Journal of Surgical Oncology & Clinical Research

Case Report

Metastatic Chordoma to the lung. Case Report of a Rare Tumor and Brief Review of the Literature

Bryan Neal*, Sidney Nathan, Adam Hebert, Clifford Davis, Jodie Simelda, Anthony Dean, Gevork Seifert, Mohamed Aziz

Department of Pathology-American University of the Caribbean (AUC), USA

Abstract

Chordomas are rare, malignant bone tumors with a typically unfavorable prognosis that develop slowly and aggressively along the skull base and axial skeleton from remnants of the primitive notochord. Grossly, chordomas classically present as lobular nodules with thick fibrous tissue; histologically, those fibrous tissues can be seen separating chords of tumor cells in a myxoid stroma. Its characteristic local aggressiveness and indolent growth makes timely detection difficult and local recurrence likely, especially since surgical resection and radiation are the only affective treatment options. Local recurrence currently serves as a significant predictor of metastatic progression which most commonly involves the lungs, liver, bone, and lymph nodes. We report a case of metastatic chordoma to the lung, and discuss the diagnostic features, differential diagnosis, molecular changes, treatment, and prognosis.

KEYWORDS: Chordoma, Sacral, Spinal, physaliphorous cells, Conventional, Metastasis

ABBREVIATION

CGH: Comparative Genomic Hybridization, **IHC**: Immunohistochemistry, **VATS**: video assisted thoracoscopic surgery, **BNCT**: Benign notochordal cell tumor, **EP**: Ecchordosis physaliphora,

INTRODUCTION

Chordomas are slow-growing, malignant neoplasms (1-4% of bone tumors) originating exclusively along the axial skeleton from remnants of the primitive notochord intended for differentiation into the nucleus pulposus [1,2]. The most common sites for these locally aggressive tumors are the sacrococcygeal region (50%), clivus (35%), and vertebral bodies (15%) [1,2]. Histologically, these tumors are comprised of physaliphorous cells separated into cords and sheets by fibrous tissue within a surrounding myxoid stroma which can ultimately be classified into 3 subgroups named classical, chondroid, and dedifferentiated [3].

Studies indicate there is a T-gene responsible for encoding a transcription factor, Brachyury, involved in the maturation and maintenance of the notochord, suggesting that mutations to this gene could play a role in kick-starting tumorigenesis [4]. The occurrence of chordomas is mostly sporadic, but T-gene duplications within families were identified with CGH (Comparative Genomic Hybridization) analysis providing evidence to a linkage between genetic predisposition and the development of familial chordomas [5].

Chordomas are rare tumors with a reported incidence of 0.08/100,000 [4], and a male-to-female case ratio of 2-3:1 [6]. It typically presents with a broad age distribution from the fourth to seventh decade, with peak discovery around the fifth decade [6,7]. While pediatric cases do occur, they are quite rare [6,7]. Currently, systemic chemotherapies are ineffective as a treatment option, leaving surgical resection and radiation as the current standard of care; however, difficult access anatomically and tumor aggressiveness often leads to recurrence and spread [4]. Recurrence of the primary neoplasm is regarded as a significant predictor in the progression of metastatic disease [8]. The incidence of metastasis with chordomas varies from 3-48% according to the literature, with the most common areas of dissemination being the lungs, liver, bone, and lymph nodes [9].

CASE PRESENTATION

A 44-year-old man presented with bilateral multiple lung nodules discovered during a yearly imaging surveillance of the abdomen and pelvis following a conventional sacral chordoma four years prior to current presentation. The chordoma was treated by aggressive surgical resection with adjuvant radiation therapy. The chordoma was extensively infiltrating the surrounding tissue and complete surgical resection was not possible. The patient also gave history of recent renal transplant and he was on cyclosporin for last six months. A dedicated CT scan of the chest identified six discrete pulmonary lesions, four in right lung and two in left lung, largest nodule measured 1.8 cm and smallest nodule measured 0.3 cm. Imaging survey showed no evidence of other sites of malignancy and head MRI showed no evidence of intracranial metastasis. Both left of lung nodules and one of the right lung nodules were hypermetabolic by PET scan. The patient was presented clinically to rule out metastatic chordoma versus a new primary or metastatic malignancy, versus an infectious process.

