**ON-LINE FIG 1.** A 55-year-old man with biopsy-proved vertebral inflammatory pseudotumor of the L5 vertebra has a mildly expansile hypointense lesion on T1-weighted (*A*) and T2-weighted (*B*) images, with involvement of the adjacent intervertebral disc space, erosion of the endplates, and a convex posterior vertebral margin; however, no obvious areas of necrosis/abscess formation or involvement of posterior elements, preparavertebral space, or any other vertebrae are noted. The lesion shows diffuse enhancement on the contrast study (*C*). Despite the expansile lesion with endplate destruction, the lesion is not hyperintense on DWI (*D*). The ADC measured from the L5 vertebral body is 1.3×10^{-3} mm^2/s (*E*). Sagittal in-phase (*F*) and opposed-phase (*G*) images with the ROI cursor drawn in the lesion are shown. The measured SIR is 0.64.
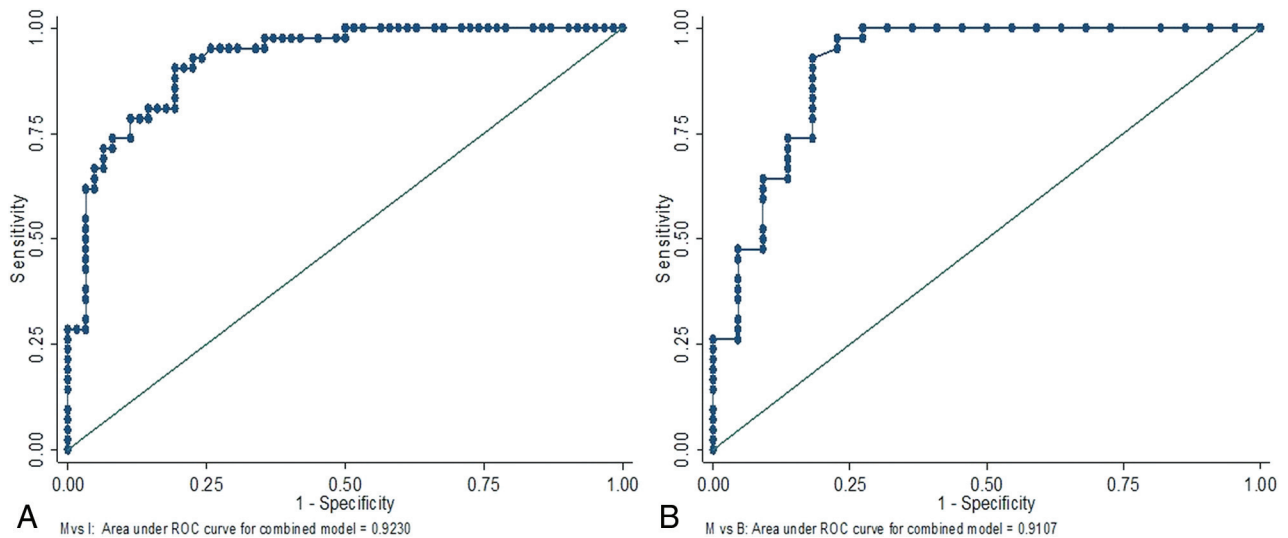
ON-LINE FIG 2. Receiver operating characteristic curve of our proposed models. *A*, Model 1 (infectious versus malignant lesions). *B*, Model 2 (noninfectious benign versus malignant lesions). The AUC for model 1 was 0.92, while the AUC for model 2 was 0.91. B indicates noninfectious benign lesions; I, infectious lesions; M, malignant lesions.

