

# Image Diagnosis: Immune Thrombocytopenia Secondary to Abdominal Koch Disease

Laxmikant Ramkumarsingh Tomar, MD, MBBS; Nikhil Gupta, MD, MBBS;  
Sarathak Malik, MD, MBBS; Paritosh Garg, MD, MBBS; Puneet Chhabra, MD, MBBS, DM

Perm J 2016 Winter;20(1):e103-e104

<http://dx.doi.org/10.7812/TPP/15-032>

## CASE REPORT

A 37-year-old man presented to our hospital with a 10-week history of low-grade fevers, abdominal distension, and constipation. He also reported significant weight loss and night sweats for the same duration. He had no history of rash or petechiae, and there was no family history of any hematologic disorders. The patient denied illicit drug use. Other than the current illness, he had no significant history of medical illness or comorbidity. On examination, the patient was febrile (101° F, 38.3° C). There was also shifting dullness on abdominal examination suggestive of free fluid in the abdomen. There was no organomegaly or lymphadenopathy. The rest of the physical examination was normal.

Relevant investigations included hemoglobin of 12.2 g/dL, total leukocyte count of 4400/mm<sup>3</sup> (48% neutrophils, 50% lymphocytes, and 2% eosinophils), platelet count of 56,000/mm<sup>3</sup>, and erythrocyte sedimentation rate of 90 mm during the first hour using the Westergren method. Peripheral blood smear was remarkable for paucity of platelets with normochromic and normocytic red blood cells (Figure 1). Mean corpuscular volume was 88 fL, and the corrected reticulocyte index was 1.7%. Bone marrow aspiration showed erythroid hyperplasia and megakaryocytosis cells without any granuloma and necrosis (Figure 2). Mantoux test was positive. Ultrasonography of the abdomen revealed moderate ascites. Ascitic fluid analysis revealed: total cells, 1000 cells/mL (85% lymphocytes); protein concentration, 4.1 gm%; and adenosine deaminase, 77 U/L. A qualitative multiplex polymerase chain reaction for tuberculosis (TB) using IS6110 and protein B was positive. The patient's liver and renal function tests, prothrombin time, activated partial thromboplastin time, lipid profile, iron studies including serum ferritin level, direct Coombs test, human immunodeficiency virus, antihepatitis C virus, and hepatitis B surface antigen reports were all negative. Chest x-ray was normal. Contrast-enhanced computed tomography scan of the abdomen and

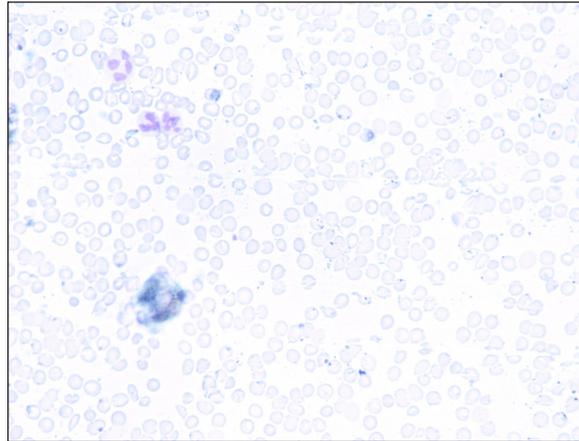


Figure 1. Peripheral blood smear showing leukocytosis, normochromic red blood cells, and occasional platelet (thrombocytopenia).

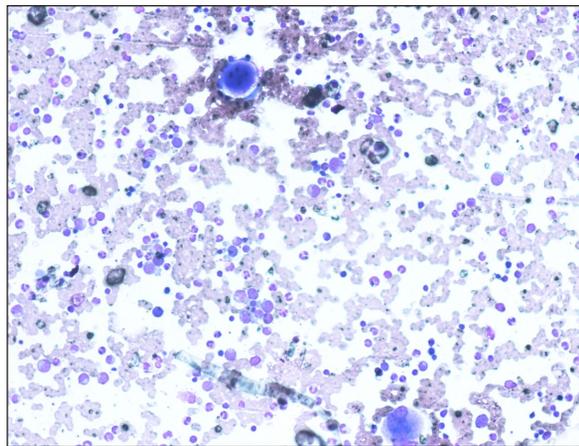


Figure 2. Bone marrow aspiration showing trilineage hematopoiesis with an increase in number of megakaryocytes (megakaryocytic thrombocytopenia).

Laxmikant Ramkumarsingh Tomar, MD, MBBS, is a Resident in the Neurology Department at the Govind Ballabh Pant Institute of Post Graduate Medical Education and Research in Delhi, India. E-mail: drlaxmikantucms@yahoo.com. Nikhil Gupta, MD, MBBS, is a Fellow in Clinical Immunology & Rheumatology at the Christian Medical College in Vellore, India. E-mail: nik.gupta4u@gmail.com. Sarathak Malik, MD, MBBS, is a Senior Resident in the Department of Medicine at the University College of Medical Sciences and Guru Teg Bahadur Hospital, University of Delhi, Dilshad Garden, Delhi, India. E-mail: sarthakmalik87@gmail.com. Paritosh Garg, MD, MBBS, is a Fellow in the Department of Pathology at the University College of Medical Sciences and Guru Teg Bahadur Hospital, University of Delhi, Dilshad Garden, Delhi, India. E-mail: drparitoshgarg@gmail.com. Puneet Chhabra, MD, MBBS, DM, is a Fellow in the Department of Gastroenterology at the Post Graduate Institute of Medical Education and Research in Chandigarh, India. E-mail: puneet.pgi@gmail.com.

