Author's response to reviews

Title: Giant liver hemangioma resected by trisectorectomy after efficient volume reduction by transcatheter arterial embolization: a case report

Authors:

Nobuhisa Akamasu (nakamatsu@umin.ac.jp)
Yasuhiko Sugawara (yasusuga-tky@umin.ac.jp)
Masahiko Komagome (mkomagome@umin.ac.jp)
Takashi Ishida (tishida@umin.ac.jp)
Nobuhiro Shin (nshin@umin.ac.jp)
Narihiro Cho (ncho@umin.ac.jp)
Fumiaki Ozawa (fozawa@umin.ac.jp)
Daijo Hashimoto (dhashimoto@umin.ac.jp)

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Author's response to reviews: see over
Reply to the reviewers.

#Reviewer 1
We appreciate thoughtful comments. We made replies comment by comment.

1. Were any doubts about this long waiting time from the first TAE till final surgery? TAE is suggested as an excellent therapy for easing the symptoms, facilitated mobilization of the liver by shrinking the haemangioma and consequently, decreased intraoperative bleeding. However, sometimes vascular recanalization occurs and even increases the lesions size. On the other hand, complications can occur after embolization and they could postpone the operation and result in the loss of an opportunity for surgery. Thus, some authors recommend performing the operation soon after embolization. The authors should make some comment on that.

(Our reply) We agree with the reviewer. Actually, the timing to perform radical operation for this particular case had been the critical argument in our institute. As described in the text, we would like to avoid life-threatening surgery for this benign entity, so TAE was firstly adopted. As mentioned in the second paragraph of Page 6, the tumor including its volume, anatomical relations, and feeding arteries were investigated using dynamic MDCT once a month. Three months after first TAE, a dramatic tumor volume reduction was observed, however, the collateral feeding from the right subphrenic artery was observed. It was difficult to decide to perform the radical operation or to perform the second TAE at that time, and our final decision was to do the second TAE for the right subphrenic artery, which resulted in the further volume reduction. As pointed by the reviewer, the operation timing after TAE is difficult to decide. According to the reviewer’s comment, we added descriptions explaining the rather long observation period in the second paragraph of Page 6, and made some comments for the operation timing after TAE in the last paragraph of Discussion. Please check them.

2. Because this report represent a technical challenge, it should be nice to have intraoperative photos, and some technical details of this highly demanding operation.
(Our replay) According to the reviewer’s comments, we added an intraoperative photo as Figure 4 (consequently, Figure 4 was changed to Figure 5), and technical details of the operation. Owing to the significant volume reduction after TAEs, the operation itself was not so demanding resulting in the conventional anatomical trisectorectomy.

3. How much of a decrease in size was required before the surgeons feel safe for resection? Wasn’t enough after the first TAE? AND why they didn’t wait more after the success of the second one?

(Our reply) As replied in the comment #1, the best timing for the radical operation was difficult problem. Please check added description in Discussion. Although we thought a great deal of the approach to the hepatic veins and vena cava for the safe operation, and decided the operation timing after two successive TAEs, some might perform aggressive operation at the first visit and others might wait more or even abandon surgical approach after effective TAEs.

4. Was the clinical course of the patient after TAE without any problems? Was any preparation at all in case of a complicated course after TAE? AND which options the authors had in mind?

(Our replay) The post-TAE course was uneventful. We added comment in the second paragraph of Page 6, please check it. As discussed in the Discussion, we supposed the possibility of hepatic resection with extracorporeal circulation or liver transplantation after failed TAE, fortunately, the patient had had a satisfactory course.

5. Why the authors choose a conversional approach for such a huge mass? Why they didn’t choose a thoracoabdominal approach? This approach is advantageous in that it provides a sufficiently large field of view, and it has been reported as a useful method for right side hepatectomies, especially for large masses. Was the liver enough manageable? Did the authors use some type of vascular occlusion? Or total exclusion?

(Our reply) We apologize for our insufficient description of the operation. We added operative description in the third paragraph of Page 6. Please check it. “Conventional” meant anatomical resection without
the extracorporeal circulation. Actually, we utilized ninth intercostal thoraco-abdominal approach, which provided an excellent operative field as pointed by the reviewer. As described in the text, the volume of the hemangioma at the time of operation was 8100g, which might be equal to the size of large HCC, and it was enough manageable with above mentioned procedure. Hepatic resection was performed only with inflow occlusion.

6. Did the authors use a cell saver to cut down on blood from the bank, because obviously, this was not a malignancy and this could be a place where cell savers could be used?

(Our reply) We agree with the reviewer. The use of a cell saver might be advantageous for the operation of huge liver hemangioma like our case. Yet, our department was not familiar with the use of a cell saver, and did not prepare it at the operation. Fortunately, the blood loss was not so much (2150ml), which required minimum blood transfusion. We would like to consider the use of the cell saver at the future operation for huge liver hemangioma like the present case.

#Reviewer 2
We appreciate the reviewer’s agreement for our strategy of successive TAEs in order to reduce the tumor volume.