

# A Case Report Review on PICA: Non-Food Tastes Better to Their Palate

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## ABSTRACT:

It is an indulgence of eating other than food (non-food). **EXAMPLE:** stones, paper, soap, bricks, sand/mud, chalk etc. This may cause a lot of vitamin deficiency and the oral cavity is distraught by eating such things (hard). It occurs at an early age due to poverty, lack of guidance, and craving for non-nutritive substances because of their appetite pattern. But it may not exhibit life-threatening situations in a course, it may lead to some chronic complications because of their psychogenic behavior in an individual.

**KEYWORDS:** PICA, Geophagy (clay). Amylophagia (raw rice/ starch). Pagophagia (ice). Cranial nerve palsy. Papilledema. Trichophagia (hair). Low blood cells. Nutritional deficiency.

## OBJECTIVES:

1. Attaining knowledge of what is Pica and its significance.
2. Diagnosing Pica.
3. Etiology and pathophysiology will give the exact reason for the disease.
4. How does it progress in the individual and what are its consequences?

## INTRODUCTION:

Pica is derived from the Latin word for magpie bird (because it collects and eats a variety of objects due to its curiosity about these (indiscriminate non-selective uncritical things). Diagnosis of pica can be done if the patient has been in behavior for a month with more than that. The ingesting items are different from person-to-person behavior, it could be either egg shells, chinks, mud, sand, bricks, copper, soap, dust, paper, paint, or hair. In non-form of other cases, childhood is mostly affected in children by pica in course cases of mental retardation. Which affects both cognitive behavior function) The patient can also have eating disorders in common. Due to cravings in periods and pregnant patient it can be seen often. Pica can also occur with simultaneously after patient is suffering from disorders like general anxiety disorder, schizophrenia and trichotillomania autism. In pagophagia/eating ice sometimes helps them to boost the perfusion which leads to improved brain function.

**EPIDEMIOLOGY:** This is a typical disorder to understand, it has many reasons concise to particular reasons.

- Different persons have different cravings, at different stages. This causes many etiological factors.
- In pregnancy they show atypical symptoms.
- In pica they crave for different things. Sometimes it may not.

- So, drug therapy is included mostly it is seen in African women. There is also a severity of mental retardation.

**ETIOLOGY:** Pica can affect the person in early stage to adolescence age of person where it needs to be taken care.

- Stress.
- There is oppression detriment on child by parents, society, family also persecution may lead to it.
- Due to hemoglobin and ferrous (iron) deficiency in body may incriminate.
- In cases deprivation of electrolytes and some micro and macro nutrients is seen in patient suffering with pica.

#### **Cultural traditions:**

In some countries traditions like eating mud still exists (sub-Saharan African people would adapt to this culture.

#### **Adapted behavior: -**

- In childhood people get adapted very well to their surroundings, but they have to need best environment to get nurtured.
- But in course cases if they grow at these surrounding, they would also get learn these and follows as they were learning it.
- Low socioeconomic status/low poverty they have access for financial education, social& health resources. Which may lead to deficit.
- **Haiti is the poorest country in western hemisphere here, reports say they sometimes eat cakes which are made out of mud.**
- Nutritional deficiency occurs because of eating this food which doesn't contain any nutrients.

#### **Genetics: -**

- Sometimes neglecting child may also lead to it or in pregnancy.
- Sometimes epilepsy may also lead to pica disorder.
- Sometimes family also play a major role as if someone in family has this the other may early get it by influencing.
- It can be explained by an organ hypothesis where this is by presence of a genetic disorder, which as Prader Willi syndrome (it is a critical disorder visualized by hyperphagia) i.e., which means it increases the risk of ingesting non-food substance.

#### **DIAGNOSIS:**

**Physical examination:** it can be examined by tongue, gums, any changes in appearance could lead to further investigations.

- As firstly in this when we asked patient, we need to know what type of the substance are induced.
- There are different types of tests done to the patients differentiated as children and pregnant iron levels need to verified properly in children and pregnant to include the diet and drugs.

- Zinc levels should be diagnosed properly after this we need to go through the basic metabolic panel, if the patient ingested clay because it may cause some metabolic disturbance i.e., hypokalemia.

**X-ray:** can be performed when the patient include pain in abdomen, and if the person ingested barium can be advised to undergo x-ray.

**ENDOSCOPY:** it can be performed when the amount of part settles in the stomach, digested and left are there any ulcer present with any other inflammation on the lining of the stomach inner layer. And in course cases we can know which part of GI tract is affected.

