

## **Hair loss in Lyme disease – the last straw?**

**Monday, November 28, 2016**

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In a recent issue of the *American Journal of Dermatopathology*, Lynch and colleagues report on the case of a 21-year-old man who suffered hair loss following a tick bite to the scalp. [2] The man presented with nonscarring alopecia, a pattern of hair loss similar to alopecia-areata, also known as spot baldness.

Tick bite-induced nonscarring alopecia typically presents as patches, often described as "moth-eaten" or patients may have nodular, blood crusted lesions. According to the authors, symptoms include pain, pruritus or swelling. "There is usually a history of tick bite to affected areas, but lack of patient-reported tick attachment does not rule out this diagnosis."

The patient's nonscarring tick-borne alopecia was complicated by external trauma including hair pulling and lichen simplex chronicus, a condition of thick, leathery, brownish skin caused by chronic itching and scratching.

The nonscarring tick-borne alopecia was thought to be due to a robust host response. "Tick bite alopecia is a reported phenomenon that is thought to be caused by a robust host response to tick-injected saliva containing an anticoagulant and anti-inflammatory and immunomodulatory chemicals," explains Lynch.

There is good news for nonscarring tick-borne alopecia. "Because few hair follicles are truly destroyed in this form of tick bite alopecia, hair regrowth is commonly observed, usually within 3 months; [3-5] however, alopecia has been reported to persist for 5 years after healing of local reaction to tick bites," according to a series of four papers cited by Lynch. [6]

A scarring form of tick bite alopecia has also been described in Europe. "Tick-borne lymphadenopathy syndrome, classically transmitted by ticks of the genus *Dermacentor* and caused by *Rickettsia slovaca* infection, is an emerging entity typically seen in Europe," according to Lynch. "Doxycycline remains the treatment of choice."

Generalized hair loss, as well, has been described in Lyme disease patients. [7] "Diffuse alopecia occurred within three months after the outbreak of disease in 3 out of 23 (13%) patients with Lyme meningitis and in 40 out of 71 (56.3%) patients with tick-borne encephalitis," according to Cimperman from the University Medical Centre, Ljubljana, Slovenia. "The mean duration of alopecia was 2 to 3 months and alopecia was reversible in all patients."

There are a number of causes of scarring and nonscarring alopecia including autoimmune conditions, such as lupus, diabetes and fibromyalgia. [8] Moreover, medications used to treat systemic autoimmune disease and fibromyalgia have also been associated with alopecia.

Hair loss can impair the quality of life of patients with systemic disease. "Patients in remission from their global systemic disease are often left with alopecia, which significantly impairs their self-esteem and interferes with their personal and professional lives," according to Moghadam-Kia from the University of Pittsburgh Medical Center. "This situation is often not adequately recognized, and withdrawal from social and work functions often leads to or augments long-standing depression in the patient."

"To the authors' knowledge, this is the fifth report of nonscarring tick bite alopecia in the literature and the first in an adult patient," writes Lynch. There are undoubtedly many more undocumented cases of Lyme disease patients suffering from not only generalized hair loss but from tick-borne alopecia. The authors are to be congratulated for bringing attention to an under-recognized medical condition which can greatly impact patients' lives.

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