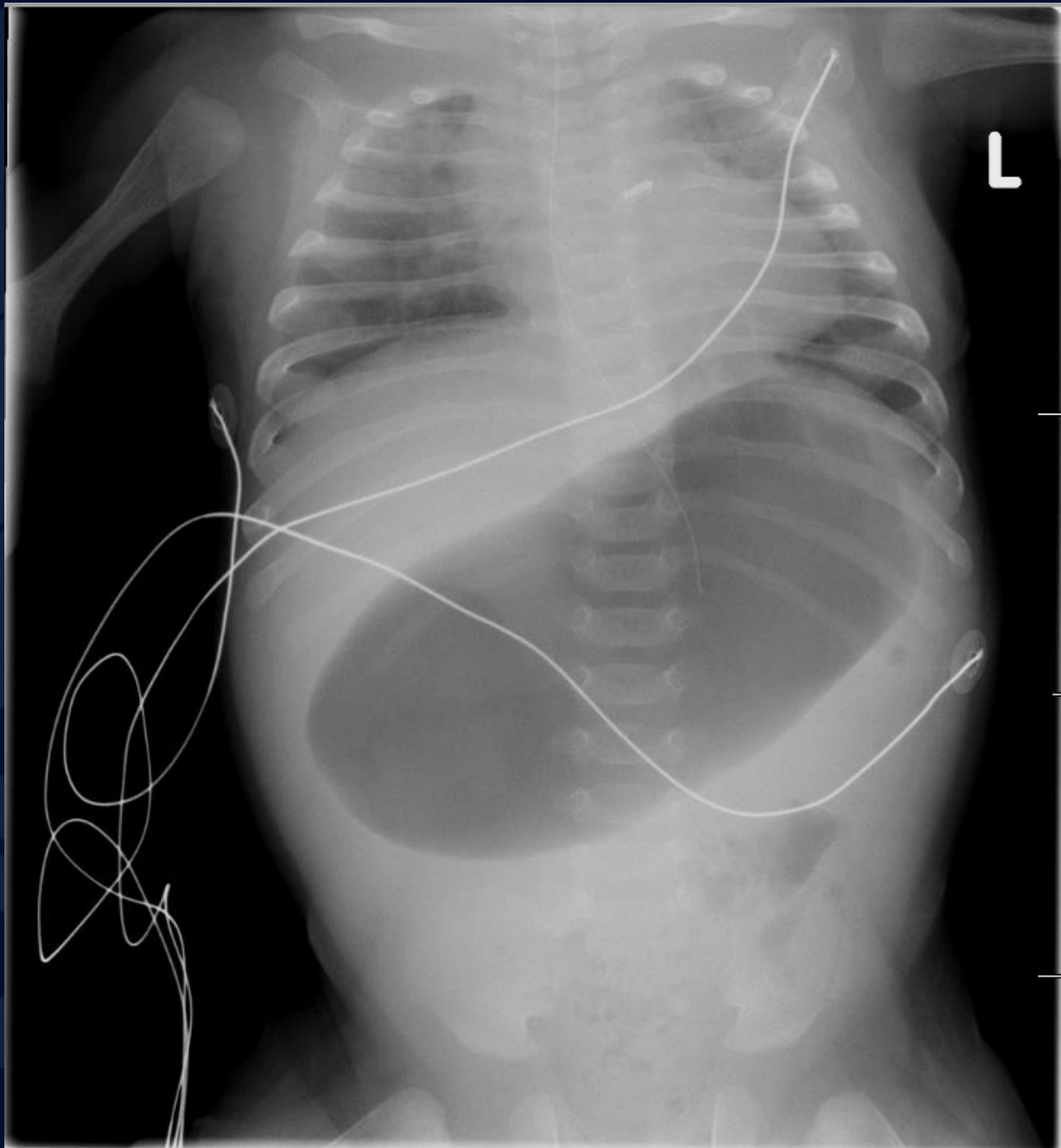


A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide and partially overlapping the text.