It would be helpful and easier for the diagnosis which will help in treating better to the patient.

- Clinical history of a patient can also be examined and reviewed.

### COMPLICATIONS:

It can be divided to the type of substance ingested by the person.

**Geophagia (mud, sand, clay):** in geophagia mainly clay eating is been distinguished. In cases it will profound to constipation, hypokalemia with myopathy, and nutritional deficiencies.

In some cases, it would be the reason of infectious agents include parasites.

In course cases lead poisoning is more complicated compared to clay ingestion.

**Pagophagia (ice):** in case it occurs, due to cravings in pregnancy. It causes iron deficiency.

Due to this the amount of iron is reduced in blood thus leads to iron deficiency which may leads to other complications, in pregnancy.

### In case of other complication include:

**Tooth decay:** due to eating ice directly tooth may decay causing bleeding gums and painful in chewing.

**Sensitivity:** acceptance of other hot and cool items would be decreased as teeth would be sensitized by coolness of ice.

**Hemoptysis:** in course cases coughing of blood would be seen, because of the ice ingested would be affecting it.

**Amylophagia (starch/ rice):** here consumption of more starch, it may lead to iron deficiency with indigent health status. (Very poor)

In cases it can cause high blood sugar and obesity which causes due to the high carbohydrate content.

**Other substance:** in cases, here inevitable many diseases by pica. Some of the certain to happen consumption are chemicals Pb, Hg, As, f and many others.

Exposure to this type of chemicals would be fatal in cases, and it is not good be rested it should be treated. Meanwhile it should be priorly diagnosed in pregnant women with lead poisoning and also with patient who have high levels can result in seizures.

**Fetal toxicity:** in pregnancy pica plays a role where they cannot eat non-food items it could be directly affect the growing fetus which would have severe consequences.

There are some cases on maternal pica by intrauterine toxicity.

Neurological disability of long term may be implicated by lead (Pb) poisoning sometimes.

In pregnancy maternal issues to be if someone in their maternal side have an act of eating non-food (pica). This may lead to the childhood motor function delay.

**TREATMENT:****Pharmacological treatment:**

- In this, treating pica the medicines usually available in homeopathy, and allopathy.
  - In Allopathy if a person ingests first mouth gets affected whereas in cases, they would prefer to give Fe, Zn, and Ca supplements while deworming is done then surgery is performed.
1. To improve symptoms of pica disease dopamine is recommended.
  2. To reduce cravings and impulses on non-food items ZYPREXA is used.
  3. And maintain some vitamin supplements and food strength.
  4. Drugs: Bupropion, Buprenorphine, Clomipramine.
  5. A patient suffering from pica disease during pregnancy in severe condition this drug is used in the post-partum period is BUPROPION.

**CASE REPORT:01**

**PATIENT:** 29-year-old female in early pregnancy.

**CHIEF COMPLAINTS:** Craving for ice.

**VITALS:** Blood pressure (110/70 mmHg), pulse rate (82 bpm), Spo2 (99%).

**LABORATORY INVESTIGATIONS:** Hb levels (11.0 g/dl), serum zinc (65 ug/ml), serum ferritin (20 ug/ml), calcium (8.2 mg/dl).

**INTERPRETATION:**

The patient is experiencing a craving for ice, which can be a symptom of a condition known as "pagophagia," a type of pica where individuals crave and consume ice.

The laboratory findings indicate that the patient has normal calcium and haemoglobin levels but a lower serum ferritin level, suggesting a possible iron deficiency.

**TREATMENT:**

- The physician advised the patient to take calcium and iron supplements.
- The condition is observed only during pregnancy, and it is likely that the cravings for ice and the nutritional deficiencies will resolve after pregnancy.

**CASE REPORT: 02**

**PATIENT:** 15-year-old male.

**CHIEF COMPLAINTS:** Eating brick dust, abdominal pain.

**LABORATORY INVESTIGATIONS:** Hb (11.5 g/dl), serum ferritin (25 ug/dl), serum zinc (69 ug/dl), calcium (8.0 mg/dl).

**INTERPRETATION:**

The patient has been consuming brick dust for an extended period, indicating a condition of pica.

Laboratory findings show that the patient has normal hemoglobin levels but slightly low serum ferritin, indicating a possible mild iron deficiency.

**TREATMENT:**

- The patient has been provided with supplements containing zinc, calcium, and iron, which suggests an approach to address the nutritional deficiencies caused by the consumption of non-food items.

