

CASES THAT TEST YOUR SKILLS

Ms. A is depressed about weight gain in pregnancy and has a history of bulimia. During her pregnancies, an obsessive craving for inedible items, which is fairly common among expectant mothers, overrides her bulimia.

Eating baby powder

controls her urge to purge

History | An inpatient discovery

Ms. A, 20, presented to the emergency room with an exacerbation of asthma due to noncompliance with medications. A review of her systems and a physical exam revealed significant bilateral shortness of breath, wheezes, and rhonchi.

A single mother who lives with her two daughters, ages 5 and 2, Ms. A is 28 weeks pregnant with her third child. After receiving albuterol nebulizers for her asthma, she was admitted to the obstetrics and gynecology floor for monitoring of maternal and fetal status. There, a nursing staff member observed her eating baby powder.

The psychiatric team evaluated Ms. A and learned that, during her first pregnancy at age 15, she grew uncomfortable with her increased weight and started purging. Standing at 5 feet, 6 inches, Ms. A weighed as much as 220 during the pregnancy; her weight fell to 170 pounds after delivery. When she presented to us she lamented, "All of my friends are still thin."

The stress of being a single teenage mother and going to school, combined with disgust over her physical appearance, provoked her purging. She did not think purging would help her lose weight but would prevent

her from gaining more even as she ate as much as she wanted.

For 11 months after the birth of her first child, she purged three to four times daily. She could eat as many as five "value meals" within 2 to 3 hours at fast-food restaurants. Eating relaxed her and made her feel comfortable, but the frequency of purging escalated to five to six times daily and the vomiting was physically exhausting, painful, and caused esophageal damage.

At age 17, Ms. A became pregnant with her second child. In the first 2 to 3 months, she continued to eat large quantities of food but purged less often (two to three times daily).

One day in the third month of this pregnancy, Ms. A watched as her mother used medicated powder on her own child, and the powder's scent stimulated within Ms. A an urge to taste it. Before long Ms. A was eating the powder regularly and had stopped purging. She recalled purging only three times during the remaining 6 months of the pregnancy. The craving for powder replaced both her desire to vomit and the need to binge on food. She returned to regular bingeing and purging (once or twice weekly) after her second child was born, however.

In your view, which should be addressed first, the bulimia or the obsession with baby powder? Or should both be addressed in tandem?



Commentary This case displays a form of adult pica for baby powder, which has only been described in the literature for pediatric pica.¹² She displays no cognitive deficits or psychological disorders (e.g., mental retardation, schizophrenia) that are commonly associated with pica.³⁻⁶ Pregnancy, which is also common in pica, did exist in this patient and may provide some physiologic or psychological insight into the patient's disorder.⁷ The patient's bulimia nervosa, however, gives an unusual twist to this case.

In the 18th century, pica was classified together with

bulimia simply as an erroneous or aberrant appetite (*Box 1*).⁸ Pica has been known to occur with—and can be a symptom of—bulimia and anorexia, but it is rarely cited.^{8,10} As in other eating disorders, affected individuals are ashamed of their weight, body shape, and body image.¹³

Comorbid bulimia and pica disorders tend to work together to accomplish a similar task: weight loss/control. Eating non-nutritive substances occupies space in the stomach, creating a sense of satiety without taking in calories. Therefore, this behavior acts as a substitute for bingeing in the patient with bulimia.¹⁴

One study identified eight themes associated with pica during pregnancy: keeping practices secret, singularity of the experience, extravagant means for obtaining the craved substance, fears for the effects on the fetus, yielding or not yielding to the cravings, use of the substances as medication, pica and lack of food intake, and sensory experiences other than taste.² All eight of these themes were present in Ms. A.

Evaluation **Needing more and more**

By her third pregnancy, Ms. A's obsession with powder started to take hold. She found it easier to conceal the purging from her partner, so she began purging more often (twice daily) to offset her cravings for the

Box 1

WHAT IS PICA?

The term pica has evolved over centuries to describe the compulsive ingestion of non-nutritive substances or unusual food cravings. Its etymology stems from the Latin word for magpie (genus *Pica*), a bird said to pick up, carry away, and presumably eat a myriad of objects.

The word was first used in 1563 by Thomas Gale, who noted this consumption of unusual foodstuffs in pregnant women and children.⁹ In contemporary literature, the word "craving" is often used instead of pica to minimize social judgment toward practices that deviate from "normal."

An estimated 20% of pregnant women are believed to have a history of pica, but the documented prevalence of these cravings may be underestimated because women often are embarrassed to disclose the behavior.⁹

Pica has been speculated to be a form of aggression, a result of compulsive neuroses, or a manifestation of oral fixation because of its association with thumb sucking.¹ In the end, pica is a poorly understood disorder.

