

Supplemental Table I: Value of Individual Secondary Findings to Various Appendiceal Diameter Thresholds

Appendix Size and Secondary Findings	n ¹ (%)	Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)	+LR (95% CI)	-LR (95% CI)
Appendix ≥ 6 mm	603/945 (63.8%)						
+ Free Fluid	424/603 (70.3%)	99.3 (97.6, 99.9)	59.9 (54.1, 65.4)	71.2 (66.7, 75.5)*	98.9 (96.1, 99.9)	2.5 (2.2, 2.8)	0.0 (0.0, 0.0)
+ Appendicolith	189/603 (31.3%)	99.4 (96.8, 100)	22.2 (8.6, 42.3)	88.9 (83.5, 93.0)*	85.7 (42.1, 99.6)	1.3 (1.0, 1.6)	0.0 (0.0, 0.2)
+ Regional Hyperemia	449/603 (74.5%)	99.2 (97.8, 99.8)	23.3 (14.8, 33.6)	85.3 (81.7, 88.4)*	87.0 (66.4, 97.2)	1.3 (1.2, 1.5)	0.0 (0.0, 0.1)
+ Echogenic Fat	430/603 (71.3%)	99.2 (97.8, 99.8)	17.4 (7.8, 31.4)	91.2 (88.1, 93.7)*	72.7 (39.0, 94.0)	1.2 (1.1, 1.4)	0.0 (0.0, 0.2)
Appendix ≥ 7 mm	466/945 (49.3%)						
+ Free Fluid	335/466 (71.9%)	95.7 (92.8, 97.7)	85.5 (81.1, 89.3)	86.9 (82.8, 90.3)	95.2 (92.0, 97.4)	6.6 (5.0, 8.7)	0.1 (0.0, 0.1)
+ Appendicolith	177/466 (38.0%)	96.5 (92.4, 98.7)	48.2 (28.7, 68.1)	92.1 (87.1, 95.6)*	68.4 (43.5, 87.4)	1.9 (1.3, 2.7)	0.1 (0.0, 0.2)
+ Regional Hyperemia	406/466 (87.1%)	95.6 (93.0, 97.4)	57.0 (45.9, 67.6)	90.9 (87.7, 93.5)*	74.2 (62.0, 84.2)	2.2 (1.7, 2.8)	0.1 (0.1, 0.1)
+ Echogenic Fat	397/466 (85.2%)	95.2 (92.6, 97.1)	54.4 (39.0, 69.1)	94.7 (92.0, 96.7)*	56.8 (41.0, 71.7)	2.1 (1.5, 2.9)	0.1 (0.1, 0.2)
Appendix ≥ 8 mm	390/945 (41.3%)						
+ Free Fluid	283/390 (72.6%)	87.8 (83.6, 91.3)	94.7 (91.6, 97.0)	94.3 (91.0, 96.7)	88.6 (84.7, 91.9)	16.7 (10.3, 26.9)	0.1 (0.1, 0.2)
+ Appendicolith	155/390 (39.7%)	88.8 (83.0, 93.1)	81.5 (61.9, 93.7)	96.8 (92.6, 98.9)*	53.7 (37.4, 69.3)	4.8 (2.2, 10.6)	0.1 (0.1, 0.2)
+ Regional Hyperemia	355/390 (91.0%)	88.1 (84.4, 91.1)	82.6 (72.9, 89.9)	95.8 (93.1, 97.6)*	60.7 (51.2, 69.6)	5.1 (3.2, 8.0)	0.1 (0.1, 0.2)
+ Echogenic Fat	358/390 (91.8%)	88.1 (84.5, 91.1)	78.3 (63.6, 89.1)	97.2 (94.9, 98.7)*	43.4 (32.5, 54.7)	4.1 (2.3, 7.0)	0.2 (0.1, 0.2)

PPV = Positive predictive value; NPV = negative predictive value; LR+ = positive likelihood ratio; LR- = negative likelihood ratio

¹ Number and percent of patients with indicated appendix size and (if applicable) secondary finding

² Positive predictive value of indicated appendix size alone and appendix size plus presence of secondary finding for a diagnosis of appendicitis

³ For secondary findings, the presence of each finding is compared to the absence of all four findings (however, secondary findings are not independent of one another)

* Significant difference vs size criterion alone, p<0.05

Supplemental Table II – Value of Additive Secondary Findings to Various Appendiceal Diameter Thresholds (Sensitivity Analysis)

