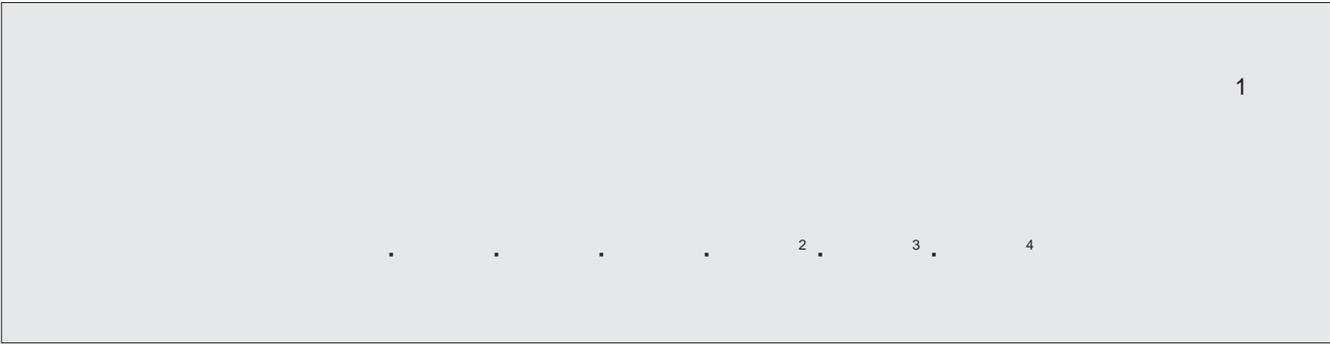


1



:
 : 169
 149
 : 12 (25%) , 36
 (75%) , 97 (96%)
 , 4 (4%) , 75%; 96%; 89%;
 90%; 89% .
 (p = 0.03).
 :

가
 (1) 가 (6-8)
 (criteria) (7, 8).
 (2-4). 6 mm 가 , 가
 가
 (5). (compressi-
 bility), 가

	2004 5	2006 6	
1		169	
2	20	149 (88%)	
3	90 ,	59	8.3 (1 - 15)
4	가	149	48
	(32%)		

2004 가
 2007 2 2 2007 7 16

99

101 (68%) 2

12 2

가 (7, 8)

(B.S.K., G.M.C.)

ATL (Advanced Technology Laboratories, bothell, WA) HDI 5000

4-7 MHz

, Puylaert (1)

(graded-compression technique) 5-12 MHz

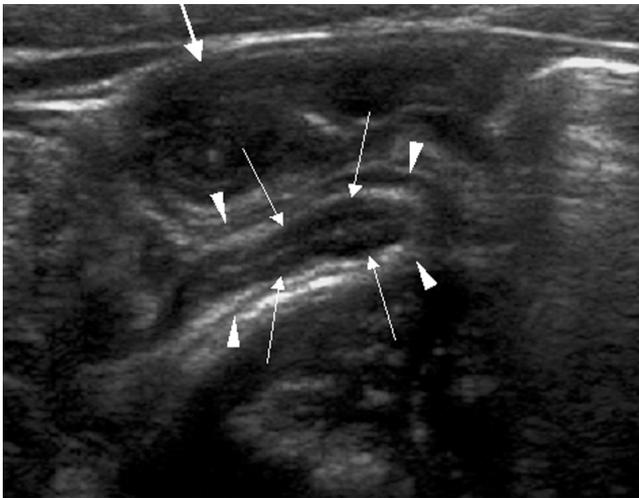


Fig. 1. An eight-year-old boy with terminal ileitis. Longitudinal image shows a normal appendix (arrowheads) with inner hypoechoic bands (long arrows). Thickened wall of terminal ileum (arrow) is noted, anterior to appendix.



Fig. 2. A seven-year-old boy with mesenteric lymphadenitis. Transverse US image shows a normal appendix (arrowheads) with inner hypoechoic bands (long arrows).

:

(linear) 가 (ileocecal valve)

가 (Fig. 1, 2), (caliper)

(ovoid)

(muscularis)

(neutrophil) (early appendicitis), (suppurative appendicitis), (gangrenous appendicitis)

가 (6).

가

student t - test (SPSS version 12.0, Statistical Package for the Social Sciences)

48 (75%) 36 (25%) (Fig. 3, 4), 12

23 (64%) (Table 1). 36

(6, 17%) 5

101 4 97

75%, 96%, 89%, 90%, 89%

1.02

mm (0.6 - 2.1 mm)

0.86 mm (0.4 - 1.4 mm)

(p= 0.03) (Fig. 5).

