Author's response to reviews

Title: Chronic expanding hematoma in the retroperitoneal space

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Author's response to reviews: see over
July 11, 2013

Dr. Hayley Henderson
Executive Editor,
BMC Urology

Dear Dr. Hayley:

Thank you for the positive response to our manuscript (MS: 5044986359111846), and for giving us the opportunity to improve our manuscript.

We have revised the manuscript, and thoroughly responded to all the concerns expressed by the 3 reviewers. We believe that this revised manuscript has improved significantly compared to the original submission, and we appreciate the constructive suggestions provided by the reviewers. Our point-by-point response has been attached herewith.

We hope that the revised manuscript is now suitable for publication in *BMC Urology*. I look forward to hearing from you.

Sincerely yours,

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Point-by-point Response to Reviewer Comments

Roberto Morina (Referee 1)

Thank you for reviewing our manuscript and providing us with many useful comments. We have rewritten the manuscript based on your comments.

(1) The authors have to review the English grammar and the redaction of the paper.

I apologize for the errors in English grammar. We have had the manuscript reviewed by an editor who is native speaker of English.

(2) The abstract is not representative about the article.

The abstract was slightly modified to appropriately represent the main text.

(3) Is important to define the type of surgery, postoperative complications, etc.

We have modified the text to include the requested details as per your comment. The type of surgery in this case was open abdominal surgery with an intraperitoneal approach. During the postoperative period, the patient developed subcutaneous emphysema that extended from the left thoracic wall to the left abdominal wall as well as high fever. As a result of consulting a dermatologist, a subcutaneous emphysema seemed to be caused by the operative stress than a bacterial infection. He received compression therapy by a compression garment. The laboratory data revealed leukocytosis and elevated β-D-glucan levels. Antibiotic therapy with cefazolin was replaced with doripenem and clindamycin. In addition, treatment with fosfluconazole was initiated. Thereafter, the patient’s fever resolved and β-D-glucan levels gradually normalized.

(4) No theory about the cause of the haematoma is proposed.
In the present case, the patient had no definite history of factors that may have caused CEH in the retroperitoneal space. The specific etiologic mechanism appears to involve a shearing force that detaches the subcutaneous fascia from the underlying fascia, thus creating a potential space for the formation of the hematoma. Blood, blood degradation products, and vasoactive substances act synergistically, leading to persistent augmented capillary permeability and hematoma expansion.

(5) Conclusions are obtained about the literature review not from the case

We modified the conclusion of the case report to reflect our observations and findings based on the patient's condition.

Gou Kaneko(Refree 2)

Thank you for reviewing our manuscript. We appreciate your thoughtful comments.

(1) Authors described that “our case showed the biggest chronic expanding hematoma in retroperitoneal space” (Page 2, line 9). However authors did not describe about the tumor size of previous reported cases in the manuscript, therefore, it is unclear whether it is true or not.

In 2009, Gou Kaneko et al. reported 7 cases of retroperitoneal CEH, which we have mentioned in our report. Besides these 7 cases, we did not identify any additional cases through our search in PubMed. We have mentioned 8 cases previously, including our own. We now realize this count is not appropriate, and thus, we have amended the count of the cases to 7.

(2) To our knowledge, trauma or previous surgery are thought as an etiology of chronic expanding hematoma. Did the patient have a history of trauma or previous surgery? Authors should describe about it.
We have added the details of the patient medical history to the text. He did not experience trauma and did not undergo any prior surgical procedures that could explain the development of the hematoma.

(3) To our knowledge, T2 weighted image of MRI and dynamic CT is useful for a diagnosis of chronic expanding hematoma. Authors should describe in detail these findings.

T2-weighted MR imaging in the present case showed a "mosaic sign," which meant that the lesion involved repeated bleeding because it contained a mosaic of various signal intensities representing fresh and old blood. (Akata S, et al Clin Imaging 24:44-46, 2000)

It has been stated that dynamic CT scanning can detect a rim enhancement in the arterial phase in such cases, because granulation tissue with vascular channels is distributed within the hematoma capsule (Yamasaki T, et al Int J Urol 12:1063-1065, 2005; Irisawa M, et al Radiat Med 23:116-120, 2005). In the present case, enhanced CT revealed a partly enhanced rim.

(4) Authors should describe in detail about operative method or intraoperative findings (for example, approach (laparotomy or laparoscopic surgery, intraperitoneal or extraperitoneal), incision, the association between the mass and ureter). Usually, chronic expanding hematoma has a firm fibrous capsule. The authors also described that “It was completely encapsulated, and no evidence of invasion to the neighboring tissue was found” (Page 6, line 11). Therefore, I can’t understand why the mass intraoperatively ruptured. Authors should describe the reason of rupture.