Scientists question the etiology of pica. Early psychiatric hypotheses focused on societal expectations of women's outward beauty. A higher prevalence of pica has been recognized in mentally retarded persons and patients with schizophrenia.³⁻⁶

Pica is most frequently observed in children, pregnant women, and patients from a low socioeconomic background.^{10,11} More comprehensive studies have explored geophagia (a craving to eat chalk, clay, or dirt) in Africa and the southern United States.¹²

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baby powder. Purging was a last resort for the patient and her only means of off-setting her desire for the powder, which relieved her urge to vomit. She ate baby powder throughout the day, even awaking two to three times at night to ingest a few spoonfuls.

Until she presented to us, Ms. A had followed a daily ritual. At 10:30 a.m., when the local drug store opens, she superficially tested the consistency of a certain brand of powder available on the shelves. She then purchased one case (six 14-ounce containers) of powder, went home and sampled each container, and rated them in quality from 1 to 6, with 1 being the bottle of powder she ate that day. The next morning, regardless of how many cases of powder were piled in her closet, she went to the drug store and repeated the process.

Ms. A felt comfortable eating the talc-based powder in her apartment and her mother's house. She kept some baby powder in her desk at work, but she regularly took an hour-long lunch break to drive back to her apartment and satisfy her craving. She also carried powder in the car, tasting it while driving.

When asked how the powder made her feel, Ms. A replied: "Powder is like nothing else. It makes me feel content and at ease." Whenever she was irritated, or if the children were frustrating her, she would take a spoonful of powder.

In the beginning, she consumed approximately one 14-ounce bottle per month. When she presented 28 weeks pregnant with her third child, she could not imagine life without baby powder. A spoonful satisfied her for only 5 to 10 minutes before she would desire more. No other substance quelled the cravings. She had tried edible substitutes such as confectioners sugar, cornstarch, and ice chips, but nothing offered the satisfaction she got from powder.

When she is unable to ingest powder, she develops a headache, begins to sweat, gets extremely anxious and irritable, cries profusely, and becomes depressed. If she is abstinent more than 2 days she is unable to sleep and becomes preoccupied with the powder. If powder is not available, she binges and induces vomiting to stifle her craving.

In the hospital she craved powder 2 days after it was removed from her access. She became extremely anxious and distressed. She then ordered as much food as possible so she could purge and forget about the powder.

How would you explain the patient's psychopathological attraction to baby powder?

Commentary Patients with pica typically express satisfaction from consuming non-nutrient substances (*Box 2*). Ms. A's motive for eating the powder stemmed from what she perceived as its soothing properties.

Other reported cases have alluded to the sensation generated by the texture of soil or chalk in the mouth. Some

Box 2

COMMON OBJECTS OF PICA

Object

Burnt matches
Earth (chalk, clay, dirt)
Feces
Hair
Ice
Laundry starch, cornstarch
Lead paint chips
Raw potatoes
Stones

Specific disorder

Cautopyreiophagia
Geophagia
Coprophagia
Tricophagia
Pagophagia
Amylophagia
Plumbophagia
Geomelophagia
Lithophagia

Other known objects of pica—Ashes, baking soda, balloons, carrots, celery, chewing gum, cigarette butts, cloth, coal, coca leaf, coffee grounds/beans, cotton balls, concrete, crayons, croutons, detergent, grass, hard candy, insects, lavatory fresheners, latex gloves, licorice, lint, metal, milk, newsprint, oats, oyster shells, paper, parsley, plant leaves, pencil erasers, plastic, popcorn, powder puffs, salt, soap, string, thread, toilet tissue, tomato seeds, twigs, vinegar, wood.

of these patients also described the importance of the soil's taste—i.e., particle size—as being second to its texture.¹² The desire to experience a certain texture, color, odor, and taste are important components in pica cravings.¹⁰

Pica appears to meet the individual's need for mental relaxation and sensory pleasure¹⁵ in much the same way that alcohol or drug abusers satisfy their intense desire for euphoria and relaxation. Scientists theorize that alcohol and drug abuse may be exacerbated by or result from a neurochemical imbalance. A similar hypothesis may explain this “variant” in pica patients.

Pregnant women often develop taste aversions for items that are potentially harmful to the developing fetus, such as alcohol and coffee. Expectant mothers may develop utter disgust and provocation of nausea toward items they enjoyed while not gravid. Aversions to foods and other items during pregnancy might be the consequence of homeostatic factors that have evolved as general feto-protective mechanisms.^{16,17} The metabolic changes that accompany the gravid state might alter olfactory and taste sensitivity.¹⁷

If a pregnancy-related change in chemical balance can cause taste aversion, certainly a similar situation could evolve into pica. In laboratory rats, intraventricular injection of exogenous neuropeptide Y, a hormone with documented CNS activity, caused taste aversions and elicited geophagia.¹⁸

Ms. A's ingestion of baby powder itself did not harm the fetus. Stephen Emery, MD, director of perinatal ultrasound at the Cleveland Clinic, notes that talc is inert and the powder's perfumes probably are benign. He adds, however, that because the powder often has replaced real food, Ms. A placed her unborn child at risk via malnourishment.

