ant composed of polyglonal, round-to-oval, or spindle-shaped tumor cells arranged in a sheet-like pattern. The neoplastic cells showed marked nuclear pleomorphism, vesicular nuclei, prominent nucleoli, irregular cell borders with occasional bizarre forms, and frequent mitoses. The tumor displayed marked and extensive necrosis, degeneration, and marked angiolymphatic emboli.

The carcinoma had distant metastasis to the bilateral pleura with serous pleural and pericardial effusion, hilum of the spleen, serosa surface of pylorus of the stomach, body of the pancreas, rectum, small and large intestines with marked adhesion, appendix, omentum, mesentery, left adrenal gland, and left lobe of the liver. Lymph nodes in the pelvic, para-aortic, hilar, paratracheal, mesenteric, mediastinal, and supraclavicular neck revealed metastatic carcinoma.

Additionally, the left kidney displayed acute tubular necrosis with focal glomerulosclerosis and a simple cyst measuring 1.5 cm in diameter. Cardiomegaly, with hypertrophy of the left ventricle (2.2 cm thick) and mild focal fibrosis, was noticed. The aorta and the coronary arteries showed mild atherosclerosis. In addition, mild fatty metamorphosis of the liver and mild bilateral lung edema were noted. A small focus of old hemorrhage in the right basal ganglion of the brain and senile change of the brain were found. An intramural leiomyoma measuring 1.2 x 1.2 x 1 cm was noted in the anterior wall of the uterus. The bilateral thyroid glands revealed a mild nodular goiter. The oral cavity, pharynx, and larynx were unremarkable.

Sarcomatoid transitional cell carcinoma affects males more frequently than females (2-3:1) and tends to occur in older patients (seventh to eighth decades). The most frequent presenting sign is hematuria, although irritative and obstructive symptoms can occur. The tumor is composed predominantly of spindle cells surrounding isolated islands of pure or mixed transitional cell carcinoma. In contrast to transitional cell carcinoma with spindle cell stroma, these spindle cells are malignant and manifest various amounts of both vimentin and cytokeratins. Clinical features do not differ significantly from those of patients with high-grade transitional cell carcinoma. Microscopically, the tumors resemble malignant fibrous histiocytoma, and multiple sections may be necessary to uncover the islands of epithelial differentiation. Positive reaction of at least some of the spindle cells to cytokeratin antibodies is confirmatory. Heterologous differentiation, when present, usually consists of chondrosarcoma (47%), osteosarcoma (31%), or rhabdomyosarcoma (24%). In cases with carcinoma and a malignant spindle cell component, the major differential diagnostic consideration is urothelial carcinoma with a pseudosarcomatous stroma, a rare entity with reactive stroma that shows sufficient cellularity and atypia to raise a serious concern of sarcomatoid carcinoma. The stroma varies from myxoid with stellate or multinucleated cells to cellular and spindle-shaped with fascicle formation. Immunohistochemically, the stroma cells of pseudosarcoma show fibroblastic and myofibroblastic differentiation and invariably lack cytokeratin. In cases without obvious carcinoma, the main differential diagnostic consideration is sarcoma. Because of the rarity of primary sarcoma, a malignant spindle-shaped cell tumor should be considered sarcomatoid carcinoma until proven otherwise. Extensive sectioning of the tumor and surrounding mucosa may reveal an in situ or invasive epithelial component.

Osseous metaplasia is present in some cases of urothelial carcinoma and should be differentiated from an osteosarcoma. The metaplastic bone is histologically benign, with a normal lamellar pattern.

Sarcomatoid carcinoma is highly malignant. Most sarcomatoid carcinomas are high stage at diagnosis and the 5-year survival has been less than 30%. Treatment of renal pelvic and ureteral tumors should be based primarily on grade, stage, position, and multiplicity. The standard therapy has been nephroureterectomy owing to the possibility of multifocal disease within the ipsilateral collecting system.

With definite treatment, which is nephroureterectomy and removal of a cuff of the bladder, the prognosis is rather good. The role of chemotherapy as an adjunct to surgery is less well documented. Radiotherapy plays a limited role in upper urinary tract cancers. Before surgery, it is essential to evaluate other areas in the urothelium by IVP, cystoscopy, and retrograde pyelography because of the high likelihood of contralateral kidney involvement or bladder involve-