Author’s response to reviews

Title: The role of T2* Gradient Echo in the diagnosis of tumefactive intrahepatic extramedullary hematopoiesis in myelodysplastic syndrome and diffuse hepatic iron-overload: A case report and literature review.

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Reviewer 1

Please refer to cover letter for the point by point response and manuscript for the changes made as requested

Reviewer 2

1. Do you believe the case report is authentic?

Yes

2. Do you have any ethical concerns? Please consider if local Institutional Review Board approval or ethical approval was obtained (if appropriate) and if the patient (or their parent or guardian in the case of children under 18) gave written, informed consent to publish this case and any accompanying images. A statement to this effect should appear in the manuscript.

Comments: No ethical concerns: Patient’s wife gave written consent to publish this case report and accompanying images. Local IRB approval not needed in this case report.
3. Does the Introduction explain the relevance of the case to the medical literature?
Yes;

4. Does the article report the following information? Where information is missing, please specify.

a. The relevant patient information, including:
   - De-identified demographic information (age, gender, ethnicity) - yes
   - Main symptoms of the patient – yes (pre-syncopal episode and pancytopenia)
   - Medical, family and psychosocial history – relevant medical hx; COPD, relevant family hx – none, relevant psychosocial history smoker; use of alcohol added for completeness
   - Relevant past interventions and their outcomes – there was none

b. The relevant physical examination findings - Included

c. Important dates and times in this case (if appropriate, organized as a timeline via a figure or table); if specific dates could lead to patient identification, consider including time relevant to initial presentation, i.e. initial presentation at T = 0, follow up at T = 1 month.
Timeline is reported, and we believe it’s clear

d. Diagnostic assessments, including:
   - Diagnostic methods – Imaging, lab and biopsy findings described
   - Challenges (e.g., financial, language/cultural) - None
   - Reasoning and prognostic characteristics (e.g., staging), where applicable – Progression given from MDS to MDS-RAEB 2 to CMML-2 ; prognostic characteristics given in terms of IPSS-R score

e. Types and mechanism of intervention – Treatment with Ruloxitnib (Janus Kinase inhibitor) – mentioned in the article; liver transplant definitive therapy which patient never got also mentioned in the article
f. A summary of the clinical course of all follow-up visits

Comments: Yes:

Patient’s treatment with Ruxolitinib, progression to RAEB-2 and CMML-2 despite treatment, appearance of EMH in pulmonary arteries, found when patient presented with hemoptysis, treatment with radiation to the chest for the pulmonary artery mass, and finally radiation induced degeneration of EMH leading to mediastinal hematoma and progressive CMML-2 causing respiratory arrest and death are included in the article.

5. Is the interpretation (discussion and conclusion) well balanced and supported by the case presented?

Comments: We believe so.

6. Is the anonymity of the patient protected? Please consider any identifying information in images such as facial features or nametags, whether the patient is named etc. If not, please detail below.

Yes

7. Is the Abstract representative of the case presented?

Comments: Yes; the abstract summarizes the most important points of the case report.

8. Does the case represent a useful contribution to the medical literature?

Comments: Yes; two main contributions to the medical literature
1. Our report emphasizes that hepatic mass forming EMH needs to be considered in the initial differential diagnosis of hepatic lesions arising in the setting of bone marrow disorders.

2. Because of rarity of mass forming EMH, other common hepatic lesions such as HCC, adenoma, FNH and metastasis are also considered. Biopsy has traditionally been the definitive way for diagnosis, as imaging based diagnosis was difficult. Our report indicates that if mass forming EMH arises in the setting of diffuse iron overload (which is very common, occurring in about 50% of patients with transfusion dependent anemias according to one study), T2* weighted GRE can help differentiate between mass forming hepatic EMH and other common hepatic lesions as described above, adding more certainty to imaging based diagnosis of EMH, perhaps averting the need for biopsy.