Peer Review File

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Round 1

Reviewer A

Comment 1: The WHO classification has been revised in 2020. The classification of osteogenic sarcoma and chondroblastic osteosarcoma is not currently in use. In addition, the pathological diagnosis of Case No. 2, 3, 4, 6, 8, and 10 is undifferentiated. Please have a skilled pathologist review them again. Accurate histological diagnosis is related to recurrence and other prognostic factors. You should also add the pathologist as a co-author.
Reply 1: We wish to thank the reviewer for this comment. We have added co-author Takuo Hayashi, a pathologist. We reviewed 10 cases with him according to the WHO classification.
Changes in the text: We rewrote "pathological examination" in Methods (Line 165-176) and "intraoperative and pathologic results" in Results (Line 215-220) and Table 3.

Comment 2: Suto et al. (PMID: 35478156) mention cell density as the reason for the negative PET; please do a pathology review of Case No. 8.
Reply 2: We reviewed No.8 pathology with pathologist again. Pathologic examination of pulmonary artery tumors revealed more than usual mucinous tumors with edematous stroma and spindle-shaped tumor cell proliferation. We have added the results to our discussion.
Changes in the text: We added the sentence, "Suto et al. reported that some PAISs with low cellular densities and high mucous tissue proportions have SUVs similar to those in pulmonary thromboembolism [18]. Therefore, when we re-evaluated the pathology of Case No. 8, pathologic examination of PAIS revealed low-grade components with myxoid change admixed with high-grade components." (Line345-351)

Comment 3: Follow-up for Case No. 9 and No. 10 is short. The follow-up period should be March 2022. It is necessary to correctly evaluate whether the time to recurrence in the margin-negative cases is longer than in the margin-positive cases.
Reply 3: Thank you for providing these insights. We have set the follow-up period to March 2022. So, I rewrote the Long-term follow-up section. We assessed the time to recurrence of margin-positive and -negative cases. The mean recurrence times for margin-positive and margin-negative cases were 9.6 months (range, 3-19 months) and 13.5 months (range, 9-18 months), respectively. The mean survival times for margin-positive and margin-negative cases were 19.1 months (range, 8-36 months) and 19.5 months (range, 17-22 months), respectively.
Changes in the text: We rewrote sentences, "Overall survival was defined as the interval between the date of the operation and the date of death from any cause or the date of the last follow-up (March 1, 2022)." (Line183) As a result, we changed Result and Table4. We added the sentence, "The mean recurrence times for margin-positive and margin-negative cases were 9.6 months (range, 3-19 months) and 13.5 months (range, 9-18 months), respectively. The mean survival times for margin-positive and margin-negative cases were 19.1 months (range, 8-36 months) and 19.5 months (range, 17-22 months), respectively." (Line269-275)
Comment 4: Line 313-314: What is the basis for the statement "Because postoperative

chemotherapy and radiation therapy are likely to be ineffective”? Xu et al. (PMID: 35117621) suggest a benefit of postoperative adjuvant therapy. There are also cases in which postoperative RT prevents recurrence even with positive margins, as in Case No. 8. The postoperative adjuvant chemotherapy for sarcoma is AI (Doxorubicin+Ifosfamide) therapy, and the fact that your hospital does not use a key drug may be related to the recurrence.
Reply 4: The reviewer's comment is correct. When we reviewed the patient's chart again, we had mistakenly written doxorubicin as docetaxel. We fixed that part.
Changes in the text: The chemotherapy regimens included cisplatin and doxorubicin in 2 cases (No.3 and No.7) and only paclitaxel in 1 case because he had concomitant heart failure (No.10). (Line258-261)

Comment 5: Line 317: What exactly do you mean by” intensive care”?
Reply 5: The intensive care we consider means early detection of recurrence. So, it may be necessary to perform frequent chest CT scans to find recurrence early and treat it.
Changes in the text: We added the sentence. “In addition, intensive care such as performing frequent chest CT is required to detect recurrence, considering that there are numerous intrathoracic recurrences with 1 year after surgery.” (Line 367-370)

Comment 6: Case No. 6 is margin-positive as noted in Table 3. Reference 12 is not required. Please do not cite your own literature unnecessarily.
Reply 6: We deleted Reference 12.
Changes in the text: We deleted Reference 12.

Comment 7: Mariko Fukui is supposed to have planned this study with five others. What exactly was her involvement in the planning of the study? Unlike the other five, there is a fear of GIFT AUTHORSHIP.
Reply 7: We have added the text on the left. “Mariko Fukui interpreted the results.”
Changes in the text: H.I., H.T., M.F., K.T., and K.S. interpreted the results. (Line 398-402)

Comment 8: Line 72: Change from “45 days” to #1.5 months” as in the original text.
Reply 8: We change “45days” to “1.5 months”.
Changes in the text: Kruger et al. reported that the median survival time without surgical resection is 1.5 months, whereas it is 10 months with surgery. (Line 81-82)

