitial lung disease due to Delamanid. MDR regimen withheld, treated symptomatically. Had persistent weakness, ataxia. MDR regimen reintroduced in Feb 2024 (Moxifloxacin, Ethionamide, Cycloserine, Linezolid, Pyrazinamide, Bedaquiline)
March 2024: ***Admitted (5th)*** with worsening cerebellar ataxia. Repeat MRI: Entrapped fourth ventricle with pachymeningeal enhancement. Possibility of Intracranial hypotension suspected. TB regimen stopped; steroid started. Inj Infliximab administered on 19th April 2024.
April-May 2024: Progressive weakness of both lower limb and ataxia. ***Admitted(6th)*** and Underwent MSO craniotomy and adhesiolysis trans-telo-velar approach done on 1st May 2024.
Readmitted (7th) for worsening ataxia on 17th May 2024. V-P shunt done. MRI Brain/spine: Persisting basal exudates, spinal arachnoiditis. Re-started on MDR regimen (Ethionamide, Levofloxacin, Linezolid, Pyrazinamide). Functional status mRS 4.
3rd July 2024: ***Admitted (8th)*** with headache, vomiting 15 days and altered sensorium for 4 days.

Examination: E1V1M1 at Emergency admission. (Sensorium improved to dull M6 after shunt exteriorization). Pulse -89/min, BP- 118/80, Fundus: B/L optic atrophy, B/L LR palsy, Bulk decreased in all 4 limbs, Power 4/5.

12th July 2024	30 (N40, L60)	83	319	ADA-3, Gene expert- neg, CSF MGIT- No growth
31st July 2024	0	<10	77	Culture- Sterile

Pure tone Audiometry: Rt Profound SN hearing loss, Left Moderate SN hearing loss
Feb 2023: Vasculitis profile: Negative, HIV/HBsAg/HCV- Negative, IgA TTG- Neg, Fat pad biopsy: Negative for amyloid

Investigations (last admission):

Date	05/07	12/07	20/07	27/07	02/08	06/08	09/08	11/08
Hb	10.4	9.0	6.9	7.3	7.2	6.8	5.5	6.4
TLC	11030	19300	12900	7830	15,970	8,400	8,880	16,100
Platelet	269k	311k	138k	64k	39k	63k	40k	63,000
Na+	140	128.4	126/3.8	132	140	148	138	137
K+	3.66	2.9	3.8	2.2	3.42	2.9	4.1	1.7
Urea	27	21	34	17	43	37	20	22
Creat	0.32	0.28	0.31	0.19	0.38	0.2	0.29	0.3
T.B/D. B	1.13/0.45	0.78/0.28	0.45/0.12	0.35/0.22	1.37/0.5	2/0.9	1.9/0.8	1.92/1.05
OT/PT/ALP	27/13/-	115/173/184	43/55	11/26	18/21	14/16/91	22/16/212	27/21

Cultures: Wound swab: Klebsiella pneumonia (Pan resistant), ET Aspirate: Acinetobacter Baumannii (IS-Colistin). Blood /Urine: Sterile, ET aspirate fungal smear: Negative

Clinical course during hospitalisation:

She arrived at PGI on 3rd July 2024 to EMOPD with a GCS of 3 and was intubated and mechanically ventilated. CT Head suggested hydrocephalus. VP shunt was exteriorized followed by improvement in sensorium. Shunt failure was corrected with left VP shunt placement on 12th July. Status continued to be moribund with grade III bed sores. In hospital development of VAP, surgical site infection and septic shock. She was treated with Modified ATT, Steroids and antibiotics as per culture sensitivity reports. She developed progressive fall in Hb towards terminal stages and was transfused with 2 PRBC. She required multiple inotropic support for refractory shock. She succumbed to cardiac arrest on 12th August 2024.

Unit's Diagnosis:

Multi Drug Resistant CNS Tuberculosis with Hydrocephalus with Trapped 4th Ventricle, Arachnoiditis S/P VP Shunt (Multiple Revisions done) – Shunt failure

Ventilator Associated Pneumonia with type 1 respiratory failure, Surgical Site Infection, Grade 3 Bed Sore, Refractory Septic Shock,

Previous Investigations:

Date	Radiological findings
April 2015	Obstructive hydrocephalus, leptomeningeal enhancement
Sept 2016	Hydrocephalus, Discrete lesion in B/L cerebral hemisphere, Enhancing exudates in left sylvian fissure
May 2019	Hydrocephalus with periventricular ooze. Exudates in left sylvian fissure, Left optic nerve enhancement,
April 2021	obstructive hydrocephalus with decompressed VP shunt in situ. Thick basal exudates with altered signal intensity in medulla
Sept 2021	Dense exudates around brainstem, cerebellum, spinal cord, syrinx on cervical part of cord.
March 2022	Partial resolution of exudates around brainstem and cervico-medullary junction, cervical syrinx
July 2022	No interval changes
Dec 2022	Exudates persisting only at base of brainstem and CVJ region syrinx persisting.
Feb 2023	CECT chest +abdomen- Left nephrolithiasis
Sept 2023	Syrinx at medulla and CM junction. Left frontal tuberculoma.
Oct 2023	CT chest: Diffuse GGOs with patchy areas of consolidation
March 2024	Trapped 4th ventricle. Few pial based nodular and peripherally enhancing lesions with enhancing basal exudates. Mild decrease in pachymeningeal enhancement, exudates in comparison to previous scan
May 2024	Trapped 4th Ventricle, Syringohydromyelia, Long segment myelitis, Mild leptomeningeal enhancement

CSF examinations:

Date	Cells	Sugar	Protein	Other
Jan 2019	40	22	147	
21st June 2019	0	40	80	Ind ink/cryptola- neg
Sept 2020				Gene expert-**Rifampicin resistant TB**
6th Sept 2023	38 (N60, L70)	46	318	**MTB -Trace, RIF resistance indeterminate**
March 2024	24 (N 30, L70)	75	281	CBNAAT-Neg, Culture- sterile
18th May 2024	12 (N32)	97	47	
28th May 2024	6 (L100)	51	264	Ind Ink/cryptola- Neg, MGIT- No growth

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