Carcinoma of the collecting ducts of Bellini are rare aggressive neoplasms of distal nephron origin; it accounts for 2% of all renal cell carcinomas. Clinically, collecting duct carcinoma (CDC) is characterized by an extremely aggressive phenotype, accompanying metastatic diseases at presentation in most reported cases. Most cases of CDC have been reported with median age above 50 years. To our knowledge, this is the only second case report of CDC in a young teenager patient below 19 years with metastasis to lungs and bones at presentation.

Key words: Collecting duct carcinoma of kidney, Gemcitabine-cisplatin, immunohistochemistry, positron emission tomography computed tomography, young age

INTRODUCTION

Collecting duct carcinoma (CDC) of the kidney is a very rare and very aggressive tumor. This case is reported to emphasize the aggressiveness of the CDC and its very high mortality. There is a great need for further research about the treatment of this condition. A wide age group is affected by this tumor from 2nd to 8th decade of life. Most of the cases reported are in the age group 50–80 years. This is only one of the few cases affecting a teenager.

CASE REPORT

Young boy of age 18 years came to our hospital in October 2014 with complains of generalized body ache and pain in back radiating to right leg for 18 months. Positron emission tomography/computed tomography (PET CT) was done which showed metabolically active, partially necrotic right renal lesion with lung and extensive bony metastases [Figures 1a, b and 2].

BIOPSY and FNAC from right renal mass showed overall morphology and immunophenotype consistent with CDC kidney. Immunohistochemistry of neoplastic cells was strongly positive for PAX-8, GATTA-3, EMA, with cells expressing CK weakly. However, neoplastic cells were negative for CK7, 34BE12 and CD10.

The case was discussed in multi-specialty-clinic (MSC) and was advised for Gemcitabine and Cisplatin with injection Zoledronic acid based palliative chemotherapy. For progressive bony pain, multiple dorsolumbar vertebral lesions and spinal cord compression due to collapse of multiple vertebrae [Figure 3a and b], palliative RT was started after discussion in MSC. The patient developed esophageal candidiasis and HSV with sepsis during the course of treatment. After 2 cycles of Gemcitabine and Cisplatin-based chemotherapy, disease was progressive as detected on repeat PET CT, Patient refused for further treatment and other options like tyrosine
kinase inhibitors. Presently patient is off treatment and is offered supportive care.

**DISCUSSION**

Collecting duct carcinoma is an uncommon and aggressive disease with extremely poor prognosis, accumulated information about CDC is very limited. Therefore, no established therapy for CDC exists except for surgical resection of localized disease. No favorable data are available for establishing the role of chemotherapy in the management of the disease; however, until there are some published studies claiming positive results on treatment with Gemcitabine plus Cisplatin-based chemotherapy\(^2,3\) which was the basis of choosing the same line of treatment for the present case. Few articles are also published which claim response to tyrosine kinase inhibitors such as sunitinib, sorafenib.\(^4\)

Considering these findings in addition to the characteristics of CDC similar to those of urothelial cancer, chemotherapy is the currently favored approach for patients with metastatic CDC; however, further research is still mandatory to establish the preferred protocols of management.

This is a unique case of its kind, aggressive form of CDC in the teenager. There are only a few cases reported. More research is needed to establish the protocols for diagnosis and treatment. Every case needs to be reported so that a good number of cases can be studied retrospectively.

**CONCLUSION**

In this case report, an 18-year-old boy was diagnosed with advanced metastatic CDC who did not responded to radiation and presently preferred chemotherapeutic agents. So there is need for further research for the better treatment options of this aggressive disease and also about the wide age range of patients who can have the disease.

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**Conflicts of interest**

There are no conflicts of interest.

**REFERENCES**