dilation usually results in symptomatic relief, recurrence is not uncommon.

Esophageal strictures can be structurally classified into 2 groups: simple and complex.[2] Simple strictures are symmetric or concentric with a diameter of ≥ 12 mm or easily allow passage of a diagnostic upper endoscope.[1] Complex strictures may include those that are asymmetric, long (> 2 cm), have a diameter ≤ 12 mm, are tortuous, or associated with a diameter that precludes passage of an endoscope. Regardless of the cause, dysphagia is an indication for dilation of benign strictures.[3] To accomplish dilation, 3 general types of dilators are used in current practice: (1) mercury-filled or tungsten-filled bougies (Maloney; Medovations Inc., Germantown, WI); (2) wire-guided polyvinyl dilators (Savary-Gilliard; Wilson-Cook Medical); and (3) Through-The-Scope (TTS) balloon dilators [Controlled Radial Expansion (CRE)].[3] Below we present a rare case of recurrent dysphagia in an adult patient with Allgrove syndrome requiring repeated endoscopic dilation.

A 23-year-old man with Allgrove syndrome complicated by multiple esophageal strictures, esophageal diverticula, and recurrent food impactions presented with dysphagia. He was diagnosed with achalasia during infancy and was previously treated by Heller myotomy and fundoplication. Endoscopy was performed with an adult gastroscope but could not pass a proximal esophageal stricture just below the upper esophageal sphincter. Instead, an ultraslim nasal scope was used and a guidewire was passed under fluoroscopic guidance into the stomach. The scope was then advanced over the guidewire with careful navigation through the proximal esophageal stricture. Another long esophageal stricture was identified from 30 to 40 cm with a food bolus located proximally. Endoscopic food disimpaction was performed using a Roth net. Subsequently, this distal stricture was serially dilated using a TTS CRE balloon from 4 to 6 mm. The nasal scope was then advanced distally to 40 cm where another food bolus was noted. Using biopsy forceps the food bolus was fragmented into the stomach. The patient tolerated the procedure well and his diet was advanced. He was discharged with outpatient follow-up for repeat stricture dilations.

Allgrove syndrome, also termed AAA or "4 A" syndrome, is a rare autosomal recessive disorder characterized by a triad of adrenal insufficiency, achalasia, and alacrima, often associated with autonomic dysfunction.[4] Although alacrima is usually the earliest associated sign, esophageal strictures and achalasia may result in significant esophageal obstruction and symptoms of dysphagia. Esophageal abnormalities are similar to idiopathic achalasia caused by a thickening of the intramuscular layer, loss of the myenteric ganglia, and decreased nitric oxide signaling. Traditional treatments include Heller myotomy and pneumatic endoscopic dilation.

The most frequently used dilators for achalasia and esophageal stricture formation are the Maloney-type bougies, the wire-guided polyvinyl dilators (Savary-Gilliard), and the TTS CRE balloon dilators.[3] These types of dilators are used for simple strictures with a diameter 12 to 14 mm.[3] Although blind passage has been demonstrated, the risk of esophageal perforation may be higher when compared with Savary-Gilliard or TTS balloons, especially in a patient with tortuous esophagus or complex strictures.[2] Dilators that are passed over a guidewire may also be used with or without fluoroscopy. TTS balloon dilators are available in either single or multiple diameters that may be passed with or without wire guidance.[3]

The Savary-Gilliard and TTS balloon dilators are currently the most frequently used in clinical practice.[1] The main difference between wire-guided polyvinyl dilators and TTS CRE balloon dilators are the mechanism of action or method of pressure applied. The Savary-Gilliard dilator exerts a radial force as it gradually passes distally, though the dilating force is transmitted longitudinally secondary to shearing effects. In contrast, the balloon dilators lack longitudinal force and deliver the radial force instantly. No clear advantage has been demonstrated for either one of these 2 dilator types. However, longitudinal force and lack of visualization pose a significant risk for perforation and are contraindicated in multiple, long, and complex strictures, or when diverticula are present.

The management of genetic, complex stricture development can be intricate with a variety of available dilation techniques. On the basis of the case presented above, the decision was made to use a CRE balloon dilator. The patient demonstrated a complex esophageal stricture due to asymmetry, diameter < 12 mm, and inability to pass the endoscope. Careful dilation of the stricture using a balloon dilator followed by endoscopic food disimpaction was successful in alleviation of symptoms. Although no clear advantage has been demonstrated among dilator types, this case highlights the benefit of endoscopic visualization with the CRE balloon dilator to accurately position the balloon across the stricture.

