A girl refuses to eat solid food because she is afraid of choking

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Ms. B, age 11, has refused to eat solid food for more than 1 month because she fears choking. She lost 14 lb during that time. How would you approach her care?

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CASE Refusing solid food

Ms. B, age 11, is admitted to a pediatric medical inpatient unit for unintentional weight loss of 14 lb (15% total body weight) over the past month. She reports having 2 traumatic episodes last month: choking on a piece of cheese and having a swab specimen taken for a rapid strep test, which required several people to restrain her (the test was positive). Since then, she has refused to ingest solids, despite hunger and a desire to eat.

Ms. B reports diffuse abdominal pain merely "at the sight of food" and a fear of swallowing solids. She denies difficulty or pain upon swallowing, nausea, vomiting, or any change in bowel habits.

Her mother reports that, on the rare occasion that Ms. B has attempted to eat solid food, she spent as long as an hour cutting it into small pieces before bringing it to her mouth—after which she put the food down without eating. Her mother also witnessed Ms. B holding food in her mouth for "a very long time," then spitting it out.

Ms. B says she is distressed about the weight loss and recognizes that her fear of solid food is excessive.

What would your diagnosis of Ms. B's problem be?

a) anorexia nervosa
b) avoidant/restrictive food intake disorder (ARFID)
c) specific phobia (swallowing solids or choking)
d) generalized anxiety disorder (GAD)

The authors' observations

DSM-5 describes a new eating disorder called ARFID, which replaces the DSM-IV-TR diagnosis of feeding disorder of infancy or early childhood. DSM-5 diagnostic criteria define ARFID as:

> *An eating or feeding disturbance (eg, avoidance based on the sensory characteristics of food…) as manifested by persistent failure to meet appropriate nutritional and/or energy needs associated with at least one of the following: 1. Significant weight loss (or failure to achieve expected weight gain or faltering growth in children). 2. Significant nutritional deficiency. 3. Dependence on enteral feeding or oral nutritional supple-*

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How would you handle this case?

Answer the challenge questions throughout this article

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ments. 4. Marked interference with psychosocial functioning.[1]

DSM-5 also specifies that the disorder cannot be caused by lack of available food or traditional cultural practices; cannot coexist with anorexia or bulimia nervosa; and is not attributable to a concurrent medical or psychiatric disorder.

Because it is a newly defined diagnosis, the epidemiology of ARFID is unclear. Patients with ARFID have a wide variety of eating symptoms that do not meet diagnostic criteria for anorexia or bulimia nervosa. One study found that, among a cohort of mostly adolescent patients who presented for evaluation of an eating disorder, 14% met diagnostic criteria for ARFID.[2] Another retrospective case-control study found a similar prevalence among patients age 8 to 18 (13.8% of 712 patients).[3] Because of the variety of maladaptive feeding behaviors seen in ARFID, there is little evidence that pharmacotherapy is effective.[4]

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HISTORY Premature birth

Ms. B's medical history states that she is twin A of a premature birth at 26 weeks (birth weight, 1,060 g), with a 90-day neonatal intensive care unit hospitalization, during which she required supplemental oxygen and nasogastric tube feeding. She has mild cerebral palsy, and had motor delay of walking at 2.5 years old. Currently, she has no motor difficulties.

Ms. B does not have a psychiatric history and does not take medications. Her mother has a history of major depressive disorder that is well controlled with an unspecified selective serotonin reuptake inhibitor. Ms. B's maternal uncle has poorly controlled schizophrenia.

During Ms. B's 6-day hospitalization, her mental status exams are unremarkable. She is shy but cooperative and open. Her mood ranges from "sad" and "nervous" on admission to "fine" with mood-congruent affect. She denies suicidal or homicidal thoughts and hallucinations, and demonstrates good insight and judgment. All laboratory values are within normal limits except for mild hypophosphatemia (3.7 mg/dL) and mild hyperalbuminemia (4.9 g/dL) on admission, which may have been related to her nutritional status.

