



Paraparesis with anemia in a post Covid patient

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JUNIOR RESIDENT 1ST YEAR

TROPICAL MEDICINE

Chief complaint

- ▶ 42 yr old gentleman resident of Kolkata, bus driver by occupation presented with:
- ▶ **Weakness of both lower limbs since last two months with fatigue**
- ▶ **Inability to walk without support for similar duration.**

History of present illness

- ▶ Patient was apparently well **3 months ago** when he was diagnosed with mild COVID 19 infection on **14 April 2021**.
- ▶ He **started having weakness of his both lower limbs after 2 weeks**.
- ▶ Also **complained of tingling sensation of feet and arms after 2 weeks**.
- ▶ Patient came to us on **17th of July 2021**.

Past history

- ▶ Past history of intake of some **homeopathic** medications for his anorexia and loss of taste for 3 months [from 21 April to 15th July]
- ▶ Took **strict vegetarian diet for 3 months** during intake of homeopathic medications.
- ▶ No other significant past history.



Personal history

- ▶ **Non alcoholic**
- ▶ Non smoker
- ▶ Not IV drug abuser
- ▶ No history of high risk behavior
- ▶ **Non diabetic and Normotensive**

General Examination

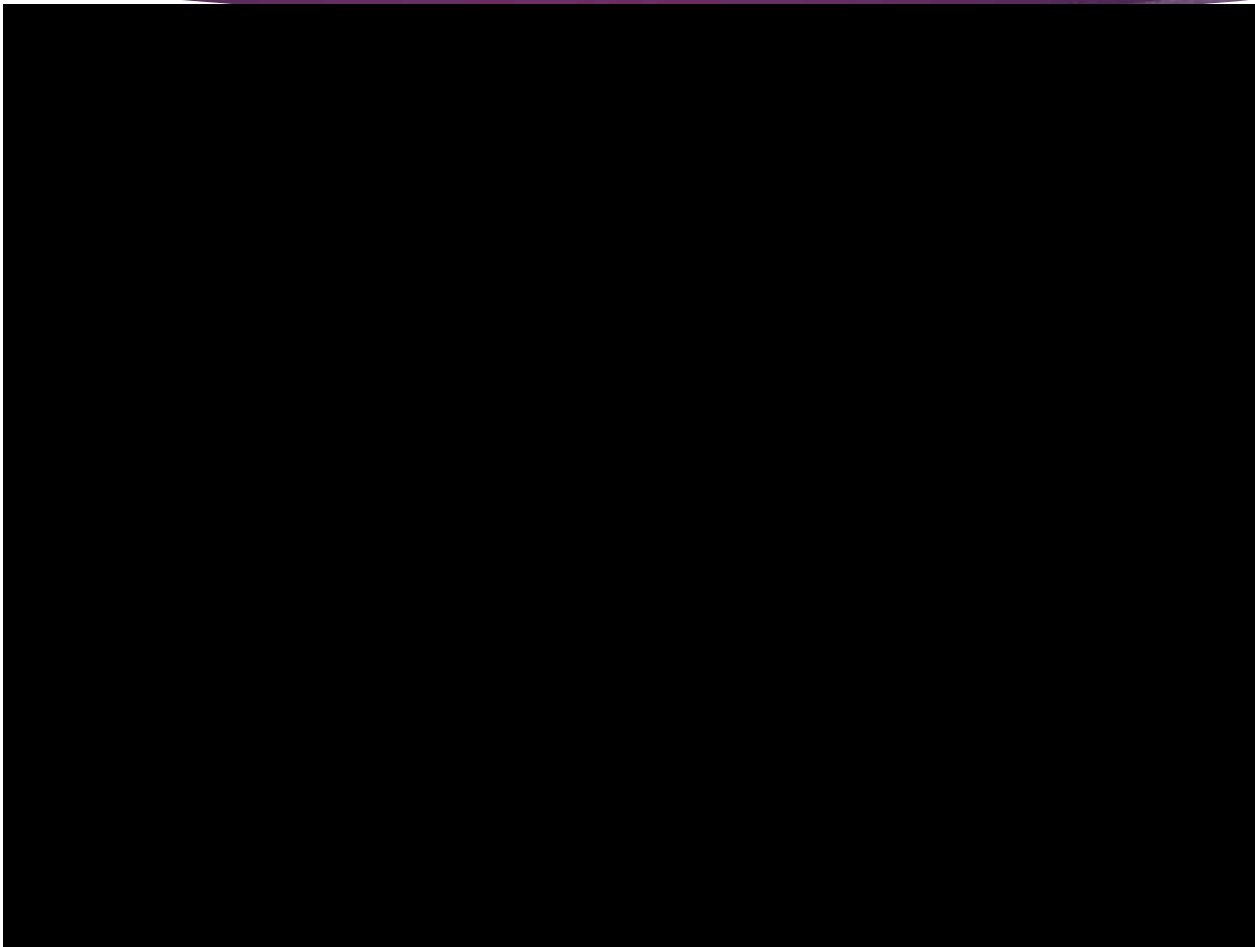
- ▶ GCS : 15/15
- ▶ Built: Average
- ▶ Nutrition: **Glossitis**
- ▶ BMI: 19 kg/metre square
- ▶ Pallor: **Severe +++**
- ▶ Icterus: +
- ▶ No other significant findings.

