Trichotillomania due to pica in a 23-month-old patient with concomitant iron deficiency anemia and lead poisoning

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INTRODUCTION
Trichotillomania is classified as an obsessive-compulsive related disorder in older children and adults. Minimal research has been done in children younger than 3 years old with trichotillomania, and its etiology is obscure.1 We report the case of a 23-month-old girl presenting with trichotillomania, who was found to have lead poisoning and trichophagia, and a manifestation of pica induced by underlying iron deficiency anemia (IDA).

CASE REPORT
A 23-month-old girl with atopic dermatitis and presumed autism spectrum disorder presented with patchy hair loss, which lasted for 1 week. She had been pulling out hair from the frontal aspect of her scalp despite preventive measures, including hair braiding. Upon questioning, the mother reported finding hair in her daughter’s stool. In addition to trichophagia, the mother also noted the patient’s chewing on nonfood items, such as paint chips. The patient had no recent stressors and no other relevant family history. The patient’s pediatrician had recently started an autism spectrum disorder workup for behavioral changes and sensorineural hearing deficiencies. Physical examination revealed multiple alopecic areas with hairs of varying length and linear excoriations on the frontal aspect of the scalp (Fig 1), which was consistent with trichotillomania.

This presentation of trichotillomania was atypical because of the patient’s young age1 and pica. Due to pica, workups for IDA and lead poisoning were pursued. Laboratory tests revealed a hemoglobin level of 8.6 g/dL (reference range, 10.3-13.2 g/dL), mean corpuscular volume of 56.6 fl (reference range, 69.5-81.2 fl), iron level of 19 μg/dL (reference range, 50-200 μg/dL), and total iron binding capacity of 429 μg/dL (reference range, 250-400 μg/dL), which were consistent with IDA. The blood lead levels was 14 μg/dL (reference range, 0-4 μg/dL), indicating lead poisoning. The patient was started on iron supplements. Lead chelators were deferred because her blood lead level was less than 45 μg/dL.2 The New York State Department of Health was notified of the presence of lead paint in the patient’s home. A search for a specific etiology of the patient’s IDA is ongoing; however, we suspect inadequate iron intake and, perhaps, concomitant thalassemia. After discussion with the patient’s pediatrician, it seems likely that her recent development of behavioral changes and sensorineural deficiencies were a result of lead poisoning.

DISCUSSION
In young children, lead poisoning is most often caused by ingestion of lead-based paint.3 While classically associated with IDA, pica is often a normal
manifestation of exploring the surrounding environment among young children. Children from lower-income families are at an increased risk of lead poisoning because they have increased pica and are sometimes exposed to peeling lead-based paint. Epidemiologically, lead-based paint is ubiquitous in areas of Bronx, where the patient lives, and continues to be a source of lead poisoning in that community. To cut costs, landlords presumably paint over lead-based paint rather than remove it.

Young children with the following risk factors should be screened for lead toxicity using venous blood measurements: being at or below the federal poverty line, pica, poor nutritional status, and a family history of lead poisoning. If the venous blood lead level is higher than 5 μg/dL, the United States Center for Disease Control and Prevention recommends repeating the venous blood lead measurements at intervals specific to the degree of toxicity to ensure that the lead levels are not rising. Lead levels higher than 20 μg/dL can occur in parallel with IDA and can independently cause microcytic anemia. Lead levels higher than 20 μg/dL should prompt iron concentration tests and a complete blood count as well as an abdominal X ray to detect lead-containing substances. Oral chelation therapy is considered with blood lead levels of 45 μg/dL and higher. Chelation therapy entails risks of fever and neutropenia and only improves neurodevelopmental outcomes in children with lead levels higher than 45 μg/dL. A risk-benefit ratio favors no treatment for lead levels lower than 45 μg/dL. High lead levels in an index case should prompt lead level measurements in the patient’s family and friends.

Lead poisoning is often asymptomatic, making it difficult to diagnose without regular screening and a known history of lead paint ingestion. The occurrence of trichotillomania in an atypically young age prompted our search for organic causes. The elicitation of a history of trichophagia prompted the consideration of pica, which is commonly caused by IDA and is commonly a cause of lead poisoning.

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