

Case Report

A 30-Year-Old Male Patient of Miliary Tuberculosis Presented with Pancytopenia and Intracerebral Haemorrhage Mimicking Brain Tumor in MRI

Ahmed QMU¹, *Hasan MN²

Abstract

Unlike to fever, pancytopenia is a rare hematological manifestations of tuberculosis and intracranial haemorrhage as well. Here we report a case of disseminated tuberculosis presented with pancytopenia and intracranial haemorrhage. The patient presented with prolonged pyrexia, weight loss and subsequently unconsciousness and convulsion. After the diagnosis of tuberculosis with pancytopenia and intracerebral haemorrhage flowed by convulsion, he was treated with category-1 standard anti-tubercular therapy and anticonvulsant. After completion of the anti-tubercular drug his fever completely subsided and gained weight and pancytopenia was improved. But he is still on anti-convulsant medication with good control of seizure.

Keywords: Tuberculosis, pancytopenia, intracerebral haemorrhage

INTRODUCTION

Tuberculosis (TB) has a protean clinical manifestations. Hematologic abnormalities associated with extrapulmonary TB include anemia of different types, leucopenia, leukocytosis, leukemoid reaction, thrombocytosis, thrombocytopenia, and rarely pancytopenia.¹ Complications due to pancytopenia, especially cerebral hemorrhage is even rare.² We describe the case of an immunocompetent patient who presented with fever of unknown origin (FUO) with pancytopenia and subsequently developed cerebral hemorrhage. Subsequent clinical course is also discussed. We report

the case to correlate the uncommon presentations of a commonly encountered disease to emphasize the need for early diagnosis and treatment, otherwise fatal condition.

