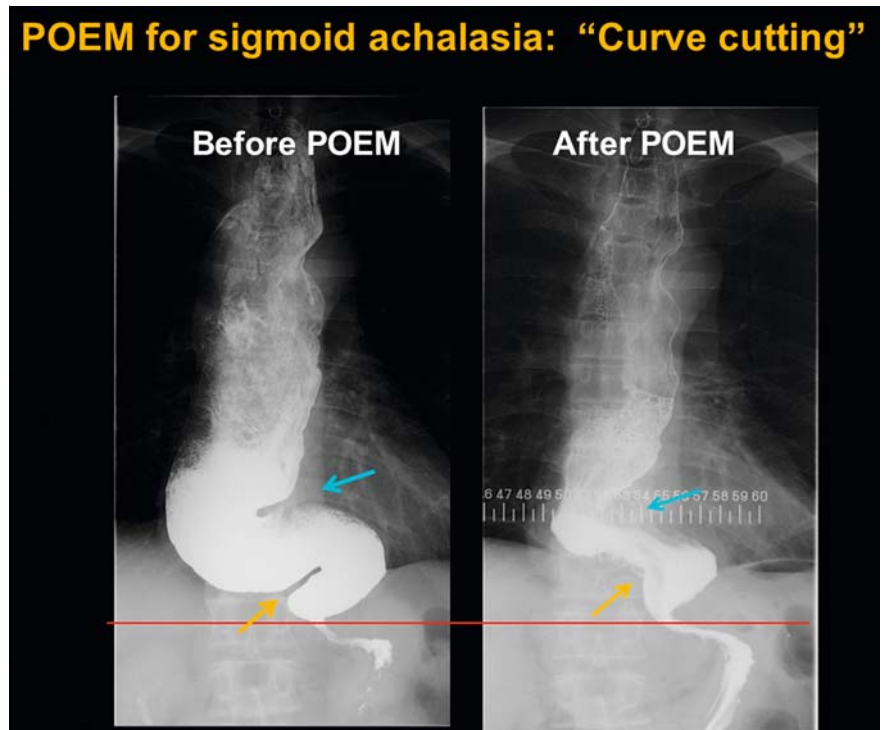


## Dynamic lumen obstructing angulation in advanced sigmoid-type achalasia successfully treated by additional proximal curve myotomy

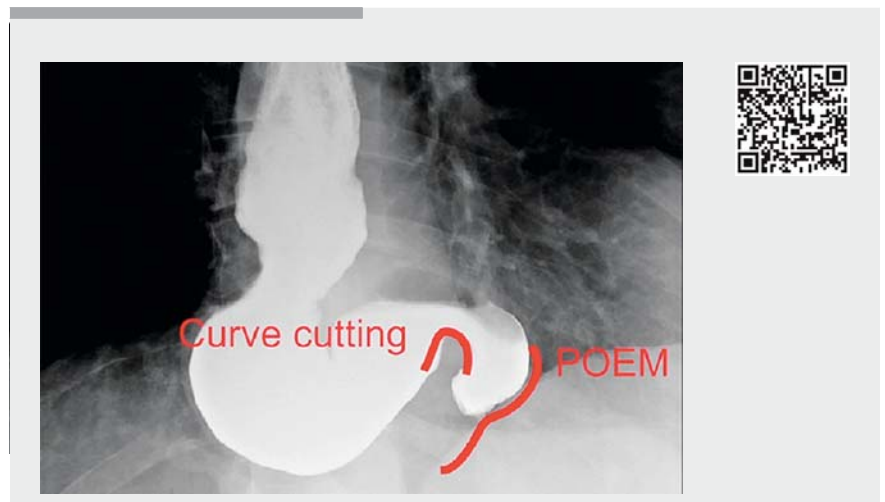
Peroral endoscopy myotomy (POEM) is now well accepted as primary treatment for achalasia [1–3]. It is also effective after failed Heller myotomy [4] and can be repeated when symptoms recur [5]. In patients with advanced sigmoid-type achalasia, in addition to failure of relaxation at the lower esophageal sphincter (LES), there may be an additional dynamic obstruction of the distal esophagus due to an acute angulation (► Fig. 1). This will redirect the flow of food backwards and inferiorly, which can potentially aggravate the downward bend of the esophagus till it goes below the level of the LES, further worsening food stasis. A real-time dynamic esophagogram is needed to demonstrate this dynamic obstruction. In such cases, myotomy of the LES alone is inadequate, and an additional short myotomy to reduce this acute angulation is needed in order to change flow dynamics and allow free passage of food distally (► Fig. 1).

We report three cases of symptomatic advanced sigmoid-type achalasia with an acute dynamic angulation at the distal esophagus causing lumen obstruction that were treated successfully with an additional curve cutting myotomy during POEM.

The first case was a 60-year-old man with type 1 achalasia who had previously been treated by balloon dilation. The second case was a 53-year-old woman with type 1 achalasia who had previously undergone balloon dilation and two Heller myotomy procedures. The third case was a 73-year-old woman with previous balloon dilation, botox injection, and POEM. Real-time esophagograms demonstrated the obstruction at the LES and at the acute dynamic angulation of the distal esophagus caused by the sigmoid-type morphology. Standard POEM was combined with a short proximal curve myotomy. Post myotomy, the barium esophagogram demonstrated resolution of the obstruction (► Video 1).



► Fig. 1 Esophagogram before and after peroral endoscopic myotomy (POEM) combined with curve cutting. The red line indicates the level of the lower esophageal sphincter. The blue and yellow arrows indicate the lumen obstructive curves, visible as sharp notches in the barium swallow. After POEM and curve myotomy, the esophagus looks shortened.



► Video 1 Dynamic barium esophagogram before and after peroral endoscopic myotomy combined with curve cutting.

Our report illustrates the importance of careful preprocedural assessment of advanced sigmoid-type achalasia using dynamic real-time esophagogram to ascertain the nature of obstruction, and the value of additional curve cutting myotomy to relieve the dynamic esophageal obstruction.

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### Competing interests

None

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