

## An unorthodox presentation of multiple myeloma in the form of acute ischemic stroke, dyspnoea, thromboses in multiple arteries and abdominal pain: A case report

Ajit Tambolkar<sup>1</sup>, Isha Tambolkar<sup>2</sup>, Raghav Navandar<sup>2</sup>

From <sup>1</sup>Consulting Physician, Department of General Medicine, Poona Hospital and Research Centre, <sup>2</sup>2<sup>nd</sup> Year Medical Student, Department of Internal Medicine, Byramjee Jeejeebhoy Government Medical College and Sassoon General Hospital, Pune, Maharashtra, India

### ABSTRACT

A patient with multiple myeloma usually presents with pathologic fractures, renal failure, anemia, and recurrent bacterial infections. Instead, this patient presented with acute ischemic stroke, dyspnea, and abdominal pain. The following case could be of immense clinical significance due to the unorthodox presenting features of the patient. A 55-year-old Indian male, a known hypertensive with a history of COVID-19, presented with features of acute ischemic stroke, breathlessness, and moderate abdominal pain. After treating the stroke, USG abdomen and pelvis were done which showed aortic, splenic, and right renal arterial thrombosis. Following suspicious laboratory results, a bone marrow biopsy was performed which revealed 12–15% plasmacytosis. Serum electrophoresis showed a band of M-protein suggestive of multiple myeloma. Multiple myeloma is rare and the aforementioned symptoms are even rarer which could pose a diagnostic challenge to clinicians. Clinicians should consider the possibility of multiple myeloma in similar cases in the future.

**Keywords:** COVID-19, Multiple myeloma, Stroke, Thrombosis

While the incidence of multiple myeloma in Asia (1.1/100,000) and India (1.0/100,000) is comparatively lower, there is evidence that it is gradually increasing in Indian metropolitan cities [1]. Majority of patients present with bone pain (70–80%), anemia (60–70%), and renal failure (20–25%). Other clinical manifestations include metabolic disorders (hypercalcemia or hyperuricemia), and hyperviscosity syndrome [2]. Although multiple myeloma patients have an increased susceptibility to stroke [3], it is an uncommon presenting feature of the disease along with dyspnea and abdominal pain [4,5]. Hence, for making an early diagnosis, it becomes extremely vital for the clinician to be aware of all the presenting features of multiple myeloma - whether common or uncommon. This is because it is estimated that people with multiple myeloma have a 5-year survival rate of 54% which increases to 75% if the diagnosis is made accurately at an early stage [6].

We now report an unorthodox presentation of multiple myeloma in the form of acute ischemic stroke, dyspnea, and moderate abdominal pain.

### CASE REPORT


A 55-year-old Indian male from Pune, Maharashtra presented with complaints of sudden onset gait imbalance along with giddiness, right upper limb weakness, and slurring of speech for the past 4–5 days. The patient also had complaints of breathlessness and moderate abdominal pain on presentation. He was a known case of hypertension for the past 2 years, however, was not taking any medication for the same. The patient had also tested positive for SARS-CoV-2 about a month before he presented with the aforementioned complaints.

On examination, he was afebrile, with a pulse rate of 110/min, blood pressure of 140/80 mm of Hg, and a respiratory rate of 22/min. The patient was immediately started on heparin infusion in view of acute cerebrovascular accident (left middle cerebral arterial infarct) and was treated for the same with dual antiplatelet therapy and statins with the continuation of the heparin infusion.

He was advised holter/transesophageal echocardiography (TEE)/thrombophilic profile, and reverse transcription polymerase chain reaction (RT-PCR) along with SARS-CoV-2 serum Immunoglobulin G (Ig)G levels. Holter and TEE showed no significant findings. Thrombophilia profile revealed low

**Correspondence to:** Raghav Navandar, Byramjee Jeejeebhoy Government Medical College and Sassoon General Hospital, Pune, Maharashtra, India. E-mail: raghavnavandar23@gmail.com

