

A Case of Hypercalcemia and Scabies

To the Editor:

Hypercalcemia has been associated with most granulomatous diseases. Sometimes it is a common manifestation, as in sarcoidosis, tuberculosis, or lymphomas.¹ For several other granulomatous diseases, it is a rare occurrence. It was described in diseases like Wegener granulomatosis, Crohn disease, histiocytosis X, silicone-induced granulomatous diseases, and berylliosis.² There are reports in infectious diseases: cryptococcosis, coccidioidomycosis, *Mycobacterium leprae*, and cat-scratch disease, to name a few^{3,4} but not with scabies.

A 40-year-old man presented in August 2003 with a calcium level of 4.04 mmol/L, and his serum creatinine level was 486 μ mol/L. He was treated with intravenous fluids, furosemide, and pamidronate. His serum calcium and kidney function quickly recovered.

The history did not reveal a possible rare cause like milk-alkali syndrome, vitamin D or A intoxication, lithium intake, or immobilization. 25-OH-D levels were normal. 1.25(OH)₂ vitamin D assay is not available in our center.

We immediately searched for the 2 most frequent etiologies, which are primary hyperparathyroidism and cancer. A low parathyroid hormone excluded the first one, so we focused our investigation on neoplastic diseases.

Search for myeloma was negative. The thoracic and abdominal computed tomography scan revealed small axillary and inguinal lymph nodes. Positron emission tomography scan revealed mild uptake of axillary and inguinal lymph nodes (Figure). A right axillary lymph node biopsy showed nonspecific inflammation.

Even though the lymph node sample did not reveal a classic granuloma, sarcoidosis and other granulomatous diseases now needed consideration. A self-remitting sarcoidosis is very unlikely, considering his normal chest radiograph, rapid spontaneous remission without corticosteroids, and low angiotensin-converting enzyme serum level.

Skin examination revealed excoriated erythematous papules of the limbs, trunk, groins, and genitals. There were interdigital burrows on the hands. A diagnosis of scabies was made by identification of mites and eggs on skin scrapings. Treatment with permethrin was started.

Granulomas have been described in association with scabies. They often arise weeks to months after the beginning of the infection.⁵ There also are some reports of scabetic nodules with a histological resemblance to malignant lymphoma.⁶ The mechanism responsible for hypercalcemia in granulomatous diseases is increased conversion of calcitriol (1.25[OH]₂D) from calcidiol. Activated macrophages have a higher activity of their 1- α -hydroxylase that transforms 25(OH)D into active Vitamin D. Exposure to ultraviolet rays is a known risk factor for hypercalcemia in granulomatous diseases.¹

Our patient's skin problem had begun 4 months prior. He had been diagnosed in another center with pytriasis rosea and recently was being treated with phototherapy. This ultraviolet source probably triggered the hypercalcemia and the ensuing acute renal failure.

Over the years, 4 more positron emission tomography scans were done and became completely normal (Figure). His serum calcium levels have remained normal throughout the 6 years of follow-up.

In conclusion, scabies should be added to the list of infectious diseases that can induce hypercalcemia.

Shana Balfour, MD
Service de Néphrologie
Hôpital Georges-Dumont
Moncton, NB, Canada

Mélanie Masse, MD
Martin Plaisance, MD
Service de Néphrologie
Département de Médecine Interne
Centre Hospitalier Universitaire de Sherbrooke
Sherbrooke, QC, Canada

doi:10.1016/j.amjmed.2009.09.033

Funding: None.

Conflict of Interest: None.

Authorship: All authors contributed to the writing of the article.

Requests for reprints should be addressed to Martin Plaisance, MD, Service de Néphrologie, Centre Hospitalier Universitaire de Sherbrooke, 3001 12e Avenue Nord, Sherbrooke, QC J1H 5N4, Canada.

E-mail address: martin.plaisance@usherbrooke.ca

ACKNOWLEDGMENT

We would like to thank Dr. Bruno Maynard, dermatologist, Dr. Jean Verreault, Nuclear Medicine Specialist, and Dr. Khun Visith Keu, resident in Nuclear Medicine.

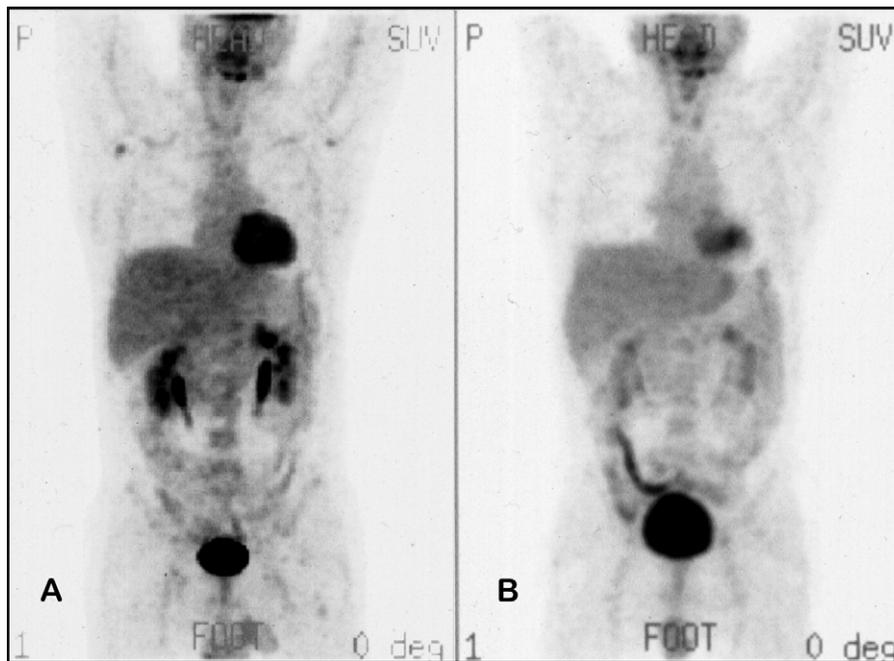


Figure (A) First positron emission tomography scan reveals hypermetabolic nodes in the underarms and groins. (B) Two years later, the positron emission tomography scan is normal.

References

1. Shepard MM, Smith JW. Hypercalcemia. *Am Med Sci.* 2007;334:381-385.
2. Bosch X. Hypercalcemia due to endogenous overproduction of 1,25-dihydroxyvitamin D in Crohn's disease. *Gastroenterology.* 1998;114:1061-1065.
3. Ali MY, Gopal KV, Llerena LA, et al. Hypercalcemia associated with infection by *Cryptococcus neoformans* and *Coccidioides immitis*. *Am J Med Sci.* 1999;318:419-423.
4. Bosch X. Hypercalcemia due to endogenous overproduction of active vitamin D in identical twins with cat-scratch disease. *JAMA.* 1998;279:532-534.
5. Wilsmann-Theis D, Wenzel J, Gerdson R, Uerlich M, Bieber T. Granuloma annulare induced by scabies. *Acta Derm Venereol.* 2003;4:318.
6. Desmons F, Bombart M, Desurmont B. Scabetic granuloma in infants and young children [French]. *Dermatologica.* 1977;155:169-171.