Author’s response to reviews

Title: A rare intrahepatic subcapsular hematoma (ISH) after laparoscopic cholecystectomy: a case report and literature review

Authors:

Qiao-fei Liu (qfliu@aliyun.com)
Lingling Bian (1368118271@163.com)
Mengqing Sun (344849639@qq.com)
Ronghua Zhang (tawufrederic@126.com)
Weibin Wang (wwb_xh@163.com)
Yongning Li (13901074129@139.com)
Junchao Guo (pumch_research@163.com)

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Author’s response to reviews:

Dear editor in chief,

We would like to submit this revised edition of our manuscript to BMC Surgery for further publication consideration.

Firstly, we would like to give our many thanks to these two reviewers who gave us several helpful suggestions to improve the quality of our paper. And then we will reply their comments point to point.

Arianna Birindelli (Reviewer 1): Sorry, but I don't agree with the management of this patient. In my opinion, after the CT scan showing the haematoma but no free fluid, the patient should have been managed conservatively (fluid resuscitation) and not surgically. What did the relaparoscopy show you that the CT scan didn't? Were you very surprised that the haematoma was not ruptured? I wasn't, after seeing the CT scan images.

Therefore, unless the authors are able to clarify this point I don't think this paper deserves publication.

My comments and suggestions in the attached file.
Prof. Birindelli,

Thank you so much for your valuable suggestions and kindly help for language polish and spelling correction! Frankly, we have to say we did not present some important detail of this case clearly in the previous manuscript which may affect your judgement. In this revised manuscript, we added this important information.

When the patient was admitted to our emergence department at 8:30 pm, according to her vital signs and hemoglobin, hemorrhagic shock was confirmed. We prescribed fluid resuscitation to her immediately, however, the vital signs remained unstable, and the hemoglobin declined further. 2 hours after admission, a B ultrasound scan showed the hematoma became larger. Active bleeding in liver was suspected. We called radiologist for consultation, however, interventional therapy was not available at mid night. The most key point for this patient was the risk of sudden death after rupture of the hematoma. No one could guarantee it would not rupture, especially when the hematoma became larger and the hemoglobin declined further. What to know next was a real dilemma. We totally agreed with the idea of prof.Birindelli. Conservative treatment may be a choice, which we also considered. However, when we explained the potential risk of sudden death after the rupture of hematoma during conservative treatment, the patient and her relative rejected conservative treatment, and requested other method to decrease the possibility of sudden death. After careful consideration of the continuous decline of hemoglobin, unstable hemodynamics after fluid resuscitation, we also explained our surgical plan to the patient and her relatives. We planned to perform laparoscopic exploration at first, during the operation, if the hemodynamic became better after blood transfusion and plenty fluid transfusion, we would not evacuate or drain the hematoma, instead, we would put a drainage tube under liver which would show the potential rupture of the hematoma immediately which would reduce the risk of sudden death after rupture, however, if the hemodynamic still remained unstable during operation after resuscitation, we would evacuate the hematoma and drain it thoroughly. They rejected the conservative treatment and requested surgical method to reduce the risk of sudden death. Therefore, an emergency laparoscopic exploration was performed under general anesthesia. 4 U red blood cell and 400 ml fresh frozen plasma were transfused. During the 3 hours of operation, after fluid resuscitation, her hemodynamic became stable. Therefore, a drainage tube was placed under the liver and then she was sent to ICU ward.

As well, we agreed with prof. Birindelli, there was no free fluid in abdominal cavity before surgery, however, in all of these 17 cases after literature review, only one case was ruptured, however, 14 cases were operated, therefore, rupture may not the unique indication for surgical treatment.

Frankly speaking, we did not say our treatment was the best one for this patient, as prof.Birindelli said, maybe conservative treatment was enough and surgical treatment could be avoided. However, at that time, no one could guarantee this satisfactory outcome, especially when the condition of the patient did not become better after resuscitation and she requested to reduce the risk of sudden death after rupture as low as possible. Laparoscopic exploration was minimally invasive procedure and a drainage tube could be a good way for early warning of the the rupture of hematoma. The review data also showed, although only one case was ruptured before surgery, 14 cases were still operated. Therefore, we think that the experience to treat ISH
remained largely limited, although our treatment maybe not the best one, this patient had no re-laparoscopic related-complications and recovered well and fast. There was still no standard treatment strategy for this kind of patients, herein, we summarized all of the reported cases, which may added our knowledge to treat this kind of patients. We sincerely expect prof. Birindelli could reconsider our revised manuscript.

