Letter to the Editor

Role of magnetic resonance imaging in intrathoracic hepatocarcinoma diagnosis

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We have read with great interest the article by Scanagatta and colleagues [1] reporting the case of a huge hepatocarcinoma (HCC) with intrathoracic extension. The authors addressed the diagnostic challenge to recognise tumour origin and possible pitfalls with intrathoracic neoplasm; they also advocated the use of magnetic resonance imaging (MRI) to better characterise lesion relationships.

As we can deduce from Fig. 1(c), it seems a case of HCC on normal liver, which is infrequent and presents several diagnostic pitfalls. HCCs are hypervascular tumours and demonstrate a strong arterial enhancement [2]; for this reason, the finding of a single esophageal mass that extensively infiltrates liver parenchyma with a strong arterial enhancement should be addressed in the first instance as HCC; in Fig. 1(b) and (c), we can observe an arterial acquisition. Nevertheless, the tumour does not seem to present a strong arterial enhancement; this could be related to the extensive intra-tumoral necrosis. However, we wonder if the authors have used a bolus-tracking technique to obtain a correct arterial phase and also which acquisition delay has been applied?

In Fig. 1(c), it also seems to appreciate a perihepatic effusion without significant pleural effusion, which is an infrequent finding for an extensive intrathoracic tumour.

By our experience, we do not think that MRI could be useful to better define, in this case, tumour origin and relationships. This is essentially because MRI has a lower spatial resolution (3-mm slice thickness using volumetric sequences) compared with multidetector computed tomography (MDCT) (0.6-mm slice thickness) [3]. The real advantages of MRI in characterisation of a liver lesion are represented by its intrinsic contrast, which offers the possibility to characterise the different components of the lesion (haemorrhage, fat and iron) [4] and also by the possibility to administrate hepatobiliary-specific medium contrast, which permits to distinguish lesions from functioning hepatocytes or Kupffer cells [5].

We conclude that, in this case, MDCT represents the best technique in the attempt to characterise the lesion and its spatial relationships, and to permit a complete oncological staging with whole body examination.

References


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Reply to the Letter to the Editor

Reply to De Cecco et al.

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We would like to thank De Cecco and colleagues for their interest and their reflections [1] about our images of a huge intrathoracic mass which was eventually revealed to be a hepatocarcinoma [2].
Their comments allow us to report some additional information which was omitted due to space constraints.

The mass was studied performing a 3-mm multidetector helical computed tomography (CT) scan, unfortunately without using a bolus tracking technique; an acquisition delay of 40 s, with a flow of 2.5 ml s\(^{-1}\) was applied. The mass appeared to be irregularly necrotic, and no significant arterial enhancement was evaluable (with the limits of the technique used).

A critical revision of the acquired images was performed by an expert radiologist, and the hypothetic diagnosis of an encapsulated tumour such as a fibrous tumour or a leiomyosarcoma was addressed first.

The possible theoretic utility in this clinical case of a magnetic resonance imaging (MRI), which was not performed, was posteriorly advocated according to the direct multiplanar imaging of MRI, that, according to some authors [3], could help to delineate the diaphragm in certain anatomic areas that evade delineation on cross-sectional images, thus revealing its position in relation with the tumour.

However, we completely agree with the colleagues that this examination is not a first-level tool in the diagnosis of intrathoracic masses, and its use should be reserved to selected cases, when diagnosis is not clear and further details could be important to achieve the correct diagnostic and therapeutic decision.

References


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Letter to the Editor

Accuracy of dual-source computed tomography coronary angiography: evaluation with a standardised protocol for cardiac surgeons

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I read with interest the article, ‘Accuracy of dual source computed tomography coronary angiography: evaluation with a standardised protocol for cardiac surgeons’ [1]. The authors must be commended for an excellent study on the utility of computed tomography (CT) angiography.

However, a number of points need to be clarified:

(1) Why was a 12-segment assessment of the coronary arteries done, when what we currently use in day-to-day practice is the standard 15-segment analysis?
(2) What exactly was the new standardised protocol used, as the one mentioned in the methods is an already-existing protocol?
(3) What was the method used to quantify the degree of stenosis in both the dual-source computed tomography (DSCT) and in the invasive coronary angiography (ICA) imaging?

We have previously performed a similar study [2], where the exact degree of stenosis was calculated and a comparison then made between the two modalities. We use a straight-vessel view and then measure the exact percentage of stenosis by comparing it with the normal vessel. The analysis is a quantitative one and the most severe well-defined lesion was measured in case there was more than one lesion in a segment. An automated edge-detection system was used to quantitate the stenosis in the ICA group. This quantitative measurement allowed us to compute a Pearson’s correlation coefficient between the two modalities (0.994, \(P < 0.0001\)) and a Bland–Altman analysis (which showed a mean difference of percent stenosis of 0.05 ± 2.42%). Both these indicated an excellent correlation.

I whole-heartedly agree with the authors that the accuracy of DSCT is promising. I compliment the authors once again in attempting to bring out the importance of cardiac surgeons becoming conversant and skilled with this excellent technology. I feel that the day is not far when ICA will become obsolete for considering bypass surgery where indicated, just as our use of echocardiograms has made angiography obsolete in most valvular and congenital heart disease. In fact, the day may already be on us!

References


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