Peer Review File

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Review Comments

1. Abstract

(1) Abstract formatting: Due to the Author Instruction (https://dmr.amegroups.com/pages/view/guidelines-for-authors#content-2-3), would you please further revise the Abstract? Reorganize the Abstract with Background (state what is known and unknown; why the case report is unique and what it adds to existing literature), Case Description (describe the patient's demographic details and main history, the main diagnosis, interventions, outcomes and follow-ups), and Conclusions (summarize the main take-away lesson, clinical impact and potential implications).

(2) In the "Abstract-Background", we suggest authors highlight the unique point of this manuscript-"To our knowledge, no case reports have demonstrated development of PAN in a patient with IgG deficiency and the development of IBD thereafter" (not just in the Discussion).

Comments: Thank you for your comment. We have adjusted the abstract to include background information and what this case report adds to existing literature in line 32-36. We have also added the main take away lesson in line 38-40.

Changes in the Text: It has been shown to impact the gastrointestinal tract and prior case reports have found PAN to be associated with inflammatory bowel disease although the association is one of conflict. **To our knowledge no case reports have demonstrated development of PAN in a patient with IgG deficiency and subsequent development of inflammatory bowel disease (IBD).** We present a case of a 65 y/o patient with IgG deficiency and previous non-Hodgkin's Lymphoma that presented with biopsy proven cutaneous polyarteritis nodosa that then developed IBD successfully treated with corticosteroid therapy. **It is vital that clinicians realize the association between development of both PAN and IBD in patients with immunoglobulin deficiency as earlier diagnosis can help improve treatment.**

2. Introduction

In the introduction, also highlight the unique point of this manuscript based on comparison with existing evidence/similar cases.

Comments: I have highlighted the unique point of the manuscript in lines 58-62.
Changes to Text: Inflammatory bowel disease (IBD) has been associated with cutaneous disorders including but not limited to reactive disorders such as erythema nodosum, pyoderma gangrenosum, and cutaneous PAN. These can precede, occur with, or happen after development of IBD. **Immunoglobulin changes have also been seen in patients with IBD. To our knowledge no case reports have shown demonstrated a patient with IgG deficiency presenting with medium vessel arteritis and subsequent development of IBD.** We present a unique case of a patient whose initial presentation of IBD manifested with erythema nodosum-like features along with IgG deficiency, requiring a full workup to define this association.

3. Timeline

We suggest the authors adding a timeline. The timeline should present relevant events in the patient's history in chronological order in a figure or table, enabling the core elements of the case report standing alone. The corresponding pathology examinations Figures can also be merged in the timeline. Please see some examples from our sister journals: https://jgo.amegroups.com/article/view/50913/html ; https://tlcr.amegroups.com/article/view/35939/24197; https://tbcr.amegroups.com/article/view/41371/html

Comments: Thank you for your comment. I have added a file with timeline and merged it with pathology examinations for ease of reading.

4. Case presentation

(1) Please change "Case" to "Case presentation" subsection.

(2) For the authors' kind reference, we prefer the detailed time information of the case report (Date, Month, Year) in the manuscript and timeline.

(3) Line 73: I failed to find the Figure 4 in the manuscript. Please kindly confirm it

Comments: Thank you for your comments. I have changed "Case" to Case Presentation". I have also added detailed time information in the Case presentation and timeline is now attached. Apologies- I had removed Figure 4 but failed to update the manuscript- there is no Figure 4.

5.Discussion

It is necessary and important to transparently discuss BOTH the STRENGTHS AND LIMITATIONS of the study in the Discussion. A separate paragraph is highly suggested.

Comments: Thank you for your comment. I have addressed limitations and strengths in lines 139-145.

Changes to text: Limitations of this case include that this patient may have already been predisposed to development of PAN even without immunoglobulin deficiency. Additionally, the prior history of lymphoma may have been related to the development of inflammatory bowel disease as a higher risk of lymphoma has been noted in patients with IBD[17]. Subsequent immunoglobulin levels were also not checked after IVIG treatment which may have been helpful. Strengths of the case study include pathological studies of both the skin and colonic tissue to allow more accurate delineation of the association between PAN and IBD.

6. Conclusion

We suggest the authors specify the information that the primary "take-away" lessons of this case report (without references) in a one paragraph conclusion.

Comments: Thank you for your comment I have added a takeaway lesion of the case report this in lines 147-151.

Changes to Text: The association between acquired immunoglobulin deficiency and PAN in the context of IBD requires further research and **is important to consider upon diagnosis of either entity. Immunoglobulin testing may prove useful when diagnosing PAN and IBD- related disorders as early treatment can result in a favorable prognosis.**