Florin Botea (Reviewer 2): Interesting case presentation, with a thorough review of the literature. However, the authors need to address some issues:

- comment on the relaparoscopy, which consisted of exploration only, and maybe it could have been avoided. In this sense, the authors should mention if the CT showed any signs of active bleeding; in absence of these signs, conservative treatment would have been recommended;

- the patient should have been screened for diseases affecting coagulation - the authors need to comment on that;

- the authors should comment also on the background liver, as steatosis, for example, may favor hematoma after minor trauma.

In conclusion, I think the paper should be considered for publishing after revision.

Prof. Botea,

Thank you so much for your valuable suggestions! Frankly, we have to say we did not present some important detail of this case clearly in the previous manuscript which may affect your judgment. In this revised manuscript, we added this important information.

When the patient was admitted to our emergence department at 8:30 pm, according to her vital signs and hemoglobin, hemorrhagic shock was confirmed. We prescribed fluid resuscitation to her immediately, however, the vital signs remained unstable, and the hemoglobin declined further. 2 hours after admission, a B ultrasound scan showed the hematoma became larger. Active bleeding in liver was suspected. We called radiologist for consultation, however, interventional therapy was not available at mid night. The most key point for this patient was the risk of sudden death due to rupture of the hematoma. No one could guarantee it would not rupture, especially when the hematoma became larger and the hemoglobin declined further. What to know next was a real dilemma. We totally agreed with the idea of prof. Botea. Conservative treatment may be a choice, which we also considered. However, when we explained the potential risk of sudden death after the rupture of hematoma during conservative treatment, the patient and her relative rejected conservative treatment, and requested other method to decrease the possibility of sudden death. After careful consideration of the continuous decline of hemoglobin, unstable hemodynamics after fluid resuscitation, we also explained our surgical plan to the patient and her relatives. We planned to perform laparoscopic exploration at first, during the operation, if the hemodynamic became better after blood transfusion and plenty liquid transfusion, we would not evacuate or drain the hematoma, instead, we would put a
drainage tube under liver which would show the potential rupture of the hematoma immediately which would reduce the risk of sudden death after rupture, however, if the hemodynamic still remained unstable during operation after resuscitation, we would evacuate the hematoma and drain it. They rejected the conservative treatment and requested surgical method to reduce the risk of sudden death. Therefore, an emergency laparoscopic exploration was performed under general anesthesia. 4 U red blood cell and 400 ml fresh frozen plasma were transfused. During the 3 hours of operation, after fluid resuscitation, her hemodynamic became stable. Therefore, a drainage tube was placed under the liver and then she was sent to ICU ward.

As well, we agreed with prof. Botea, there was no free fluid in abdominal cavity before surgery, however, in all of these 17 cases after literature review, only one case was ruptured, however, 14 cases were operated, therefore, rupture may not the unique indication for surgical treatment.

Frankly speaking, we did not say our treatment was the best one for this patient, as prof. Botea, said, maybe conservative treatment was enough and surgical treatment could be avoided. However, at that time, no one can guarantee this satisfactory outcome, especially when the condition of the patient did not become better after resuscitation and she requested to reduce the risk of sudden death after rupture as low as possible. Laparoscopic exploration was minimally invasive procedure and a drainage tube could be a good way to show the rupture of hematoma, immediately. The review data also showed, although only one case was ruptured before surgery, 14 cases were still operated. Therefore, we think that the experience to treat ISH remained largely limited, although our treatment maybe not the best one, this patient had no relaparoscopic related complications and recovered well. There was still no standard treatment strategy for this kind of patients, herein, we summarized all of the reported cases, which may added our knowledge to treat this patient.

This patient did not have any disease history.

Her preoperative coagulation function was normal and as well, she did not suffer no steatosis or cirrhosis which may be risk factors for ISH after minor trauma. (We added this information in the revised manuscript.)

We sincerely expect prof. Botea could reconsider our revised manuscript.

Best regards

Junchao Guo

punch_research@163.com