Submitted: 30 January 2022 | **Accepted:** 25 February, 2022 | **Published:** 28 February, 2022

***Corresponding author:** Bryan Neal*, Department of Pathology, American University of the Caribbean School of Medicine, USA

Citation: Neal B, Nathan S, Hebert A, Davis C, Simelda J, et al. (2022) Metastatic Chordoma to the lung. Case Report of a Rare Tumor and Brief Review of the Literature. J Surg Oncol Clin Res 4: 5.

CT guided surgical biopsy of the largest nodule of right lung showed infiltrating tumor lobules separated by fibrous septae containing chords and nests of large vacuolated cells (physaliphorous cells) within a myxoid stroma exhibiting mild nuclear atypia. Although scattered foci of necrosis were noted, mitotic activity was minimal (1-2 mitosis/10 HPF) and there was no evidence of pleomorphic or spindle atypical cells. The features were that of a low grade malignant neoplasm (**Figures 1A-B-C**). Immunohistochemistry (IHC) markers are utilized to aid in the histological identification of the disease. The tumor cells were positive for many of the keratin markers including cytokeratin CK-8, CK18, CK19, as well as S-100 protein and epithelial membrane antigen (EMA). C Kit (cD117) was negative (**Figures 1D-E-F**). The histomorphologic features together with the IHC profile were sufficient for the diagnosis of metastatic conventional chordoma. No molecular studies were performed on the biopsy sample.

With absence of other metastatic sites, the management plan included resection of all metastatic foci with curative intent. The patient underwent video assisted thoracoscopic surgery (VATS) with removal of all pulmonary nodules. Microscopic pathological examination of the excised nodules was diagnostic of conventional chordoma confirming the earlier biopsy diagnosis. The patient received no post-operative treatment and continued to undergo surveillance contrast enhanced CT scans of his chest, abdomen, and pelvis every six months. There was no evidence of recurrence or metastasis for four years after which the patient was lost to follow up.

DISCUSSION

During the mid-1800's, Rudolf Virchow incidentally identified a small, unusual tumor on the clivus blumenbachii (dorsum sellae) during an autopsy which he later named "chordomata" [10]. Upon further investigation, he noted identifiable embryonic characteristics which ultimately led to his description as being an "ecchondrosis physalifora spheno-occipitalis," which translates as "cartilaginous physaliphorous" lesion located in the junction of the basisphenoid and basioccipital bones [10]. In 1858, Johannes Muller, Virchow's advisor, hypothesized that a chordomata (known today as chordoma) instead originates from remnants of notochordal tissue of the nucleus pulposus lineage, and, after 36 years of debate, was accepted in 1894 and still recognized to this day [10]. Chordoma's notochordal origins leads to an exclusive propensity for primary tumor growth along the axial skeleton, typically located within the sacrococcygeal region (50%), clivus (35), and vertebral bodies (15%) [1,2]. These slow-growing, malignant neoplasms account for 1-4% of all skeletal tumors, and according to the literature exhibit a broad ranging incidence of metastasis from 3-48% typically disseminating to the lungs, liver, bone, and lymph nodes [9,11].

Clinical discovery of chordomas is often incidental since they frequently remain clinically silent until the late stages of the disease, which is attributed to their indolent, slow-growing progression [12]. However, due to its locally invasive and destructive nature, some will present as symptomatic cases with clinical features dependent on the location of the mass and its compression and invasion of adjacent structures