On-line Table 1: Summary of infectious, noninfectious benign, and malignant lesions

Infectious (*n* = 62)			Noninfectious Benign (*n* = 22)	Malignant (*n* = 42)	
Tubercular (*n* = 51)	Pyogenic (*n* = 11)	Osteoporotic (*n* = 14)	Hemangioma (*n* = 2) Meningioma (*n* = 1) Vertebral inflammatory pseudotumor (*n* = 1) Chronic inflammatory (noninfectious inflammatory lesion) (*n* = 4)	Metastasis (*n* = 36) Adenocarcinoma (*n* = 9) Squamous cell carcinoma (*n* = 12) Ductal carcinoma (*n* = 5) Follicular carcinoma (*n* = 3) Clear cell carcinoma (*n* = 3) Sarcoma (*n* = 2) Transitional cell carcinoma (*n* = 1) Neuroblastoma (*n* = 1)	Primary (*n* = 6) Plasmacytoma (*n* = 3) Malignant giant cell tumor (*n* = 1) Primitive neuroectodermal tumor (*n* = 1) Rhabdoid tumor (*n* = 1)

On-line Table 2: ADC and SIR for GPI, GPN, and GPM lesions

	GPI		GPN		GPM		Overall	GPI vs GPN	GPI vs GPM	GPN vs GPM
	Mean	SD	Mean	SD	Mean	SD	*P* Value	*P* Value[a]	*P* Value[a]	*P* Value[a]
ADC	1.23	0.16	1.41	0.31	1.01	0.22	.000	.002	.000	.000
SIR	0.80	0.13	0.75	0.19	0.98	0.11	.000	.460	.000	.000

[a] Bonferroni-adjusted *P* value.

On-line Table 3: The cutoffs for ADC and SIR for differentiating various groups

Condition	Test	Cutoff	SE	Sp	CC	LR+	LR−	AUC	95% CI
GPI vs GPM	ADC	≥1.0	96.8%	69.1%	85.6%	3.13	0.05	0.82	0.73–0.92
GPN vs GPM	ADC	≥1.2	86.4%	78.6%	81.3%	4.03	0.17	0.89	0.81–0.96
GPN vs GPI	ADC	≥1.3	72.7%	59.7%	63.1%	1.80	0.46	0.70	0.56–0.84
GPN+GPI vs GPM	ADC	≥1.0	96.4%	69.1%	87.3%	3.12	0.05	0.84	0.75–0.93
GPM vs GPI	SIR	≥0.91	85.7%	85.5%	85.6%	5.90	0.17	0.90	0.84–0.96
GPM vs GPN	SIR	≥0.90	88.1%	77.3%	84.4%	3.88	0.15	0.86	0.76–0.97
GPI vs GPN	SIR	≥0.65	93.6%	36.4%	78.6%	1.47	0.18	0.56	0.40–0.73
GPN+GPI vs GPM	SIR	≥0.91	85.7%	83.3%	84.1%	5.14	0.17	0.89	0.83–0.95

Note:—LR+ indicates positive likelihood ratio; LR−, negative likelihood ratio; CC, correct classification.

On-line Table 4: Combined models for differentiating various groups

	Model 1: GPM vs GPI		Model 2: GPM vs GPN		Model 3: GPM vs GPN+GPI	
	RC (95% CI)	*P* Value	RC (95% CI)	*P* Value	RC (95% CI)	*P* Value
ADC	−5.67 (−8.79 to −2.55)	<.001	−4.59 (−7.61 to −1.57)	.003	−5.42 (−8.26 to −2.58)	<.001
SIR	18.35 (9.7 to 27.01)	<.001	13.33 (3.7 to 22.97)	.007	15.27 (8.09 to 22.45)	<.001
Constant	−10.50 (−18.52 to −2.47)	.01	−5.93 (−14.82 to 2.96)	.191	−8.25 (−15.4 to −1.11)	.024
CC-LOO	82.7%		89.1%		84.1%	
AUC-LOO	0.91		0.88		0.90	

Note:—RC indicates regression coefficient; CC-LOO, correct classification leave-one-out cross-validation analysis; AUC-LOO, area under the curve on leave-one-out cross-validation analysis.

On-line Table 5: The cutoffs for probability of malignant lesions in different predictive models

Model	Cutoff	SE	Sp	CC	LR+	LR-	AUC	95% CI
1	≥0.39	81.0%	80.7%	80.8%	4.18	0.24	0.92	0.87–0.97
2	≥0.68	83.3%	81.8%	82.8%	4.58	0.20	0.91	0.82–1.00
3	≥0.32	83.3%	82.1%	82.5%	4.67	0.20	0.92	0.87–0.97

Note:—LR+ indicates positive likelihood ratio; LR-, negative likelihood ratio; CC, correct classification.