Systemic examination

- ▶ **Nervous System:**
- ▶ Lower limbs : **Visible wasting.**
- ▶ Tone: ↓
- ▶ Power: 3/5
- ▶ Reflexes: ↓

- ▶ **Ankle jerks absent.**
- ▶ **Plantar: Extensor**
- ▶ Sensory system: **Loss of vibration and position sense and fine touch.**
- ▶ Gait: **Ataxia with high stepping gait.**
- ▶ Romberg Sign: Could not be done.
- ▶ Other systems: NAD

Gait of the Patient



Summary

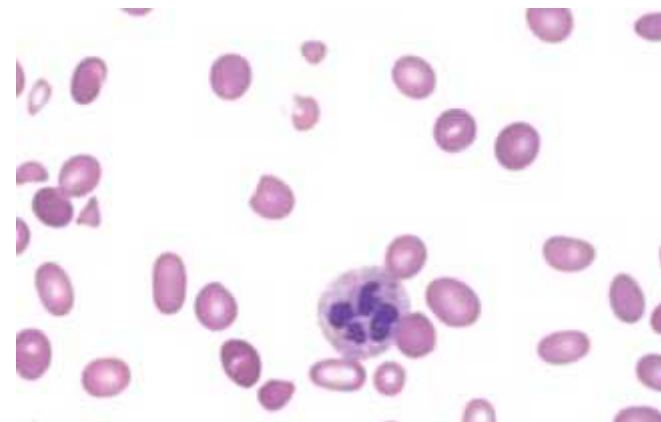
- ▶ 42 y M
- ▶ C/A/C
- ▶ Post COVID
- ▶ Intake of homeopathic medications and recent change of diet
- ▶ Fatigue and Paraparesis
- ▶ Pallor with icteric tinge
- ▶ Motor weakness with dorsal column involvement
- ▶ Plantar extensor with diminished reflexes
- ▶ Ataxia with no cerebellar signs
- ▶ Bladder bowel not involved

What may be the probable diagnoses?



Investigations of Blood

- ▶ **Complete Hemogram**
- ▶ Total WBC count: **1700/mm³** [N=45, L=50]
- ▶ Total RBC count: 160000/mm³
- ▶ **Hemoglobin: 5.4 g/dl**
- ▶ **PCV: 15.4%**
- ▶ **MCV: 96.7/femtolitre**
- ▶ **MCH: 34 pg**
- ▶ **MCHC : 35.1 g/dl**
- ▶ Platelet: **55000/mm³**
- ▶ **Peripheral blood smear** →



Investigation of blood continued..