Appendix Size and Number of Secondary Findings	n ¹ (%)	Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	+LR (95% CI)	-LR (95% CI)
Appendix ≥ 6 mm	603 (63.8%)			68.3 (64.5, 72.0)		
+ 0	61 (10.1%)	100 (47.8, 100)	0.0 (0.0, 6.4)	8.2 (2.7, 18.1)	1.0 (1.0, 1.0)	---
+ 1	135 (22.4%)	90.0 (78.2, 96.7)	38.4 (30.4, 46.8)	33.3 (25.5, 42.0)	1.5 (1.3, 1.7)	0.3 (0.1, 0.6)
+ 2	134 (22.2%)	95.4 (89.5, 98.5)	64.4 (53.4, 74.4)	76.9 (68.8, 83.7)	2.7 (2.0, 3.6)	0.1 (0.0, 0.2)
+ 3	202 (33.5%)	97.4 (94.1, 99.2)	81. (69.9, 89.6)	93.6 (89.3, 96.5)	5.2 (3.2, 8.4)	0.0 (0.0, 0.1)
+ 4	71 (11.8%)	93.3 (85.1, 97.8)	98.3 (90.6, 100)	98.6 (92.4, 100.0)	53.3 (7.6, 371.6)	0.1 (0.0, 0.2)
Appendix ≥ 7 mm	466 (49.3%)			85.0 (81.4, 88.1)		
+ 0	21 (4.5%)	100 (39.8, 100)	0.0 (0.0, 19.5)	19.1 (5.4, 41.9)	1.0 (1.0, 1.0)	---
+ 1	73 (15.7%)	91.7 (80.0, 97.7)	37.0 (23.2, 52.5)	60.3 (48.1, 71.6)	1.5 (1.2, 1.8)	0.2 (0.1, 0.6)
+ 2	115 (24.7%)	96.1 (90.3, 98.9)	50.0 (32.4, 67.6)	85.2 (77.4, 91.2)	1.9 (1.4, 2.7)	0.1 (0.0, 0.2)
+ 3	187 (40.1%)	97.8 (94.6, 99.4)	73.9 (51.6, 89.8)	96.8 (93.2, 98.8)	3.8 (1.9, 7.5)	0.0 (0.0, 0.1)
+ 4	70 (11.6%)	94.5 (86.6, 98.5)	94.4 (72.7, 99.9)	98.6 (92.3, 100.0)	17.0 (2.5, 114.4)	0.1 (0.0, 0.2)
Appendix ≥ 8 mm	390 (41.3%)			93.6 (90.7, 95.8)		
+ 0	12 (3.1%)	100 (39.8, 100)	0.0 (0.0, 36.9)	33.3 (9.9, 65.1)	1.0 (1.0, 1.0)	---
+ 1	49 (12.6%)	91.3 (79.2, 97.6)	53.3 (26.6, 78.7)	85.7 (72.8, 94.1)	2.0 (1.1, 3.4)	0.2 (0.1, 0.5)
+ 2	99 (25.4%)	95.8 (89.6, 98.8)	50.0 (24.7, 75.4)	91.9 (84.7, 96.5)	1.9 (1.2, 3.1)	0.1 (0.0, 0.3)
+ 3	165 (42.3%)	97.6 (94.0, 99.3)	80.0 (44.4, 97.5)	98.8 (95.7, 99.9)	4.9 (1.4, 16.9)	0.0 (0.0, 0.1)
+ 4	65 (16.7%)	94.2 (85.8, 98.4)	100 (63.1, 100)	100.0 (94.5, 100.0)	---	0.1 (0.0, 0.2)

PPV = Positive predictive value; NPV = negative predictive value; LR+ = positive likelihood ratio; LR- = negative likelihood ratio

Sensitivity analysis = Secondary findings coded as “maybe” flipped to “no” and findings coded as “no comment” flipped to “yes”

¹ Number and percent of patients with indicated appendix size and (if applicable) secondary finding count

² Test characteristics compared to referent group of indicated appendix size alone (e.g., +0 findings) and appendix size plus combination of secondary findings for a diagnosis of appendicitis

³NPV did not change for each subgroup as only one case of appendicitis in the referent group

At 6 mm, NPV = 91.8 (81.9, 97.3)

At 7 mm, NPV = 81.0 (58.1, 94.6)

At 8 mm, NPV = 66.7 (34.9, 90.1)