4-month-old newborn with progressive food intolerance and non-bilious emesis

John J. DeBevits IV, MD



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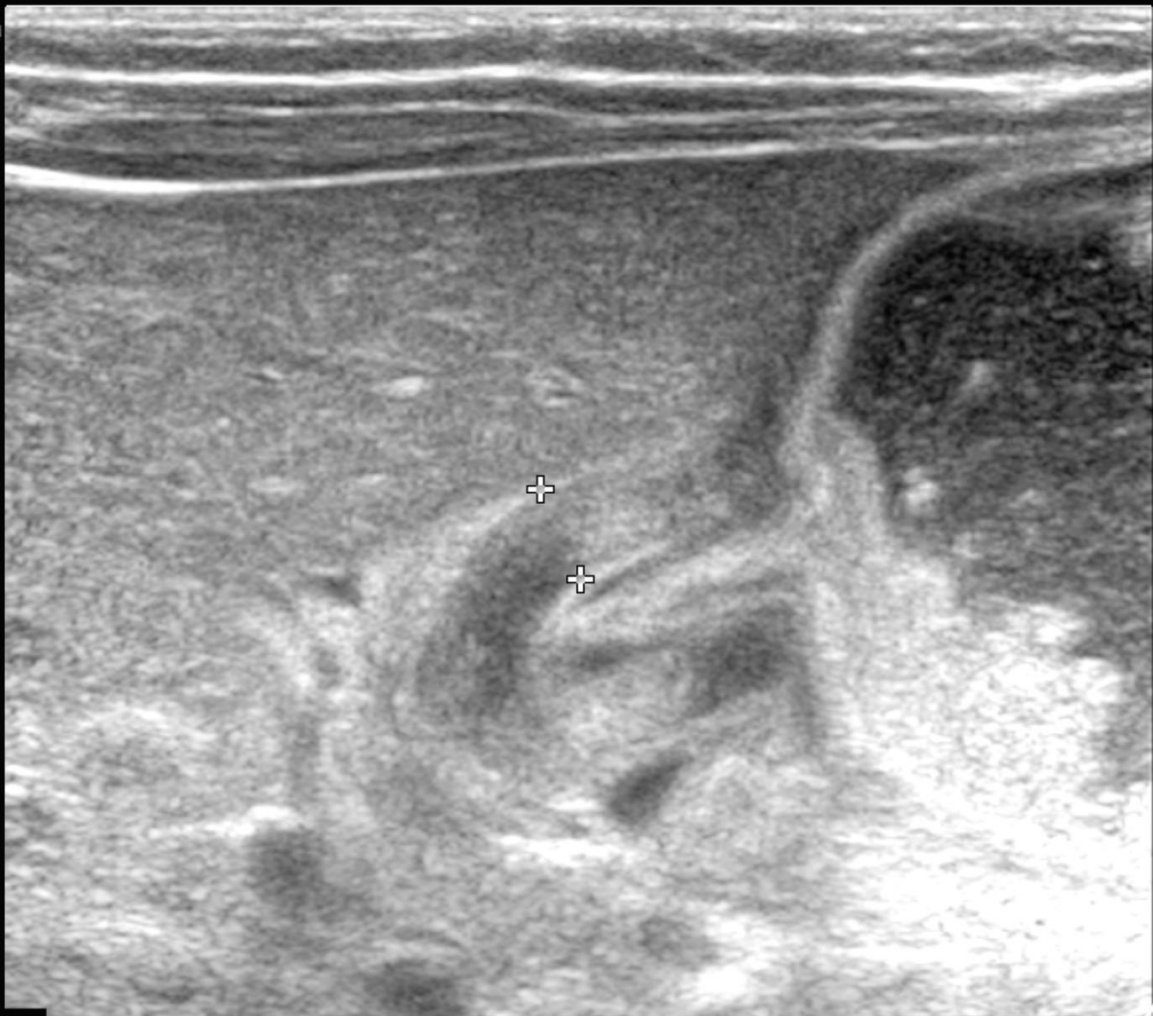
RADIOLOGY

