

Comments of 02832130-Manuscript

The subject of this manuscript is of value, but there are defects need to be modified.

1. The structure (numbered) of this manuscript is not clear. The number of the article is confusing. According to the content of this article, should it be divided into: introduction, imaging techniques and optimization, assessment of mediastinal masses, staging, therapy monitoring and conclusion. Please Check and revise it.

Revised and changed.

2. Is the Imaging techniques and optimization section independent, or include DWI, PWI and Other functional MR based techniques. If this paragraph is independent, it's too simple. It should be clearly numbered.

DWI, PWI and other imaging techniques sections are included in the imaging techniques and optimization section.

3. The terminology of the full text should be unified. The following sentences or terms should be checked and reworded: These segments include prevascular (anterior), visceral (middle), and paravertebral (posterior) compartments. Anterior (prevascular) mediastinal lesions. 1.2.1. Thymoma Thymoma is the most common histologic type of thymic epithelial neoplasms of the prevascular anterior mediastinum. 2. Middle (visceral) mediastinal lesions.

Revised and changed.

4. Some conclusions or statements should added literature. Please see annotations.

Reviewed.

5. Tables: Good.

Reviewed

6. Figures: Good.

Reviewed

Comments of 02439215-Manuscript

Several of these functional imaging modalities such as dynamic contrast-enhanced

MRI (DCE-MRI), diffusion-weighted MRI (DW-MRI), Blood oxygen level dependent imaging (BOLD) and fluorine-18 fluorodeoxyglucose positron emission tomography (18FDG-PET) are now being evaluated for mediastinal tumors, increasing its precision, and in the therapy monitoring of mediastinal neoplasms. Multifunctional quantitative MR metrics may serve as “imaging biomarkers” and evolving imaging techniques provide an opportunity for multiple time point non-invasive spatial and temporal assessment of mediastinal tumor biology.

Advantages

- 1、 It has clarified the motion of this article which is to find the roles of functional MRI in the assessment of malignancies of mediastinum.
- 2、 In the session of introduction, it has demonstrate the advantages of functional MR compared with other imaging means which include the absence of ionizing radiation and the possibility of studying several physiological characteristics of tumors in the same protocol .That are also the reasons for this article.
- 3、 This article is organized. Firstly introduce the advantages of functional MRI for CT. Secondly, introduce the sequences and the imaging effect which include DWI、 PWI and other functional MRI techniques. Next, introduce the Mediastinal tumors which divided into three parts: Anterior (prevascular) mediastinal lesions、 Middle (visceral) mediastinal lesions、 Posterior mediastinal masses. Then to assess the effect of the functional MRI sequences in the diagnosis in mediastinal lesion.
- 4、 The description of mediastinal lesion is detailed which contains epidemiological characteristics、histological features and the imaging effect of functional sequences for the diagnosis.
- 5、 In the conclusion, it has clarified the effect of the functional MRI in the diagnosis in mediastinal lesion which corresponds to the title.
- 6、 The references cited are abundant. Besides, it did not Simply repeat the literature.
- 7、 Using charts and graphs make the description more visual and intuitive. Besides, the image annotations are integrated

Comments of 02829306-Manuscript

The manuscript is concise but offers no new information. The language needs polishing. although common mediastinal masses have been described, there is no mention of the masses which are less common but encountered nevertheless and pose diagnostic dilemma like extramedullary haemopoiesis, masses of vascular origin, neurenteric cysts etc. There are no unique or new insights from the paper.

Comments of 02635498-Manuscript

The authors presented a mini review to elucidate the role of advanced MRI in the differential diagnosis of the mediastinal masses. The paper is in general good and nicely written. However there are minor issues should be revised.

Specific comments:

1. Throughout the manuscript some spaces between the words are missing. This issue causing reading difficulty, should be revised.

Checked and fixed.

2. Some typo and letter errors should be revised.

Checked and fixed.

3. Page 5; "(1) Persistent, with a time-to-peak (TTP) > 120 seconds; (2) Plateau, with a TTP < 120 seconds and a wash-out >30%; and (3) Wash-out, with a TTP < 120 seconds and wash-out < 30%". Is there an error about <, > 30%?

Checked and fixed

4. "Kosucu et all." to "Kosucu et al."

Checked and fixed.

5. Page 7: " HL ($1.02 \pm 547 \text{ mm}^2/\text{s}$)" $1.02 \pm 0.547 \times 10^{-3} \text{ mm}^2/\text{s}$???

Checked and fixed

6. Page 9; "fraction anisotropy" to "fractional anisotropy"

Checked and fixed.

7. In the title and throughout the manuscript the definition of "functional MRI" may be cause misunderstanding. Functional magnetic resonance imaging or functional MRI (fMRI) usually known as measures brain activity by detecting changes associated with blood flow. Advanced MRI techniques could be more appropriate.

Checked and corrected

8. Tables 3 and 4 are redundant and could be removed.

*We think it could add some help for non-experienced radiologist in chest imaging.
If there is any inconvenience they can be deleted.*

9. In figure 4, the authors stated that "Figure 4. A 63 year - old male with a complex cystic anterior mediastinal mass. A and B. High b value DWI (A; $b=1000 \text{ s/mm}^2$) and corresponding ADC map (B) revealing the complex behaviour of the lesion. In this case, DWI can differentiate the solid (white arrow on A and B) and cystic (white asterisk on A and B) components and, also, reveals the restrictive behaviour of the solid part of the mass (ADC: $10.12 - 1.23 \times 10^{-3} \text{ mm}^2/\text{s}$), related to hypercellularity"

In this figure, where is the heart? The cystic component of the lesion where is? Different from the heart? Please add a T1 or T2 weighted image for detailed anatomic finding.

The lesion is located in the upper portion of the anterior mediastinum. The heart is located below the lesion and not included. This lesion does not resemble at all the structure of the heart. The cystic or necrotic component for any lesion is defined as the absence of enhancement of contrast, related to the absence of any viable tissue. The cystic component of the lesions is signaled by a white asterisk. By contrast, the solid portion, which has a locally invasive behavior, is flagged by a white arrow.

11. In figure captions 5. The lesion (white asterisk) could be more suitable.

We have increased the size of the asterisks.

12. In figure caption 6; A 27-year-old man? or woman???

Checked and corrected.