Peer Review File

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Reviewer A

I have several comments.

1. Line 146-148: The youngest case listed in reference 14 is 5 years old, why did you use 24 years old as an example?
Reply 1: We were primarily focusing on the adult population but it is important to highlight the previously reported case in a pediatric patient.
Changes in the text: We have made this change. Our sentence now reads, "as young as 5 years of age has been reported" (line 149-150)
2. Line 155-157: How can you tell if it is malignant or not by radiographic findings? Please describe your findings in more detail.
Reply 2: We are limited to our interpretation of radiographic imaging and this likely was biased as we presumed this was a recurrent inguinal hernia. We have re-phrased that sentence to convey why we believed the radiographic images were benign appearing.
Changes in the text: Our sentence now reads: "The radiographic findings appeared consistent with lipomatous tissue (e.g. similar density as surrounding subcutaneous fat, no invasion of surrounding structures, and well-demarcated borders) and thus did not raise suspicion for a neoplasm in the preoperative setting". (line 161-163)
3. Line 182-184: Please add literature supporting that radiosensitivity of well-differentiated liposarcoma is generally low, but radiotherapy was necessary.
Reply 3: We agree that, in general, radiation treatment is not standard of care for well-differentiated liposarcomas, regardless of their location. We reviewed the details of the six case reports describing the use of radiation therapy; these occurred in the setting of lesions with poorly differentiated components and/or incomplete resection. We provided additional details regarding the context in which radiation therapy was used in these six cases and we also broadened our conclusion statement regarding different treatment modalities for paratesticular liposarcoma.
Changes to the text: We included these changes in the body of the text "Reasons for adjuvant radiation were described as the presence of lesions with poorly differentiated components, incomplete resection, and/or recurrence. (lines 176-177). Our conclusion reads as: "The mainstay of treatment for liposarcoma of the groin remains wide local excision with orchiectomy and/or radiation as potential adjuncts" (lines 201-202).
4. Line 241: What is the title of the reference 12?
Reply 4: Thank you for catching this oversight, the title was updated.
Changes in the text: Reference number 12 now has the title included, line 273.
5. Line 262-264: Please describe the modality in the description of Figure 1.
Reply 5: We agree and will include this detail for clarification.
Changes in the text: Figure legend now reads: "Preoperative computed tomography depicting suspected recurrent left inguinal hernia." (line 309)
6. Please add ultrasound and MRI images.
Reply 6: This is a good suggestion, unfortunately we do not have ultrasound or MRI images for our patient.
Changes in the text: None
7. Please add a histopathology image.

Reply 7: This is also a good suggestion, unfortunately we do not have an image of the tumor's histopathology.
Changes in the text: None

8. Please cite the following three references (PMID: 28878655 and PMID: 25828386 and PMID: 36531026) involving dedifferentiated liposarcoma and add the discussion on prognosis.

Reply 8: We agree that expanding upon the dedifferentiated subtype and the respective outcomes is important for our discussion.
Changes in the text: At the end of the discussion we added, "Most of these cases were patients with well differentiated liposarcoma or myxoid subtype which likely contributes to their improved outcomes. This differs for patients with dedifferentiated paratesticular liposarcomas, for whom recurrence is higher, outcomes are poorer, and thus, the use of chemotherapy and radiation is more frequent (18-20) (lines 185-188).

9. Please describe the risk factors for paratesticular liposarcoma. Did the first hernia surgery affect the development and diagnostic process of liposarcoma?

Reply 9: Thank you for this suggestion. We have included risk factors for paratesticular liposarcoma in our manuscript. From our review of the literature, history of a prior hernia repair, or prior tissue manipulation, has not been published as a risk factor for the subsequent development of a paratesticular liposarcoma.

We do believe the diagnostic process was affected by the fact that this patient had a prior hernia repair. This patient history biased our differential diagnosis. In the conclusion on lines 193-195 we do comment on the diagnostic challenge of this unique presentation.
Changes in the text: We included information regarding common risk factors by adding the following sentence: "Risk factors for soft tissue sarcomas, including paratesticular liposarcomas, include genetic mutations, exposure to external beam radiation, and exposure to certain chemicals (15)." (lines 150-152)

10. What is novel about the manuscript? Please add to the discussion how the diagnosis and treatment strategy differs from reference 9 and 13.