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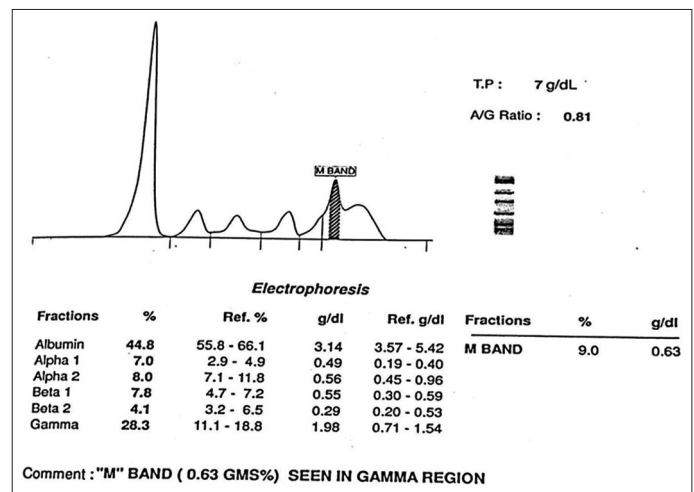
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antithrombin III levels and borderline low protein C levels. RT-PCR for SARS-CoV-2 was negative. However, SARS-CoV-2 IgG antibodies in the serum were positive, thus confirming a history of infection with COVID-19.

In light of the moderate abdominal pain, an ultrasound (Abdomen and Pelvis with Doppler) was done which revealed a hypodense thrombus in the aorta along with the right renal and splenic infarcts with reduced flows. In view of extensive thrombosis, the patient was advised to continue anticoagulant therapy. No Factor V Leiden mutations were seen after performing a molecular genetic test for F5 gene mutation, which ruled out any genetic basis for extensive thrombosis. Electrocardiogram was performed, which ruled out hypertension-induced pathology. A 2D Echo was done as well, which revealed mild concentric left ventricular hypertrophy, no regional wall motion abnormality, normal left ventricular systolic function, and no pulmonary hypertension. Mild left ventricular hypertrophy was attributed to his history of hypertension. Fundoscopy was also normal, which ultimately ruled out hypertension as the cause of the thrombosis.

The fecal occult blood test was positive, revealing the presence of blood in stools. A routine hemogram was done and it was observed that the hemoglobin levels of the patient were 9 g/dl (normal value - 13–17 g/dl), pointing toward anemia. The peripheral blood smear revealed normocytic normochromic anemia with anisopoikilocytosis. Platelet levels were abnormally high (1,113,000/mm<sup>3</sup>). Dacrocytes and a few elliptocytes were also seen. Lymphopenia with relative neutrophilia was seen. Serum creatinine and serum urea were elevated (2.04 mg/dl and 53 mg/dl, respectively), both pointing toward renal failure. Liver function tests revealed a reversal in the A: G ratio, found to be 0.81. In light of the reversed A: G ratio, 24-h urinary protein levels were monitored, and they turned out to be very high, that is, 988.2 mg/24 h (normal value is <150 mg/24 h). Anemia, renal failure, thrombosis (in multiple arteries), a reversal in the A: G ratio along with elevated 24-h urinary protein levels, and occult blood loss in stools pointed toward either a hematological or a gastrointestinal malignancy. Accordingly, gastroscopy, ileocolonoscopy, and serum protein electrophoresis were advised to the patient. The ileocolonoscopy and gastroscopy were normal, thus ruling out any gastrointestinal malignancies.

Serum electrophoresis revealed the presence of an “M Band” in the Gamma region (Fig. 1). The M Band was well defined and faint. Monoclonal gammopathy was seen in the IgG and kappa region, pointing towards Multiple Myeloma. Accordingly, bone marrow aspiration and biopsy were advised and showed that the marrow was hypercellular for the age of the patient. The myeloid: erythroid ratio was approximately 7:1. Approximately, 15–20% of plasma cells were noted in the marrow interstitium - both in aggregates and singly scattered. Light chain immunohistochemistry showed a kappa: Lambda ratio of 5:1. In view of the serum immunofixation finding of IgG kappa gammopathy, the light chain immunohistochemistry finding was interpreted as kappa light chain restriction. Thus, the bone marrow trephine biopsy revealed that the marrow was involved by a low



