

# Aerophagia - An interesting cause of recurrent abdominal distension

Saba Anwar, VivekDewan, Shivani Deswal, Shikha Singh, Rahul Titotia, VaniNarayani K  
Department of Pediatrics, PGIMER & Dr. Ram Manohar Lohia Hospital, New Delhi; India  
Corresponding Author : Dr. Shivani Deswal (shivani paed@gmail.com)

### Abstract

Functional aerophagia involves excessive air swallowing causing progressive abdominal distension. It can present in children dealing with stress and anxiety. Early recognition and diagnosis of aerophagia is required to avoid

unnecessary, expensive diagnostic investigations. Neuro cognitive evaluation and behavior therapy are accepted management strategies.

**Keywords :** Aerophagia, Abdominal Distension

### Introduction

Aerophagia is a well-recognized condition among pediatric functional GI disorders however it remains under recognized due to lack of awareness among pediatricians. Its defining criteria have been modified as per latest Rome IV criteria among children while it has been removed from adult classification system [1]. A large school-based, cross-sectional study conducted in North India used Rome III criteria and reported a prevalence of 1.5% while Sri Lankan study has reported 7.5% prevalence of this condition [2,3]. We report an interesting case of massive abdominal distension due to aerophagia.

### Case Report

Anxious and worried parents presented to our outpatient department with their 7 year old son who was experiencing recurrent bouts of massive abdominal distension over last one month. It was sudden in onset, usually during night times after meals and resolved spontaneously after 30 minutes. As per parents child was restless and uncomfortable during that period. It was not associated with belching, increased flatulence or altered bowel habits. He had suffered similar problem of milder nature one year back. He was treated for constipation

and gastritis during that time. His weight was 18 kg (weight/age < 2SD), height 118 cm (height/age < 2SD). Vitals, abdominal and systemic examination were normal. There were no identifiable stressors. His previous investigations revealed Hb 11.1gm/dl, TLC 6800/cu mm (P46 L50 E1 M3), platelet count 285x10<sup>9</sup>/L, ESR 20, CRP 0.8mg/dL, Blood urea nitrogen 22mg /dL, serum creatinine 0.4mg/dL, serum sodium 138meq/L, serum potassium 3.9 meq/L , serum calcium 8.9 mg/dL. Multiple ultrasonography reports did not reveal any organomegaly or intussusception. Computed Tomography of the abdomen showed no evidence of intestinal obstruction. On Upper gastro intestinal endoscopy lax lower esophageal sphincter was present. We kept the child under observation for 24 hours to record the episode as it occurred during night time. Patient had two episodes of abdominal distension during night. It was observed by resident doctor that child swallowed air for 20-30 minutes before distension occurred. There was visible epigastric distension (> 5cm increase in abdominal girth) with tympanic note on percussion. There was no tenderness or lump felt. Abdominal radiograph during that time showed distended bowel loops with increased

gas in stomach and gut without air fluid levels [Fig 1 and 2]. His distension relieved spontaneously after passage of flatus and burps. These episodes of air swallowing had gone unnoticed by parents till now. Clinical diagnosis of aerophagia was made. Psychiatric evaluation showed Attention deficit hyperactive disorder. Simethicone and behavior therapy were advised. Child improved gradually over 3 months with continuous behavior therapy.



Figure 1. A plain erect abdominal radiograph showing massive gastric distension.



Figure 2. A plain erect abdominal radiograph showing extensive gaseous distension stomach, small bowel and colonic loops with gas seen in rectum. No abrupt transition in caliber seen in bowel loops.

## Discussion

Rome IV diagnostic criteria define aerophagia as presence of all three criteria for at least two months: a. Excessive air swallowing b. Abdominal distention due to intraluminal air which increases during the day c. Repetitive belching and/or increased flatus and d. After appropriate evaluation, the symptoms cannot be fully explained by another medical condition. The word “excessive” and “increases during the day” have been added from previous definition based on the Rome III Criteria for FGIDs [1].

