

Geophagia in Transkei region of South Africa: case reports

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Abstract

Background: Soil has been eaten by humans under various names all over the world. It was used as a spread on the bread instead of butter in Austria known as 'mountain tallow' and in German known as 'stone butter'. Earth is tasty in various countries, termed as 'American earth', 'Earth of Samos' and 'Nishapoor earth', continues to make geophagia habit.

Objective: To highlight the problem of geophagia in the Transkei region of South Africa.

Case reports: First, one is (XM) of a 35 years woman who divulges her history of geophagia at Sinawe Center. She consumed fresh earthworm dig-out soil after smelling it. This has happened in her first pregnancy in her first trimester. The second, one is an adult women 55-years; she had consumed red bricks for last 15 years. It is not related with her pregnancy. She keeps bricks close her bed and eats when she feels to eat. She used to complain abdominal pain and off and on loose motions. She had bladder stones, which passed through urethra. The history of geophagia, mechanism of craving for soil, and associated cultural belief has discussed in this case report.

Conclusion: There is geophagia in the Xhosa community is prevalent and socially accepted.

Keywords: soil, earth, craving, earthworm, and belief.

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Introduction

Geophagia has been reported all over the world. It generally, implicated with poverty and famine. In developing world, either it is ignored or accepted, therefore it remains underreported. It is poorly explained in terms of its causation and consequences. The habit of eating soil is prevalent worldwide, and is centuries old. Greek and Roman textbooks reveal astute description of medical disorders and striking diagnostic acumen. The textbook compiled by Hippocrates (460-377 BC) provides a description of pregnant women who eat earth; the child will show signs of this things¹.

Geophagia is not uncommon in southern parts of the United States as well as urban Africa.² Fine red coloured clay is often preferred. In particular, geophagia is observed during pregnancy as a feature of iron deficiency anemia³. Earth may serve as an appetite suppressant and filler; similarly, geophagia has been observed in anorexia nervosa.

However, geophagia often observed in absence of hunger, and environmental and cultural contexts of the habit⁴.

The practice of geophagia (soil-eating) is widespread among pregnant and breast feeding women in sub-Saharan Africa. Geophagic soil samples can be highly contaminated with microbes and may contain high levels of lead. Geophagy, however, is not a cause of adult helminth infection. The periodic consumption of geophagic materials at high dosages might be problematic particularly during pregnancy.⁵ A study conducted in Tanzania by Kawai et al (2009) showed that among 971 human immunodeficiency virus (HIV)-positive pregnant women in Tanzania, 29% of them, regularly consumed soil.⁶ Pica (non-food substances) is common and remains an important clue to underlying iron deficiency. The ingestion of toxic substances may have serious consequences. It needs to be recognized, and an underlying cause sought and treated. Geophagia is a good indicator of iron deficiency, yet often go unrecognized.⁷

Geophagia is an idiosyncratic behaviour of isolated individuals and as well as culturally prescribed behaviour of particular societies. The behavior has long been viewed as pathological by the medical profession, and it is has been claimed to be both a cause and consequence of anemia.⁸ The purpose of this case report is to highlight the

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problem of geophagia in the Transkei region of South Africa.

Case reports

Case history 1

XM, 35-year staff nurse gave history of geophagia in Sinawe Center. She used to smell sand and then eat it. This is happened in her first pregnancy when she was 19 years old. She ate fresh soil, which is taken out by earthworms. Soon after her pregnancy known her, she started eating soil. She continued for 3-months, and then stopped it. She used to eat twice or thrice in a week, and a small amount of soil. She does not know what made her to eat, but she feel very satisfied after smelling and then eating it. She does not know, what makes her to stop it. She eats in front of everyone. Although she was anemic but she delivered a healthy full term male baby who is normal like her other three siblings.

Case history 2

VN is an adult women 55-years housewife. She had consumed red bricks for last 15 years. It is not related with her pregnancy. She keeps bricks close her bed and eats when she feels to eat. She used to eat in small amount twice or thrice in a week. She feels very satisfied after eating it. She used to complain abdominal pain and off and on loose motions. She had bladder stones, which passed through urethra. There was history of anemia, and confirmed by presence of koilychia. She is having joint pains, and nails are shriveled and look ugly. She is mother of 4-children.

Discussion

Transkei is one of the former black homelands in South Africa. It is a rural part of South Africa where people are poor, uneducated, and under resourced. There are only few studies carried out on geophagia in South Africa. Most of them are in urban areas. Therefore, it is considered a problem of urban area. Food cravings, aversions and pica are common during pregnancy. A recent (2009) study conducted among 204 pregnant and lactating women in Tanzania has showed that nausea and vomiting reported by 82.8%. The proportion of women with dietary cravings, aversions and pica were 73.5%, 70.1%, and 63.7% of all women respectively.⁹

In majority of cases like in these two reports, the amount of earth consumed is very small amount and in piecemeal. This is no more a harmful to the consumers. Those who consumed large amount

result in intestinal obstruction and gut perforation.¹⁰ In both cases, there was history of anemia. The anemia is the cause or the effect of geophagia, is difficult to determine, as it is common among females, not in males. The lack of absorption of the ingested iron due to associated phosphate content in the mud. This might render the iron insoluble.¹¹ A study conducted by Corbett et al (2003) among pregnant rural socioeconomically disadvantage women, has showed that 38% of these women practiced pica. African-American women reported practicing pica more often than other ethnicities.¹² Pica is the compulsive intake as mentioned by XM. She is a health care worker, and having knowledge of non-nutritive substances, but still use to eat. Although there is lack of statistics of its prevalence in Xhosa community, but it well accepted in community, indicated that this practice is very common.

Geophagia is the compulsive and intentional consumption of earth eg. VN. She also used to have some midnight snacks of soil. It is a form of pica, which is the craving and eating of non-natural, and inedible objects. Pica derives from the Latin word for magpie, a bird known for its omnivorous habit of eating almost anything.¹³ Soil consumption was the pica observed in most women in the Tanzanian study.⁹

XM also started ingesting soil within 3-weeks into her pregnancy, and continued through the first trimester. Aversions and cravings are closely linked to, dietary intake of pregnant women, but it is difficult to explain the eating of soil. There is scarcity of literature in this field. XM had described the smell of soil, and she was fascinated by it. This remains an intriguing, little understood occurrence. There are several studies indicating that iron deficiency anemia is the cause of pica. However, it could be a consequence of pica. Reid reported in 1992 that the consumption of soil may interfere with the absorption of elemental iron, zinc & potassium.⁸ This may result in anemia as was in XM. Young women in urban South Africa believe that earth eating will give them a lighter colour and soften their skin. They think that they would look more attractive and beautiful.¹ This was not the issue both in XM & VN.

There is reason to believe that geophagia often goes unrecognized by doctors because patients are reluctant to volunteer the history. Family physicians are also reluctant to ask the history of geophagia as

it never cross their mind. Stigma plays a role as it is not considered a healthy act by the people around that person. This was not the case of XM. She ate soil in the presence of anyone, and it was accepted by those around her. There was no complication with XM, but VN had abdominal pains, and diarrhoea. There are complications of geophagia with substantial morbidity and mortality¹⁴. Most of the time these complications remain unrecognized, and therefore unreported. The diagnosis of geophagia or pica could be made during antenatal care of pregnant women.

Conclusion

There is geophagia in the Xhosa community in the Transkei region, but it appears to be accepted by the community. Pregnant women should be informed about the risks associated with soil consumption. There is a need to study more of this habit in the local community.

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