Percutaneous nephrostomy in patients with advanced or recurrent cervical cancer

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Summary: Thirteen percutaneous nephrostomies were performed in 10 patients with advanced (no=4) (group A) or recurrent (no=6) (group B) cervical cancer. Urinary diversion was unilateral in 7 patients and bilateral in 3 patients. The catheter was kept in place for 4 months in mean (range: 1-7 months). A normalization of renal function was achieved in 4 out of 4 patients of group A, and in 3 out of 6 patients of group B. Of the 4 patients of group A, who afterwards underwent antineoplastic integrated treatments, 2 patients are currently alive with no evidence of disease after 48 and 20 months from the diagnosis, respectively, while the other 2 died of disease after 10 and 14 months, respectively. Of the 6 patients of group B, 5 patients died within 7 months, while another patient is currently undergoing chemotherapy. The present data seem to confirm that percutaneous nephrostomy can be of clinical benefit for patients with advanced cervical cancer, having a chance of prolonged palliation or cure. Conversely, this technique seems to be of little use for patients with recurrent disease, for whom no effective salvage therapy is generally available.

Key words: Nephrostomy; Cervical cancer; Hydronephrosis.

INTRODUCTION

Hydronephrosis due to ureteral obstruction often occurs in patients with gynecologic malignancies, and particurarly in those with cervical cancer ([1, 2]). Retrograde placement of ureteral catheter is frequently not feasible because of altered anatomy or high grade ureteral obstruction ([3]). On the other hand, surgical nephrostomy implies a postoperative course associated with a risk of complications ([4, 5]). The technique of percutaneous nephrostomy, first used in gynecologic oncology by Mann *et al.* ([6]), represents a quite atraumatic approach to the relief of ureteral obstruction ([5]). Moreover this method often allows the beginning of antineoplastic therapy early after the urinary diversion.

In the present paper we have reported our experience in percutaneous nephrostomy in the management of hydronephrosis due to advanced or recurrent cervical cancer.

MATERIALS, METHODS AND RESULTS

This retrospective study included 10 patients who underwent percutaneous nephrostomy to relieve a ureteral obstruction due to advanced or recurrent cervical cancer. The median age of patients was 51 years, with a range from 30 to 69 years.

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The histologic type of the tumor was large cell non keratinizing squamous cell carcinoma in 5 patients, keratinizing squamous cell carcinoma in 3 patients, small cell carcinoma in one patient, and adenocarcinoma in another patient.

Regarding the 4 patients with untreated advanced cervical cancer (group A), 3 patients had Stage III B disease and one patient had Stage IV B disease.

On the 6 patients with recurrent cervical cancer (group B), 5 patients had pelvic relapse after radical hysterectomy with pelvic lymphadenectomy and postoperative high energy external pelvic radiotherapy performed for FIGO Stage IB - IIA disease. Another patient had pelvic recurrence after neoadjuvant chemotherapy, including cisplatin, vincristine, and bleomycin (PVB regimen), followed by radical hysterectomy with pelvic lymphadenectomy for FIGO Stage III B disease.

The urinary diversion was carried out with local anesthesia and ultrasound guidance. Antibiotics for urinary prophylaxis were long administered. Percutaneous nephrostomy was unilateral in 7 patients and bilateral in 3 patients. In these latter the catheters were inserted sequentially to minimize patient discomfort.

The catheter was kept in place for 4 months in mean, with a range from 1 to 7 months. No severe complication was observed during or after the catheter insertion. The most frequent complication was the dislodgement of the catheter from the renal pelvis, which occurred once in 3 patients, twice in one patient, and 3 times in another.

Regarding group A, a normalization of renal function was achieved in 4 out of 4 patients, who afterwards underwent high energy external pelvic radiotherapy followed by radical hysterectomy with pelvic lymphadenectomy (2 patients), or neoadjuvant chemotherapy with PVB regimen followed by radical hysterectomy with pelvic lymphadenectomy (one patient), or neoadjuvant chemotherapy with PVB regimen followed by high energy external pelvic radiotherapy (one patient). Of these 4 patients, 2 are currently alive with no evidence of disease after 48 and 20 months from the diagnosis, respectively, while the other 2 died of disease after 10 and 14 months, respectively.

With regard to group B, the renal function improved in all patients but in only 3 of them the serum creatinine levels became normal. Three patients received no further antineoplastic therapy and died after 2, 6, and 7 months, respectively; 2 patients underwent individualized radiotherapy and died after 4 and 7 months, respectively; one patient is currently undergoing chemotherapy.

DISCUSSION

Percutaneous nephrostomy is a widely used, relatively easy procedure to relieve a malignant ureteral obstruction ([7, 8]). In our experience, a normalization of renal function was obtained in all patients with advanced cervical cancer but in only 50% of those with recurrent cervical cancer. It is noteworthy that 2 out of 4 patients with advanced disease, who underwent antineoplastic integrated treatment after percutaneous nephrostomy, are currently alive with no evidence of disease after 48 and 20 months from the diagnosis, while 5 out of 6 patients with recurrent disease died within 7 months from urinary diversion.

Soper *et al.* ([2]) reported that percutaneous nephrostomy substantially improved the renal function in all 12 patients with advanced cervical cancer. The pre- and postinsertion median serum creatinine values were 8.5 mg/dl and 1.3 mg/dl, respectively. A normalization of renal function was achieved in 5 out of 6 patients with recurrent disease; in this subset of patients the median serum creatinine levels were reduced from 4.4 mg/dl to 1.8 mg/dl after catheter insertion.

In the experience of Baker *et al.* ([9]), percutaneous nephrostomy decreased the mean serum creatinine levels from 3.2 mg/dl to 1.3 mg/dl in 8 patients with ureteral obstruction due to advanced cervical cancer, and respectively from 7.1 mg/dl to 2.1 mg/dl in 9 patients with ureteral obstruction caused by recurrent gynecologic malignancy.

Pedersen and Juul ([5]) performed 35 percutaneous nephrostomies in 21 patients with urinary obstruction due to advanced gynecologic cancer. In 14 patients the nephrostomy was removed after normal renal function had been restored following cancer treatment; in 5 patients renal function was still altered after therapy and the nephrostomies were left in situ permanently; 2 patients with postoperative ureteral fistula were nephrectomized.

Chapman and Reid ([8]) reported that percutaneous nephrostomy improved renal function in 15 (88%) out of 17 patients with malignant ureteral obstruction. A normalization of serum urea levels occurred within 10 days.

In their series the use of bilateral nephrostomy conferred no benefit with respect to unilateral nephrostomy.

In agreement with other papers ([2, 5, 9, 10]) the present data seem to confirm that percutaneous nephrostomy can be of clinical benefit for patients with advanced cervical cancer having a chance of prolonged palliation or cure. Conversely, this technique seems to be of little use for patients with recurrent disease, for whom no effective salvage therapy is generally available.

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