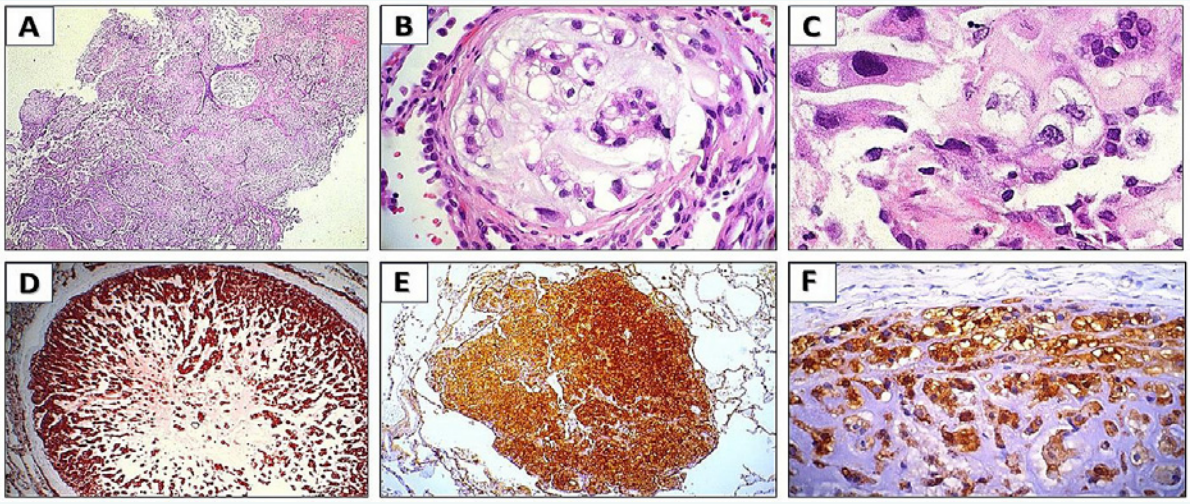

Figure 1 Pathologic examination of the lung tissue biopsy.

1A: Infiltrating tumor lobules separated by fibrous septae containing chords and nests. (H&E stain x20)

1B: Nests of large vacuolated cells (physaliphorous cells) within a myxoid stroma (H&E stain x40)

1C: Mitotic activity was minimal (1-2 mitosis/10 HPF). Only mild to moderate atypia, and there was no evidence of significant atypical pleomorphic or spindle cells. (H&E stain x60)

1D: Tumor cells positive for cytokeratin AE1/AE3

1E: Tumor cells negative for EMA

1F: Tumor cells negative for S-100

[12,13]. An intracranial tumor could manifest symptoms such as chronic intractable headaches, epistaxis, and cranial nerve palsy, as well as more severe complications including cerebrospinal fluid rhinorrhea, subarachnoid hemorrhage, and endocrinopathies depending on size and location of mass [12,13]. Alternatively, chordomas occurring along the vertebral bodies and sacrococcygeal region tend to exhibit pathological effects in a dermatomal distribution including sphincter dysfunction, radiculopathies, and paresthesias [12,13].

When considering a chordoma diagnosis it is important to rule out other entities from a differential list of benign and malignant entities. For benign lesions, ecchordosis physaliphora (EP) and benign notochordal cell tumor (BNCT) must be considered due to their shared morphological similarities and identical immunoprofile as chordoma [14,15,16]. EP is an extraosseous polypoid mass originating from the dura mater along the axial skeleton considered to be a hamartoma of notochordal remnants, most commonly located on the clivus [14,15]. EP masses present histologically with nests of large vacuolated cells (physaliphorous cells) containing clear to mildly eosinophilic cytoplasm surrounded by myxoid matrix similar to that of chordomas [14,15]. However, this benign mass can be distinguished from chordomas histologically due to its well-delineated borders, and absence of necrosis, mitotic figures, high-grade nuclear atypia, and lobulated structure [14]. BNCT also originates from notochordal remnants and presents as an intraosseous mass, as do most (>95%) chordomas [16]. This form of neoplasm contains a physaliphorous cell appearance with clear to minimally eosinophilic cytoplasm, but there is no surrounding myxoid matrix, making this a key distinguishing characteristic from chordoma. Like EP, BNCT lacks any necrosis, mitotic figures, nuclear atypia, lobulated architecture [14,16]. Ultimately, the most obvious discriminating factor between chordomas and these benign neoplasms is identification of the tumors invasive, locally destructive necrosis, with abundant nuclear atypia and mitotic figures; all of which are characteristic of malignant chordomas and lacking in benign lesions [14].

