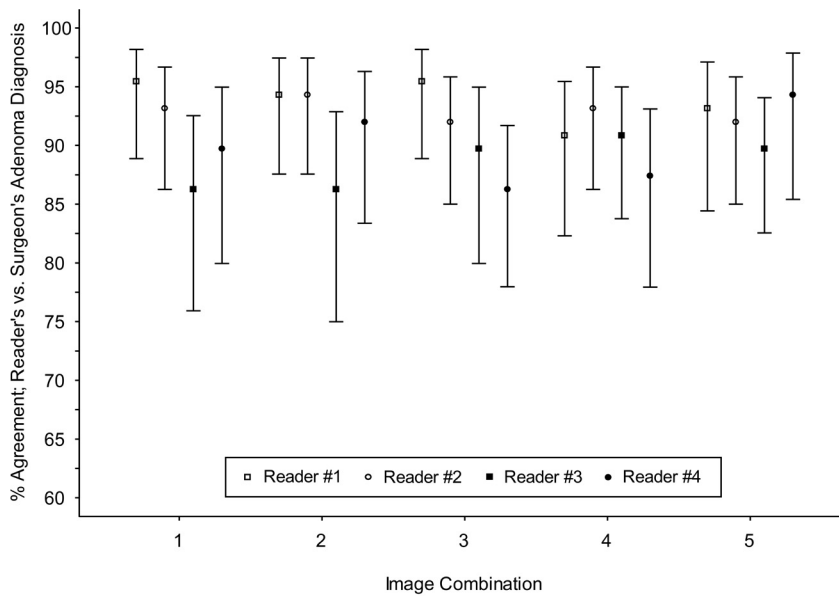**ON-LINE FIG 1.** Individual agreement between the reader's interpretation of the combination of imaging sequences and the surgeon's pathologic findings based on localization to a specific quadrant.

ON-LINE FIG 2. Individual agreement between the reader's interpretation of the combination of imaging sequences and the surgeon's pathologic findings based on lateralization to a side of the thyroid (left-versus-right).

On-line Table 1: Estimates for reader-versus-surgeon adenoma diagnostic agreement (%) when the agreement criterion is based on an exact match between the right upper, right lower, left upper, left lower, and ectopic adenoma diagnoses (positive, negative) of the readers and the surgeons

Reader	Image Combination					P Value[a]
	1	2	3	4	5	
Combined % (CL)	92.2 (86.5, 94.4)	90.9 (86.6, 93.9)	90.5 (86.1, 93.6)	91.0 (87.1, 93.9)	91.6 (87.4, 94.4)	.996
1	95.2 (89.9, 97.8)	94.5 (89.3, 97.3)	95.9 (91.7, 98.0)	93.1 (87.9, 96.2)	93.1 (86.5, 96.6)	.793
2	90.3 (83.6, 94.5)	89.7 (83.6, 94.1)	89.0 (81.5, 93.6)	91.7 (85.4, 95.5)	91.0 (84.8, 94.9)	.959
3	89.0 (81.1, 93.8)	87.6 (79.2, 92.9)	89.7 (82.6, 94.1)	90.3 (84.8, 94.0)	89.0 (83.0, 93.0)	.973
4	90.3 (82.6, 94.9)	91.7 (86.0, 95.2)	87.6 (79.6, 92.7)	89.0 (81.1, 93.8)	93.1 (86.5, 96.6)	.677

Note:—CL indicates confidence limit.
[a] Test for no association between imaging combination and reader-versus-surgeon diagnostic agreement.

On-line Table 2: Summary for reader-versus-surgeon diagnostic agreement when the agreement criterion is based on an exact match between the right upper, right lower, left upper, left lower, and ectopic adenoma diagnoses (positive, negative) of the readers and the surgeons

