

# Delusional parasitosis secondary to severe iron deficiency anemia



Sahil Sekhon, MD, Caleb Jeon, BS, Mio Nakamura, MD, and John Koo, MD  
San Francisco, California

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## INTRODUCTION

Delusions of parasitosis (DOP), a disorder in which patients have a fixed belief that they are infested without evidence, is often a very difficult condition to manage. There are many organic causes of DOP that are potentially reversible. We present a case of DOP secondary to severe anemia. The authors could not find any other case in which DOP reversed with blood transfusion.

## THE CASE

A 49-year-old woman presented for evaluation of the sensation of “bugs eating away” at her skin with associated symptoms of burrowing, biting, and crawling. Her symptoms started about 18 months before this evaluation when she presented to the emergency room (ER) after her friend cut into an erythematous nodule on her leg. They reported seeing “spider eggs fall out” of the wound. No eggs or spiders were seen in the ER. Nine months later, she presented again to the ER with a similar complaint of a painful nodule on her leg. A recurrent epidermal inclusion cyst was diagnosed that was excised by a surgeon. Three months later, she presented to another dermatologist for multiple open wounds on her extremities that were diagnosed as self-induced wounds. At that time, she firmly believed her wounds were caused by, “spiders burrowing into [her] skin and laying eggs within the wounds.”

Physical examination in our clinic 6 months later found multiple wounds on her extremities and back in various stages of healing with sparing of difficult-to-reach areas on her back; no primary skin lesions were observed. Throughout her visit, she repeatedly

### Abbreviations used:

DOP: delusions of parasitosis  
ER: emergency room

insisted that she had some type of bug that was “eating away at [her] skin from inside,” and felt burrowing, biting, and crawling sensations on her skin.

The diagnosis of DOP was made. Before considering pimozide for treatment, she had routine screening laboratory testing that included a complete blood count because of the extremely rare risk of leukopenia, neutropenia, and agranulocytosis with pimozide therapy. Her laboratory results showed hemoglobin of 3.4 g/dL (normal range, 11.7–15.5 g/dL) and hematocrit of 13.5% (normal range, 35%–47%). She was instructed to immediately go to the ER where she was treated with blood transfusions with packed red blood cells and iron supplementation. Two months later, she returned to our clinic with complete resolution of her symptoms of burrowing, biting, and crawling and her delusional ideation after the blood transfusion. Of note, she never took pimozide. The extensive workup for her anemia was unremarkable except for iron deficiency anemia. Most of her wounds had healed; she still had a wound on her right deltoid area but was no longer fixated on infestation as the only possible explanation of her symptoms. She was able to articulate explicitly to us a range of possibilities that the wound may be from “a spider bite, or low blood count, or whatever.”

From the Department of Dermatology, University of California San Francisco.

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Correspondence to: Sahil Sekhon, MD, 515 Spruce St, San Francisco, CA 94118. E-mail: [sahil.sekhon@ucsf.edu](mailto:sahil.sekhon@ucsf.edu), [sahil.sekhon@gmail.com](mailto:sahil.sekhon@gmail.com).

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## DISCUSSION

DOP can either be primary or secondary. Primary DOP is diagnosed when a delusion of infestation is present on its own, whereas secondary DOP may be the result of another medical or psychiatric condition and medications including substance abuse.

DOP can be secondary to psychiatric disorders that include schizophrenia, depression, and bipolar disorder.<sup>1</sup> DOP can also be secondary to the use of illegal substance including cocaine and amphetamines, prescription medications, and alcohol.<sup>2</sup> Medications that have been associated with DOP include opiate narcotics, Parkinson disease therapies, stimulants for attention deficit hyperactivity disorder, antidepressants, and antihypertensives.<sup>3</sup> Of these medications, the most common culprits are the anti-Parkinson medications, especially levodopa/carbidopa, in addition to ropinirole, selegiline, cabergoline, pramipexole, and amantadine. Stimulants, specifically methylphenidate, are thought to cause DOP by a similar mechanism as that of cocaine and illicit amphetamines. Antidepressants that have caused DOP include bupropion, fluoxetine, and phenelzine. Interestingly, abrupt phenelzine withdrawal and decreased dose of trazodone have caused DOP. Antihypertensive medications associated with DOP include propranolol and hydralazine.<sup>3</sup>

Medical conditions known to cause DOP include neurologic conditions such as dementia, Huntington disease, multiple sclerosis, and stroke and diseases that can involve pruritus including hepatic disease, renal disease, and lymphoma.<sup>2,4-8</sup> Furthermore, nutritional deficiencies have also been linked to DOP, with B12 deficiency, folate deficiency, and pellagra caused by niacin deficiency as the most common culprits.<sup>2,8-10</sup> However, to our knowledge, there is not a single case report published in English-language literature with DOP secondary to severe anemia that then resolved with correction of the anemia.

## CONCLUSION

This case highlights a very uncommon sequela (DOP) of a common medical condition (anemia). In the case of our patient, she was found to have severe iron deficiency anemia with a fixed delusion of infestation with associated tactile hallucinations. With treatment of the severe anemia with blood transfusions, her delusion resolved along with her tactile hallucinations. In dermatology, as a subspecialty of internal medicine, it is important to know that patients presenting with DOP warrant a medical workup to rule out secondary organic causes of DOP. It is important to know that anemia can cause DOP, and, that more than ever, it behooves dermatologists faced with a patient with DOP to perform a screening medical workup.

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