Chondrosarcomas are malignant neoplasms derived from primitive mesenchymal cells that share some radiographic and histological similarities making it an important entity to consider in a differential diagnosis with chordoma, particularly chondroid chordoma [17]. Both chondroid chordoma and chondrosarcoma contain extensive regions of hyaline cartilage encompassing bony trabeculae as they invade local structures, giving both entities similar radiological appearances; however, these two malignant tumors can be differentiated using histology and immunohistochemistry (IHC) [14,17]. As mentioned, both neoplasms contain significant areas of hyaline cartilage throughout, but only the chondroid chordoma contains regions of conventional chordoma architecture such as physaliphorous cells among pools of mucin [14,17]. IHC markers further differentiate chordomas from chondrosarcomas as chondrosarcomas typically contain IDH1 or IDH2 mutations not found in chordomas, as well as negatively expressing epithelial markers cytokeratin (CK) 8, CK18, epithelial membrane antigen (EMA), and brachyury, all of which are positive in chordomas [14,17]. Finally, metastatic carcinoma to the axial skeleton is another differential diagnosis that must also be ruled out since most carcinomas are positive for the same epithelial markers (CK and EMA) that are present in chordomas; however, most carcinomas are negative for S100 and brachyury, while expressing their own unique markers indicative of their primary origin [14]. Myxoid chondrosarcoma, a chondrosarcoma variant, can mimic chordoma histomorphologically. Joseph B. et al. reported a case of myxoid chondrosarcoma and described the differentiating criteria from other types of malignant chondroid lesions including chordoma. They described the cells of myxoid chondrosarcoma are short, spindle, or oval in shape, with hyperchromatic or vesicular nuclei, and occasionally vacuolated cytoplasm. Grooved or cleaved nuclei indicative of chondroid differentiation may also be observed [29].

The reported incidence of chordoma is 0.08/100,000 persons [4]. It is observed in males more than females at a 2-3:1 rate and can occur at any age with most cases presenting in the fourth to seventh decade, and a greater risk of disease as age increases [6,18]. Race has also shown to have some increased associated risk as Caucasians are affected at a 4:1 ratio to that of African Americans [19]. While most chordomas are sporadic incidences, genetic association has been identified with alteration of a T-gene (TBXT) located at 6q27 responsible for encoding Brachyury, an essential tissue specific transcription factor which aids in the development and maintenance of the notochord [19]. In 2009, Yang, et al. [5] used CGH (Comparative genomic hybridization) analysis to provide evidence of genetic predisposition to familial chordomas amongst families with unique duplications of the T-gene responsible for Brachyury. Alteration of this T-gene appears to be the event that initiates tumorigenesis [4].

On gross examination, chordomas appear as a gelatinous, tan-grey, lobulated, intraosseous mass with an internal fibrous septae typically seen invading adjacent structures [2,14]. Histologically, chordomas can fall under three classifications identified as conventional (most common), dedifferentiated, and poorly differentiated, as well as chondroid chordoma which is a unique entity considered to be a subtype of conventional chordomas [14]. The conventional presentation appears as infiltrative lobules partitioned by fibrous septae containing chords and nests of large physaliphorous cells within a myxoid stroma exhibiting minimal atypia [14,20]. Heterogeneous tumor cells with abundant mitotic figures can be seen throughout the mass with areas of both low-grade nuclei and high-grade (ranging from pleomorphic to spindled) nuclei present, along with extensive areas of necrosis [14]. The chondroid chordoma subtype, which appear to have a propensity to grow in the sphenooccipital region, consist of areas of hyaline cartilage interspersed throughout adjacent surrounding matrix of conventional chordoma [14,20]. Dedifferentiated chordomas are comprised of sheets of cells with two unique components which include an area of conventional chordoma as well as a high-grade, undifferentiated, sarcomatous region with diffuse cellular atypia [14,20]. Poorly differentiated chordoma is the rarest form of the disease (only ~60 reported cases throughout the literature) and is predominantly identified in children and young adults typically involving the clivus and cervical spine [14]. The poorly differentiated tumor contains

