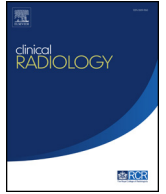




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Correspondence

Re: Optimal diagnostic tool for surveillance of oesophageal varices during COVID-19 pandemic



Sir—We read the article by Jothimani *et al.*<sup>1</sup> exploring the accuracy and utility of computed tomography (CT) for the diagnosis and grading of oesophageal varices, against the reference standard of oesophagogastroduodenoscopy (OGD). They conclude CT is comparable to OGD for these purposes and list limitations including low patient numbers, single centre, and lack of ability to detect high-risk signs for bleeding; however, we would like to raise further limitations.

Two technique-specific scoring systems underpinned the comparative analysis for ordinal sizing of varices. The Baveno workshop consensus classification is established and is used in the British Society of Gastroenterology guidance,<sup>2</sup> but no such radiological measure is validated. The unreferenced four-stage radiological classification in this paper appears to be their own development, and it is not clear what the significance of the 3 and 5 mm boundaries is clinically and how these have been validated in practice. This is important because direct inter-technique comparison of vessel calibre or mucosal prominence may be affected by distension of the oesophagus during endoscopy, compared to the atmospheric pressure during CT acquisition.

Varices have been observed to progress from small to medium/large at an annual rate of approximately 12%.<sup>3</sup> This study included cases where the CT occurred within 6 months either side of the OGD. In our opinion, this 6-month delay may have led to category shifting of varices and affected the validity of the data and a smaller limit would have been more appropriate in a retrospective comparative study for proof of principle.

We would like to draw attention to Table 2 where we believe the sensitivity was substituted for PPV for all categories of varix, and similarly, with specificity and NPV. We suggest that this should be re-evaluated and a correction published. It may be of interest to the readership to see an example of how we calculated this, with reference to small varices.

Table 2 calculations for “small varices”.

Original Table

CT classified	Endoscopic (true classification)			
	None	Small	Medium	Large
None	4	2	0	0
Small	3	23	2	1
Medium	0	2	26	1
Large	0	0	8	32

Correctness if comparing small to not small

Correctness if comparing small to not small

CT classified	Endoscopic (true classification)			
	None	Small	Medium	Large
None	TN	FN	TN	TN
Small	FP	TP	FP	FP
Medium	TN	FN	TN	TN
Large	TN	FN	TN	TN

Collapsed to usual 2 × 2 table

CT classified	Endoscopic (true classification)	
	Small	Not small
Small	S TP = 23	S FP = 6
Not Small	S FN = 4	S TN = 71

## Calculated indices

$$\text{Sensitivity} = \text{TP}/(\text{TP}+\text{FN}) = 23/(23 + 4) = 85.1\%$$

$$\text{Specificity} = \text{TN}/(\text{TN}+\text{FP}) = 71/(71 + 6) = 92.2\%$$

$$\text{PPV} = \text{TP}/(\text{TP}+\text{FP}) = 23/(23 + 6) = 79.3\%$$

$$\text{NPV} = \text{TN}/(\text{TN}+\text{FN}) = 71/(71 + 4) = 94.7\%$$

Although the study included cases that had undergone triple-phase CT, the authors only evaluated the portal venous phase imaging for variceal measurement. Additional phases add little to the assessment of varices, 380 cases were excluded because of lack of triple-phase CT. In our view, single-phase portal venous imaging should have been included to increase the sample size.

CT often identifies incidental findings, and there are potentially significant additional resource implications related to this. In the current UK context, local endoscopic surveillance programmes for patients with cirrhosis are recovering after the health emergency related to SARS-

CoV-19. It is important that CT surveillance assessment is not assumed to have equivalence when its clinical role is unvalidated and the published statistical analysis is incorrect.

## Conflict of interest

The authors declare no conflict of interest.

## References

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