

# Association of Methylmalonic Acidemia and Erythema Nodosum

## Letter to the Editor

Dear Editor,

Methylmalonic acidemia, one of the organic acidemias, is associated with a variety of clinical presentations ranging from very sick newborn infants to asymptomatic adults, regardless of the nature of the enzymatic defect or the biochemical abnormalities.<sup>1</sup>

A 6-year-old boy with a past history of methylmalonic acidemia presented to the emergency room with a one-week history of inflammatory nodular lesions on the anterior aspects of his legs. He had been on sodium bicarbonate, carnitine, vitamins B<sub>6</sub> and B<sub>12</sub>, and biotin for a period of about 5 years. In physical examination, there was no fever, no lymphadenopathy or sign of arthritis. There were multiple erythematous tender nodules (3-6 cm) in diameter on both legs especially on the right one. In repeated examinations within the next 3 days the nodules became darker, harder and tender and were still extremely tender to touch (figure 1).



**Figure 1:** Multiple erythematous tender nodules on the patient's legs especially on the right one. A. At the time of admission, B. three days later

The results of blood tests (chemistries, complete blood count, antinuclear antibody, rheumatoid factor, complements, thyroid function tests, sedimentation rate, and Anti-streptolysin O (ASO) titer, and anti tissue transglutaminase antibody were normal except for mild anemia and mild enlargement of kidneys, which were secondary to methylmalonic acidemia.

The findings of physical exam in this patient are a typical presentation of erythema nodosum. Erythema nodosum is a cutaneous reaction consisting of inflammatory tender nodular lesions usually located on the anterior aspects of lower extremities. Erythema nodosum can be associated with a broad spectrum of conditions; most commonly infections, sarcoidosis, rheumatologic disorders, inflammatory bowel disorders, autoimmune disorders, malignancies, and the use of some medications. Typically it is manifested by the sudden onset of symmetrical, tender erythematous, warm nodules and raised plaques usually located on the shins, ankles and knee. Lesions are often distributed bilaterally. At first the nodules show a bright light color, but within a few days they become red or purplish, and finally they exhibit a yellow or greenish appearance taking on the look of a deep bruise.<sup>2</sup>

The treatment of erythema nodosum should be directed at the associated underlying condition if identified. Usually nodules of erythema nodosum regress spontaneously within a few weeks, and bed rest is often sufficient for treatment. Some authors use vitamin B<sub>12</sub> in the treatment of erythema nodosum.<sup>2,3</sup> In the present case we used high dose of vitamin B<sub>12</sub>, which resulted in the resolution of erythema nodosum in a few days later.

It is suggested that in the present case there was an association of methylmalonic acidemia and erythema nodosum. High dose of vitamin B<sub>12</sub> may play a role in the resolution of erythema nodosum. It is recommended that this association be considered in future.

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## References

- 1 Rezvani I. Metabolic Disease. In: Kleigman R, Rezvani I, editors Nelson Textbook of Pediatric, 18th ed. Philadelphia. Saunders; 2007. p. 547-9.
- 2 Volkov I, Rudoy I, Press Y. Successful treatment of chronic erythema nodosum with B<sub>12</sub>. *J AM Board Fam Pract* 2005; 18: 567-9.
- 3 Volkov I, Press Y, Rudoy I. Vitamin B<sub>12</sub> could be A "Master Key" in the regulation of multiple pathological processes. *J Nippon Med Sch* 2006; 73: 65-9.