mild-moderate atypia, numerous mitotic figures, and geographic necrosis, as well as nests of signet ring and mildly eosinophilic epithelioid cells; whereas the characteristic physaliphorous cells and surrounding myxoid stroma found in conventional chordomas are typically absent [14]. Like the notochordal remnants they are derived from, chordomas stain positive for many of the same keratin markers such as cytokeratin (CK) 8, CK18, CK19, as well as Brachyury, S100 protein and epithelial membrane antigen (EMA) [14]. These immunohistochemical markers are used to aid in the histological identification of the disease.

Basic diagnostic imaging can be done via X-rays or Computed Tomography (CT) which can identify the hyperdense soft tissue mass exhibiting a locally destructive pattern of lytic bone lesions and irregular focal calcifications characteristic of chordoma invasion [4,14,21]. The superior imaging modality for chordomas is T1 and T2 weighted Magnetic Resonance Imagining (MRI) [14,21]. T1 weighted studies show an iso-dense mass relative to adjacent muscle consisting of focal areas of hyperintensity, whereas T2 weighted imaging light up the tumor's myxoid stroma with high intensity surrounded by a low signal fibrous septae giving the mass its lobular structure [14,21]. Gadolinium contrast is useful to enhance chordomas honeycomb structure on MRI, and Fluid Attenuation Inversion Recovery (FLAIR) produces an iso-dense to intermediate signal within a mass [4,14]. Once the primary tumor has been identified, fine-needle aspiration biopsy is recommended prior treatment to establish the final diagnosis of chordoma, differentiating it from chondrosarcoma [12].

While the majority of chordomas occur as sporadic cases, there are a variety of specific molecular changes identified at increased frequencies that could serve as an indicator for tumorigenesis. The duplication of the TBXT gene, located at 6q27, discussed previously has been linked to familial predisposition to chordomas [4,5,19]. Cytogenetic studies have shown that typical primary chordomas express increased rates of quantitative abnormalities within the tumor cells genome frequently resulting in monosomy of chromosome 1p, 3p, and 4q and gain of chromosome 2p, 6q, and 7q copy numbers, with the deletions occurring more often than the duplications [22]. Comparative genomic hybridization (CGH) analysis has determined that ~70% of cases express a homozygous or heterozygous loss of CDKN2A and CDKN2B at chromosome 9p21, as well as 40% of cases showing amplification of epidermal growth factor receptor gene (EGFR) located at 7p12 [14,22]. Sun, et al. [22] reports that loss of heterozygosity at CDKN2A, PTEN (10q23), and SMARCB1 (22q) could be significant to chordomagenesis. Aberrant receptor tyrosine kinases (RTKs) including platelet-derived growth factor receptor (PDGFR), epidermal growth factor receptor (EGFR), human epidermal growth factor receptor (HER2/neu), and c-Met have been studied in link to the overexpression of downstream products commonly present in chordomas [14,22]. Epigenetic changes have also been identified related to DNA hyper- and hypomethylation of tumor suppressor genes C3, XIST, TACSTD2, FMR1, HIC1, RARB, DLEC1, KL, and RASSF1, which can be used for early detection [14,22,23].

