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| **Age** | **Gender** | **Diagnosis**  **eTable 1. Detailed Descriptions of the 10 Mock Patients** | **Tumor Grade and Type** | **Treatment** | **Metastasis** | **Recurrence** | **Pathological Findings** |
| 60 | F | Recurrent invasive transitional cell carcinoma of the bladder, involving the vagina and other pelvic regions | Invasive transitional cell carcinoma of the bladder (Grade II) | Partial cystectomy -> Radical cystectomy with ileal conduit reconstruction -> Vaginal biopsy -> Additional tests and follow-up | Yes (multiple lymph node metastases, with increased metabolic activity shown on PET/CT) | Yes (recurrence 6 years post-surgery, involving the vagina and pelvis) | Vaginal wall tissue indicates urothelial carcinoma |
| 64 | F | High-grade invasive urothelial carcinoma, recurrent post-surgery | High-grade invasive urothelial carcinoma | TURBT -> Radical cystectomy with ileal conduit reconstruction -> Urine cytology -> Imaging studies | No (PET-CT shows no clear signs of tumor metastasis) | Yes (localized soft tissue thickening at the ureter-ileal anastomosis site, suggesting tumor recurrence or postoperative changes) | Cancer cells detected in urine cytology on two occasions |
| 64 | M | High-grade urothelial carcinoma with invasion into the left seminal vesicle and lymph node metastasis | High-grade urothelial carcinoma, with invasive and metastatic characteristics | TURBT -> Intravesical chemotherapy -> Second TURBT -> Multiple cycles of chemotherapy (GEM+DDP, TXT+DDP) -> Pelvic lymph node radiotherapy | Yes (multiple nodules in both lungs, metastasis to the left pelvic wall lymph nodes) | Yes (recurrence of soft tissue mass in the left bladder wall, with lymph node metastasis) | Cystoscopic biopsy pathology indicates invasive carcinoma; PET-CT suggests recurrence |
| 75 | M | High-grade invasive urothelial carcinoma with multiple lymph node metastases | High-grade invasive urothelial carcinoma with invasive and metastatic characteristics | TURBT -> Partial cystectomy -> Multiple cycles of chemotherapy (gemcitabine + cisplatin) -> Central venous catheterization -> Anticoagulant therapy -> Management of bone marrow suppression | Yes (multiple lymph node metastases, with increased metabolic activity on PET/CT, suspected bone metastasis) | Yes (increased number and size of lymph nodes in the left pelvic wall and retroperitoneum) | Cystoscopic biopsy pathology indicates invasive urothelial carcinoma; PET/CT suggests metastatic lymph nodes |
| 75 | M | Benign prostatic hyperplasia, soft tissue mass in the posterior bladder wall and trigone with mild hydronephrosis; small cell neuroendocrine carcinoma | Highly aggressive tumor (initial diagnosis) -> Small cell neuroendocrine carcinoma (confirmed by biopsy) | No surgical records at present; tumor type confirmed through hospital admission examinations and biopsy | Yes (enlarged lymph nodes in the bilateral pelvic walls) | No | Biopsy shows atypical cells; immunohistochemistry: TTF-1(+), CD56(+), Ki67(+ ~80%); morphology and immunophenotype consistent with small cell neuroendocrine carcinoma |
| 73 | M | Invasive high-grade urothelial carcinoma of the bladder, with invasion into the rectum, seminal vesicles, prostate, and pelvic wall | High-grade urothelial carcinoma (poorly differentiated carcinoma) | Partial cystectomy -> Radical cystectomy with ileal conduit reconstruction -> Bilateral percutaneous nephrostomy -> Colonoscopy and biopsy -> TURBT + TURP -> Arterial infusion chemotherapy | Yes (multiple nodular metastases in the pelvic and peritoneal regions, with multiple lymph node metastases in the pelvic and inguinal areas) | Yes (recurrent invasive high-grade urothelial carcinoma of the bladder, with invasion of adjacent organs and metastasis) | Poorly differentiated carcinoma consistent with invasive high-grade urothelial carcinoma; immunohistochemistry: GATA-3(+), CK7(+), P504s(-), PSA(-), Ki67(60%) |
| 74 | M | Invasive poorly differentiated urothelial carcinoma (plasmacytoid subtype) with involvement of the posterior bladder wall and pelvic floor | Poorly differentiated urothelial carcinoma (plasmacytoid subtype) | Partial cystectomy -> Laparoscopic exploration + pelvic floor and bladder tumor biopsy -> Chemotherapy | Yes (intermuscular venous thrombosis in the right calf, suspected to be caused by tumor metastasis) | No | Poorly differentiated urothelial carcinoma (plasmacytoid subtype); immunohistochemistry: GATA-3(+), S100P(+), CK7(+), CK20(-), P63(-), Ki67(10%) |
| 69 | M | Small cell neuroendocrine carcinoma (NEC) of the bladder | Small cell neuroendocrine carcinoma (highly malignant) | Transurethral resection of bladder tumor (TURBT) with plasma ablation -> Urethral dilation -> Chemotherapy + immunotherapy (etoposide + cisplatin + durvalumab) | Yes (enlarged lymph nodes near the left internal iliac artery, suspected metastasis) | No | Small cell malignant tumor with focal necrosis; immunohistochemistry: syn+, CD56+, NK2.2+, GATA3+, P53+/~50%, Rb1-/deficient, Ki67~90% |
| 78 | M | Recurrent invasive urothelial carcinoma of the pelvis, with perianal pain and possible involvement of the prostate and adjacent structures | Moderately to highly differentiated invasive papillary urothelial carcinoma | Laparoscopic radical cystectomy with pelvic lymph node dissection and ileal conduit reconstruction -> Pelvic mass biopsy confirming recurrence | No clear evidence of metastasis, but tumor recurrence with invasion into surrounding tissues | Yes (confirmed pelvic tumor recurrence, 5 years after primary bladder cancer surgery) | Recurrent invasive urothelial carcinoma, pathology shows multiple punctate calcifications within the tumor |
| 54 | M | High-grade urothelial carcinoma of the left renal pelvis, with metastasis to the left retroperitoneal lymph nodes | High-grade urothelial carcinoma | Laparoscopic radical nephroureterectomy with bladder cuff excision -> 6 cycles of GC chemotherapy -> 15 cycles of immunotherapy with tislelizumab | Yes (metastasis to multiple lymph nodes throughout the body; retroperitoneal mass confirmed as metastatic urothelial carcinoma) | Yes (retroperitoneal lymph node metastasis post-surgery, with residual lesions after treatment) | Postoperative pathology confirms high-grade urothelial carcinoma of the left renal pelvis; retroperitoneal mass biopsy confirms metastatic urothelial carcinoma |

**eTable 2. Prompt Templates for 3 Steps in the Study**

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|  | **Prompt** |
| **Prompt1** | S:I have detailed case information of a urothelial carcinoma patient, including his chief complaints, medical history, examination results, pathology findings, and treatment course, R:Please act as a professional multidisciplinary team (MDT) specializing in urological oncology,  G:Please review the patient's information, and provide: A list of the current preferred treatment measures along with the reasons for each recommendation, C:A list of measures to avoid along with the reasons for each recommendation. |
| **Prompt2** | Open-ended questions+Please carefully consider and provide a clear conclusion. |
| **Prompt3** | Are there any suitable clinical trials for this patient? Always include the NCT (ClinicalTrials.gov registration number) or PubMed ID, and indicate the level of evidence and clinical significance whenever possible. |