Research Article

Case Report on Rumination Disorder in a Pediatric Patient

Kavya Vinod Mankulangara, Jismy Karakkattu, Meenu Vijayan*, Remya Reghu
Dept of Pharmacy Practice, Amrita Vishwa Vidyapeetham University, AIMS Health Sciences Campus, Ponekkara P. O, Kerala, India.
***Corresponding author's E-mail:** meenuvijayan@aims.amrita.edu

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ABSTRACT

Rumination disorder is a condition in which a person keeps bringing up food from the stomach into the mouth (regurgitation) and rechewing the food. Rumination disorder usually starts after age 3-6 months and more common in females. Symptoms includes weight loss, halitosis, indigestion and chronically raw and chapped lips and regurgitation and malnutrition. The following lab tests can measure how severe the malnutrition like blood test for anemia and also imaging studies are performed. The main diagnostic criteria for rumination syndrome is 'The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)'. Rumination disorder is treated with behavioral techniques mainly and surgical procedure is also effective like gastroesophageal fundoplication and when the symptoms get worse nutritional supply is also given.

Keywords: Rumination disorder, Regurgitation, Rechewing, Gastroesophageal reflux disease.

INTRODUCTION

Rumination comes from the latin word ruminare which is to chew the cud. This disorder is characterized by the voluntary or involuntary regurgitation and rechewing of the partially digested food which is either reswallowed or expelled and this regurgitation appears effortless, which may be preceded by a belching sensation, and does not involve retching or nausea.[1] Rumination disorder is seen in children and adults with intellectual disability, as well as in infants, children, and adults of normal intelligence. Rumination is the primary cause of death in 5%-10% of individuals who ruminate.

Mortality rates of 12%-50% have been seen in infants and older individuals. This disorder is rare in both females and males but common in females.[2] Rumination disorder usually occurs in first years of life like in the age of 3-6 months.[3] The diagnostic criteria is by 'The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)'[1] which classifies rumination as a feeding and eating disorder. The DSM-5 criteria contains the following:

- The repeated regurgitation of food for a period of at least 1 month and the regurgitated food may be re-chewed, re-swallowed or spit out.
- Repeated regurgitation is not related to an associated gastrointestinal or other medical condition.
- The disorder does not occur exclusively during the course of anorexia nervosa, bulimia nervosa, binge-eating disorder or avoidant/restrictive food intake disorder.
- If this disorder occurs within the context of another mental disorder (i.e., generalized anxiety disorder) or neurodevelopmental disorder (i.e., intellectual disability), it must be sufficiently severe to warrant independent clinical attention.

The pathophysiology of the disorder is that gastric distention with food is followed by abdominal compression and relaxation of the lower esophageal sphincter; all actions allow stomach contents to be regurgitated and rechewed and then swallowed or expelled. There are several mechanisms for the relaxation of the lower esophageal sphincter which includes the voluntary relaxation, simultaneous relaxation with increased intra-abdominal pressure, and an adaptation of belch reflex. Rumination disorder causes halitosis, malnutrition, weight loss, growth failure, electrolyte imbalance, dehydration, gastric disorders, upper respiratory tract distress, dental problems[4], aspiration, choking, pneumonia and finally death.[2] The main symptoms of this disorder are weight loss, halitosis, indigestion and chronically raw and chapped lips. Regurgitation typically begins within minutes of a meal and may last for several hours. Regurgitation occurs almost every day following most meals. The regurgitation is effortless and is rarely associated with forceful abdominal contractions or retching. Infants with rumination usually have the characteristic position of straining and arching the back with the head held back, making sucking movements with tongue and also exhibit irritability, hunger, weight loss and failure to make expected weight gain.[1]Rumination is found out by mainly laboratory test to rule out anemia secondary to esophageal and gastric ulceration. Next comes the imaging studies (barium swallow) to find out hernia, esophageal atresia, stricture, achalasia and chalasia. There are also other tests like esophagogastroduodenoscopy includes the culture of Helico bacter pylori, scintigraphic studies for gastric

emptying, radiological studies, GI manometry 5,upper GI motility, gastric emptying, lower esophageal sphincter pressure and trial of histamine 2 (H2) blockers, metoclopramide, or antacids to rule out underlying causes of rumination when more invasive medical investigation is not possible. The surgical procedure for the treatment of this disorder is gastroesophageal fundoplication which have been used as an antireflux surgical intervention.[6] The main therapy includes the behavioral treatment for rumination syndrome which is habit reversal using special breathing techniques (diaphragmatic breathing) to compete the urge to regurgitate. In very rare cases, children with severe symptoms and associated weight loss is given supplemental nutritional support.[7] Medications for rumination disease, including acid blocking agents, prokinetic medications, antiemetics, anticholinergics, anxiolytics and antidepressants, are not effective in relieving the symptoms.[8]

Case History

A 11 year old male patient with complaints of non projectile, nonbilious vomiting (10-15 days) of food particles and epigastric pain.

The patient was diagnosed to have rumination disorder. The patient was treated with:

T.Domstal (domperidone) 10mg 1-0-0

T.Razo (rabeprazole) 20mg 1-0-0

IV emeset (ondansetron) 4mg/2ml 1-0-1

IV Potassium chloride 10 ml 1-0-1

Investigation

Table 1: Laboratory Value

Parameter	10/10/14	12/10/14	Normal Value
Hemoglobin	9.6↓	9.4↓	11.5 to 15.5 g/dl

The patient's upper gastrointestinal and small bowel barium follow-through, were all normal. Esophageal manometry study showed normal amplitude and pressures in the upper esophagus, the body and the lower esophagus.

The patient was discharged after five days of admission and was given a psychological counsultation. Mother was counseled regarding the feeding techniques.

DISCUSSION

Rumination disorder is characterized by regurgitation of recently ingested food into the pharynx and the food is then either ejected or rechewed and reswallowed.[9] Rumination disorder is mainly seen in infancy and in mentally handicapped children and adults, and in males more than females.

The incidence have found out to be about 6 to 10% of mentally challenged patients.[10] The various diagnostic test done are as follows:

Table 2: Diagnostic Tests[11]

Upper gastrointestinal series	24-hour esophageal pH monitoring
Small bowel follow-through examination	Scintigraphic studies of gastric emptying
Esophagogastroduodenoscopy	Manometric recordings

Rumination is mostly mistaken with gastroparesis and gastroesophageal reflux disease.[12] This disorder is different from gastroparesis, because regurgitation is effortless and occurs within 15 to 30 minutes after a meal.[13] On the other hand, patients with gastroparesis vomit usually more than an hour after a meal, and the symptoms may not occur daily. The concomitant presence of nausea and heartburn may make it look like gastroesophageal reflux disease, but the symptoms of gastroesophageal reflux disease occur predominantly at night and/or when the patient is supine.[12]

The main treatment modality is the behavioral therapy and then supplemental nutritional support if the symptoms are severe. Medications are not found that effective.[7]

CONCLUSION

Rumination syndrome is not a recognized condition in children and adolescents. The insufficient awareness of the clinical features of the disorder can lead to the under-diagnosis of this medical condition.

The diagnosis of rumination syndrome is based upon clinical features, and extensive diagnostic testing is irrelevant. Early behavioral therapy is initiated, and outcomes are generally favorable.[7]

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