The current standard treatments for chordoma are a wide margin en bloc resection and radiation therapy [24]. These treatment modalities are often helpful with the reduction and removal of the tumor; however, chordomas predilection for invasion along the poorly accessible region of the axial skeleton make complete resection difficult, increasing the risk of recurrence [24]. Kaiser, et al. [25] determined that preserving the integrity of the tumor capsule during resection reduced the incidence of recurrence by 50%. Local recurrence has been identified as a major indicator of the progression to metastatic disease [8]. Radiation therapy is typically used as adjuvant treatment, but in cases of unresectable chordomas can be utilized independently as a high-dose treatment which has shown a five-year local control rate of ~85%, ~89% disease specific survival, and ~20% incidence of distant failure [14]. Currently, chemotherapeutics have not been found to have any significant effect in the treatment of chordomas; however, there are ongoing phase II trials testing the utilization of targeted therapies to inhibit cell growth and proliferation, as well as the overexpression of downstream products on receptor tyrosine kinases (RTK), Imatinib being one of the most studied candidates at this time [4,13,14,26]. Since the phase II trials are currently ongoing, they are not yet approved for standard treatment.

Many variables play a role in the overall prognosis of chordoma. The survival rate is dependent on tumor location, presence or absence of metastasis, age, and treatment method used: surgical, radiotherapy, or combination [13,14]. Pan, et al. [27] investigated 357 cases of spinal chordomas occurring from 1973-2014 and determined the overall survival (OS) and disease-specific survival rates at three years was 80.5% and 89.0%, at five years was 68.5% and 80.9%, and at 10-years was 39.2% and 60.1%. Factors such as nonsurgical therapy, distant metastasis, and patient age >60 years old have resulted in a reduced overall survival [14,27]. While subtypes such as poorly differentiated and dedifferentiated chordomas have worse prognosis than conventional types, for example dedifferentiated tumor's overall survival is only ~16 months, the median OS for all chordoma types is 6.3 years [14,28].

We bring this case forward to shed light on the importance of including metastatic chordoma in the differential diagnosis of lung metastasis. It is our hope that this report raises awareness of including this differential, and continued investigation drives further development of efficacious diagnosis and safe treatments for improving patient outcomes.

ACKNOWLDGEMENT

Special thanks to Braegen Amaya-Turnbull, Megan Mckenney, and Peter Gameel, MD candidates, American University of the Caribbean for their assistance in reviewing the final manuscript.

REFERENCES

1. Vergara G, Belinchón B, Valcárcel F, et al. Metastatic disease from chordoma. Clin Transl Oncol. 2008;10:517–21Asdf.
2. Rohatgi, Saurabh et al. "Metastatic Chordoma: Report of the Two Cases and Review of the Literature." The Eurasian journal of medicine vol. 47,2 (2015): 151-4. doi:10.5152/eurasianjmed.2015.52.

3. Cha, Yoon Jin, and Yeon Lim Suh. "Chordomas: Histopathological Study in View of Anatomical Location." Journal of Korean medical science vol. 34,13 e107. 8 Apr. 2019, doi:10.3346/jkms.2019.34.e107.

4. Noor, Arish et al. "Chordoma: A Case Report and Review of Literature." The American journal of case reports vol. 21 e918927. 23 Jan. 2020, doi:10.12659/AJCR.918927.

5. Yang, Xiaohong R et al. "T (brachyury) gene duplication confers major susceptibility to familial chordoma." Nature genetics vol. 41,11 (2009): 1176-8. doi:10.1038/ng.454.

6. Farsad K, Kattapuram SV, Sacknoff R, Ono J, Nielsen GP. Sacral chordoma. Radiographics. 2009;29:1525–30.

7. Raque GH Jr, Vitaz TW, Shields CB. Treatment of neoplastic diseases of the sacrum. J Surg Oncol 2001;76(4):301–307.

8. McPherson CM, Suki D, McCutcheon IE, et al. Metastatic disease from spinal chordoma: a 10-year experience. J Neurosurg Spine. 2006;5:277–80.

9. Delank KS, Kriegsmann J, Drees P, Eckardt A, Eysel P. Metastasizing chordoma of the lumbar spine. Eur Spine J. 2002;11:167–71.

10. Sahyouni, Ronald, Khodayar Goshtasbi, Amin Mahmoodi, and Jefferson W. Chen. " A historical recount of chordoma". Journal of Neurosurgery: Spine SPI 28.4 (2018): 422-428. < https://doi.org/10.3171/2017.7.SPINE17668>. Web. 1 Jan. 2022.