Comment 9: Line 107: “For the remaining nine patients.” is an incomplete sentence.
Reply 9: We added the sentence "The remaining nine patients underwent a thin-section CT."
Changes in the text: We added the sentence "The remaining nine patients underwent a thin-section CT." (Line 119-120)

Comment 10: Line 292: The median SUVmax in Tabe1 in Ref. 20 is 7.95.
Reply 10: I wrote mean data instead of median data, so the numbers are wrong. We rewrote the median data again.
Changes in the text: Ito et al. reported that the median maximum standardized uptake value of FDG is 7.95 in PAS and 2.37 in pulmonary embolism. (Line337)

Comment 11: The abbreviation for chemotherapy in Table 4 should be “ChT” to avoid confusion.
Reply 11: We rewrote “CT “to “ChT”.
Changes in the text: We rewrote “CT” to “ChT”. (Table 4)

Reviewer B
This is a series of cases with pulmonary sarcomas and surgical management of such cases. Please see my comments as highlighted sections in the attached manuscript.
Comment 1: These classes are not correct. There is no class like "Undifferentiated". If calling a sarcoma rhabdomyosarcoma, then we need to know if this pleomorphic or alveolar. Malignant fibrous hitiocytoma is now called undifferentiated pleomorphic sarcoma. There is no category like unclassified leiomyosarcoma. It should be called non-uterine leiomyosarcoma. Please correctly classify these. (Line 152-157)
Reply 1: We strongly appreciate the reviewer’s comment on this point. We have added co-author Takuo Hayashi, a pathologist. We reviewed 10 cases with him according to the WHO classification.
Changes in the text: We rewrote pathological examination in Methods (Line 166-176) and Intraopetative, Pathologic Results in Results (Line 215-220) and Table 3.

Comment 2: Please delete “as short as (Line 222)
Reply 2: Thank you for your suggestion. We deleted “as short as”.
Changes in the text: We deleted “as short as”. (Line 246)

Comment 3: Why was doxorubicin not given to these patients? Anthracycline based regimens are the number 1 choice even for pulmonary artery sarcoma.
Reply 3: We agree with you and have incorporated this suggestion throughout our paper. When we reviewed the patient's chart again, we had mistakenly written doxorubicin as docetaxel. We fixed that part.
Changes in the text: We added the sentence, “The chemotherapy regimens included cisplatin and doxorubicin in 2 cases (No.3 and No.7) and only paclitaxel in 1 case because he had concomitant heart failure (No.10)” (Line 258-261)

Comment 4: Please write the cause of death. It is important to know if pazopanib caused hemorrhage in this patient.
Reply 4: You have raised an important question. One patient (Case No. 3) did not respond to pazopanib and died from progression of PAS due to poor performance status 2 months after using pazopanib.
Changes in the text: We added the sentence, “One patient (Case No. 3) did not respond to pazopanib and died from progression of PAS due to poor performance status 2 months after using pazopanib.” (Line 263-266)

Comment 5: How did you reach this conclusion? Your sample size is not powered to make this conclusion. It would be best to stick to the strength of the manuscript which is the

surgical management.
Reply 5: The reviewer's comment is correct. We removed the sentence "because postoperative chemotherapy and radiation therapy are likely to be ineffective".
Changes in the text: We removed the sentence "because postoperative chemotherapy and radiation therapy are likely to be ineffective".

Round 2

Reviewer A
Comment 1: The WHO classification treats intimal sarcoma and angiosarcoma as independent diseases. If the pathological diagnosis of Case No. 5 is angiosarcoma, you should exclude it from this analysis.
Reply 1: The reviewer's comment is correct. Therefore we reviewed case No.6 again with the pathologist (Takuo Hayashi MD, Ph.D). Case No. 6 consisted mostly of spindle-shaped cells with varying degrees of atypia and varying cellularity, arising from the intimal layer of the pulmonary artery (PA), with only a very small number of angiosarcomatous component cells. Therefore, we determined that case No.6 is classified as primary pulmonary artery intimal sarcoma (PAIS). We thought that it would cause confusion, so in the first revision, Table 3 was corrected, and we did not mention this in the main document.
Changes in the text: We haven't changed any sentences.

Comment 2: In the sarcoma field, the doxorubicin plus cisplatin regimen is usually used only for perioperative osteosarcoma. If the pathological diagnosis of Case No. 7 is osteosarcoma, you should exclude it from this analysis.
Reply 2: Thank you for providing these insights. We reviewed case No. 7 again with the pathologist. Case No. 7 consisted mostly of spindle-shaped cells with varying degrees of atypia and varying cellularity, arising from the intimal layer of the pulmonary artery (PA), with only a very small number of osteoid formation. Therefore, we determined that case No.6 is classified as primary pulmonary artery intimal sarcoma (PAIS). We rewrote Table 3 in the previous revision to avoid confusion for the reader, and added “a very small amount of” to the text in Lines 216-220 this time.
Changes in the text: We rewrote sentences, “In this series, 4/10 cases were observed to have a very small amount of three different morphological components: a leiomyosarcomatous component (No. 1), an osteosarcomatous component (No. 7, 9) and a chondroblastomatous component (No. 8).” (Line216-220)