

The pattern of dysphagia in children

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BACKGROUND: Difficulty in swallowing is not uncommon among children and yet little information is available in the literature. We report our experience on the pattern of this condition.

METHODS: We extracted data from the medical records of 42 children with dysphagia on age at presentation, nationality, gender, and final diagnosis.

RESULTS: From 1993 to 2002, 96% of 42 children presenting with dysphagia were Saudi nationals, ranging in age from 3 months to 18 years, with a male to female ratio of 1:0.6. An etiologic diagnosis was found in 30 children (72%). Esophagitis, esophageal strictures and motility disorders were the most common causes of dysphagia, occurring in 16 (38%), 7 (17%), and 4 (10%) children, respectively. Two children had esophageal webs and one had an esophageal ring. Age-related analysis indicated that most of the cases of esophagitis (11/16, 69%) and strictures (5/7, 71%) occurred in young children whereas most nondemonstrable causes occurred in older children (9/12, 75%).

CONCLUSION: This report documents a pattern of dysphagia in Saudi Arab children that is similar to descriptions from other countries.

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Difficulty in swallowing or dysphagia is not uncommon in children of all age groups. Many causes are reported in the literature. These include esophagitis, esophageal strictures, congenital anatomic abnormalities such as esophageal webs and rings, and motility disorders of the esophagus.¹⁻⁵ Esophageal tumors and external compression of the esophagus by vascular rings are rare causes of dysphagia in children. The scarcity of information on the pattern of dysphagia in Arab children^{4,6,7} has prompted this report.

Methods

This was a retrospective review of the medical records of children who presented to King Khaled University Hospital, the main teaching hospital for King Saud University medical students in Riyadh, which provides free primary and secondary care with difficulty in swallowing. After performing a history and physical examination, investigations included barium swallow, upper GI endoscopy, a 24-hour esophageal pH study, and esophageal manometry as indicated. Gastroenterologists determined the choice and sequence of investigation. Endoscopic diagnosis of esophagitis was based on the presence of macroscopic lesions varying from erythema, erosions, ulcerations, or strictures. The information retrieved from the records included age at presentation, gender, nationality, and final diagnosis. The results were analyzed using descriptive statistics.

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Results

From 1993 to 2002, 42 children presented with dysphagia. Ninety-six per cent were Saudi nationals, ranging in age from 3 months to 18 years. The male to female ratio was 1:0.6. An etiologic diagnosis was found in 30 children (72%). The details of the diagnoses are depicted in the table, indicating that esophagitis, esophageal strictures and motility disorders were the most common causes of dysphagia, occurring in 16 (38%), 7 (17%), and 4 (10%) children, respectively. Esophagitis was peptic in 10 children (63%) and was caused by caustic injury in 6 (37%). Esophageal strictures were complications of peptic esophagitis and caustic injury in 4 and 3 children, respectively. Motility disorders were found in 4 children including one each of cricopharyngeal dysfunction, lower esophageal achalasia, nonspecific motility disorder, and hypertonic lower esophageal sphincter. Two children had esophageal webs and one had an esophageal ring. Age-related analysis indicated that most of the cases of esophagitis (11/16, 69%) and strictures (5/7, 71%) occurred in young children whereas most nondemonstrable causes occurred in older children (9/12, 75%).

Discussion

From a clinical standpoint, there are two types of dysphagia, oropharyngeal and esophageal. Oropharyngeal or transfer dysphagia refers to difficulty in initiating a swallow or in the transfer of the bolus from the oropharynx to the esophagus. These patients are likely to have either congenital cricopharyngeal dysfunction or an acquired neuromuscular disease.⁸ This report includes one case of cricopharyngeal dysfunction diagnosed in a 3-month-old Saudi male infant who presented with intermittent difficulty in swallowing milk since birth, associated with episodes of oral and nasal regurgitation and aspiration. Barium swallow in this infant showed narrowing at the level of the cricopharynx. Treatment options for this condition include dilatation or early cricopharyngeal myotomy.⁹⁻¹¹ Other neuromuscular disorders such as poliomyelitis, encephalitis, and myopathies may be associated with cricopharyngeal dysphagia,¹²⁻¹⁴ but are not documented in this study.

Patients who have esophageal dysphagia present with a sensation of obstruction as food passes through the esophagus. They may feel that food is "stuck or hung up" after swallowing. The causes of esophageal dysphagia may be classified in three broad categories (inflammation, obstruction, motility disorders). In this report, esophagitis without stricture was the

Table 1. Causes of dysphagia in 42 children.

Endoscopic diagnosis	Age in years		Total (%)
	0-12	13-18	
No cause found	3	9	12 (28%)
Esophagitis	11	5	16 (38%)
Strictures	5	2	7 (17%)
Motility disorders	2	2	4 (10%)
Ring	1	1	2 (5%)
Web	1	0	1 (2%)
Total	22	20	42 (100%)

commonest cause of dysphagia. Esophagitis is most commonly secondary to gastroesophageal reflux disease (GERD), but other causes include chemical, viral, candidal, allergic and inflammatory. The fact that esophagitis without anatomical narrowing may cause dysphagia is documented in the literature. In a report from The United Kingdom, it was concluded that esophagitis is as important as esophageal stricture diameter in determining dysphagia.¹⁵ In another report from the USA, it was found that nonobstructive dysphagia occurs commonly in patients with esophagitis.¹⁶ Furthermore, Catto-Smith et al reported that in childhood, dysphagia may be the presenting symptom of reflux esophagitis in the absence of a history suggestive of gastroesophageal reflux and without evidence of peptic stricture.¹⁷ Although the exact mechanism of nonobstructive dysphagia is not known, it is believed to be related to transient segmental esophageal motor disorder associated with reflux.^{16,18}

Obstruction was the second common cause of dysphagia in our children. The predominance of benign strictures secondary to GERD or to caustic ingestions,^{19,20} over congenital anomalies such as webs and rings,^{2,3} is consistent with findings in the literature. Motility disorders of the esophagus may be primary, involving only the esophagus such as achalasia or associated with systemic diseases. Esophageal atresia and GERD are known causes of dysphagia.²¹ The small number of these disorders in this study is consistent with the literature.

The children in this report were investigated in accordance with the guidelines in the literature, which indicate that the sequence of investigation of patients presenting with dysphagia should be guided by the history and physical examination as well as the etiologic pattern. In both adults and children, barium swallow should be the first method of evaluation.²² Endoscopy is the method of choice in the

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diagnosis of mucosal lesions such as esophagitis in which barium swallow is usually normal.²³ It provides not only a visual diagnosis but also histologic confirmation. The value of esophageal manometry is limited to the diagnosis of primary or secondary mo-

tility disorders and therefore it is usually indicated after negative barium swallow and endoscopy that have excluded obstruction and inflammation of the esophagus.^{5,24}

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