11. Baratti D, Gronchi A, Pennacchioli E, et al. Chordoma: natural history and results in 28 patients treated at a single institution. Ann Surg Oncol. 2003;10:291–6.

12. Walcott BP, Nahed BV, Mohyeldin A, et al. Chordoma: Current concepts, management, and future directions. Lancet Oncol. 2012;13(2):e69–76.

13. Khawaja AM, Venkatraman A, Mirza M. Clival chordoma: Case report and review of recent developments in surgical and adjuvant treatments. Pol J Radiol. 2017;82:670–75.

14. Veronica Ulici, Jesse Hart; Chordoma: A Review and Differential Diagnosis. Arch Pathol Lab Med 2021; doi: https://doi.org/10.5858/arpa.2020-0258-RA.

15. Lagman, Carlito et al. "Proposed Diagnostic Criteria, Classification Schema, and Review of Literature of Notochord-Derived Ecchordosis Physaliphora." Cureus vol. 8,3 e547. 30 Mar. 2016, doi:10.7759/cureus.547

16. Nishiguchi, Tomokazu, et al. "Differentiating benign notochordal cell tumors from chordomas: radiographic features on MRI, CT, and tomography." American Journal of Roentgenology 196.3 (2011): 644-650.

17. Almefty, Kaith, et al. "Chordoma and chondrosarcoma: similar, but quite different, skull base tumors." Cancer: Interdisciplinary International Journal of the American Cancer Society 110.11 (2007): 2467-2477.

18. Das, P., Soni, P., Jones, J. et al. Descriptive epidemiology of chordomas in the United States. J Neurooncol 148, 173–178 (2020). https://doi.org/10.1007/s11060-020-03511-x.

19. Kelley, Michael J et al. "Characterization of T gene sequence variants and germline duplications in familial and sporadic chordoma." Human genetics vol. 133,10 (2014): 1289-97. doi:10.1007/s00439-014-1463-z.

20. Ridenour III, Robert V., et al. "Clinical and histopathologic features of chordomas in children and young adults." Pediatric and Developmental Pathology 13.1 (2010): 9-17.

21. Oot, Robert F., et al. "The role of MR and CT in evaluating clival chordomas and chondrosarcomas." American journal of neuroradiology 9.4 (1988): 715-723.

22. Sun, Xin et al. "Chordoma: an update on the pathophysiology and molecular mechanisms." Current reviews in musculoskeletal medicine vol. 8,4 (2015): 344-52. doi:10.1007/s12178-015-9311-x

23. Yu, Xin, and Zheng Li. "Epigenetic deregulations in chordoma." Cell proliferation vol. 48,5 (2015): 497-502. doi:10.1111/cpr.12204

24. Williams, Brian J., et al. "Diagnosis and treatment of chordoma." Journal of the National Comprehensive Cancer Network 11.6 (2013): 726-731.

25. Kaiser TE, Pritchard DJ, Unni KK. Clinicopathologic study of sacrococcygeal chordoma. Cancer 1984;53:2574–2578.

26. Heery, C.R. Chordoma: The Quest for Better Treatment Options. Oncol Ther 4, 35–51 (2016). https://doi.org/10.1007/s40487-016-0016-0.

27. Pan Y, Lu L, Chen J, Zhong Y, Dai Z. Analysis of prognostic factors for survival in patients with primary spinal chordoma using the SEER Registry from 1973 to 2014. J Orthop Surg Res. 2018;13(1):76

28. McMaster, M.L., Goldstein, A.M., Bromley, C.M. et al. Chordoma: incidence and survival patterns in the United States, 1973–1995. Cancer Causes Control 12, 1–11 (2001). https://doi.org/10.1023/A:1008947301735

29. Joseph B, Eskander H, Matar G, Grisel B, Aziz M, et al. (2021) Extraskeletal Myxoid Chondrosarcomas of the Ankle, Case Report of Uncommon Tumor and Brief Review of the Literature. SM J Clin Med 6: 4.