Case Report

Sunitinib in the Treatment of Follicular Dendritic Cell Sarcoma

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Abstract

Follicular dendritic cell sarcoma (FDCS) is a rare mesenchymal tumor. It often presents a diagnostic challenge to the pathologist and the clinician. Due to the rarity of the disease, there are no large studies available to guide the management of this disease. Most of the available data is based on case reports and series. In the past FDCS has been treated as a lymphoid malignancy but recent evidence suggests that FDCS is actually a mesenchymal tumor. Regimens such as gemcitabine-docetaxel have been tried and found to benefit patients. Here we present the case of a lady with an abdominal mass arising from the ileum for which she underwent R1 resection elsewhere, which was diagnosed as FDCS and treated with sunitinib. She was treated with sunitinib for several months until she had significant clinical and radiological evidence of disease progression. Additionally disease biology, clinical features, histopathology and therapeutic options are discussed.

Key Words: Cancer, Sunitinib, Follicular dendritic cell sarcoma

Introduction

Follicular dendritic cell sarcoma (FDCS) is a rare mesenchymal tumor.[1] It presents a diagnostic challenge to the pathologist and the clinician. With identification of the mesenchymal origin of this tumor, sarcoma-like regimens have been tried in the treatment of this disease. Here we report the first case, to the best of our knowledge, of the use of sunitinib in FDCS. This could potentially be a new therapeutic option for this rare disease.

Case Report

A 34 year old lady was evaluated elsewhere for an abdominal lump of two weeks duration in November 2009. CT scan revealed a 12x11cm mass arising from the ileum for which she underwent resection (R1) elsewhere. The surgical pathology of the specimen was reported as probable Gastrointestinal Stromal tumor (GIST). Subsequently, she presented to our institute for further management. Her surgical blocks were reviewed at our hospital and reported as a spindle cell tumor of uncertain malignant potential in the mesentry. Mib-1 proliferation index was 20-30%. CD117 was negative. At this juncture, the diagnosis of CD117 negative GIST was considered. In view R+ resection and possibility of CD 117 negative GIST, we offered her adjuvant treatment with sunitinib. The blocks were sent to USA for review and Immunohistoschemistry. (IHC) The tumor was strongly positive for CD35 and focally positive for CD21. The final histopathological diagnosis was follicular dendritic cell sarcoma. She was started on Sunitinib 50mg once daily on a 2/1 schedule in January 2010. She was on regular follow up every 3 months. In November 2010 she developed grade two skin excoriation, Hand Foot Syndrome, and mucositis. Hence sunitinib was stopped.

In May 2011 CT showed local recurrence in the right adnexa for which she underwent a Total abdominal hysterectomy and bilateral salpingooophorectomy. The surgical specimen was consistent with a recurrent sarcoma involving the uterine serosa, right adnexa and left ovary. Postoperatively she was restarted on sunitinib 50mg once daily on a 2/1 schedule. Sunitinib was continued till September 2013. In September 2013, imaging showed an enlarged right para-iliac node. She underwent another surgery in December 2013. Intra-operatively there were three tumor deposits on the urinary bladder dome which were excised. A para-iliac node measuring 10x8 cm attached to the terminal ileum was also excised. Surgical histopathology showed that the excised bladder wall and para-iliac node were suggestive of FDCS. She was restarted on Sunitinib in January 2014.

She was well until October 2015 when she developed a dull aching right upper quadrant pain radiating to the right shoulder. Clinical examination revealed an ill-defined mass in the right iliac fossa with other systemic examination being normal. CT scan showed significant disease progression with several new lesions, hence she was offered second line of systemic therapy with Gemcitabine and Docetaxel.