Reply 10: While we agree that there are numerous case reports of paratesticular liposarcoma in patients who were initially thought to have an inguinal hernia, our case is unique in that it presents a case for which the diagnosis was made after the patient had previously had an inguinal hernia repair. This adds to the diagnostic challenge in the sense that most clinicians will initially assume the pathology is a hernia recurrence rather than a malignant tumor. This matters because recurrent hernias can sometimes take months, if not years, to be addressed; especially if they are asymptomatic. In patients who present with a groin bulge after a prior inguinal hernia repair, it is important that malignancy be ruled out early and not delayed until the time operative repair is pursued, particularly for those patients who present with an asymptomatic bulge. The diagnosis and treatment strategy we discuss in our report does not vary significantly from that found in references 9 and 13. However, we believe that the value of our report is not diminished by this. By presenting this interesting case, we aim to expand on the existing literature on this topic. Our hope is that by describing the presentation, diagnostic process, and treatment approach to this particular patient, other clinicians will draw from this information, along with the other prior cases reported in the literature, and use the information to critically think about a potential future patient with a similar presentation and to guide their practice. We believe that because there are no established guidelines or protocols pertaining to paratesticular liposarcoma, case reports like ours help expand the body of knowledge on the topic; even if the case itself is not a "one-in-a-million" type of case.
Changes in the text: We added details to our conclusion to encourage potential future readers of the need to think include paratesticular neoplasms in their differential for patients who present with hernia recurrence. Our sentences read, "This thorough approach matters because

recurrent hernias can sometimes take months, if not years, to be addressed; especially if they are asymptomatic. In patients who present with a groin bulge after a prior inguinal hernia repair, it is important that malignancy be considered and that reoperation not be delayed until the time symptoms develop." (lines 197-201)

Reviewer B

This article is well-written, though it seems pretty superficial. Doing a quick literature search, I found several additional articles related to this topic that were not cited, in addition to a large retrospective analysis that provided specific optimal treatment recommendations for paratesticular liposarcomas. Even if the authors disagree with the conclusion, it seems it should be mentioned. If a comprehensive literature review is not required for submission, this is a well-written, concise case report.

I posted a few of the articles I came across for your consideration.

Kamitani R, Matsumoto K, Takeda T, Mizuno R, Oya M. Optimal treatment strategy for paratesticular liposarcoma: retrospective analysis of 265 reported cases. Int J Clin Oncol. 2020;25(12):2099-2106. doi:10.1007/s10147-020-01753-3

Li Z, Zhou L, Zhao L, et al. Giant paratesticular liposarcoma: A case report and review of the literature. Mol Clin Oncol. 2018;8(4):613-616. doi:10.3892/mco.2018.1577

Chan K, Odubanjo T, Swamy R, Hosny M. Giant Paratesticular Liposarcoma Mimicking a Left-Sided Groin Hernia: A Case Report. Cureus. 2022;14(9):e28856. Published 2022 Sep 6. doi:10.7759/cureus.28856

Thomas KL, Gonzalez RJ, Henderson-Jackson E, Caracciolo JT. Paratesticular Liposarcoma Masquerading as an Inguinal Hernia. Urology. 2018;113:e5-e6. doi:10.1016/j.urology.2017.11.035

Reply: We appreciate your review and the suggested articles. There are a handful of prior publications regarding paratesticular liposarcoma and several describe a presentation of an atypical groin/scrotal mass that raises suspicion for pathology beyond a routine inguinal hernia. We believe our case report can add a unique perspective to paratesticular liposarcomas by the fact that our patient presented with what appeared to be an early inguinal hernia recurrence but was in fact a liposarcoma. Our aim is to enlighten potential future readers that for individuals with early groin bulge recurrence after a prior surgery, hernia recurrence is primary on the differential but more uncommon etiologies such as a soft tissue tumor must also be on the differential and thus, the decision to pursue reoperation should not be delayed.
Changes to the text: We do appreciate your suggested articles and have included the outcomes from the retrospective review. On lines 172-174, we added "Data from a retrospective review of 265 cases noted improved recurrence free survival for those who underwent complete tumor resection with orchiectomy versus those who underwent tumor resection only (16)." (lines 172-174). We have also made edits to our conclusion to better convey our encouragement for future potential readers to keep paratesticular neoplasm on their differential for recurrent inguinal hernia bulges. On lines 197-201, it reads "This thorough approach matters because recurrent hernias can sometimes take months, if not years, to be addressed; especially if they are asymptomatic. In patients who present with a groin bulge after a prior inguinal hernia repair, it

is important that malignancy be considered and that reoperation not be delayed until the time symptoms develop.”