

Unusual Presentation of Metastatic Bladder Cancer: Carcinomatous Meningitis

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Abbreviations GCS: Glasgow Coma Scale; MRI: Magnetic Resonance Imaging; CSF: Cerebro Spinal Fluid; TCC: Transitional Cells Carcinoma, LMC: Leptomeningeal Carcinomatosis; MTX: Methotrexate; M-VAC: Methotrexate, vinblastine, Adriamycin, and cisplatin

Abstract

Classical metastasis sites of bladder transitional cell carcinoma are nodes, liver, lung and bone. The meningeal infiltration is exceptional and it's reported only few case reports in the literature and the majority shows that many patients had the complication occur after successful treatment of their systemic disease. We report her new case report of meningitis carcinomatous revealing bladder cancer in young woman.

Introduction

The first case of neoplastic meningitis has been described by Elberth in 1870 in patient with metastasis lung cancer [1]. The most common primary tumors associated with leptomeningeal dissemination are lung and breast cancer, melanoma, lymphoma and leukemia [2]. Carcinomatous meningitis from bladder carcinoma is very rare. We report a case report of meningitis carcinomatous as first manifestation of a metastatic bladder cancer.

Observation

A 29 years old woman was admitted to emergency for headache, spinal pain and exophthalmia. Her medical history revealed some episodes of hematuria during last month. On her admission she was conscious, GCS 15, PS at 2. Physical examination showed a left exophthalmia (Figure 1) with decreased visual acuity. cerebral computed tomography was normal, a complement by MRI was performed and showed a meningeal nodular infiltration in the left of parietal site measuring 19mm with extension to left orbital associated to exophthalmia grade 1 (Figure 2, 3). The Cerebro Spinal Fluid (CSF) examination showed hypoglycorachia, elevated protein and atypical epithelial cells. The body CT scan to search for a primary tumor revealed a soft tissue polypoidal mass in the bladder associated with lymph nodes and multiples vertebral metastases. Cystoscopy and biopsy confirmed the polypoidal vesical mass to be Transitional Cells Carcinoma (TCC).

After discussion among the local multidisciplinary team, our patient was treated by systemic chemotherapy (Gemcitabine and Cisplatin) and intrathecal methotrexate. Evaluation after 3 courses showed partial response, however she died 4 months after diagnosis.

Discussion

Neoplastic meningitis represents a spread of malignant cells into the subarachnoid space. The most common primary tumors associated with leptomeningeal dissemination are lung and breast cancer, melanoma, lymphoma and leukemia [2]. This localization is very rare from metastatic bladder carcinoma.

Classical metastasis sites from bladder transitional cell carcinoma are lymph nodes, liver, lung and bone. The meningeal infiltration is exceptional and it's reported only in few published case. The real incidence of bladder cancer's carcinomatous meningitis is difficult to specify. In a study by Anderson *et al.* about 359 patients [3] no patient developed carcinomatous meningitis and only 1% of developed brain metastasis. Moreover, less than 5 % of all neoplastic meningitis described in other articles [4] originates from urothelial tumors.

The diagnosis of meningeal infiltration is easily evocated in patient known of cancer and exhibiting neurological manifestations, however, this diagnosis becomes more difficult when neurological symptoms are first manifestations of cancer such as the case of our patient.



Figure 1: Left exophthalmia grade 1.

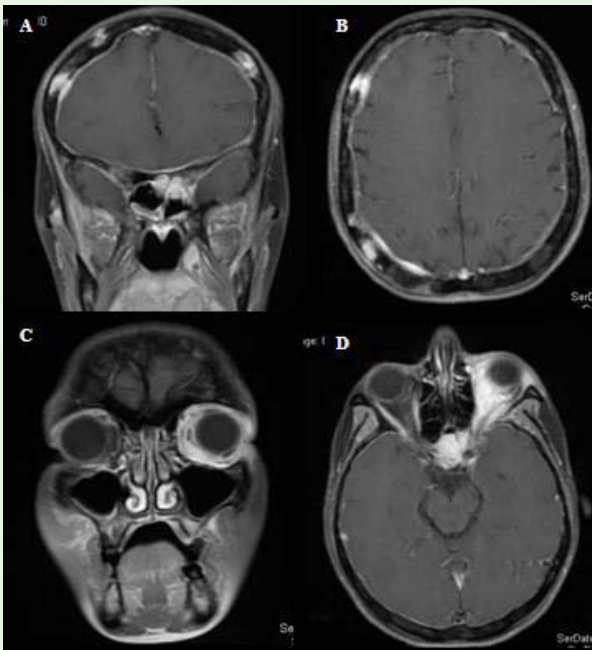


Figure 2: (A +B) Brain Magnetic Resonance Imaging (MRI) revealed abnormal meningeal enhancement. (C+D) MRI showed a meningeal nodular infiltration with extension to left orbital associated to exophthalmia grade 1.