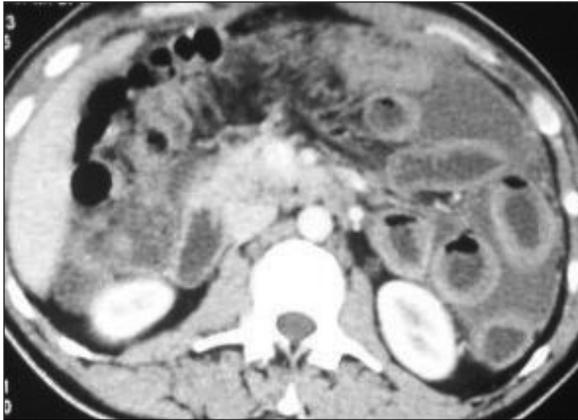


Figure 3. Contrast-enhanced computed tomography scan of the abdomen showing thickening of the small intestine (terminal ileum), ileocecal junction, and cecum with ascites.

thorax showed ascites with ileocecal and omental thickening without any evidence of lymphadenopathy in the chest and abdomen (Figure 3).

In view of these clinical findings and because of the possibility of secondary immune thrombocytopenia caused by gastrointestinal Koch disease (peritoneal plus small intestinal) antitubercular therapy (ATT) was started. After ten days, the patient's platelet count started to rise, and by the end of one month his platelet count was normal. After completing his full course of ATT, the patient reported feeling well and had no complaints.

## DISCUSSION

TB has varied clinical presentations and is on a rising trend in developing countries. A World Health Organization 2014 report<sup>1</sup> showed that India has the highest TB burden with an estimated incidence of 2.2 million. Global incidence is estimated to be 8.7 million.<sup>1</sup>

The hematologic manifestations of TB include anemia, leukocytosis, and pancytopenia. Immune thrombocytopenia in TB, as found in our patient, is rare. Thrombocytopenia is typically described in the context of pancytopenia, which develops secondary to bone marrow infiltration by tuberculous granulomas (nonimmune mechanism), as related to TB-induced hemophagocytic syndrome, as a side effect of antitubercular therapy, and rarely as immune-mediated platelet destruction.<sup>2-8</sup>

Differential diagnosis of such a presentation includes: 1) disseminated intravascular coagulopathy, 2) thrombotic thrombocytopenic purpura, 3) Evans syndrome, and 4) hemophagocytic syndrome.

Abdominal Koch disease was diagnosed in our patient on the basis of a high adenosine deaminase value in the ascitic fluid, a positive multiplex polymerase chain reaction for TB, surrogatory contrast-enhanced computed tomography findings, and a treatment response to ATT. The patient reported no history of drug use in the recent past. Secondary causes of immune thrombocytopenia were also ruled out, and his bone marrow aspiration results were consistent with peripheral destruction of platelets.

## CONCLUSION

For immune thrombocytopenia secondary to TB, a combination of steroid and ATT is generally preferred for rapid increase in platelet count.<sup>8</sup> The role of intravenous immunoglobulin has also been described in the literature, but there are presently no definite guidelines for treatment of immune thrombocytopenia secondary to TB.<sup>9</sup>

Because our patient was not symptomatic for thrombocytopenia, he was treated with ATT only. On follow-up after completing the full course of ATT, his platelet count and hemoglobin were normal, and he reported feeling fine. ❖

## Disclosure Statement

*The author(s) have no conflicts of interest to disclose.*

## References

1. Global tuberculosis report 2014 [Internet]. Geneva, Switzerland: World Health Organization; 2014 [cited 2015 Aug 20]. Available from: [http://apps.who.int/iris/bitstream/10665/137094/1/9789241564809\\_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/137094/1/9789241564809_eng.pdf?ua=1).
2. Ghobrial MW, Alborno MA. Immune thrombocytopenia: a rare presenting manifestation of tuberculosis. *Am J Hematol* 2001 Jun;67(2):139-43. DOI: <http://dx.doi.org/10.1002/ajh.1093>.
3. Spedini P. Tuberculosis presenting as immune thrombocytopenic purpura. *Haematologica* 2002 Feb;87(2):ELT09.
4. Madkaikar M, Ghosh K, Jijina F, Gupta M, Rajpurkar M, Mohanty D. Tuberculosis and immune thrombocytopenia. *Haematologica* 2002 Aug;87(8):ELT38.
5. Ozkalemkas F, Ali R, Ozkan A, et al. Tuberculosis presenting as immune thrombocytopenic purpura. *Ann Clin Microbiol Antimicrob* 2004 Sep 6;3:16. DOI: <http://dx.doi.org/10.1186/1476-0711-3-16>.
6. Kalra A, Kalra A, Palaniswamy C, Vikram N, Khilnani GC, Sood R. Immune thrombocytopenia in a challenging case of disseminated tuberculosis: a case report and review of the literature. *Case Report Med* 2010;2010. DOI: <http://dx.doi.org/10.1155/2010/946278>.
7. Surana AP, Shelgikar KM, Melinker S, Phadke A. Immune thrombocytopenia (ITP): a rare association of lymph node tuberculosis. *J Assoc Physicians India* 2014 Jan;62(1):74-6.
8. Jin F, Balthasar JP. Mechanisms of intravenous immunoglobulin action in immune thrombocytopenic purpura. *Hum Immunol* 2005 Apr;66(4):403-10. DOI: <http://dx.doi.org/10.1016/j.humimm.2005.01.029>.
9. Pérez de Llano LA, Soñán del Cerro JL, García Pais MJ. [Immune thrombocytopenic purpura as presenting form of miliary tuberculosis]. [Article in Spanish]. *Arch Bronconeumol* 1998 Sep;34(8):411-2.