101 6 mm

Table 1. Comparison of US Finding, and Surgico-pathologic and Clinical Follow-up Results

	Appendicitis (n = 48)			Total	Negative Appendicitis (n = 101)
	Early Appendicitis (n = 4)	Suppurative Appendicitis (n = 37)	Gangrenous Appendicitis (n = 7)		
Absence of Inner Hypoechoic Band	1	28	6	36 (75%)	4 (4%)
Partial	0	11	1	13 (36%)	4 (100%)
Whole	1	17	5	23 (64%)	0
Entire visible Inner Hypoechoic Band	2	9	1	12 (25%)	97 (96%)



Fig. 3. An 11-year-old boy with acute suppurative appendicitis. Longitudinal US image shows an acutely inflamed appendix (arrowheads) with entire loss of inner hypoechoic band. Two intraluminal appendicoliths with acoustic shadowing (long arrows) behind it are seen.

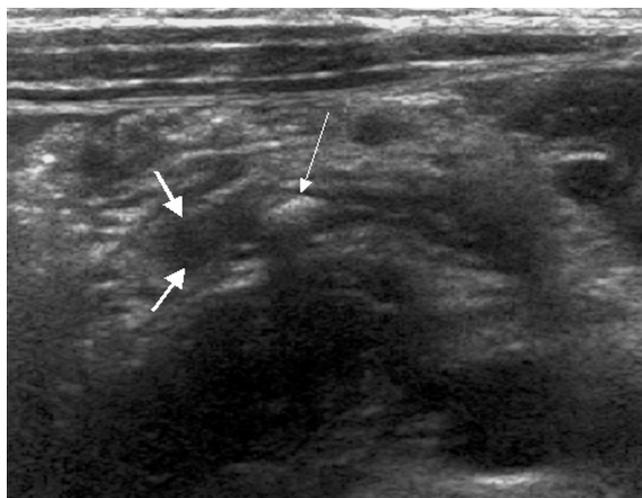


Fig. 4. A five-year-old boy with acute suppurative appendicitis. Longitudinal US image shows an acutely inflamed appendix with partial loss of inner hypoechoic band (arrows). An intraluminal appendicolith with posterior shadowing (long arrows) is seen in mid portion of the appendix.

20 , 19 (95%)가
 (Fig. 6). 48
 6 mm 4 ,
 (Fig. 7).
 가
 30% - 45%
 (9).
 10
 가
 (9 - 11).
 Puylaert (1)
 (2, 11, 12).

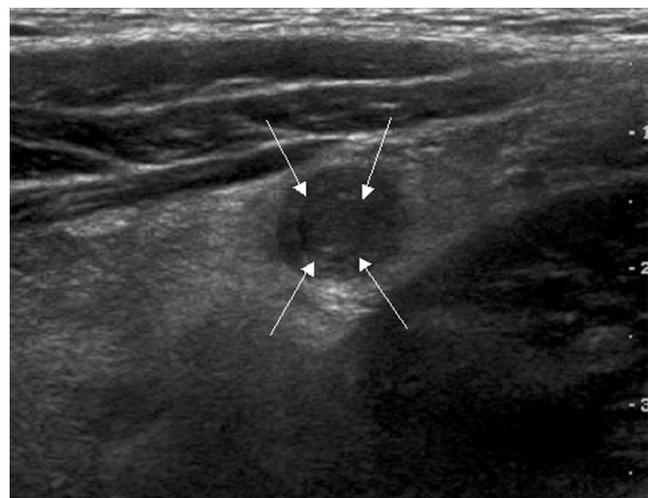


Fig. 5. A 12-year-old girl with acute suppurative appendicitis. Transverse US image shows an acutely inflamed appendix with decreased thickness of inner hypoechoic band (long arrows).

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Usefulness of the Inner Hypoechoic Band of the Vermiform Appendix as Ultrasonographic Criteria for the Diagnosis of Acute Appendicitis in Children¹

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Purpose: We wanted to evaluate the usefulness of the inner hypoechoic band in pediatric appendices as an ultrasonographic criterion to exclude or confirm acute appendicitis.

Materials and Methods: Among the 169 consecutive children with right lower abdominal pain, the 149 appendices depicted on US were prospectively evaluated for an inner hypoechoic band in the appendiceal walls. The sensitivity, specificity, positive and negative predictive values and accuracy were assessed for loss of the inner hypoechoic band as a diagnostic criterion for acute appendicitis.

Results: The appendices in 12 (25%) patients with acute appendicitis show entire inner hypoechoic bands and those in 36 patients (75%) did not. The appendices in 97 (96%) patients without acute appendicitis showed entire inner hypoechoic bands, and those in 4 (4%) did not. The loss of inner hypoechoic band confirmed acute appendicitis with a sensitivity of 75%, a specificity of 96%, positive and negative predictive values of 89% and 90%, respectively, and an accuracy of 89%. The thickness of the inner hypoechoic band in patients without appendicitis was significantly higher than that in patients with appendicitis ($p = 0.03$).

Conclusion: The visualization of entire thickened inner hypoechoic band in the appendiceal wall helps to rule out acute appendicitis. However, the loss of the inner hypoechoic band is suggestive of acute appendicitis.

Index words : Appendicitis
Appendix, ultrasonography
Child
Acute disease
Reference standards

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