Title
Small cell carcinoma of the urinary bladder: a case of remarkable remission with combined chemotherapy

Author(s)
ITOH, Kiichiro; KYAKUNO, Miyaji; SAKAI, Hatsuo; KOKADO, Yukito; SAGAWA, Shiro; SHIN, Takezou

Citation
泌尿器科紀要 (1988), 34(8): 1443-1447

Issue Date
1988-08

URL
http://hdl.handle.net/2433/119666

Type
Departmental Bulletin Paper

Textversion
publisher

Kyoto University
INTRODUCTION

Small cell carcinoma arising in the urinary bladder is very rare, only 10 cases having been reported in the literature. These tumors share histologic and ultrastructural figures, including the presence of neurosecretory granules, with small cell carcinoma of the lung. Small cell carcinoma of the urinary bladder might be expected to show aggressive biologic behavior and to have a very poor prognosis as does its pulmonary counterpart.

Combined chemotherapy is essential in the treatment of small cell carcinoma of the lung. The regimen with Adriamycin, cyclophosphamide, and vincristine has been most commonly used. Recently, a more effective approach with CDDP and etoposide has been introduced. This regimen is superior to and is partially non-cross-resistant with the former. We report one patient with small cell carcinoma of the urinary bladder who showed a remarkable effect of chemotherapy with CDDP and etoposide at the metastatic site. This is the first report of application of this regimen to small cell carcinoma of the bladder. In addition, it shows the importance of detailed pathological examination in connection with the therapeutic approach to bladder tumors.
phocytes, having very scanty cytoplasm and hyperchromatic nuclei, growing in sheets (Fig. 1). Though small cell carcinoma of the lung is often associated with ectopic production of various polypeptide or hormones, in this case, endocrinological tests were within normal limits. Metastasis was found in the left external iliac node on CT scan.

A total cystectomy, bilateral ureterocutaneostomy and biopsy of the metastasized node were well tolerated by the patient. The original tumor was necrotic and had infiltrated to the wall. In the non-tumorous areas, no significant dysplasia was noted. Postoperative tumor, node and metastasis classification was PT3b, N1 and M0, respectively. Microscopic features of both the tumor and node were compatible with that of the biopsied specimens preoperatively. Grimelius staining demonstrated numerous carcinoma cells containing granules. Ultrastructurally, tumor cells had small numbers of neurosecretory granules in the cytoplasm (Fig. 2).

Three weeks after the operation, systemic combination chemotherapy with CDDP and etoposide was started at the metastatic site. The patient received three cycles of CDDP and etoposide at the doses of 60 mg and 100 mg per whole body, respectively, on days 1~3 of each cycle with a planned interval of four weeks between the first day of each cycle. He was followed by CT scan of the pelvic cavity. No change was found after the first cycle, but a remarkable remission was introduced after the second and third ones (Fig. 3). The reduction rate was calculated on the long and short diameters of metastatic external iliac node on CT scan. After the second and third cycles, the reduction rate was 73.8% and 88.3%, respectively. We wanted to continue chemotherapy to induce complete re-
mission, but the patient rejected further treatment. He was followed closely for 15 months postoperatively with repeated CT scan and X-ray. There was no evidence of regrowth at the metastatic site or of distant metastasis.

**DISCUSSION**

The incidence of undifferentiated carcinoma arising in the urinary bladder is less than 1.2% of all bladder carcinomas, and, among these, carcinomas composed of small cells have been extremely rare. Since first reported by Cramer et al. in 1981, there have been only 10 cases reported in the literature (Table 1). Recognition of small cell carcinoma in a variety of extrapulmonary sites has increased in recent years, probably due to the more frequent use of electron microscopy in diagnostic pathology. In the cases of bladder cancer, stage has been demonstrated to be the major determinant of survival, and histologic type has been of little attention. The true incidence of urinary bladder small cell carcinoma may, therefore, be higher by more detailed pathological examination for bladder tumors, as Davis pointed out.

Morphologically, small cell carcinoma of the bladder, as well as other extrapulmonary counterparts, is very similar to pulmonary small cell carcinoma, in most cases, with neurosecretory granules, though their presence is not essential. Kim et al. reported two cases that did not manifest these granules. Small cell carcinoma has often been shown to synthesize and secrete various polypeptide and protein hormones, occasionally leading to clinical manifestations, the best known being ectopic adrenocorticotropic hormone (ACTH) production. Partanen et al. reported a patient with ACTH production. In our case, serum and urine endocrinological examinations were within normal limits and not all clinical manifestations were noted.

The histogenesis of small cell carcinoma...
of the urinary bladder is controversial, and the possibilities have been thoroughly discussed by Cramer et al.\(^1\) He suggested that these tumors may have originated from the neoplastic transformation of metaplastic cells. We have demonstrated small numbers of cells having neurosecretory granules in the basal layer of normal transitional epithelium of the urinary bladder (unpublished data), as Feyrter\(^4\) suggested. These cells may be differentiated from normal mucosal epithelial cells, not from neural crest. Therefore, it seems that small cell carcinoma may originate from normal mucosal cells of the bladder and may have neurosecretory granules.

The prognosis of urinary bladder small cell carcinoma is difficult to evaluate because only 10 cases have been reported to date. However, considering the aggressive behavior and early distant metastasis, including pulmonary and extrapulmonary manifestations, we can assume that the prognosis of the bladder counterpart also is very poor. In small cell carcinoma of the lung, combined chemotherapy plays a central role in the treatment\(^7\). The regimen with adriamycin, cyclophosphamide and vincristine has been most common\(^6\). Recently, the regimen with CDDP and etoposide, which is superior to and is partially non-cross-resistant with the former, has been introduced and recognized to be effective\(^9\). The effectiveness of etoposide, a semisynthetic podophyllotoxin derivative, with or without other agents for lung small cell carcinoma, malignant lymphoma and testicular tumor has been exhibited\(^10\). For nonseminomatous testicular tumor, in particular, it is now an extremely important agent, mostly in combination with CDDP\(^13\). Davis et al\(^2\), reported a case of chemotherapy with adriamycin, cyclophosphamide and vincristine for bladder small cell carcinoma with bone marrow metastasis. We tried a regimen with CDDP and etoposide for the metastasized regional node after surgical treatment. Fig. 3 shows a dramatic remission after three cycles. This suggests that chemotherapy may also play an important role in the treatment of bladder small cell carcinoma as well as its pulmonary counterpart.

These observations emphasize the importance of recognizing small cell carcinoma in the urinary bladder as a distinct entity and the importance of pathological diagnosis including the use of electron microscopy for bladder tumors.

**REFERENCES**


8) Kies MS, Mi va J, Chen T and Livingston RB: Value of chest radiation (RT) in limited small cell lung cancer after chemotherapy (CT)-induced complete disease remission. Proc Asco 1: 141-141, 1982


51: 348–358, 1983
(Accepted for publication August 26, 1987)

和文抄録

化学療法が著効を示した膀胱小細胞癌の1例

大阪府立病院泌尿器科（部長：新武三）
伊藤喜一郎，客野宮治，塚初男
小角幸人，佐川史郎，新武三

膀胱に発生する未分化癌は膀胱腫瘍の約1.2%といわれており，そのうち小細胞癌の頻度は極めて稀である。今回，われわれは，膀胱小細胞癌の1例を経験したので，治療を含め若干の文献的考察を加えて報告する。

（泌尿紀要 34: 1443–1447, 1988）