Liver Function Tests

- ▶ **TB: 3.2 mg/dl CB: 0.9 mg/dl**
- ▶ Total protein :6.3 g/dl
- ▶ Albumin :3.5 g/dl
- ▶ SGOT: 15 IU/L
- ▶ SGPT: 13 IU/L
- ▶ Alk.Phosp: 35 IU/L
- ▶ **LDH : 5611 U/L**

Renal function tests WNL.

Investigations of blood continued..

- ▶ Serum Ferritin: 455 ng/ml [Range: 28-365]
- ▶ Serum Iron: 141 microgram/dl [Range:60-160]
- ▶ Serum TIBC: 231 mcg/dl [Range:250-400]
- ▶ Serum Vit. B12 level: **56 pg/ml** [Range:174-878]
- ▶ Serum Folate level: **11.6 ng/ml** [Range: 20-70]
- ▶ HPLC : Normal study
- ▶ DCT : Negative
- ▶ Serum VDRL: Negative
- ▶ HIV 1 and 2: Negative

Other Investigations

- ▶ **Urine analysis:** Normal
- ▶ **Stool :** **OBT:** negative
OPC :No Ova parasite cyst
- ▶ **ECG:** Normal
- ▶ **USG Whole abdomen :** Normal study
- ▶ **CXR PA view:** Normal
- ▶ **Ophthalmological review:** No abnormality detected.
- ▶ **Upper GI Endoscopy: Normal and stomach mucosae biopsy was taken for HPE.**

IMAGING

- ▶ **MRI SPINE:**
- ▶ T2 weighted hyperintense signal changes in **dorsal column** extending from **D1 to D8** with cord edema.



- ▶ T2 weighted MRI **cervical spine** showing similar hyperintensities in **dorsal column** .





Provisional diagnosis

**SUBACUTE COMBINED
DEGENERATION OF CORD** due to
vitamin B12 and folic acid deficiency.

Other possibilities

- ▶ Copper/Vitamin E deficiency
- ▶ Neurosarcoidosis
- ▶ Friedreich's Ataxia
- ▶ Taboparesis

Points in Favor

- ▶ Subacute onset
- ▶ PBS showing pancytopenia with macrocytic hyperchromic anemia, hypersegmented neutrophils and high LDH
- ▶ Unconjugated hyperbilirubinemia
- ▶ Involvement of dorsal column , lateral corticospinal tract and peripheral neuropathy
- ▶ Vit B 12 levels grossly reduced

Treatment

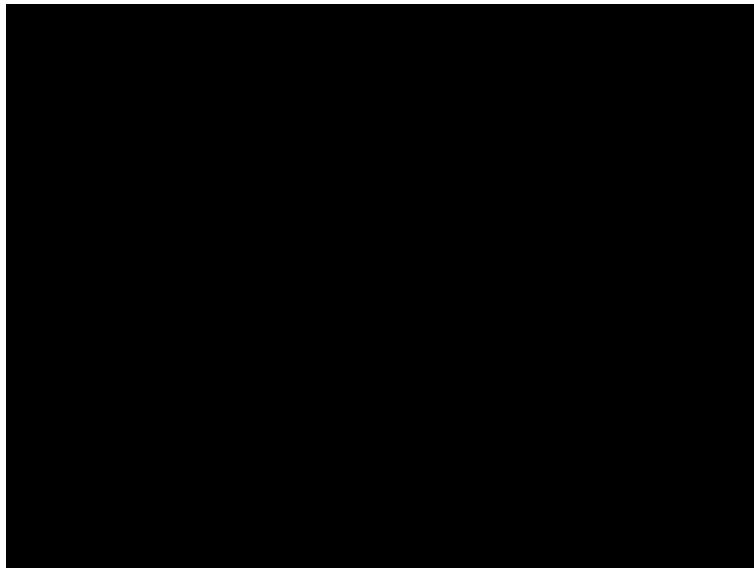
- ▶ Three units of Packed Red blood cells
- ▶ Injection Methylcobalamine 1000 microgram deep IM daily for 7 days
- ▶ Every alternate day x 7 such days
- ▶ Weekly once for 1 month
- ▶ Monthly once for lifelong
- ▶ Tab Folic acid 5 mg was given twice daily