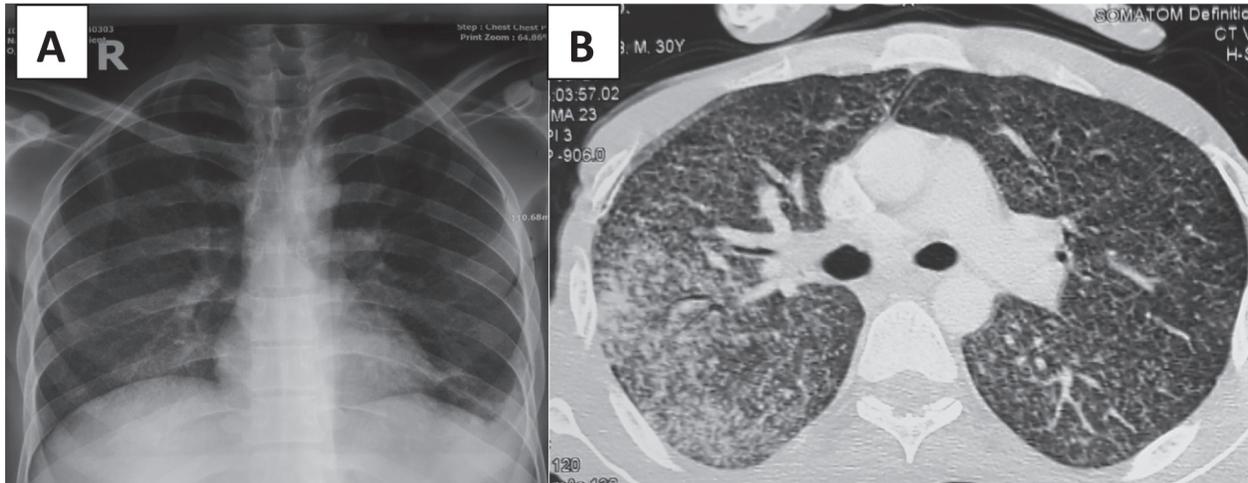
CASE REPORT

A 30-year-old male went to Saudi Arabia with a job. But after staying there for two weeks, he developed fever. There was no improvement after treatment for three weeks in Saudi Arabia. So, he returned to Bangladesh with fever and cachexia (FIGURE-3A) and was admitted at Dhaka Medical College Hospital (DMCH). At DMCH, some tests were run which included complete blood count (CBC), Blood for culture and sensitivity, Serum Electrolytes, C-reactive protein (CRP), chest X-ray, Urine routine examination and culture, Bone marrow examination (table-1). Except for raised CRP (82 mg), all investigations were normal. He was treated with meropenem 1 gm IV 8 hourly for 14 days. But still there was no improvement of fever, which continued with a range from 101⁰ F to 104⁰F. The patient decided to go to another hospital and got himself admitted in department of Internal Medicine at Bangabandhu Sheikh Mujib Medical University (BSMMU). On admission, his CBC showed pancytopenia (WBC-1080/ μ L, Hb- 9.9 gm/dl, Platelet- 19000/ μ L). Although his CXR was normal (figure-1A), we did high resolution CT (HRCT) scan of the chest. HRCT showed miliary mottling consistent with military tuberculosis (Figure-1B). Anti-tuberculous treatment (ATT) were started and fever began to subside after six days. But on the ninth day of ATT, he developed aphasia. MRI was advised which was done after five days of onset of aphasia due to financial constraints of the patient. MRI of brain with T2 weighted image showed large mixed intensity lesion in the left fronto-parietal region with perilesional oedema and effacement of the lateral ventricle (figure-2A). Radiological differential diagnosis was either intracerebral haemorrhage or glioblastoma multiforme. He was treated with IV dexamethasone along with ATT. Although, the ATT patient got rid of fever by this time, his consciousness deteriorated and he became unconscious. After four days, he regained his consciousness with slight

1. Dr. Quazi Mamtaz Uddin Ahmed, Associate professor, Department of internal medicine, Bangabandhu Sheikh Mujib Medical University (BSMMU), Shahbagh, Dhaka.

*2. Dr. Md. Nazmul Hasan, Assistant professor, Department of Internal Medicine, BSMMU, Shahbagh, Dhaka. Email-nazmul_31st@yahoo.com

*Correspondence



Chest X-ray PA view

HRCT of chest

Fig-1: A) Chest X-ray showing no detectable abnormalities B) HRCT chest revealed multiple bilateral miliary shadows.

recovery of speech. He was hospitalized at BSMMU for forty days and regained his speech completely. He was discharged and asked to come for follow up visit. He came after completion of ATT with follow-up MRI of brain which showed complete resolution of the brain lesion with evidence of gliosis. Four months after completion of ATT,

he developed generalized tonic clonic seizures several times. He was prescribed carbamazepine with the advice to continue the drug. One year on, he is still free from seizure and active in his daily life. He improved after treatment with anti-tubercular drug except convulsion which probably due to gliosis of brain (figure-3)