In the present study, we treated the patient with open abdominal surgery via the intraperitoneal approach. The mass was located in the retroperitoneal space, was completely encapsulated, and did not exhibit any evidence of invasion to the neighboring tissue; however, it was found to be partly adhering to the left ureter and psoas muscle. On exploration,
we observed that there was no vascular malformation in the surrounding tissue. Although a slight adhesion was present between the mass and the left ureter, dissection was performed relatively easily because of a ureteral stent that was placed prior to the operation. However, the mass was partially adhering to the aorta, and therefore, we decided to perform dissection at a site close to the mass. Despite the careful dissection, the traction exerted on the thin capsule of the mass resulted in its rupture.

(5) Authors described that 8 retroperitoneal chronic expanding hematomas previously reported (Page 8, line 8). A retroperitoneal space is very large space (above a kidney -pelvis), thus, kindly comment on the location details of previous reported cases.

In 2009, Gou Kaneko, et al. reported 7 cases of retroperitoneal chronic expanding hematomas. Besides these 7 cases, we did not identify any additional cases through our search in PubMed. We added a table (see below) summarizing the findings of these 7 previous reports.

Table 1. Reported cases of retroperitoneal chronic expanding hematomas

<table>
<thead>
<tr>
<th>Author</th>
<th>Patient age (years)</th>
<th>Patient sex</th>
<th>Site of the hematoma</th>
<th>Hematoma size (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaneko et al [4]</td>
<td>34</td>
<td>F</td>
<td>Above the right kidney</td>
<td>12</td>
</tr>
<tr>
<td>Hamada et al [5]</td>
<td>65</td>
<td>M</td>
<td>At the right iliac fossa</td>
<td>8</td>
</tr>
<tr>
<td>Irisawa et al [7]</td>
<td>70</td>
<td>M</td>
<td>Below the right kidney</td>
<td>18</td>
</tr>
<tr>
<td>Yamazaki et al</td>
<td>53</td>
<td>M</td>
<td>Above the left kidney</td>
<td>12</td>
</tr>
<tr>
<td>Yamada et al [6]</td>
<td>59</td>
<td>M</td>
<td>Above the left kidney</td>
<td>12</td>
</tr>
<tr>
<td>Reid et al [1]</td>
<td>79</td>
<td>M</td>
<td>At the right iliac fossa</td>
<td>NA</td>
</tr>
<tr>
<td>Reid et al [1]</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>8</td>
</tr>
<tr>
<td>Syuto et al</td>
<td>69</td>
<td>M</td>
<td>Below the left kidney</td>
<td>20</td>
</tr>
</tbody>
</table>
M, male; F, female; NA, data not available

(6) The conclusion in the manuscript mostly consists of a review of the literature, and it is too long. Therefore, it is not suitable as a conclusion of a case report. Authors should briefly describe only the new knowledge and experience gained from this case.

We agree with your comment entirely. Our conclusion was too long, and not suitable as a conclusion of case report. We have modified it accordingly.

Mahzuz Karim (Refree 3)

Thank you for reviewing our manuscript and providing us with your kind suggestions.

(1) Given the presence of hydronephrosis, the patient’s renal function (and, if possible, blood pressure) should be specified before and after treatment.

The serum creatinine level changed from 0.72 mg/dL before double J-stent insertion to 0.53 mg/dL after removal of the treatment.

(2) The authors discuss the differential diagnosis of CEH, including soft tissue malignancy. It would be useful if the section on imaging could be expanded, discussing relevant features that may aid in diagnosis, and the role (if any) of other imaging modalities such as angiography.

As a suggested by reviewer #2(Gou Kaneko), T2-weighted MR imaging and dynamic CT scanning is useful for diagnosing chronic expanding hematomas. T2-weighted MR imaging in the present case revealed a “mosaic sign,” and dynamic CT scanning indicated rim enhancement in the arterial phase. Oka et al reported that, in addition to indicating the “mosaic sign, diffusion-weighted MR imaging is also useful for

Although the clinical diagnosis may be confirmed by sonography, computed tomography and MRI provide better visualization of the mass. Moreover, angiography may be useful to exclude an ongoing hemorrhagic event, but it is less effective as compared to MRI for differentiating between CEHs and soft tissue malignancy.

(3) Some comment should be made regarding potential complications of CEH (particularly infection), both before and after surgical intervention.

Prior to surgical intervention, the CEH-related complication observed in the present study was hydronephrosis; however, we did not identify the presence of any infection.

After surgical intervention, subcutaneous emphysema developed from the left thoracic wall to the left abdominal wall. The laboratory data revealed leukocytosis and elevated β-D-glucan levels. Antibiotic therapy with cefazolin was replaced with doripenem and clindamycin. In addition, treatment with fosfluconazole was initiated. Thereafter, the patient’s fever resolved and β-D-glucan levels gradually normalized. We could not locate the site of inflammation or infection after examination by CT, urine culture, sputum culture, and blood culture.