Response to Treatment

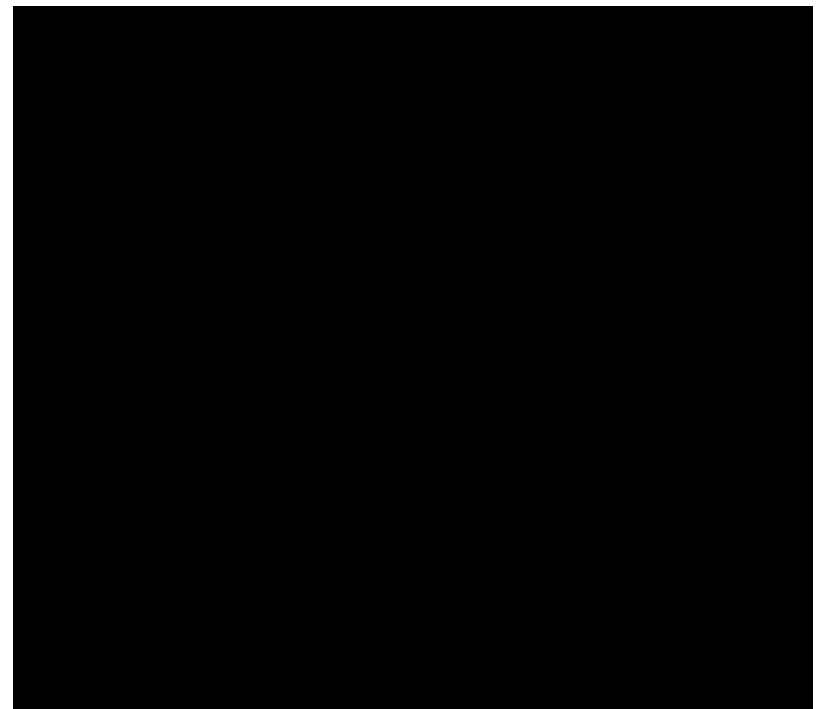
Response	Before treatment [17/7/21]	After treatment [9/8/21]
Radiology [MRI]	Dorsal cord enhancement from D1 to D8	Reduced to D1 to D3
Hemogram	Total WBC count: 1700 /mm ³ [N=45, L=50] Total RBC count: 160000/mm ³ Hemoglobin: 5.4 g/dl MCV: 96.7 /femtolitre MCH: 34 pg MCHC : 35.1 g/dl Platelet: 55000 /mm ³	Total WBC count: 7800 /mm ³ [N=70, L=23] Total RBC count: 280000/mm ³ Hemoglobin: 8.7 g/dl MCV: 91.6 fl MCH: 30.2 pg MCHC: 33 g/dl Platelet : 628000 /mm ³

Clinical Response

Before treatment
17/07/21



After treatment
11/8/21



Points to think about...

- ▶ May B12 deficiency be manifest in POST COVID patients?

Vitamin B12 Deficiency in COVID-19 Recovered Patients: Case Report

Alshammari, Elham.

*International Journal of Pharmaceutical Research (09752366) ;
13(1):482-485, 2021.*

Article | Academic Search Complete | ID: covidwho-1022367



▶ **Abstract:**

- ▶ A 42 year old healthy female
- ▶ Post COVID
- ▶ Presented with fatigue palor dizziness depression
- ▶ On evaluation VIT B12 level low
- ▶ Treated with VIT B12 and symptoms improved.

▶ **Author's conclusion and inference:**

- ▶ COVID 19 affects cobalamin metabolism
- ▶ COVID 19 impairs intestinal microbial proliferation



Thank you