**Discussion:****Discussion on case report: 01**

**In the case of the 29-year-old female in early pregnancy with a chief complaint of craving for ice, several important points can be highlighted:**

1. Craving for ice (pagophagia): The patient's craving for ice is indicative of pagophagia, a specific form of pica. Pica is a disorder characterized by the persistent consumption of non-nutritive, non-food substances.
2. Vitals: The patient's vital signs, including blood pressure, pulse rate, and Spo2, appear to be within normal ranges, suggesting no acute medical crisis related to these parameters.
3. Laboratory findings: The laboratory results are crucial for understanding the patient's condition. While the Hb levels are within the normal range, the low serum ferritin level is indicative of a potential iron deficiency, which is common in individuals with pica.
4. Calcium levels: It's noteworthy that the patient's calcium levels are normal, which rules out a calcium deficiency as a cause of the cravings for ice.
5. Treatment: The physician's recommendation of calcium and iron supplements is appropriate for addressing the nutritional deficiencies associated with the patient's pagophagia. It's important to monitor the patient's progress and adjust the treatment plan as needed during the pregnancy.
6. Temporary nature: The discussion mentions that the condition is observed only during pregnancy and is likely to resolve after pregnancy. This is a crucial point, as some cravings and nutritional deficiencies during pregnancy can be transient and related to hormonal changes.

**Discussion on case report: 02**

**In the case of the 15-year-old male with a chief complaint of eating brick dust and abdominal pain.**

1. Pica and unusual habits: The patient's consumption of brick dust is a clear sign of pica, a disorder characterized by the ingestion of non-food substances. In this case, it's essential to determine the underlying cause of this behaviour, as it can be associated with various factors, including nutritional deficiencies and psychological issues.
2. Laboratory findings: The laboratory results show that the patient has normal haemoglobin levels (Hb) but slightly low serum ferritin. This suggests that while the patient's overall iron levels are not severely depleted, there may still be some mild iron deficiency, which could be related to the pica behaviour.
3. Treatment: providing the patient with supplements containing zinc, calcium, and iron is a suitable approach to address the potential nutritional deficiencies caused by the consumption of non-food items like brick dust. However, it's crucial to address the underlying cause of the pica behaviour, which may require psychological evaluation and intervention.
4. Psychological assessment: Given the unusual eating habits and the potential psychological factors involved, a thorough psychological assessment should be considered to determine if there are underlying issues such as stress, anxiety, or other mental health concerns contributing to the pica behaviour.

In both cases addressing the nutritional deficiencies is a critical step, but it's equally important to identify and address the root causes of these unusual cravings and eating behaviours, which may involve a multidisciplinary approach involving medical and psychological care.

**MULTIDISCIPLINARY APPROACH:** Treating pica often requires multidisciplinary approach involving physicians, nutritionists, and mental health professionals to address both the behavioural and nutritional aspects of the disorder.

**CULTURAL CONSIDERATION:** Cultural traditions play a significant role in the development of pica. Understanding and respecting cultural practices is essential when addressing this disorder

**PREVENTION:** Identifying and addressing the underlying causes of pica such as, stress or nutritional deficiencies, can help prevent the behaviour from occurring or recurring.

**PSYCHOLOGICAL SUPPORT:** Patient with pica may benefit from psychological support to address the underlying emotional or psychological factors contributing to their cravings.

**MONITORING AND FOLLOW UP:** Regular monitoring of iron zinc and calcium levels, especially in pregnant women, is essential to ensure proper treatment and to address any potential complications.

**FAMILY AND SOCIAL SUPPORT:** In cases where family dynamics or socioeconomic status contribute to pica, involving social support services and education can be crucial for the patient's well-being. In both cases, it's crucial to address the underlying nutritional deficiencies and provide appropriate supplementation. Additionally, psychiatric evaluation and counselling may be necessary to address the pica behaviour and prevent its recurrence. The patients should be closely monitored for improvement in their symptoms and nutritional status.

#### **RESEARCH AND AWARENESS:**

Continued research is essential to better understand the complexities of pica, including its causes, prevalence, and effective treatment strategies.

Raising awareness about pica is also critical to reduce stigma and ensure individuals receive timely and appropriate care. By advancing our knowledge of this disorder, we can develop more effective interventions and support systems for those affected.

#### **CONCLUSION:**

In conclusion, Pica is a unique and challenging eating disorder that warrants attention and understanding from both the medical community and society at large. A comprehensive approach to addressing pica, encompassing medical, psychological, cultural, and social factors, is essential to improve the well-being of individuals affected by this disorder and reduce its associated health risks.

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