**Figure 1: Serum protein electrophoresis report showing the presence of “M band”**

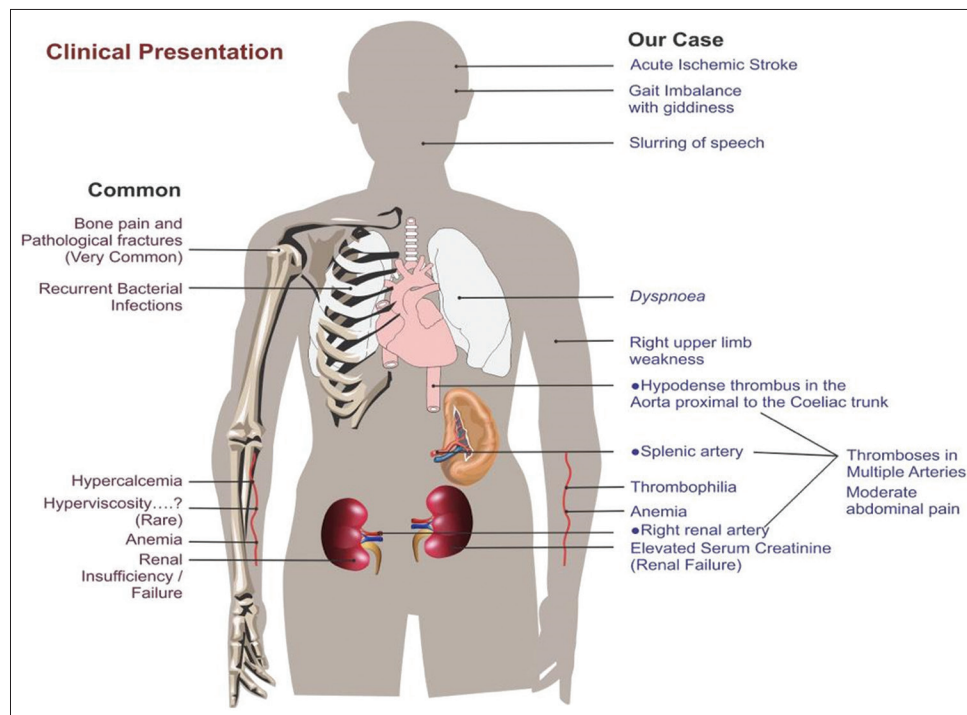
volume plasma cell myeloma, hence confirming our diagnosis of Multiple Myeloma.

Finally, the patient was referred to a hemato-oncologist for further treatment including chemotherapy. At the time of writing, the patient had been started on chemotherapy (zoledronic acid and thalidomide).

## DISCUSSION

We have described an atypical presentation of multiple myeloma consisting of acute ischemic stroke, dyspnea, and moderate abdominal pain due to underlying thrombosis. Prior literature has also shown a few case reports that have described incidences of stroke in patients with multiple myeloma although most of the incidences were a consequence of chemotherapeutic drugs such as lenalidomide and carfilzomib among others [7,8]. There have been prior reports of patients with multiple myeloma having arterial as well as venous thrombotic episodes, however, they have been attributed to treatment regimens consisting of thalidomide and dexamethasone [9,10]. Only in a rare setting does a patient of multiple myeloma primarily present with thrombosis, an example being a case of a healthy young man of new-onset multiple myeloma presenting with bilateral central retinal vein occlusion [11]. The comparison of clinical presentation of common cases of multiple myeloma versus our case is shown in Fig. 2.

Stroke and multiple thrombosis have been attributed to hyperviscosity syndrome. Symptoms and signs of hyperviscosity syndrome occur rarely in patients with multiple myeloma and this hyperviscosity is due to abnormally elevated concentrations of myeloma protein in the blood. Hyperviscosity is also observed as a post-COVID-19 complication. Thus, when a hypertensive patient with multiple myeloma presents with hyperviscosity along with a recent history of SARS-CoV-2 infection, it is difficult to attribute the hyperviscosity to either of the three disorders. The absence of any bone pain or pathological fractures also increased the difficulty in diagnosing this case correctly. After the fundoscopy ruled out hypertension as a cause of thrombosis, the authors were



**Figure 2:** Clinical presentation of a common case of multiple myeloma versus our case

considering the latter to be a post-COVID complication until the laboratory reports revealed suspicious findings such as anemia, elevated serum creatinine and serum urea, albumin: globulin ratio reversal, occult fecal blood loss, and increased 24-h urinary protein levels. These findings pointed toward a deeper cause of thrombosis rather than just labeling it as a post-COVID complication.