FR 40Hz
RS

M3

2D
75%
C 62
P Low
Pen

P



✦ Dist 0.438 cm

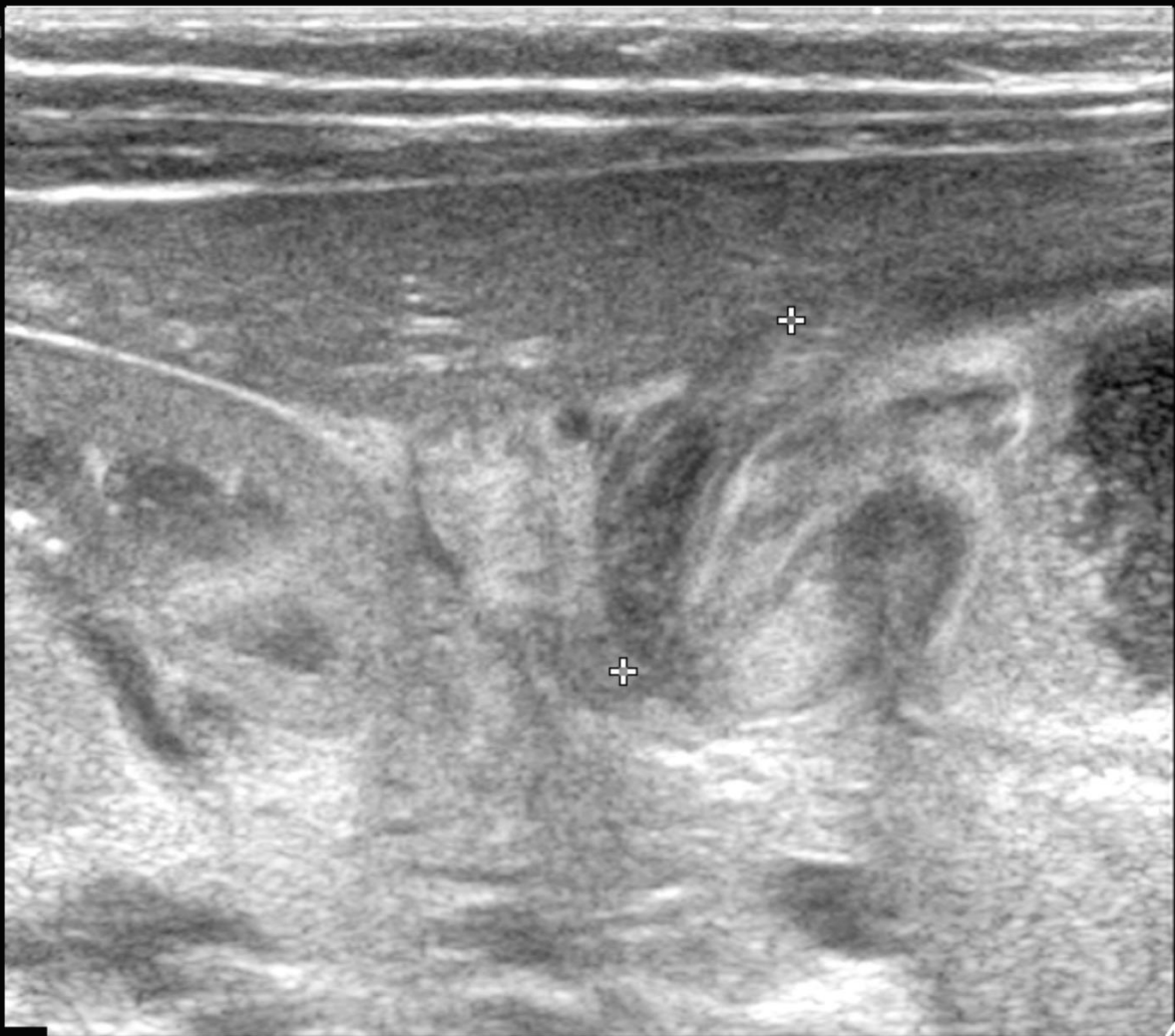
4.5

FR 40Hz
RS

M3

2D
75%
C 62
P Low
Pen

P



+ Dist 1.70 cm

PYL

4.5



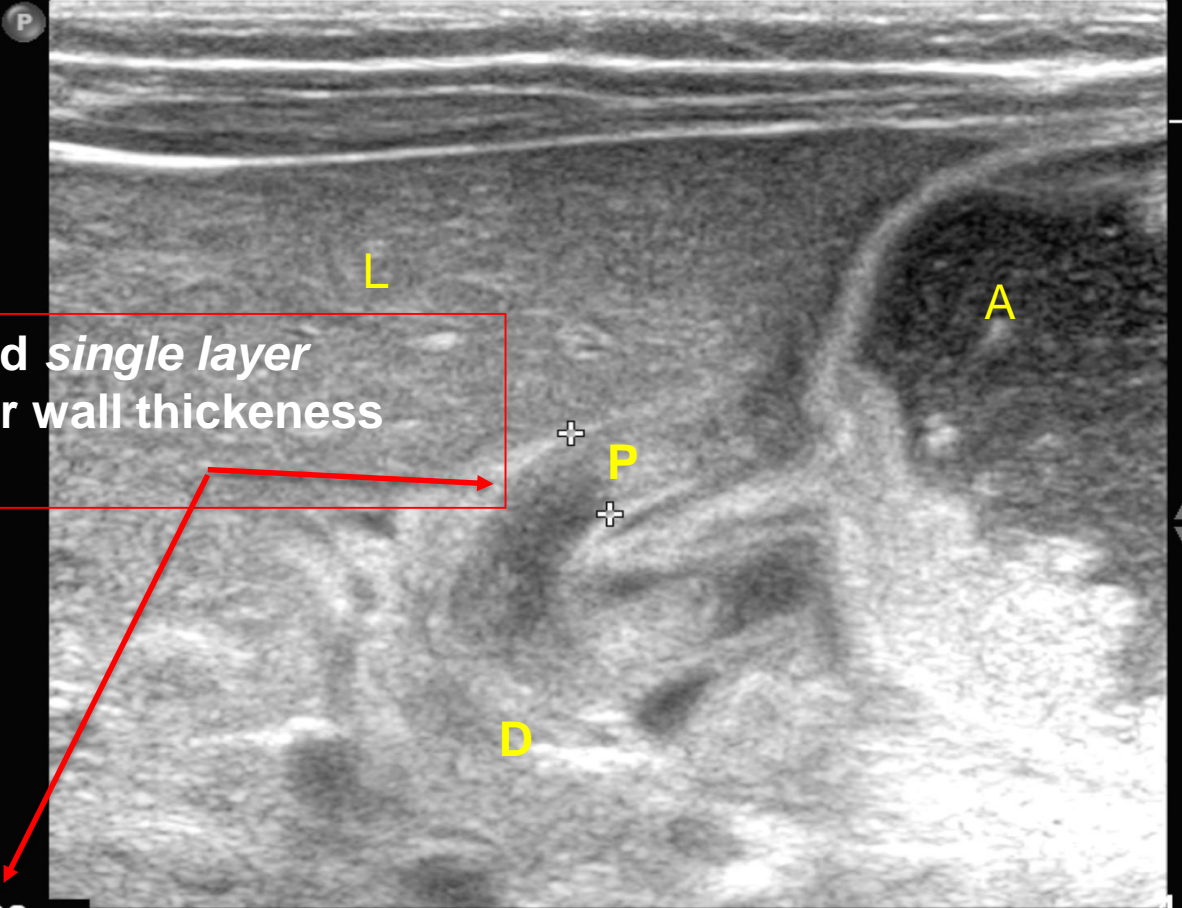
?

Hypertrophic pyloric stenosis

FR 40Hz
RS

M3

2D
75%
C 62
P Low
Pen



Increased *single layer*
muscular wall thickness
>3mm

+ Dist 0.438 cm

PYL

4.5

Hypertrophic pyloric stenosis

- Idiopathic thickening of the gastric pyloric musculature, resulting in progressive gastric outlet obstruction
- M:F – 4:1
- Occurs between first week to 3 months of age
- Presents with *non-bilious* projectile vomiting (ddx from duodenal atresia), sudden food intolerance with failure to thrive
- U/S is imaging modality of choice, though fluoroscopy may be able to identify additional GI tract abnormalities, such as malrotation

Findings

Pylorus musculature is hypoechoic with hyperechoic mucosa

Muscle thickness of single muscular wall on transverse: >3mm (most accurate)