Reader	Image Combination										P Value[a]
	1		2		3		4		5		
	Agree (No.) (%)	Disagree (No.) (%)	Agree (No.) (%)	Disagree (No.) (%)	Agree (No.) (%)	Disagree (No.) (%)	Agree (No.) (%)	Disagree (No.) (%)	Agree (No.) (%)	Disagree (No.) (%)	
Combined	529 (91.2)	51 (8.8)	527 (90.9)	53 (9.1)	525 (90.5)	55 (9.5)	528 (91.0)	52 (9.0)	531 (91.6)	49 (8.4)	.996
1	138 (95.2)	7 (4.8)	137 (94.5)	8 (5.5)	139 (95.9)	6 (4.1)	135 (93.1)	10 (6.9)	136 (93.1)	10 (6.9)	.793
2	131 (90.3)	14 (9.7)	130 (89.7)	15 (10.3)	129 (89.0)	16 (11.0)	133 (97.7)	12 (8.3)	132 (91.0)	13 (9.0)	.959
3	129 (89.0)	16 (11.0)	127 (87.6)	18 (12.4)	130 (89.7)	15 (10.3)	132 (90.3)	14 (9.7)	129 (89.0)	16 (11.0)	.973
4	131 (9.03)	14 (9.7)	133 (91.7)	12 (8.3)	127 (87.6)	18 (12.4)	129 (89.0)	16 (11.0)	135 (93.1)	10 (6.7)	.677

[a] Test for no association between imaging combination and reader-versus-surgeon diagnostic agreement.

On-line Table 3: Overall summary for diagnostic agreement between the readers and surgeons when the agreement criterion is based on an exact match between the right upper, right lower, left upper, left lower, and ectopic adenoma diagnoses (positive, negative) of the readers and the surgeons and the surgeons' diagnoses are considered the criterion standard

Agreement Measure	Image Combination				
	1	2	3	4	5
Combined					
Sensitivity % (CL)	82.1 (74.8, 88.1)	82.9 (75.6, 88.7)	82.1 (74.8, 88.1)	83.6 (76.4, 89.3)	84.3 (77.2, 89.9)
Specificity	94.1 (91.5, 96.1)	93.4 (90.7, 95.5)	93.2 (90.4, 95.4)	93.4 (90.7, 95.5)	93.9 (91.2, 95.9)
PPV	81.6 (74.2, 87.6)	80.0 (72.6, 86.2)	79.3 (71.8, 85.6)	80.1 (72.7, 86.3)	81.4 (74.1, 87.4)
NPV	94.3 (91.7, 96.3)	94.5 (91.9, 96.4)	94.3 (91.6, 96.2)	94.7 (92.2, 96.6)	94.9 (92.4, 96.8)
Reader 1					
Sensitivity % (CL)	88.6 (73.3, 96.8)	88.6 (73.3, 96.8)	91.4 (76.9, 98.2)	82.9 (66.6, 93.4)	82.9 (66.4, 93.4)
Specificity	97.3 (92.2, 99.4)	96.4 (91.0, 99.0)	97.3 (92.2, 99.4)	96.4 (91.0, 99.0)	96.4 (91.0, 99.0)
PPV	91.2 (76.3, 98.1)	88.6 (73.3, 96.8)	91.4 (76.9, 98.2)	87.9 (71.8, 96.6)	87.9 (71.8, 96.6)
NPV	96.4 (91.0, 99.0)	96.4 (91.0, 99.0)	97.3 (92.2, 99.4)	94.6 (88.7, 98.0)	94.6 (88.7, 98.0)
Reader 2					
Sensitivity % (CL)	80.0 (63.1, 91.6)	77.1 (59.9, 89.6)	74.3 (56.7, 87.5)	85.7 (69.7, 95.2)	85.7 (69.7, 95.2)
Specificity	93.6 (87.3, 97.4)	93.6 (87.3, 97.4)	93.6 (87.3, 97.4)	93.6 (87.3, 97.4)	92.7 (86.2, 96.8)
PPV	80.0 (63.1, 91.6)	79.4 (62.1, 91.3)	78.8 (61.1, 91.0)	81.1 (64.8, 92.0)	78.9 (62.7, 90.4)
NPV	93.6 (87.3, 97.4)	92.8 (86.3, 96.8)	92.0 (85.3, 96.3)	95.4 (89.5, 98.5)	95.3 (89.4, 98.5)
Reader 3					
Sensitivity % (CL)	80.8 (63.1, 91.6)	80.0 (63.1, 91.6)	80.0 (63.1, 91.6)	82.0 (66.4, 93.4)	77.1 (59.9, 89.6)
Specificity	91.8 (85.0, 96.2)	90.0 (82.8, 94.9)	92.7 (86.2, 96.8)	92.7 (86.2, 96.8)	92.7 (86.2, 96.8)
PPV	75.7 (58.8, 88.2)	71.8 (55.1, 85.0)	71.8 (55.1, 85.0)	78.4 (61.8, 90.2)	77.1 (59.9, 89.6)
NPV	93.5 (87.1, 97.4)	93.4 (86.9, 97.3)	93.4 (86.9, 97.3)	94.4 (88.3, 97.9)	92.7 (86.2, 96.8)
Reader 4					
Sensitivity % (CL)	80.0 (63.1, 91.6)	85.7 (69.7, 95.2)	82.9 (66.4, 93.4)	82.9 (66.4, 93.4)	91.4 (76.9, 98.2)
Specificity	93.6 (87.3, 97.4)	93.6 (87.3, 97.4)	89.1 (81.7, 94.2)	90.9 (83.9, 95.6)	93.6 (87.3, 97.4)
PPV	80.0 (63.1, 91.6)	81.1 (64.8, 92.0)	70.7 (54.5, 83.9)	74.4 (57.9, 87,0)	82.1 (66.5, 92.5)
NPV	93.6 (87.3, 97,4)	95.4 (89.5, 98.5)	94.2 (87.9, 97.9)	94.3 (88.1, 97.9)	97.2 (92.0, 99.4)