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Chronic Pancreatitis is a Common Finding in Celiac Patients Who Undergo Endoscopic Ultrasound

To the Editor:

Celiac disease (CD) has been associated with chronic pancreatitis (CP) in numerous studies, with 1 population-based study finding an almost 3-fold increase of CP in these patients.[1,2] Though the exact pathogenesis remains unknown, proposed mechanisms include edema at the duodenal papilla, papillary stenosis, and decreased cholecystokinin levels.[1,3–5]

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In view of the limited clinical data on this association we characterized the findings on endoscopic ultrasound (EUS) and endoscopic retrograde cholangiopancreatography in CD patients evaluated over a 7-year period (Table 1).

Of 26 CD patients who underwent EUS and/or endoscopic retrograde cholangiopancreatography, 7 (27%) had findings consistent with CP. Those with abdominal pain prompting CD diagnosis had a greater risk of CP (3/7, 43%) versus those with other symptoms leading to CD diagnosis (4/19, 21%, $P = 0.34$). Four CP patients underwent EUS for current abdominal pain, 2 for abnormal imaging or endoscopy findings (cysts or polyps), and 1 for steatorrhea. During EUS, 4 of the 7 underwent concurrent duodenal biopsy, only 1 had findings suggestive of active CD.

With various pancreatic and ductal findings on EUS suggestive of CP, the threshold for diagnosis remains unestablished.[6,7] Our patients had a median of 3 findings, and 4 had recorded fatty infiltration or atrophic appearance. Three were placed on pancreatic enzyme replacement, and 2 improved. In those not treated, 1 had concern for autoimmune pancreatitis, requiring operative intervention. The others remained symptomatic.

TABLE 1. Characteristics of All Patients With Biopsy Proven CD Who Underwent EUS and/or ERCP, (n = 26)

Characteristic	No. (%)
Sex	
Male	6 (23.1)
Female	20 (76.9)
Age at CD diagnosis (mean/median) (y)	50.8/52.0
Age at first procedure (mean/median) (y)	59.7/62.5
Duration of CD at time of first procedure (mean/median) (y)	9.0/8.4
Presentation of CD*	
Abdominal pain	7 (26.9)
Anemia	6 (23.1)
Bone disease	1 (3.8)
Diarrhea	6 (23.1)
Neuropathy	1 (3.8)
Weight loss	2 (7.7)
Incidental or screening	5 (19.2)
No. patients diagnosed with CD at time of procedure	1 (3.8)
Indication for EUS or ERCP†	
Abnormal findings on endoscopy	9 (34.6)
Abnormal findings on imaging	13 (50)
Symptoms	10 (38.5)
Abdominal pain	7 (26.9)
Diarrhea	2 (7.7)
Jaundice	1 (3.8)
No. EUS procedures, mean/median	1.2/1
No. ERCP procedures, mean/median	0.4/0
Initial procedure	
EUS	22 (84.6)
ERCP	4 (15.4)
Findings	
Chronic pancreatitis/pancreatic atrophy	7 (26.9)
Duct stenosis or dysfunction, biliary/pancreatic	5 (19.2)
Lesions: tissue, cysts, plaques, or polyps (reactive, benign, nondiagnostic)	14 (53.8)
MALT lymphoma	1 (3.8)
Pancreatic adenocarcinoma	2 (7.7)
Side-branch intraductal papillary mucinous neoplasm	2 (7.7)
Sludge, common bile duct or gallbladder	3 (11.5)
No findings	1 (3.8)
Duodenal biopsy performed at time of procedure	
No	14 (53.8)
Yes	12 (46.2)
Active CD	4 (15.4)
Nonspecific inflammation, without CD	3 (11.5)
Normal	5 (19.2)

*Some patients had >1 presenting symptom, prompting diagnosis of CD.
†Some patients had more than one presenting indication prompting EUS or ERCP.
CD indicates celiac disease; ERCP, endoscopic retrograde cholangiopancreatography; EUS, endoscopic ultrasound; MALT, mucosa associated lymphoid tissue.

The diagnosis of CP can be challenging, reliant on symptoms and imaging findings. Symptoms such as abdominal pain and diarrhea are common in CD patients, possibly leading to underdiagnosis and undertreatment of CP. Although CP is known to affect CD patients, here we have found EUS findings that support the diagnosis. Many of the EUS findings can be age related findings, but in the correct clinical context, our results show the importance of recognizing CP in patients with CD.

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Chronic Abdominal Wall Pain

In Reply:

We read with great interest the recent article by Glissen Brown et al[1] on chronic abdominal wall pain and laud the authors for their comprehensive review of the condition. It is a condition

The authors declare that they have nothing to disclose.
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