Case Report

Coprophagia in a Young Girl: A Case Study

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Abstract

Objective:
Study design: It is a case study.
Place and duration of study: Psychological intervention was carried out in The Neurocounsel, Islamabad for a patient suffering with Coprophagia (from 2019 to 2023)
Material and Methods: Applied Behavior Analysis was adopted as the course of treatment, setting up achievable goals and rewards to motivate desired behaviors.
Results: During the treatment duration of almost 5 years, her problem of coprophagia is no longer present, and her behavioral issues have improved drastically.
Conclusion: The treatment including different medications and psychological intervention technique of Applied Behavioral Analysis resulted in the total elimination of the coprophagy issue and other problems have also shown improvement.
Keywords: Coprophagia, Behavioral Therapy, Applied Behavioral Analysis

1. Introduction

Coprophagia or Coprophagy refers to the act of ingesting one's feces. While it is quite a normal occurrence in non-human species such as rabbits, pigs, or rodents[1], the condition is rare among humans, and usually presents with psychosis or dementia. In literature, it has been documented mainly in institutionalized patients. We present a pediatric case of coprophagia, which was successfully managed and treated in a semi-controlled environment. Along with medications, ABA therapy was used for her treatment. Applied Behaviour Analysis is a very useful therapy, which is presumably based on learning and behavior. It includes small tasks and goals, their measurements to see if it is working, and thus changing behavior to desired one. It is mostly used for social skill training, teaching child basic self-care and communication etc.[2]

2. Materials & Methods

A 7-year-old girl was referred to the Neurocounsel Outpatient Department for a neurology consultation, with complaints of encopresis, in addition to severe behavioral issues and learning difficulties. The patient, accompanied by her mother, had been to several other doctors with the same complaints, but none had been able to give her a proper diagnosis. No medications were prescribed during these previous visits, and a 15-day course of TENS (Transcutaneous Electrical Nerve Stimulation) for her encopresis did not produce any satisfactory results.

The child is the youngest of three siblings. There was no significant family history of physical and mental disorders. The patient was born after a full-term gestational period and by vaginal birth, but had a delayed birth cry. She was born with a healthy weight. The mother reported that she had a calcium deficiency during her pregnancy and reported symptoms of depression, though never properly diagnosed. The mother also reported that she only breastfed for 3-4 months, after which the child was bottle-fed. The child had delayed developmental milestones. She had delays in neck holding and crawling, for which a doctor diagnosed her with a calcium deficiency and bone weakness. Upon treatment, she skipped the crawling phase and started walking at two and a half years. At the same time, she was reported as having control over her bladder, but no bowel control.

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The patient remained in diapers until the age of nine. Her diet and nutrition was also severely disturbed, being bottle-fed until age 6 and given baby food until age 4. Workups and tests done before and during her treatment were all in the normal range, including a complete blood panel, MRI of the brain and dorsal spine, thyroid workup, and x-ray for bone age. Although, her weight was observed to be very low for her age. Her height was also a point of concern but was ruled out to be genetic and non-pathological.

The neurologist called for a psychology consult, to assess the patient for cognitive/intellectual dysfunction and to rule out any psychological disorders. In her first session, the mother revealed that she had seen her daughter consume feces, and had noticed her keeping it in toys, her fixation on picking it up, smelling it, or smelling her soiled clothes. She also reported the smell of feces coming from her daughter's mouth. She first suspected something when the smell would persist around the room and in the child's belongings.

The patient was assessed using the Wechsler Abbreviated Scale of Intelligence WASI-II and diagnosed with mild to moderate cognitive impairment, along with an extremely low IQ of 69. She presented with severe behavioral issues, a high degree of aggression and stubbornness, lack of social skills and communication. There were also severe delays in learning. At this time, she had dropped out of school, could barely read and write, and was very behind for her age. She had an inadequate diet consisting mainly of milk, some fruit and junk food, and was an extremely fussy eater.

With the consultation of our neurologist, she was prescribed anti-anxiety tablets and a brain stimulant. In terms of psychological intervention, the psychologist started with establishing a strong rapport with the girl, and employed the technique of Applied Behavioral Analysis (ABA) in combination with the medication, setting up a system of rewards and punishment to both encourage positive behaviors (eating a balanced diet, engaging in social situations) and discouraging unwanted behaviors (aggression and coprophagic behavior). After building a strong rapport and developing trust with the child, small episodic incentives were set up such as the child's desirable snacks/foods (sweets, chocolates, biscuits) or small toys and gifts, with the condition that no complaints of a particular behavior will be reported in the next session. Praise and encouraging words also played a huge role in motivating the girl to behave accordingly.

Hands-on treatment was discontinued in late 2019-early 2020 due to the COVID-19 lockdown. In mid-2020, treatment was continued at a private clinic with the same team. During this, appetite enhancers and supplements of calcium, vitamins B and D, and omega-3 were prescribed to deal with nutritional deficiencies. No recurrent episodes of coprophagia had been observed at this point and her weight had increased to the healthy range for her age.

The family was involved in the treatment process. Sessions were conducted with the family members, separately with parents and siblings, to psycho-educate them on how to best deal with aggressive and non-cooperative behaviors at home in accordance with the child's cognitive level. The family was facilitated in the process of carrying out the reward/ punishment system at home for optimum improvement. The girl was also put back in school in 2020 after seeing improvement in her cognitive ability. At this point, the teachers were also given instructions on how to best handle the academics and behavior of the girl, requiring some special attention owing to her cognitive delay.