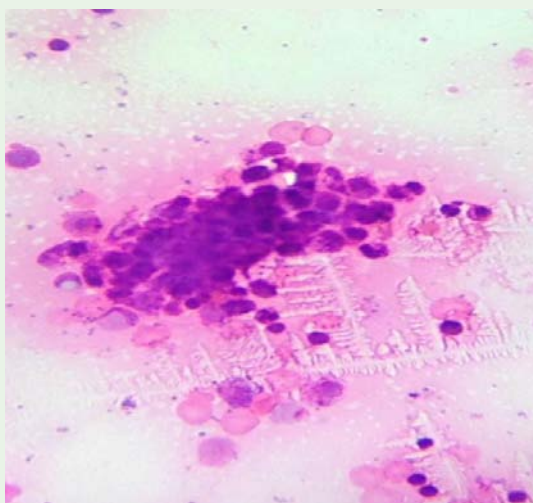


Figure 3: Atypical epithelial cells in cerebro spinal fluid.

There are few cases of transitional cell carcinomatous meningitis reported in the literature, and the majority shows that patients had this complication long time after successful management of their systemic disease [5]. In our case, leptomenigeal carcinomatous was inaugural of metastatic bladder cancer.

The clinical symptoms associated with neoplastic meningitis are symptoms due to increased intracranial pressure because of hydrocephalus such as nausea and vomiting, headaches and neck pain as well as confusion. Cranial nerve palsies resulting in diplopia, hemifacial weakness and radicular symptoms and signs like pain, paresthesia, paresis as well as loss of bladder or bowel control can also occur. Our patient presented with headache and exophthalmia.

Clayton AJ *et al.* showed in retrospective review of LM patients that 53% were diagnosed by imaging [6]. The characteristic finding on MRI is meningeal enhancement, best noted at the skull base between cerebellar folia, along cranial nerves, and around the spinal cord and nerve roots. MRI of our patient showed a meningeal nodular infiltration in the left of parietal site measuring 19mm with extension to left orbital associated to exophthalmia grade 1.

The diagnosis of LM is demonstration of malignant cells in Cerebrospinal Fluid (CSF), although the false negative rate may be substantial and improved sensitivity may rely on repeated sampling of the CSF [7]. However the diagnosis can be evoked if measurements of CSF demonstrated Hypoglycorrhachia (<50% of LM) [8-10], lymphocytic pleocytosis (25-64% of LM), and elevated opening pressures (50% of LM) but are non-specific [11].

According to the National Comprehensive Cancer Network, treatment decisions should be based on the patients' risk group stratification. Patients in the poor risk group are usually offered supportive care and palliative radiation therapy is considered. Patients in the good risk group receive radiation therapy and chemotherapy [12].

For carcinomatous meningitis associated with solid tumors, a typical induction regimen consists of a fixed dose of 10 or 12 mg of intrathecal MTX twice weekly for 4 weeks. If clinical response occurs, the frequency of administration is decreased to once weekly for 4-8 weeks; a maintenance regimen is then continued with drug administration every 2 weeks for several months, and then monthly for 2-4 months. The optimal duration of therapy is unknown [13]. In the series by Bishop *et al.* [14] two of 17 patients treated with MVAC had carcinomatous meningitis. Our patient was treated with a chemotherapy regimen (gemcitabine + cisplatin) and intrathecal MTX. The prognosis for most patients with carcinomatous meningitis secondary to TCC is dismal, with patients surviving a median of 38 days [15].

Conclusion

The meningeal infiltration from bladder cancer is exceptional and only few cases are reported in the literature. The majority of those patients had this complication after successful treatment of their systemic disease. We report here a new case report of meningitis carcinomatous revealing bladder cancer in young woman.

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