Geophagia: A case series

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Geophagia, a form of pica, is often associated with iron and zinc deficiency. However, a number of environmental, cultural, and psychological factors are also implicated. Pica in children is common with those having intellectual disability. In adults, it is most commonly associated with pregnancy. No specific screening tests for pica exist, but many nutritional and psychological complications can be avoided by accurate and timely diagnosis. Even when pica is diagnosed, no proven treatments exist. Two patients who reported to the psychiatry outpatient department with habit of eating nonnutritive substances for a prolonged period associated with apprehension and decreased appetite are reported. Both the patients were diagnosed with adult pica and were treated with selective serotonin-reuptake inhibitors and psychotherapy with considerable improvement.

**Keywords:** Apprehension, eating disorders, geophagia, iron deficiency, pica, pregnancy, psychotherapy, selective serotonin-reuptake inhibitors, zinc deficiency

Geophagia is defined as deliberate consumption of earth, soil, or clay. From a psychiatric point of view, geophagia has been classified as a form of pica—a term that comes from Latin for magpie, a bird with indiscriminate eating habits. Although reported all over the world in different cultures, the etiology of the condition is not known but is probably multifactorial. From medical literature, it is clear that geophagia was known even at the time of writing of the first medical texts. It was reported that the Otomac tribe in Africa used to store dried earth to be eaten during periods of famine. The condition was named febrisalbain Europe, safurain Africa, and cachexia Africana among the slaves in North America. It has also been reported from India and various parts of Asia. Two patients with adult pica of long duration who responded well to therapy are presented.1,2

**Case Reports**

**Case 1**
A 25-year-old woman, homemaker, came to outpatient department (OPD) with complaints of eating mud for 2 years, increased for the past 1 month, decreased appetite for 6 months, and occasional apprehension. The patient was apparently asymptomatic around 2 years back when she started eating mud. At first, she had around 2–3 pinches. She continued to have pinches for around 1 year when she felt a need to increase the amount of mud she used to have daily. Thereafter, the amount of mud increased to 20–40 g/day. She preferred dry mud. She stated that the mud eating was preceded by an irresistible urge and simply that she enjoyed having mud. She did, however, note that once she began eating mud, her appetite decreased. She reported increased appetite and weight gain after stopping eating mud. The patient was treated with selective serotonin-reuptake inhibitors and psychotherapy with considerable improvement.

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mud, she would have the need to eat more. Since the past month, the urge to have mud had increased to such an extent she started buying mud from the market to eat. She used to have around 100 g of mud daily. Whenever she tried to avoid eating mud, she would feel the need to eat something hard and could not control the urge to have mud and at times used to have apprehension. To control the apprehension, she used to eat mud. On enquiring, she said that she knows eating mud was not a right thing, but her urge was so strong that she was unable to stop herself from eating mud that made her distressed. She is also experiencing decreased appetite for the past 6 months. Earlier, she used to eat three meals in a day with a mid-day snacks. In each meal, she used to have two chapattis with a bowl of rice and a bowl of vegetable and pulses. For around 6 months, she has started missing her mid-day snacks and only eats one chapatti with a bowl of pulses. On asking by spouse and parents-in-law, she said that she does not feel like eating food. No significant past and family history was reported. She presented as a well-orientated, cleanly dressed lady with normal speech and appropriate replies. Her mood was generally warm and friendly. She had no abnormality of thoughts or perceptions and scored 30/30 on a Mini Mental State Examination. She was prescribed fluoxetine that was gradually increased to 40 mg along with multiple sessions of psychotherapy and showed a significant improvement in her condition.

Case 2
A 30-year-old female, married for the last 11 years, educated up to 10th standard, came to the psychiatric OPD with complaints of eating nonnutritional substances for the last 10 years. The patient was apparently well 10 years ago when she was pregnant with her first child, and during third trimester, she started having craving for eating chalk pieces. One day, she went to a shop near her home and bought one box of chalk pieces. She ate the whole box in 1 day. It reduced her craving and she felt satisfied. After that, she started buying one box of chalk every day and eating it. With time, her craving and daily intake of chalk boxes increased, and within 5 years, she was eating 3 boxes per day. During her second pregnancy 5 years back, she as usual went to buy chalk box, but saw a box of “multani mitti” (MM), and decided to try it. She bought 250 mg of MM. She liked the taste of it. After that, she stopped eating chalk box and started eating MM only. Six months ago, the patient tried to stop eating MM. She experienced craving for it, and after 1 month of stopping, she gave in to the craving and started eating MM again. She was kempt, cooperative, in touch with reality. Talk was relevant and coherent. Mood was euthymic. No features of psychosis were noted. Memory, orientation, and insight were unimpaired. She was treated with sertraline 75 mg along with multiple sessions of psychotherapy and showed a significant improvement in her condition.

DISCUSSION

The term “pica” meaning unusual appetites was coined by Pare. Pica is an interesting phenomenon, because of its unclear etiology. It is commonly associated with iron and zinc deficiency and is strongly associated with both family history and cultural factors. In children, it is common with those having intellectual disability. In adults, pica is most commonly associated with pregnancy. Pica often occurs in association with mental retardation, psychosis, and autism. The phenomenology includes compulsion to take in one or more of a number of foreign bodies ranging from dirt and plastic to feces. Complications of pica may include anemia, iron deficiency, heavy metal poisoning, parasitic infection, bowel obstruction, bowel perforation, altered bowel habit, peritonitis, and obesity. Treatment includes the behavioral treatment of pica itself and the treatment of any underlying conditions such as schizophrenia and iron deficiency.

Very little is known about this ubiquitous but commonly missed condition. No specific screening tests for pica exist, but many nutritional and psychological complications can be avoided by accurate and timely diagnosis. Eventually, when pica is diagnosed, no proven treatments exist. Although selective serotonin-reuptake inhibitors can be helpful in some cases, diagnosis and treatment must be individualized.[3-5]

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

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