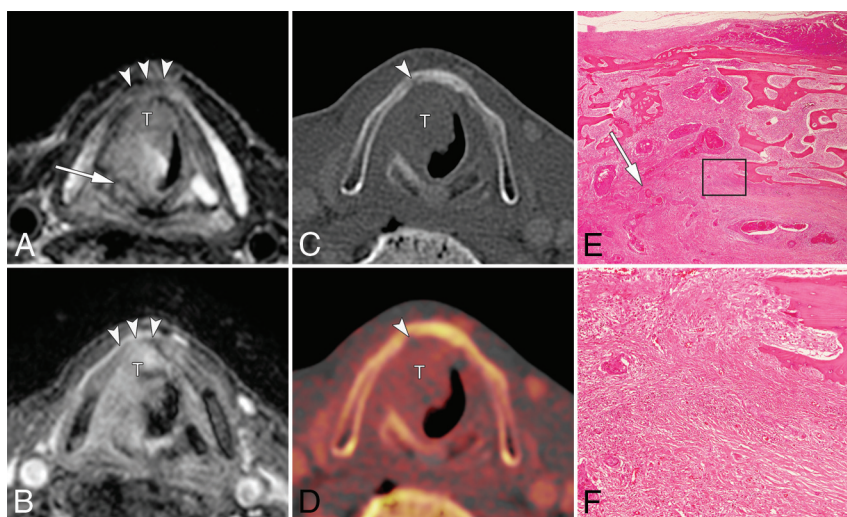


**On-line Table: Diagnostic criteria of MRI and dual-energy CT for detection of cartilage invasion**

	Signal Intensity/Density or Enhancement		
	Ossified Cartilage (Cortical Bone)	Ossified Cartilage (Fatty Marrow)	Nonossified Cartilage
Normal cartilage			
MRI			
T1-weighted	Very low	High	Low
T2-weighted	Very low	High	Low
Contrast-enhanced T1-weighted	No enhancement	No enhancement	No enhancement
Dual-energy CT			
WA image	Very high	Low	Intermediate (similar to that of tumor)
IO image	Could not be evaluated	No enhancement (low)	No enhancement (low)
Positive findings for detecting of cartilage invasion			
MRI <sup>a</sup>			
T1-weighted	Similar to that of tumor (low)		
T2-weighted	Similar to that of tumor (intermediate high)		
Contrast-enhanced T1-weighted	Similar enhancement to tumor		
Dual-energy CT <sup>b</sup>			
WA image	Erosion, lysis, or transmural extralaryngeal spreading through the cartilage		
IO image	Positive corresponding enhancement in the region of cartilage indicated in the WA image		

<sup>a</sup> The cartilage displayed the signal intensity on all the sequences needed for findings positive for cartilage invasion.

<sup>b</sup> Diagnostic readings always began with the WA image. After a lesion was evaluated as positive for cartilage invasion on WA images, the iodine distribution on the IO images was examined to derive a final classification of either positive or negative for cartilage invasion.



**ON-LINE FIGURE.** Laryngeal cancer in a 67-year-old man with microinvasion of thyroid cartilage and negative invasion of cricoid cartilage. *A*, T2-weighted MR image (glottic level) shows a right-sided laryngeal tumor (T) with intermediate signal intensity. Adjacent anterior thyroid lamina shows an intensity like that of the tumor (*arrowheads*). *B*, Contrast-enhanced fat-suppressed T1-weighted MR image also shows signal intensity like that of the tumor in the thyroid cartilage (*arrowheads*), and MR imaging findings were considered positive for invasion. *C*, Weighted-average image shows focal erosion on the right thyroid cartilage (*arrowhead*). *D*, Iodine overlay image shows no corresponding enhancement in the region indicated on the WA image (*arrowhead*), and dual-energy CT findings were considered negative for invasion. *E*, The tumor cells permeate the ossified right plate of the thyroid cartilage with an extent of 3-mm diameter observed under microscopic examination (*arrow*). *F*, Magnified histopathologic photograph (*square* in *E*) demonstrates lymphocytic infiltration into the medullary space, accompanied by desmoplasia of tumor cells in the thyroid cartilage lamina, which demonstrates extensive enhancement on MR images (hematoxylin-eosin stain; original magnification,  $\times 200$ ). Although MR imaging suggested tumor invasion in the right cricoid cartilage, histopathologic evaluation revealed severe inflammatory change without tumor.