Peer Review File

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Reviewer comments
Reviewer A

Comment 1: Chest wall tumours are infrequent, and only high-volume thoracic centres can provide case series large enough for any conclusions. This is particularly important in the light of multitude of reconstruction techniques and available prosthetic material. The four presented cases are interesting, but I have remarks regarding each of them:
Case 1
No data regarding the width of surgical margins, which is one of the most important prognostic factors.
Reply 1: We thank the reviewer for this comment. Surgical margins were added for all cases.
Changes in the text: we have modified our text as advised (see page 4, line 92-93): Radical full-thickness en-bloc resection of the sternal body with 2 cm margins including the right fifth and sixth costal cartilages was performed through a hemi-clamshell skin incision.

Comment 2: Case 2
Chondrosarcoma is resistant to radiotherapy. Radiation should not be used preoperatively, as this only delays the only effective therapy (surgery).
Reply 2: We thank the reviewer for this comment. We agree with the comment. The radiotherapy was performed at outside hospital. Since chondrosarcoma is a relatively radioresistant lesion, we save this treatment modality for patient with an incomplete resection of high-grade tumors and when resection is not feasible.
Changes in the text: We have deleted this controversial data from the text.

Comment 3: No data regarding the width of surgical margins, which is one of the most important prognostic factors.
Reply 3: We thank the reviewer for this comment. Surgical margins were added for all cases.
Changes in the text: we have modified our text as advised (see page 5, line 112-113): The tumor was resected en-bloc through a midline T-shaped skin incision with the manubrium, upper third of the body of the sternum, two costal cartilages, and sternoclavicular joints bilaterally with 2 cm surgical margins, resulting in a large defect measuring 12 x 10 cm with exposed mediastinum.

Comment 4: Case 3
PET-CT can't exclude metastasis of chodrosarcoma (it may not confirm it, but not exclude!)

Reply 4: We thank the reviewer for this comment. It has been corrected.
Changes in the text: we have modified our text as advised (see page 6, line 129): PET-CT scan revealed no metastatic disease.

Comment 5: Chondrosarcoma is resistant to radiotherapy. Radiation should not be used preoperatively, as this only delays the only effective therapy (surgery).
Reply 5: We thank the reviewer for this comment. We agree with the comment. The radiotherapy was performed at outside hospital. Since chondrosarcoma is a relatively radioresistant lesion, we save this treatment modality for patient with an incomplete resection of high-grade tumors and when resection is not feasible.
Changes in the text: We have deleted this controversial data from the text.

Comment 6: No data regarding the width of surgical margins, which is one of the most important prognostic factors.
Reply 6: We thank the reviewer for this comment. Surgical margins were added for all cases.
Changes in the text: we have modified our text as advised (see page 6, line 142): The posterior aspect of the tumor was dissected free from the anterior mediastinal tissue without sign of its extension into vascular or cardiac structures, and the tumor was removed en-bloc with 2cm margins.

Comment 7: Pictures show upper partial sternal resection, while Authors state: "lower partial sternotomy was performed".
Reply 7: We thank the reviewer for this comment. Correction to upper partial sternotomy was made in text.
Changes in the text: we have modified our text as advised (see page 6, line 136): The sternal body was transected at the level of the 3rd intercostal space (2 cm distal to the end of the manubrium), and an upper partial sternotomy was performed.

Comment 8: Case 4
I do not understand why "The right pleural cavity was closed with a thymic flap, elevated from the pericardium".
Reply 8: We thank the reviewer for this comment. Clarification has been added to the text.
Changes in the text: we have added some clarifications (see page 7, line 164-165): The extensive right pleural cavity defect was closed with a thymic flap, elevated from the pericardium to avoid empyema.

Comment 9: Authors state that "the infection disallowed hardware use for the skeletal reconstruction". This is not true. There is substantial body of evidence, mainly from infected sternal dehiscence following cardiac surgery, showing successful reconstruction in the infected field using titanium, which is resistant to bacterial colonisation and biofilm formation. Particularly, if used together with omental flap, titanium plates have been shown effective in such cases. In fact, Authors refer to this

method in the Discussion section (lines 359-363).
Reply 9: We thank the reviewer for this comment. We agree with this comment, however use of hardware for skeletal reconstruction was chosen against due to surgeon preferences in this particular case.
Changes in the text: we have added some clarifications (see page 7, line 165-166): Due to contamination of the wound, use of hardware for skeletal reconstruction was chosen against.

Comment 10: Authors state that "the extent of the wound required sacrifice of both internal mammary arteries and excluded the use of rectus abdominis flaps". Again, this is not true. Although pedicled flaps are not available in such circumstances, free rectus abdominis musculocutaneous flap with vascular anastomosis of the inferior epigastric vessels to the internal mammary vessels is excellent option.
Reply 10: These are excellent points regarding this reconstruction. The use of free rectus flaps with inferior epigastric anastomoses was not considered during this reconstruction. The text will be changed to reflect that this is still a potential option.
Changes in the text: we have added some clarifications (see page 7, line 169-171): Of note, rectus abdominis free flaps with anastomoses to inferior epigastric arteries could have also been an effective form of reconstruction in this case.

Reviewer B

Comment 1: Between 2016 and 2021 4 cases of surgically treated sternum tumors were reported. These 4 cases contain 3 chondrosarcomas and one basal cell tumor, which were resected.
Furthermore, a literature research of the digital database concerning the therapy of chest wall tumors between 1952 until 2019 was performed. The results were presented together. Because of the low numbers of cases a statistical work up is not possible.
These case reports report on a relatively rare tumor manifestation, which needs complex surgical treatment of the chest wall and the sternum.
A surgical resection with different possible reconstructive opportunities resulted in a good outcome and should not be primarily excluded.
Reply 1: These are also excellent points regarding the data presented; given the relative rarity of these sternal tumors, the literature present on reconstructive techniques is limited. Other forms of reconstruction are also valid and acknowledging their utility is important for future reconstructive planning.
Changes in the text: None