Muscle longitudinal length: >15-17mm

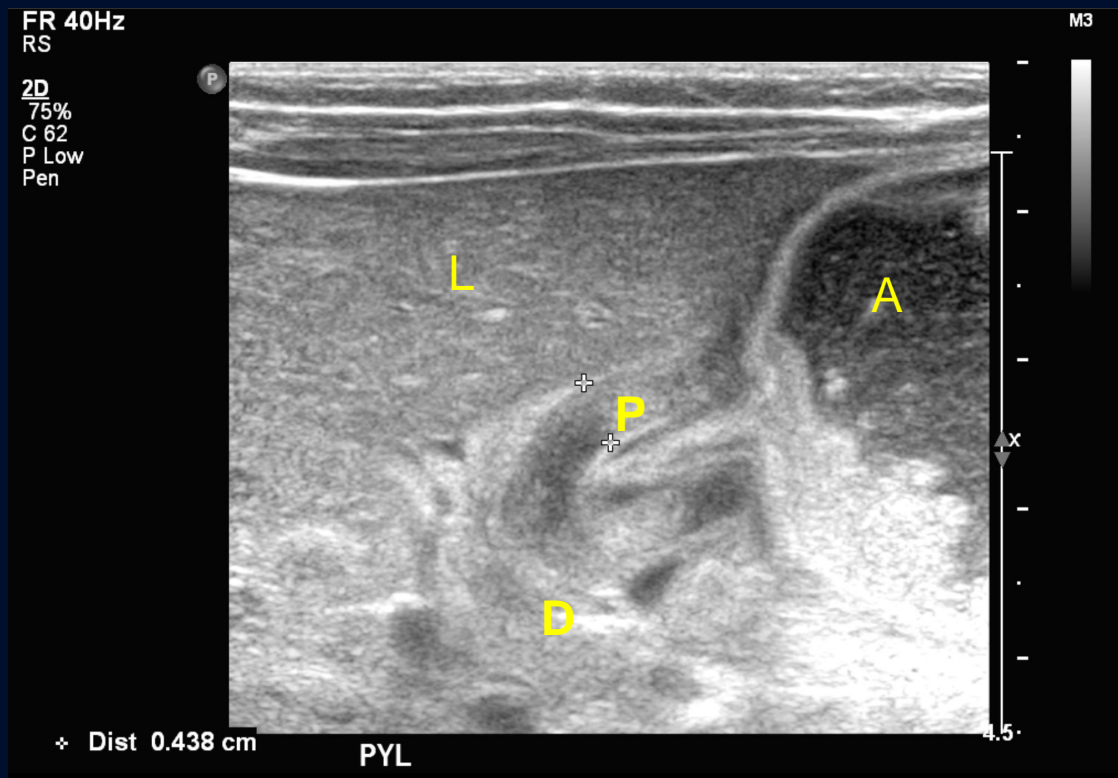
MNEMONIC: PI-LORIC STENOSIS

- PI = 3.14

Pyloric volume >1.5cc

Pyloric transverse diameter > 13mm

Antral nipple, cervix, and target signs



L = liver, A = Antrum, P = pylorus, D = duodenum

Additional concerns

- Be aware of tangential views and contractions which may produce pseudo-thickening.
- Dynamic evaluation is critical as a wide-open pylorus with normal passage of contents excludes HPS, even if muscle appears thickened
- Tx of choice is surgical pyloromyotomy. F/u u/s may be performed if emesis continues
 - Thickening may persist up to 5 months post-op
 - Anterior normalizes first, posterior last
 - Upper GI may be performed to exclude duodenal leak, incomplete pyloromyotomy, or GERD

References

Insights Imaging (2012) 3:247–250
DOI 10.1007/s13244-012-0168-x

PICTORIAL REVIEW

Hypertrophic pyloric stenosis: tips and tricks for ultrasound diagnosis

Sílvia Costa Dias · Sophie Swinson · Helena Torrão ·
Lígia Gonçalves · Svitlana Kurochka · Carlos Pina Vaz ·
Vasco Mendes

Radiology

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Index terms:

Infants, gastrointestinal tract
Pylorus, stenosis, 724.1431
Radiography, in infants and children,
70.1231
Review
Ultrasound (US), in infants and
children, 70.1281

Infantile Hypertrophic Pyloric Stenosis¹

Infantile hypertrophic pyloric stenosis is a common condition affecting young infants; despite its frequency, it has been recognized only for a little over a century, and its etiology remains unknown. Nevertheless, understanding of the condition and of effective treatment have undergone a remarkable evolution in the 20th century, reducing the mortality rate from over 50% to nearly 0%. The lesion is

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RADIOLOGY