DIAGNOSIS Not solely psychiatric

The psychiatric differential diagnosis includes:

- ARFID
- specific phobia of swallowing solids or choking (pseudodysphagia)
- GAD
- unspecified feeding disorder.

Ms. B meets diagnostic criteria for ARFID, particularly that of profound acute weight loss due to restrictive eating behaviors. Her presentation also is similar to that of a specific phobia, namely profound anxiety upon even the thought of solid food (phobic stimulus) and recognition that her fear is excessive. However, she fails to meet diagnostic criteria for phobia in children, which require duration of at least 6 months. GAD also is less likely because she has had symptoms for 1 month (also requires 6-month duration) and her anxiety is limited to feeding behaviors.

The treatment team starts exposure therapy, encouraging Ms. B to begin taking small bites of textured foods, such as oatmeal.

On hospital Day 5, barium esophagogram reveals extrinsic compression of the esophagus. To identify the precise cause of compression, chest magnetic resonance angiogram reveals that Ms. B has a right-sided aortic arch with an aberrant left subclavian artery at T4 that, with the ligamentum arteriosum and left pulmonary artery, form a vascular ring impinging around the esophagus.

The authors' observations

Dysphagia lusoria, coined in 1789 from the root for "natural abnormality,"[5] is caused by

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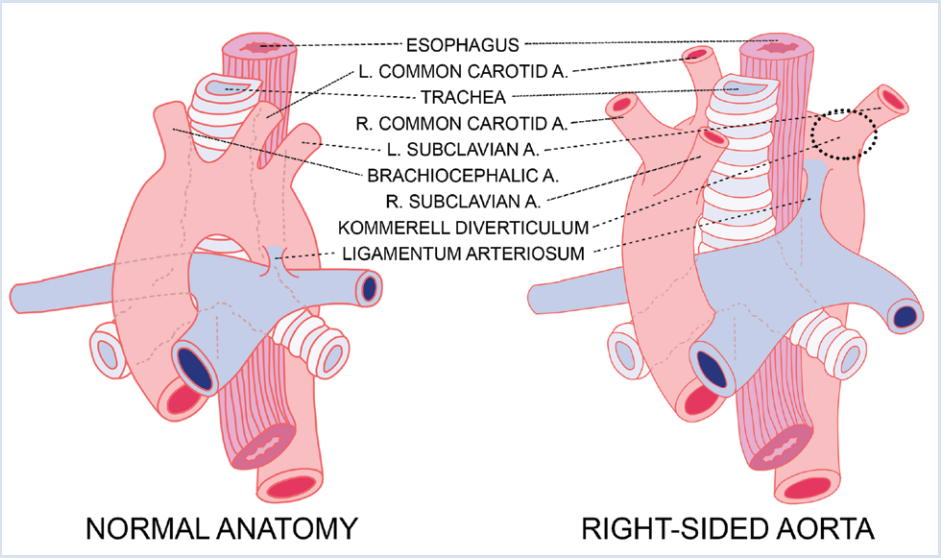
Figure 1

Normal aortic arch anatomy vs right-sided aorta with aberrant left subclavian artery



Source: Illustration courtesy of medmovie.com

A: artery; L: left; R: right

an aberrant right subclavian artery, which persists because of abnormal involution of the right fourth aortic arch during embryogenesis[6] (***Figure 1***). The condition is diagnosed incidentally in most affected adults, who are asymptomatic throughout life and do not require operative management.[6]

Symptoms of dysphagia lusoria can include dysphagia and recurrent aspiration if significant esophageal impingement is present.[7] It is thought that patients tend to show more symptoms as they age because of sclerosis, aneurysm, or atherosclerosis of the impinging vessel.[7] Cough and dyspnea caused by impingement of the trachea also have been reported, and might be more common in children because of tracheal flexibility.[5]

This case illustrates the complex interrelationship of physical and psychiatric conditions. After the treatment team discovered a physical cause of Ms. B's symptoms, the initial psychiatric diagnosis became problematic, but remained critically important for long-term treatment of her comorbid eating phobia.