In July 2021, a relapse of coprophagic behavior occurred at a family event. The mother reported that she was busy, and could not pay much attention to the girl at that time. When discovered, the psychologist met with the child virtually for some intervention.

3. Results

In subsequent assessments before COVID-19 lockdown, we saw an improvement in the above-mentioned behaviors with the use of this system.

An impressive improvement can be noticed in the patient's recent sessions. IQ and cognitive function has improved. A recent IQ reassessment using the Wechsler Abbreviated Scale of Intelligence WASI-II showed the patient in the lower-average range with an IQ of 81. The child's aggression has also reduced drastically, the physical and verbal aggression, and the temper tantrums have almost stopped. Social skills have also improved, and she now engages with extended family members and same-age peers more positively and frequently. Academically, she has advanced to the third grade. The process is not linear; we see our share of ups and down. Some behavioral issues come up from time to time,

particularly manifesting as jealousy and attention seeking, for which she continues to have occasional sessions. However, since the last relapse, no further complaints of coprophagia have been made. A brief overview, marking the extent of improvement of behaviors, has been provided in Table I.

Behaviors	Initial Assessment (2018)	Midway Assessment (2021)	Recent Assessme
Coprophagic Behaviour	Persistent ingestion of fecal matter, Smelling of fecal matter or soiled clothes	Single episode of such behavior at a family event	No episodes of s behavior since l relapse.
Learning	Out of school, unable to learn basic reading and writing	In school for a year, improved but still a relatively slow learner	A student of 3rd able to read and recognizes word speech and can them down, imp memory
Aggression	Overtly and physically aggressive, would hit siblings, throw temper tantrum and only settle on her own terms	Physical aggression has reduced, screaming and crying persists when extremely upset	Rarely physical, tantrums have re
Social Skills	Only interact with her mother, not interactive with same-age peers or extended family	Increased interaction/play with family, increased involvement in family events	Interaction with school. More op other people and with conversatio attention-seekin behavior persist
Diet	Very limited diet, not open to new foods	More variety in foods, more balanced diet, supplements for nutrition	Balanced diet, e types of fruits, vegetables, mea dairy. No more supplements

4. Discussion

As disgusting as it sounds, coprophagic behavior is fairly common in many non-human species such as rabbits, pigs, dogs, and rodents.[1] For some, it is necessary for survival as they derive nutrients from their feces. However, the condition is rare among human beings, usually found in patients with severe psychological or neurological disorders. We usually find the occurrence of coprophagia associated with mental retardation[3,4,7], Schizophrenia[3,5,7], dementia[6,7], or cerebral structural abnormalities[7]. There are few cases of coprophagia reported worldwide. To our knowledge, only one study on this disorder has been reported in Pakistan[8]. The cause remains unknown and controversial. Based on experiments performed on dogs, thiamine deficiency has been suspected to be the cause, and lesion studies in monkeys point towards the involvement of the amygdala[1]. Overall, we are no closer to a complete understanding of coprophagy in humans. Our patient did not present with any structural brain abnormalities, nor did she have any indicators of psychosis. Although upon psychological assessment, she did appear to have mild mental retardation, for which brain stimulants were prescribed. This was the appropriate course of treatment as consecutive IQ assessments show that her intellectual functioning has improved since the initial assessment.

The main course of treatment recommended for the patient was outpatient psychological services, employing the use of behavioral modification therapy with psychosocial support in order for the child to let go of the compulsion. Behavioral intervention has been the first line of intervention for coprophagic patients and appears to have successful results[8,10,11]. Foxx and Martin reported successful treatment of coprophagia using aversion therapy. In our patient, Applied Behavioral Analysis or behavior modification proved to be successful as well, in treating both the child's coprophagia as well as other behavioral dysfunctions. Apart from a single relapse, the child has had no more incidences of coprophagic behavior.

Some researchers believe that coprophagy is a form of Pica[13]. The DSM-V TR defines pica as "persistent eating of nonnutritive, nonfood substances, inappropriate to the individual's developmental level."[12] However, this point of view is rather controversial and not so widely accepted. Interestingly, proper nutritional supplementation and a change towards a balanced diet have shown positive effects on the occurrence of both Pica and Coprophagia.[3,14] Similarly, for our patient, our neurologist prescribed her Vitamin, Calcium, and Omega-3 supplements, on and off, as deemed necessary. Explicit instructions were given to the parents to pay attention to the child's diet. These appeared to have a positive impact on the child's coprophagic behavior.

Coprophagia patients risk quality of life, for both themselves and their caretakers/families. Our patient's mother could not bring up the situation with anyone else for fear of shame or exclusion. As such, they risk their opportunity to receive proper treatment and diagnosis.

Conclusion:

Coprophagia is usually comorbid with different types of medical issues; like dementia, mental retardation, schizophrenia, OCD, and epilepsy. In our case, multiple medical tests were carried out to rule out any other illness. In our patient, coprophagia was seen along with delayed milestones, behavioral disturbance, and lower

IQ. Therefore, we worked alongside a neurologist for the betterment of the child. During the duration of treatment, different medications and psychological intervention technique of Applied Behavioral Analysis was employed. It resulted in the total elimination of the coprophagy issue and other problems have also shown improvement as we continue to work on them.

Conflict of interest:

None to declare

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