Discussion

Follicular dendritic cell sarcoma is a rare tumor and accounts for 0.4% of soft tissue sarcomas.[1] Follicular dendritic cells (FDC) are accessory cells of the immune system which are essential for antigen presentation. Normal FDCs are large (70 to 100 mm), containing two nuclei, have long cytoplasmic processes and form clusters with lymphocytes. The cytoplasmic processes are joined by desmosomes.[2] They form an arborizing meshwork in lymphoid follicles. FDCs are mesenchymal in origin.[3] These tumors arise primarily in lymph nodes; hence it was previously thought to be a lymphoid malignancy. However with the evidence that FDCs are mesenchymal in origin, these tumors are now thought to be biologically similar to sarcomas. Additionally, FDCS have been found to have karyotypes and structural anomalies as seen in other sarcomas.3 Patients with FDCS often present with slow-growing, painless masses and commonly do not have any systemic symptoms.[4] This tumor was earlier considered to be a low grade, indolent malignancy with tendency to recur locally. However studies on larger cohorts have shown that FDCS is at least an intermediate grade malignancy with significant potential to recur and metastasize.[5] Their biological behaviour can range from slow growing, indolent locally recurring lesions to an aggressive, widely metastatic disease.[6] Pathologically, these lesions are usually large masses containing spindle to ovoid cells arranged in a fascicular, whorled or storiform pattern with infiltration by scattered lymphocytes.[3] The markers that are seen only in FDCS are R4/23, CD 21, CD 35, 58 nucleotidase. The diagnosis of FDCS requires positivity for at least one of CD21 or CD23 or CD35.[7] Other common markers are S-100, fascin, Ki M40, Ki FDC1p, muscle specific actin, Epithelial membrane antigen, and vimentin. Rare markers which may be positive are HLA-DR, Clusterin, LCA, and NSE.[2,8] Several treatment modalities such as surgical resection, chemotherapy, radiotherapy have been attempted in FDCS. Earlier, when these tumors were considered to be lymphoid in origin, Cyclophosphamide - Doxorubicin - Vincristine - Prednisolone (CHOP) regimen was the most widely used systemic therapy. Subsequently, with the identification of mesenchymal origin of these tumors, sarcoma-like treatment regimens have been tried and found to have benefit. Being an uncommon tumor, there are no clear guidelines available on its treatment. In our patient sunitinib was used for a total period of 68 months (January 2010 to October 2015). In this period although she had local recurrence of the tumor and required surgery twice, there was no systemic disease and a change in systemic therapy was not needed. It is not clear how much sunitinib itself has contributed to the protracted course of the disease since the tumor itself is known to have a long indolent course. Since the pathology showed a Mib-1 proliferation index of 20-30%, we believe that our patient's disease was not very low grade.

Conclusion

The observations in this patient suggest that sunitinib could be a potential novel the rapy for FDCS, particularly in low and intermediate grade cases. Further studies are warranted to evaluate the activity of sunitinib in this rare disease.

References

1) Shaw D, Cuison R, Ito H. Follicular dendritic cell sarcoma of the stomach: case report and review of the literature. Current Oncology 2014; 21 (6): e775 - e778.

2) Fonseca R, Yamakawa M, Nakamura S, van Heerde P, Miettinen M, Shek T, et al. Follicular dendritic cell sarcoma and interdigitating reticulum cell sarcoma: A review. Am J Hematol 1998; 59 (2): 161 - 7.

3) Conry R. Response of follicular dendritic cell sarcoma to gemcitabine and docetaxel: report of two cases and literature review. Clinical Sarcoma Research 2014;4:6.

4) Choi B, Baek J, Shin Y, Kim J, Kim H, Lee S, et al. Follicular Dendritic Cell Sarcoma: A Case Report and Review of the Literature. Cancer Research and Treatment 2010;42(2):121-4.

5) Rui Fen Wang, Wei Han, Lei Qi, Li Hui Shan, Zheng Cai Wang, Li Feng Wang. Extranodal follicular dendritic cell sarcoma: a clinicopathological report of four cases and a literature review. Oncol Lett. 2014; 9(1):391–8.

6) Chan J, Fletcher C, Nayler S, Cooper K. Follicular dendritic cell sarcoma. Cancer. 1997;79(2):294-313.

7) Grogg KL, Macon WR, Kurtin PJ, Nascimento AG. A survey of clusterin and fascin expression in sarcomas and spindle cell neoplasms: strong clusterin immunostaining is highly specific for follicular dendritic cell tumor. Mod Pathol. 2004;18(2):260-6.

8) Wang H, Su Z, Hu Z, Wen J, Liu B. Follicular dendritic cell sarcoma: a report of six cases and a review of the Chinese literature. Diagnostic Pathology 2010;5:67.