INTRODUCTION

The common types of epithelial bladder tumors include urothelial carcinoma, squamous cell carcinoma, and adenocarcinoma in decreasing order of frequency (1). Among them, adenocarcinoma accounts for 0.5-2%, and is mostly the secondary type (1, 2). Primary adenocarcinoma mainly arises in the gastrointestinal tract, breast or gall bladder, and rarely in the urinary bladder (1, 3). In particular, signet-ring cell subtype in adenocarcinoma of the bladder is relatively rare and one of the most aggressive variant (4). We reported characteristic computed tomography findings of signet-ring cell carcinoma distinguishable from that of urothelial cell carcinoma in the bladder.

CASE REPORT

A 76-year-old woman with painless gross hematuria was referred to our hospital. On pelvic ultrasonography, a 1 cm hyperechoic luminal polypoid mass was seen in the left-sided wall of the bladder. The mass showed greater arterial enhancement than the perilesional spared mucosal layer on enhanced abdominal and pelvic computed tomography (CT) (Fig. 1A). The lesion revealed a venous wash-out enhancing pattern (Fig. 1B). Additionally, there were no perivesical fatty infiltration or enlarged lymph nodes and no metastases in other organs. Pathologically, signet-ring carcinoma was confirmed by the transurethral resection of the bladder tumor. Perilesional proper muscle and lymphatics have been invaded by the malignant cells.

After three months, the mass grew remarkably with an irregular shape presenting as wall thickening of the bladder on dynamic CT (Fig. 2A). A venous phase image demonstrated inner necrosis-like low density portion of the wall with perivesical fat infiltration (Fig. 2B). The lesion extended to the trigone in-
as characteristic mucin pool of adenocarcinoma (Fig. 3). The low density mass in left sided pelvic cavity was the metastatic lymph node with extranodal invasion to adjacent left external iliac vein. After 7 days, a CT venography manifested thrombi in the left external iliac vein and other deep vein thrombosis of left lower extremity. The patient expired, owing to a pulmonary thromboembolism.

DISCUSSION

Histologically, six patterns are known as subgroups of adenocarcinoma: no specific type, enteric, mucinous, signet-ring cell, clear cell, and mixed (5). The primary signet-ring carcinoma, a rare type of the adenocarcinoma, secretes unevenly...
distributed mucin within the intracellular space and nuclei (1, 2, 6). This tumor shows perivesical fat strandings or distant metastases more commonly than urothelial carcinoma at diagnosis (1). Therefore, diffuse bladder wall thickening and perivesical fat stranding are commonly seen on CT images, suggesting a transmural extension of the cancer (1, 7). The heterogenously enhancing bladder wall thickening findings of the tumor show similar features to linitis plastica in other abdominal visceral adenocarcinoma (2). Further, the inner mucinous component of the tumor appears as a bizarre-shaped, central necrosis-like low density area, and a distinct margin on enhanced CT images (7). The primary adenocarcinoma have been reported with enlarged lymph nodes in 25% of cases, with peritoneal deposit in 38% of cases (2), and distant metastases or involving local organs in 28% of cases (8).

On the other hand, urothelial carcinoma generally presents as an intraluminal papillary, nodular mass or focal wall thickening at diagnosis. More than half of the lesions measured less than 2.5 cm (1). The perivesical spread in 10% of cases and cancer invasion of the adjacent organ or abdominal wall in 3% of cases are noted in the patients with urothelial carcinoma (9).

In our case, primary adenocarcinoma of the bladder belongs to the nonurachal type based on the origin and signet-ring carcinoma according to the histologic subgroup. Upon initial diagnosis, the lesion revealed a hypervascular polypoid mass similar to urothelial carcinoma. After three months, the mass demonstrated typical further aggressive features with remarkable growth, developing irregular wall thickening, and perivesical fat strandings considered as adenocarcinoma. Moreover the cancer metastasized to the left external iliac lymph node, hence causing venous invasion and a thromboembolism. No evidence of extravasical primary malignancy was found.

A diffuse wall thickening appearance on CT image can be seen in an inflammatory, infective, or fibrotic condition and mimic presence of the bladder adenocarcinoma (2). In addition, the signet-ring cell carcinoma can be demonstrated as an arterial enhancing luminal polypoid mass resembling urothelial cell carcinoma as in this case. The lesional biopsy can be performed for the differential diagnosis, but the initial pathologic report of the signet-ring cell type malignancy can be inconclusive (2). Therefore radiologists need to consider bladder adenocarcinoma with these CT findings and try to determine the lesional extension or metastatic lesions (2).

REFERENCES

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