Suspecting gastrointestinal or hematological malignancies, certain investigations such as gastroscopy, ileocolonoscopy, and serum protein electrophoresis were performed. The electrophoresis report revealed the presence of an “M-band” in the gamma region, which was well-defined and faint. Monoclonal gammopathy was seen in the IgG and kappa region. Thus, a diagnosis of multiple myeloma was made - which was later confirmed by bone marrow trephine biopsy results which showed hypercellular marrow for the age of the patient, and myeloid: erythroid ratio as 7:1. Aided by CD 138 and MUM-1 immunostains, approximately 15–20% of plasma cells were noted in the marrow interstitium, both in aggregates and singly scattered. Adding to the multitude of abnormal presentations, the patient - paradoxically - also had thrombophilia, which has never been previously reported in a patient with multiple myeloma. A possible explanation for the paradoxical thrombophilia was that the patient was a case of evolving POEMS Syndrome, and will need regular follow-ups to confirm the same.

## CONCLUSION

A case of multiple myeloma presenting with stroke and hyperviscosity is uncommon and the fact that the patient had a history of COVID-19 could have made him susceptible to thrombosis. COVID-19 could have augmented the thrombosis due to multiple

myeloma or Myeloma-induced hyperviscosity could have predisposed the thrombosis due to COVID-19. Multiple Myeloma is a rare disease in itself and the aforementioned presenting features are even rarer which could pose a diagnostic challenge to clinicians. Physicians should take into account the possibility of multiple myeloma in similar cases in the future.

## ETHICAL CONSIDERATIONS

The authors obtained written informed consent of the patient before proceeding to write the case report. CARE Guidelines were followed by the authors while writing the manuscript.

## REFERENCES

1. Dhillon PK, Mathur P, Nandakumar A, Fitzmaurice C, Kumar GA, Mehrotra R, *et al.* The burden of cancers and their variations across the states of India: The global burden of disease study 1990-2016 *Lancet Oncol* 2018;19:1289-306.
2. Kumar L, Verma R, Radhakrishnan VR. Recent advances in the management of multiple myeloma. *Natl Med J India* 2010;23:210-8.
3. Hinduja A, Limaye K, Ravilla R, Sasapu A, Papanikolaou X, Wei L, *et al.* Spectrum of cerebrovascular disease in patients with multiple myeloma undergoing chemotherapy-results of a case control study. *PLoS One* 2016;11:0166627.
4. Cabrera A, Klein JS. Bilateral pleural masses and shortness of breath associated with multiple myeloma. *Chest* 1997;111:1750-3.
5. Salguero DA, Barletta PA, Sierraalta W. Severe abdominal pain and diarrhea-unusual multiple myeloma presentation with a severe prognosis: A case report. *J Med Case Reports* 2018;12:70.
6. Cancer Net Editorial Board Multiple Myeloma-statistics; 2012. Available from: <https://www.cancer.net/cancer-types/multiple-myeloma/statistics> [Last accessed on 2021 Jul 31].
7. De Celis E, de Leciñana MA, Rodríguez-Pardo J, Fuentes B, Diez-Tejedor E. Increased risk of ischemic stroke in multiple myeloma associated with lenalidomide treatment: A case report and review of the literature. *Clin Neuropharmacol* 2018;41:232-5.
8. Osafehinti D, Zivari K. Case of stroke from cerebral vasculitis following

- carfilzomib, lenalidomide, and dexamethasone therapy in a patient with relapsing multiple myeloma. *Case Rep Hematol* 2019;2019:5180424.
9. Goz M, Eren MN, Cakir O. Arterial thrombosis and thalidomide. *J Thromb Thrombolysis* 2008;25:224-6.
  10. Raven W, Berghout A, Van Houten A, Frank WG. Treatment of multiple myeloma and arterial thrombosis. *Ann Hematol* 2010;89:419-20.
  11. Golesic EA, Sheidow TG. An otherwise healthy young man presents with bilateral CRVO as the first sign of hyperviscosity syndrome in the setting of new multiple myeloma. *Retin Cases Brief Rep* 2015;9:38-40.

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