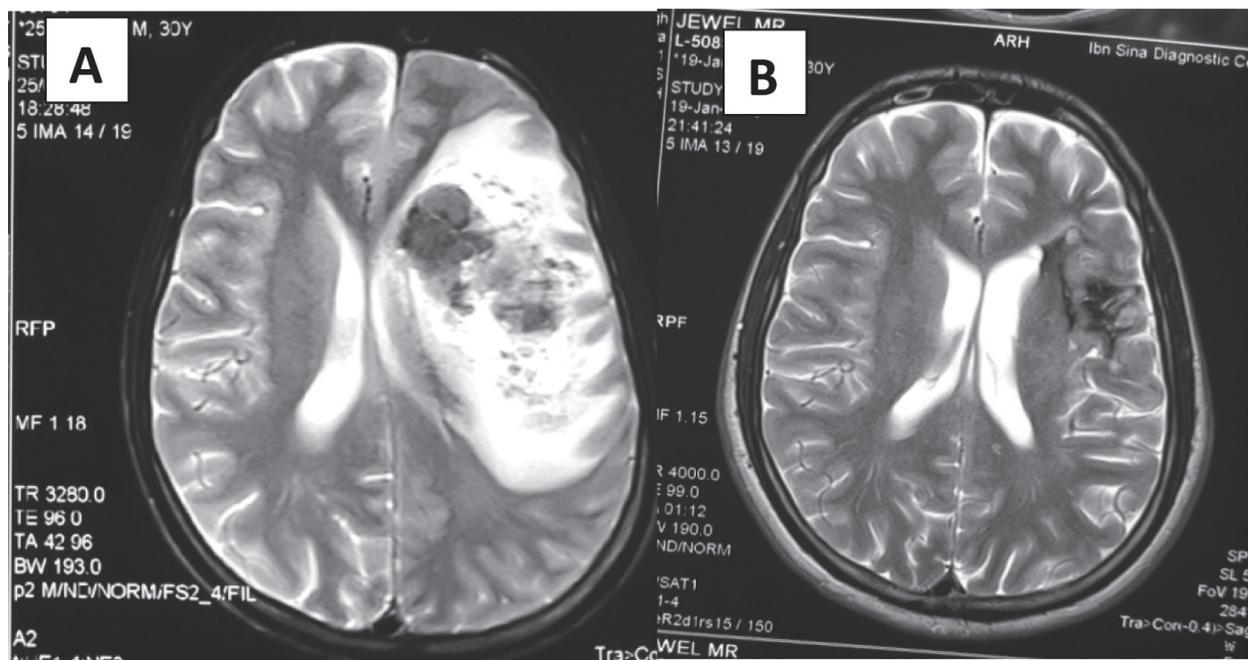


Fig-2: MRI of brain: A) Showing large mixed intensity lesion in left fronto-parietal region with peri-lesional edema and midline shifting and effacement of the lateral ventricle. B) Showing a small hypo-intense area with complete resolution of the previous lesion.

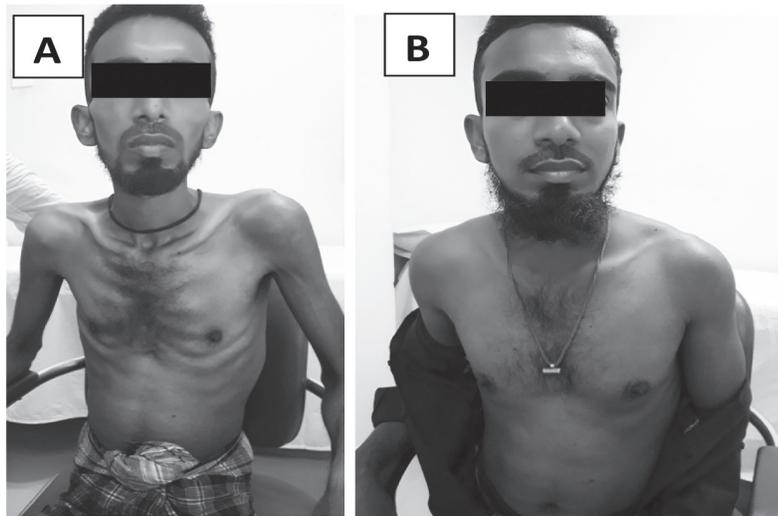


Fig -3: General condition of the patient before (A) and after(B) treatment with anti-tubercular drugs.

Table- I: Results of the investigation reports

Name of the investigations		Results
1.	CBC	
	Haemoglobin	9.9 gm/dl
	WBC-	1080/ μ L
	Platelet-	19000/ μ L
	ESR	30 mm in the first hour
2.	CRP	82 mg/dl
3.	Serum creatinine	0.9 mg/dl
4.	SGPT	40 IU/L
5.	Chest X-ray	Normal
6.	HRCT chest	Multiple military mottling in the both lung field
7.	MT	NEGATIVE
8.	Blood culture and sensitivity	No growth
9.	Urine R/M/E and culture and sensitivity	Normal
10.	Bone marrow examination	Reactive marrow
11.	MRI of the brain	Showing large mixed intensity lesion in left fronto-parietal region with peri-lesional edema and midline shifting and effacement of the lateral ventricle