TREATMENT Therapy, surgery

The treatment team is faced with the question of whether dysphagia lusoria fully accounts for Ms. B's status. The anatomic anomaly might explain the initial choking incident if the food particle was lodged at the site of impingement, but does not account for development of a severe acute eating disorder and subsequent malnutrition.

Because of the presence of dysphagia lusoria, the team concludes that Ms. B does not meet diagnostic criteria for ARFID. She is given a diagnosis of unspecified eating disorder.

Ms. B is discharged and referred to a pediatric cardiothoracic surgeon for operative consult of symptomatic dysphagia lusoria. By

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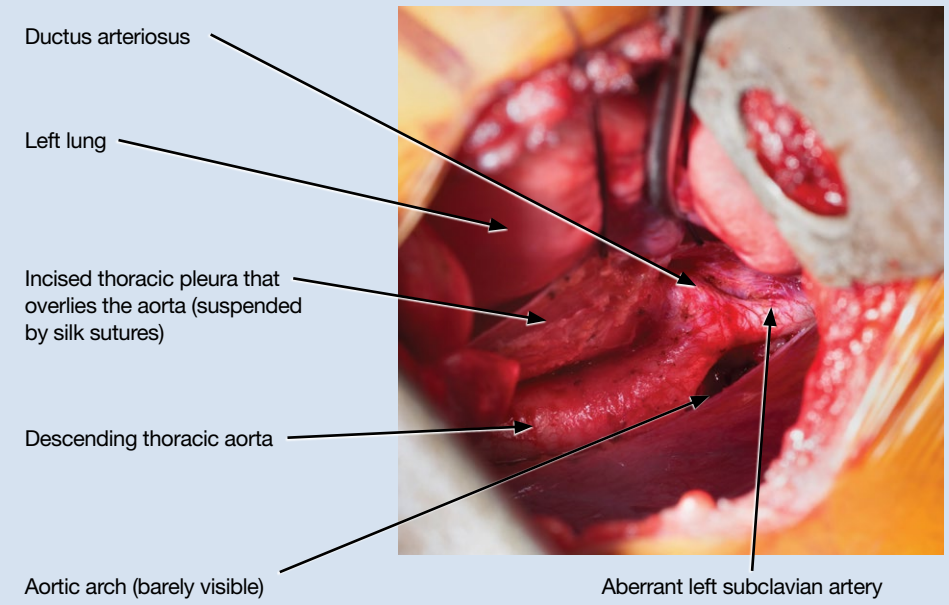
Symptoms of dysphagia lusoria can include dysphagia and recurrent aspiration if significant esophageal impingement is present

Figure 2

Intraoperative view of the vascular ring through left posterior lateral thoracotomy



The ring is created by a patent ductus arteriosus (some times only a ligamentum) in the setting of a right aortic arch with an aberrant left subclavian artery.

Source: Photo courtesy of Jess Thompson, MD

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The interrelationship of physical and psychiatric conditions can be a complex one

discharge, she is successfully eating yogurt with fruit chunks, which she had rejected earlier. She also expresses optimism about eating cake at her birthday party, scheduled for 2 weeks after discharge.

The treatment team strongly recommends outpatient psychiatric follow-up to manage Ms. B's unspecified eating disorder with cognitive-behavioral therapy and exposure and response prevention, which helped to mildly decrease her anxiety during the hospital stay.