Note:—CL indicates confidence limit.

On-line Table 4: ROC summary for diagnostic agreement between the readers and surgeons when the agreement criterion is based on an exact match between the right upper, right lower, left upper, left lower, and ectopic adenoma diagnoses (positive, negative) of the readers and the surgeons and the surgeons' diagnoses are considered the criterion standard

Reader	Agreement Measure	Image Combination				
		1	2	3	4	5
Combined	ROC (CL)	0.88 (0.86, 0.90)	0.88 (0.86, 0.90)	0.88 (0.86, 0.90)	0.88 (0.86, 0.90)	0.89 (0.87, 0.91)
Reader 1	ROC (CL)	0.93 (0.90, 0.96)	0.92 (0.89, 0.96)	0.94 (0.91, 0.97)	0.90 (0.86, 0.93)	0.90 (0.86, 0.93)
Reader 2	ROC (CL)	0.87 (0.83, 0.91)	0.85 (0.81, 0.90)	0.84 (0.79, 0.89)	0.90 (0.86, 0.93)	0.89 (0.85, 0.93)
Reader 3	ROC (CL)	0.86 (0.82, 0.90)	0.85 (0.80, 0.89)	0.86 (0.82, 0.91)	0.88 (0.84, 0.92)	0.85 (0.80, 0.89)
Reader 4	ROC (CL)	0.87 (0.83, 0.91)	0.89 (0.86, 0.93)	0.86 (0.82, 0.90)	0.87 (0.83, 0.91)	0.93 (0.89, 0.96)

Note:—ROC indicates receiver operating characteristic analysis; CL, confidence limit.

On-line Table 5: Estimates for reader-versus-surgeon adenoma diagnostic agreement (%) when the diagnostic agreement criterion is based on matches between the right, left, and ectopic adenoma diagnoses (positive, negative) of the readers and the surgeons

Reader	Image Combination					P Value[a]
	1	2	3	4	5	
Combined % (CL)	91.1 (85.8, 94.6)	91.7 (87.1, 94.7)	90.8 (86.5, 93.8)	90.5 (85.4, 94.0)	92.2 (87.5, 95.3)	.976
1	95.4 (88.9, 98.2)	94.3 (87.6, 97.5)	95.4 (88.9, 98.2)	90.8 (82.3, 95.5)	93.1 (84.4, 97.1)	.705
2	93.1 (86.3, 97.5)	92.0 (95.0, 95.8)	93.1 (86.3, 96.7)	93.1 (86.3, 96.7)	92.0 (85.0, 95.8)	.967
3	86.2 (75.9, 92.5)	86.2 (75.0, 92.9)	89.7 (80.0, 95.0)	90.8 (83.8, 95.0)	89.7 (82.6, 94.1)	.837
4	89.7 (80.0, 95.0)	92.0 (83.4, 96.3)	86.2 (78.0, 91.7)	87.4 (77.9, 93.1)	94.3 (85.4, 97.9)	.477

Note:—CL indicates confidence limit.
[a] Test for no association between imaging combination and reader-versus-surgeon diagnostic agreement.