In daily clinical practice they can present with chronic stable symptoms or as surgical emergencies. It is mostly seen in children with severe psychiatric and/or neurologic problems. However it can affect normal children in stress situations. Pathophysiologically when air swallowing is excessive, gas fills the GI lumen, resulting in excessive belching, abdominal distention, flatus, and pain as a result of luminal distention. In few children, symptoms of distention and pain may be more severe when they are unable to belch. It is estimated that 70% of the gastrointestinal gas is swallowed, 20% is caused by diffusion of gases from the blood, and 7% to 10% is the result of bacterial decomposition. [4,5]

In extreme cases, aerophagia may lead to massive gastric and intestinal distension with the consequent development of ileus, volvulus, necrosis or even perforation due to ischemia [6]. Aerophagia may be confused with etiologies of abdominal distention and excessive flatus like gastroparesis, chronic intestinal pseudo obstruction, small intestinal bacterial overgrowth and malabsorption (celiac disease) [7, 8]. These can be ruled out on detailed history and minimal workup. Typical history of gulping sounds and movements suggestive of air swallowing or video recording

of the episodes can serve as important clues to diagnosis. In older children, large amounts of air may be swallowed while chewing gum or drinking water very quickly. This can prevent unnecessary investigations like CT abdomen in such cases.

There are no controlled studies to guide management. Therapy includes behavioral therapy and psychotherapy, speech for therapy can be considered a very important approach as it may make the patient conscious of his/her behavior [9]. A diet free of beverages containing gas may help reduce the volume of intestinal gas and alleviate symptoms. In addition, drugs such as simethicone and dimethicone can reduce gas formation in the bowel. Good communication and support to the family is needed compliance.

### Conclusion

Aerophagia is a functional GI disorder characterized by repetitive air swallowing, abdominal distension, belching and flatulence. Extra intestinal symptoms of headache, sleep difficulty and lightheadedness may be present in some children. It can present as sudden acute attacks or chronically. An overlap with other FGID-like irritable bowel syndrome or constipation can be found. Detailed history and observing the episode carefully by parents or caregivers can clinch the diagnosis with minimal investigative workup. Treatment consists of parental reassurance and behavioral therapy.

### References

1. Hyams JS, Lorenzo CD, Saps M et al. Childhood Functional Gastrointestinal Disorders: Child/Adolescent. *Gastroenterology* 2016;(6):1456-1468.
2. Bhatia V, Deswal S, Seth S, Kapoor A, Sibal A, Gopalan S. Prevalence of functional gastrointestinal disorders among adolescents in Delhi based on Rome III criteria: A school-based survey. *Indian Journal of Gastroenterology* 2016; 35(4), 294-298.
3. Deva Narayana NM, Adhikari C, Pannala W, Rajindrajith S. Prevalence of functional gastrointestinal diseases in a cohort of Sri Lankan adolescents: comparison between Rome II and Rome III criteria. *J Trop Pediatr*. 2011; 57:34–39.
4. Bredenoord AJ. Management of belching, hiccups, and aerophagia. *Clin Gastroenterol Hepatol*. 2013; 11:6–12.
5. Loening-Baucke V. Aerophagia as cause of gaseous abdominal distention in a toddler. *J Pediatr Gastroenterol Nutr*. 2000; 31: 204–207.
6. Hwang JB, Choi WJ, Kim JS, Lee SY, Jung CH, Lee YH, Kam S. Clinical features of pathologic childhood aerophagia: early recognition and essential diagnostic criteria. *J Pediatr Gastroenterol Nutr*. 2005; 41:612–616.
7. Maurage CCHM, Delaperriere NND, Orega MMO, Roulet Renolleau NNRR, Labarthe FFL, Faure NNF, Leddet IID, Robert MMR. Air swallowing in non-deficient children: an under-diagnosed disease. *J Pediatr Gastroenterol Nutr*. 2004;39(suppl 1):S444.
8. Zyizdic Z, Jonuzi A, Djuran A and Vranic S. Gastric Necrosis and Perforation Following Massive Gastric Dilatation in an Adolescent Girl: A Rare Cause of Acute Abdomen. *Front. Surg* 2009; 6:3.
9. Helgeland H, Flagstad G, Grøtta J, Vandvik PO, Kristensen H, Markestad T. Diagnosing pediatric functional abdominal pain in children (4–15 years old) according to the Rome III Criteria: results from a Norwegian prospective study. *J Pediatr Gastroenterol Nutr*. 2009; 49 :309–315.