Editorial

Brief overview of primary mesenchymal chondrosarcoma and discussion of a case report

Raminta Veronika Theriault[1], Muhammad Umar Jawad[2], Robert Lor Randall[1]

[1]Department of Orthopaedic Surgery, UC Davis School of Medicine, Sacramento, CA, USA; [2]Department Orthopedic Surgery, Good Samaritan Medical Center, Corvallis, OR, USA

Correspondence to: Raminta Veronika Theriault. Department of Orthopaedic Surgery, UC Davis School of Medicine, Sacramento, CA, USA. Email: rvtheriault@ucdavis.edu.

Comment on: Lin M, Zhou H, Zhang X, *et al.* Primary mesenchymal chondrosarcoma of the adult lumbar spine: a case report and review of the literature. Transl Cancer Res 2022;11:3363-70.

Submitted Sep 25, 2022. Accepted for publication Nov 07, 2022.
doi: 10.21037/tcr-22-2284
View this article at: https://dx.doi.org/10.21037/tcr-22-2284

Primary mesenchymal chondrosarcoma (PMC) remains a relatively rare entity and represents less than 10% of all chondrosarcomas. As a result, literature on presentation, diagnosis, and treatment of mesenchymal chondrosarcoma remains relatively scarce, with case reports providing the majority of the content available to physicians. While primarily arising from the soft tissue or bone, axial locations, including the brain and meninges have been reported (1). As a group, the prognosis of these tumors is often poor with a propensity for late local recurrence and metastasis. (1-6). Although histologic analysis with immunohistochemical staining often narrows the differential diagnosis, an exact diagnosis may prove elusive (1,2).

In the article entitled "Primary mesenchymal chondrosarcoma of the adult lumbar spine: a case report and review of the literature" the authors provide an overview of PMC as well as specific details of the management of non-metastatic PMC in the lumbar spine. This case report is of particular importance for several reasons: tumor location in the lumbar spine, age of patient, and inconclusive immunohistochemical staining results on initial biopsy (7). There are only a small number of case reports of PMC in the lumbar spine as noted by the authors (3-6). Additionally, the majority of patients are diagnosed in their second or third decade of life, making the patient's age of 47 years old, unusual. Lastly, the immunohistochemistry results of the specimen were atypical for a diagnosis of primary mesenchymal chondrosarcoma as it did not express S-100 or vimentin (1). Furthermore, mesenchymal chondrosarcoma, which has a propensity to metastasize, often presents with systemic disease by the time of diagnosis, further complicating treatment. Accordingly, literature on the management of non-metastatic mesenchymal chondrosarcoma is an important addition to the current literature (1,2).

As discussed by Lin *et al.*, there are limited options for the management of this tumor. The majority of the current literature does support treatment of non-metastatic cases in the spine with surgical resection (3-8), with adjuvant radiotherapy post operatively as needed (9). The authors do not remark on the use of neoadjuvant chemotherapy (7). As stated in other case reports, neoadjuvant chemotherapy may be used in the management of this disease with limited success in the literature, however, there are reports of positive response in individual patients (3-6). Overall, this case report serves as a valuable resource to physicians faced with managing PMC and adds to the limited literature available on the subject in an important way, while also demonstrating some unique case specific details that differ from prior case reports in the literature with regards to location of disease, age at presentation and diagnostic challenges.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Translational Cancer Research*. The article did not undergo external peer review.

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at https://tcr.amegroups.com/article/view/10.21037/tcr-22-2284/coif). The author RLR receives royalties and has licenses with Onkos, Zimmer Biomet, and Daichii Sankyo, has received consulting fees from Onkos, Zimmer Biomet, and Daichii Sankyo, has received payment or Honoria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Onkos, and has leadership or fiduciary role in other board, society, committee or advocacy group, paid or unpaid through SFA and MSTS. The other authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

References

1. Lightenstein L, Bernstein D. Unusual benign and malignant chondroid tumors of bone. A survey of some mesenchymal cartilage tumors and malignant chondroblastic tumors, including a few multicentric ones, as well as many atypical benign chondroblastomas and chondromyxoid fibromas. Cancer 1959;12:1142-57.
2. Dantonello TM, Int-Veen C, Leuschner I, et al. Mesenchymal chondrosarcoma of soft tissues and bone in children, adolescents, and young adults: experiences of the CWS and COSS study groups. Cancer 2008;112:2424-31.
3. Zibis AH, Wade Shrader M, Segal LS. Case report: Mesenchymal chondrosarcoma of the lumbar spine in a child. Clin Orthop Relat Res 2010;468:2288-94.
4. Rushing EJ, Armonda RA, Ansari Q, et al. Mesenchymal chondrosarcoma: a clinicopathologic and flow cytometric study of 13 cases presenting in the central nervous system. Cancer 1996;77:1884-91.
5. Matsuda Y, Sakayama K, Sugawara Y, et al. Mesenchymal chondrosarcoma treated with total en bloc spondylectomy for 2 consecutive lumbar vertebrae resulted in continuous disease-free survival for more than 5 years: case report. Spine (Phila Pa 1976) 2006;31:E231-6.
6. Fukuda A, de Castro Oliveira DL, Fernandes Joaquim A, et al. Vertebral body chondrosarcoma with metastasis to the scalp. BJR Case Rep 2018;5:20180037.
7. Lin M, Zhou H, Zhang X, et al. Primary mesenchymal chondrosarcoma of the adult lumbar spine: a case report and review of the literature. Transl Cancer Res 2022;11:3363-70.
8. Liu S, Zhou X, Song A, et al. Surgical treatment of metastatic mesenchymal chondrosarcoma to the spine: A case report. Medicine (Baltimore) 2020;99:e18643.
9. Kawaguchi S, Weiss I, Lin PP, et al. Radiation therapy is associated with fewer recurrences in mesenchymal chondrosarcoma. Clin Orthop Relat Res 2014;472:856-64.

Cite this article as: Theriault RV, Jawad MU, Randall RL. Brief overview of primary mesenchymal chondrosarcoma and discussion of a case report. Transl Cancer Res 2022;11(12): 4235-4236. doi: 10.21037/tcr-22-2284