On-line Table 6: Summary for reader-versus-surgeon diagnostic agreement when the diagnostic agreement criterion is based on matches between the right, left, and ectopic adenoma diagnoses (positive, negative) of the readers and the surgeons

Reader	Image Combination										P Value[a]
	1		2		3		4		5		
	Agree (No.) (%)	Disagree (No.) (%)	Agree (No.) (%)	Disagree (No.) (%)	Agree (No.) (%)	Disagree (No.) (%)	Agree (No.) (%)	Disagree (No.) (%)	Agree (No.) (%)	Disagree (No.) (%)	
Combined	317 (91.1)	31 (8.9)	319 (91.7)	29 (8.3)	316 (90.8)	32 (9.2)	315 (90.5)	33 (9.5)	321 (92.2)	27 (7.8)	.976
1	83 (95.4)	4 (4.6)	82 (94.3)	8 (5.5)	83 (95.4)	4 (4.6)	79 (90.8)	8 (9.2)	81 (93.1)	6 (6.9)	.705
2	81 (93.1)	6 (6.9)	82 (94.3)	5 (5.8)	80 (92.0)	7 (8.0)	81 (93.1)	6 (6.9)	80 (92.0)	7 (8.0)	.967
3	75 (86.2)	12 (13.8)	75 (86.2)	12 (13.8)	78 (89.7)	9 (10.3)	79 (90.8)	8 (9.2)	78 (89.7)	16 (10.3)	.837
4	78 (89.7)	9 (10.3)	80 (92.0)	7 (8.0)	75 (86.2)	12 (13.8)	76 (87.4)	11 (12.6)	82 (94.3)	5 (5.7)	.477

[a] Test for no association between imaging combination and reader-versus-surgeon diagnostic agreement.

On-line Table 7: Overall summary for diagnostic agreement between the readers' and surgeons' diagnoses when the diagnostic agreement criterion is based on exact matches between the right, left, and ectopic adenoma diagnoses (positive, negative) of the readers and the surgeons and the surgeons' diagnoses are considered the criterion standard