Ms. B's surgeon deems the case severe enough to warrant surgery. Surgery for dysphagia lusoria can be indicated to prevent progression of symptoms into adulthood[8]; options include division of the ligamentum arteriosum to loosen the vascular ring and re-implantation of the aberrant subclavian artery.[9,10] (On the other hand, dietary modification might be therapeutic in patients whose symptoms are mild.[5])

The surgeon elects to divide the ligamentum arteriosum to relieve the pressure of the vascular ring on the esophagus. Intraoperatively, he discovers that Ms. B has a mildly patent ductus arteriosus (PDA) (***Figure 2***), which is more common in premature infants than in full-term births. The PDA is clipped on both sides and divided. This immediately causes the vascular ring created by the aberrant left subclavian artery, right-sided aorta, and PDA to spring open, releasing pressure on the esophagus.

The aberrant left subclavian artery emerges from an abnormal bulging of aorta, known as Kommerell's diverticulum. After the vascular ring is released, the diverticulum is not observed to impinge on the esophagus; however, as a preven-

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Related Resources

- Bryant-Waugh R. Feeding and eating disorders in children. Curr Opin Psychiatry. 2013;26(6):537-542.
- Norris ML, Robinson A, Obeid N, et al. Exploring avoidant/restrictive food intake disorder in eating disordered patients: a descriptive study. Int J Eat Disord. 2014;47(5):495-499.

tive measure, the surgeon sutures it to the anterior spinous ligament. This will prevent the diverticulum from enlarging and impinging on the esophagus as Ms. B grows to adulthood.

The surgery is completed without complications. Ms. B tolerates the procedure well.

Ten days after surgery, Ms. B is recovering well. She and her mother report satisfaction with the procedure to release the vascular ring. She discontinues her pain medication after 2 days and slowly begins reintroducing solid foods. Her fear of dysphagia and choking rapidly diminish.

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Cognitive-behavioral therapy and exposure and response prevention helped to mildly decrease anxiety during the hospital stay

References

1. Diagnostic and statistical manual of mental disorders, fifth edition. Washington, DC: American Psychiatric Association; 2013.
2. Ornstein RM, Rosen DS, Mammel KA, et al. Distribution of eating disorders in children and adolescents using the proposed DSM-5 criteria for feeding and eating disorders. J Adolesc Health. 2013;53(2):303-305.
3. Fisher MM, Rosen DS, Ornstein RM, et al. Characteristics of avoidant/restrictive food intake disorder in children and adolescents: a "new disorder" in DSM-5. J Adolesc Health. 2014;55(1):49-52.
4. Kelly NR, Shank LM, Bakalar JL, et al. Pediatric feeding and eating disorders: current state of diagnosis and treatment. Curr Psychiatry Rep. 2014;16(5):446.
5. Janssen M, Baggen MG, Veen HF, et al. Dysphagia lusoria: clinical aspects, manometric findings, diagnosis, and therapy. Am J Gastroenterol. 2000;95(6):1411-1416.
6. Abraham V, Mathew A, Cherian V, et al. Aberrant subclavian artery: anatomical curiosity or clinical entity. Int J Surg. 2009;7(2):106-109.
7. Calleja F, Eguaras M, Montero J, et al. Aberrant right subclavian artery associated with common carotid trunk. A rare cause of vascular ring. Eur J Cardiothorac Surg. 1990;4(10):568-570.
8. Jalaie H, Grommes J, Sailer A, et al. Treatment of symptomatic aberrant subclavian arteries. Eur J Vasc Endovasc Surg. 2014;48(5):521-526.
9. Gross RE. Surgical treatment for dysphagia lusoria. Ann Surg. 1946;124:532-534.
10. Morrris CD, Kanter KR, Miller JI Jr. Late-onset dysphagia lusoria. Ann Thorac Surg. 2001;71(2):710-712.

Bottom Line

The diagnosis and management of eating disorders, including avoidant/restrictive food intake disorder and choking phobia, can be challenging. Furthermore, if an anatomical or organic anomaly is found, it is important to question how a patient's eating disorder can be managed best through interdisciplinary collaboration between medical and behavioral specialties.