Further evaluation A 'pleasant' appearance


Ms. A's medical history revealed chronic asthma since childhood and gastroesophageal reflux disease. According to her social history, she is dating the father of her expectant child. She has been smoking one pack of cigarettes per day for 2 years but says she does not drink alcohol and has never abused illicit drugs.

Her lab values were as follows (with normal ranges in parentheses): blood urea, 4 mg/dl (9-23); serum iron, 69

mg/dl (42-135); calcium 8.7 mg/dl (8.5-10.5); magnesium, 1.6 mg/dl (1.8-2.4); phosphate, 2.4 mg/dl (2.7-4.6); hemoglobin, 10.0 g/dl (12.0-14.0); hematocrit, 31.1% (37.0-47.0); mean corpuscular volume, 86.4 fl (81-99).

Ms. A appeared well-nourished, appropriately dressed, and well-groomed during our examination. She was alert, oriented and cooperative, and held a pleasant conversation with good eye contact. Her mood was depressed and anxious, and her affect was congruent. Speech was normal in rate, tone, and volume. Her thoughts were well organized and goal-directed. She denied suicidal ideation but had thoughts of harming her fetus. She denied any perceptual disturbances. No intellectual impairment was evident, and her insight and judgment were preserved.

What is the psychiatric diagnosis for this patient? Also, in your view, how likely is she to harm her fetus or her two children? How would you assess and manage that risk?



Commentary The physiologic cause of pica may be metabolic disturbances in iron, zinc, calcium, potassium, lead, and magnesium.^{10,19-22} Ice pica typically is associated with iron deficiency and low hemoglobin levels,^{14,20,23,24} although other forms of pica have been linked to iron deficiency.^{12,25} Some studies show iron deficiency in nearly half of patients who display ice pica;^{20,26} correcting the iron deficiency relieves the cravings for the desired substances.^{7,14} Scientists are split as to whether pica results in the deficiency of certain minerals or whether mineral deficiencies cause pica. Mineral deficiencies may alter appetite-regulating brain enzymes that can lead to these cravings.^{7,10,11,23}

Ms. A's laboratory values demonstrated decreased hemoglobin, hematocrit, and magnesium levels. Magnesium replacement did not change her eating behavior. Her mild anemia may simply have been an effect of pregnancy.

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Treatment Confronting comorbid depression

Ms. A's diagnosis was pica, bulimia nervosa-purging type, with comorbid depressive disorder NOS.

She was placed on the selective serotonin reuptake inhibitor sertraline, 12.5 mg/d. The dosage was increased gradually to 50 mg qd. Supportive psychotherapy was provided during the patient's hospital course.

After her discharge, cognitive therapy was initiated. Ms. A was asked to keep a journal utilizing the "triple column technique," through which she described a situation in one column, explained the symptoms or unwanted behaviors and emotions evoked by that situation in the second, and wrote down her thoughts in the third.

Ms. A was monitored for signs and symptoms of postpartum depression. After this careful assessment, in which two psychiatrists and the ob/gyn team participated, we concluded that the patient's transient thoughts of harming her fetus had fully resolved.

Ms. A was educated about nutrition and healthy exercise, as well as birth control options. We also asked to see her as an outpatient.

In the ensuing months, Ms. A reported moderate depressive symptoms but described a significant decrease in her craving for, and consumption of, powder. She continued follow-up treatment with her physician at the women's care center. Ms. A decided to stop taking sertraline after 2 months because she felt it was not helping her depression and was causing fatigue.

When we followed up after 6 months, Ms. A reported that she and her baby were doing well. She told us that her powder cravings had decreased markedly.

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Related resources

- ▶ Alliance for Eating Disorders Awareness. www.eatingdisorderinfo.org
- ▶ Stein DJ, Bouwer C, van Heerden B. Pica and the obsessive spectrum disorders. *S Afr Med J* 1996; 86(12 suppl):1586-8, 1591-2.

DRUG BRAND NAMES

Sertraline • Zoloft

DISCLOSURE

The authors report no financial relationship with any company whose products are mentioned in this article.

Pica disorder, an obsession for eating inedible items, is more common among pregnant women than most people realize. Psychiatrists need to recognize the potential for pica and other eating disorders in pregnant women who are grappling with weight gain, hormonal changes, and the perception that they are "losing" their beauty.

BottomLine