Agreement Measure	Image Combination				
	1	2	3	4	5
Combined					
Sensitivity % (CL)	89.5 (82.7, 94.3)	91.9 (85.7, 96.1)	90.3 (83.7, 94.9)	88.7 (81.8, 93.7)	92.7 (86.7, 96.6)
Specificity	92.0 (87.6, 95.2)	91.5 (87.1, 94.8)	91.1 (86.5, 94.5)	91.5 (87.1, 94.8)	92.0 (87.6, 95.2)
PPV	86.0 (78.8, 91.5)	85.7 (78.6, 91.2)	84.8 (77.6, 90.5)	85.3 (78.0, 90.8)	86.5 (79.5, 91.8)
NPV	94.1 (90.1, 96.8)	95.3 (91.6, 97.7)	94.4 (90.5, 97.1)	93.6 (89.5, 96.5)	95.8 (92.2, 98.1)
Reader 1					
Sensitivity % (CL)	93.5 (78.6, 99.2)	93.5 (78.6, 99.2)	93.5 (78.6, 99.2)	83.9 (66.3, 94.5)	90.3 (74.2, 98.0)
Specificity	96.3 (87.7, 99.6)	94.6 (85.1, 98.9)	96.4 (87.7, 99.6)	94.6 (85.1, 98.9)	94.6 (85.1, 98.9)
PPV	93.5 (78.6, 99.2)	90.6 (75.0, 98.0)	93.5 (78.6, 99.2)	89.7 (72.6, 97.8)	90.3 (74.2, 98.0)
NPV	96.4 (87.7, 99.6)	96.4 (87.5, 99.6)	96.4 (87.7, 99.6)	91.4 (81.0, 97.1)	94.6 (85.1, 98.9)
Reader 2					
Sensitivity % (CL)	90.3 (74.2, 98.0)	90.3 (74.2, 98.0)	87.1 (70.2, 96.4)	93.5 (78.6, 99.2)	93.5 (78.6, 99.2)
Specificity	94.6 (85.1, 98.9)	96.4 (87.7, 99.6)	94.6 (85.1, 98.9)	92.9 (82.7, 98.0)	91.1 (80.4, 97.0)
PPV	90.3 (74.2, 98.0)	93.3 (77.9, 99.2)	90.0 (73.5, 97.9)	87.9 (71.8, 96.6)	85.3 (68.9, 95.0)
NPV	94.6 (85.1, 98.9)	94.7 (85.4, 98.9)	93.0 (83.0, 98.1)	96.3 (87.3, 99.5)	96.2 (87.0, 99.5)
Reader 3					
Sensitivity % (CL)	87.1 (70.2, 96.4)	90.3 (74.2, 98.0)	90.3 (74.2, 98.0)	90.3 (74.2, 98.0)	87.1 (70.2, 96.4)
Specificity	85.7 (73.8, 93.6)	83.9 (71.7, 92.4)	89.3 (78.1, 96.0)	91.1 (80.4, 97.0)	91.1 (80.4, 97.0)
PPV	77.1 (59.9, 89.6)	75.7 (58.8, 88.2)	82.4 (65.5, 93.2)	84.8 (68.1, 94.9)	84.4 (67.2, 94.7)
NPV	92.3 (81.5, 97.9)	94.0 (83.5, 98.7)	94.3 (84.3, 98.8)	94.4 (84.6, 98.8)	92.7 (82.4, 98.0)
Reader 4					
Sensitivity % (CL)	87.1 (70.2, 96.4)	93.5 (78.6, 99.2)	90.3 (74.2, 98.0)	87.1 (70.2, 96.4)	100 (88.8, 100)
Specificity	91.1 (80.4, 97.0)	91.1 (80.4, 97.0)	83.9 (71.7, 92.4)	87.5 (75.9, 94.8)	91.1 (80.4, 97.0)
PPV	84.4 (67.2, 94.7)	85.3 (68.9, 95.0)	75.7 (58.8, 88.2)	79.4 (62.1, 91.3)	86.1 (70.5, 95.3)
NPV	92.7 (82.4, 98.0)	96.2 (87.0, 99.5)	94.0 (83.5, 98.7)	92.5 (81.8, 97.9)	100 (93.0, 100)

Note:—CL indicates confidence limit.

On-line Table 8: ROC analysis summary for diagnostic agreement between the readers and surgeons when the agreement criterion is based on an exact match between the right upper, right lower, left upper, left lower, and ectopic adenoma diagnoses (positive, negative) of the readers and the surgeons and the surgeons' diagnoses are considered the criterion standard

Reader	Agreement Measure	Image Combination				
		1	2	3	4	5
Combined	ROC (CL)	0.91 (0.88, 0.93)	0.92 (0.90, 0.94)	0.91 (0.88, 0.93)	0.90 (0.88, 0.92)	0.92 (0.90, 0.94)
Reader 1	ROC (CL)	0.95 (0.90, 0.98)	0.95 (0.92, 0.98)	0.95 (0.92, 0.98)	0.89 (0.84, 0.94)	0.92 (0.88, 0.97)
Reader 2	ROC (CL)	0.93 (0.88, 0.97)	0.91 (0.86, 0.95)	0.91 (0.86, 0.95)	0.93 (0.89, 0.97)	0.92 (0.88, 0.96)
Reader 3	ROC (CL)	0.86 (0.81, 0.92)	0.87 (0.82, 0.92)	0.90 (0.85, 0.95)	0.91 (0.86, 0.95)	0.89 (0.84, 0.89)
Reader 4	ROC (CL)	0.89 (0.84, 0.94)	0.92 (0.88, 0.96)	0.87 (0.82, 0.93)	0.87 (0.82, 0.93)	0.96 (0.92, 0.99)

Note:—ROC indicates receiver operating characteristic analysis; CL, confidence limit.