DISCUSSION

Tuberculosis is a common problem in Bangladesh. Most of the cases are diagnosed with relative ease. But sometimes, it is very difficult to diagnose, especially when presented with fever of unknown origin(FUO). Moreover, complications like pancytopenia and cerebral hemorrhage make the

situation worse. Our patient presented with all these features. In a patient with FUO, where the CXR is normal, we should do HRCT of chest. In neutropenic patients upto 50% of the cases may have normal chest X-ray but HRCT chest may show evidence of pneumonia.³ Unfortunately, HRCT is still underperformed in a patient with FUO. Our

patient highlighted the importance of this test. Pancytopenia is a rare manifestation of tuberculosis. Patients with miliary tuberculosis accompanied by a pancytopenia rarely survive their disease.² Pancytopenia may be due to temporary suppression of bone marrow by the cytokines or due to direct invasion of the bone marrow by the acid fast bacilli as evident by granulomas with or without caseous necrosis in bone marrow trephine biopsy.⁴

Cerebral hemorrhage is an uncommon finding in pancytopenic patients. Bleeding from other body sites are more common. The cause of cerebral bleeding in our patient is not obvious. It could be due to pancytopenia or it could be due to intracerebral tuberculoma. Cerebral tuberculosis can cause mycotic aneurysm or it may weaken the cerebral vessel walls.^{5,6} Both may lead to rupture of cerebral vessels with resultant intracerebral, intraventricular and subarachnoid hemorrhages^{5,6} There are case reports supporting tuberculosis as a cause of intracranial bleedings. On many occasions diagnosis is made at autopsy.^{5,6} Also the timing of intracerebral hemorrhage can vary in intracerebral tuberculosis. It can be the presentation of the disease or it can happen anytime during ATT.^{7,8} Our patient developed intracerebral bleeds after first week of ATT. Tuberculosis affecting the central nervous system and bone marrow should be treated early. Otherwise, it is likely to be fatal. Our patient is lucky to get rid of his ordeal and lead a normal life.

CONCLUSIONS

A immunocompetent patients presented with fever of unknown origin and pancytopenia whose MRI of brain showed cerebral haemorrhage and also found bilateral miliary shadows by HRCT was treated with category-1 anti-tubercular therapy (ATT). The response of ATT and other symptomatic therapy was good and prognosis was also good. Early diagnosis and treatment can save the TB patients from fatal condition

REFERENCES

1. R.Avasthi, S.C. Chaudhary, D.Mohanty, and K Mishra,"Disseminated tuberculosis: interesting hematological observations", Journal of Association of Physicians of India, vol.58, no. 4, pp.243-244,2010.
2. Escourt LJ, Stanworth SJ, Collet D,Murphy MF.Intracranial haemorrhage in a thrombocytopenic haematologic patients-a nested case control study:the InCiTe study protocol. *BMJ open* 2014; 4:e004199
3. Heussel CP,Kauczor HU,Heusel G,Fischer B,Mildenberger P, et.al. Early detection of pneumonia in febrile neutropenic patients:use of thin section CT.AJR Am J Roentgenol 1997;169:1347-53
4. B. J. Hunt, V. Andrews and K.W. Pettingale. The significance of pancytopenia in miliary tuberculosis. *Postgraduate Medical Journal*. 1987 Sep; 63(743): 801-804
5. Hai Zou, Ke Hua Pan, Hong-Ying Pan, Dong-Sheng Huang: Cerebral hemorrhage due to tuberculosis meningitis: a rare case report and literature review. *Oncotarget*.2015 Dec 29;6(42): 45005- 45009.
6. BN Panda, RS Shah and RRRK Nair. Tuberculosis of brain presenting with recurrent stroke and intracranial haemorrhage. *Med J Armed Forces India*. 1995 Apr;51(2):139-141.
7. Shuangshoti S, Phisitbutr M. Fatal haemorrhage in tuberculosis of brain. *J Med Assoc Thai* 1979; 62: 639-645.
8. Nakayama Y, Tanaka A, Nagasaka S, Ikui H. Intracerebral haemorrhage in a patient with moyamoya phenomenon caused by tubercular arteritis: a case report. *No Shinkei Geka* 1999; 27: 751-755.