9-2022

IgG4-Related Interstitial Nephritis Ranges From Kidney Mass to Acute Kidney Injury

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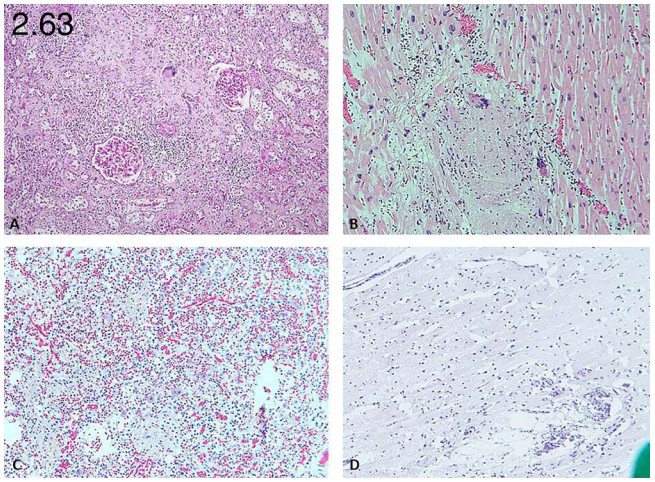

Chromophobe Renal Cell Carcinoma With Sarcomatoid Differentiation: Clinicopathologic Correlation and Molecular Findings of 5 Cases

(Poster No. 64)

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Context: Sarcomatoid differentiation has been reported in approximately 8% of chromophobe renal cell carcinomas (ChRCCs) and is associated with a worse prognosis. We present clinicopathologic findings of 5 cases of ChRCC with sarcomatoid differentiation from our institution.

Design: Surgical pathology database was searched to identify ChRCC with sarcomatoid differentiation from January 2015 to December 2021.

Results: Three patients were male and 2 were female. Median age at presentation was 57 years (51–61 years). Four cases were located on the left kidney. Median tumor size was 10.7 cm (5.6–13.6 cm). Median sarcomatoid component was 60% (10%–90%) and 1 had osteoid formation. All cases had necrosis (median, 30%; 10%–60%). Three cases had renal vein invasion and 2 showed lymphovascular invasion. Adrenal invasion was identified in 1 case and lung metastasis in 2 cases. After median follow-up of 12.1 months (1.6–18.2 months), 2 patients were alive. The patient with 90% sarcomatoid component, 50% necrosis, and adrenal invasion died after 1.6 months from time of diagnosis. Both patients with lung metastasis died after 18.2 and 12.1 months. PAX8, CK7, CD117, and Hale colloidal iron were positive in epithelial areas. Sarcomatoid areas had reduced PAX8 and cytokeratin markers, as well as positive vimentin, CD10, and higher Ki-67 index. Comprehensive NGS was performed in 3 cases; all were microsatellite stable and had TP53 mutations. One case had FLCN and TERT promoter site mutation.

Conclusions: ChRCC with sarcomatoid differentiation is a rare entity with aggressive behavior. Percentages of sarcomatoid component and necrosis appear to correlate with prognosis, as well as occurrence of metastasis.

Secondary Neoplasms of the Testis: A Clinical Pathologic Review

(Poster No. 65)

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Context: Secondary involvement of the testis by a neoplastic process is rare. The majority of the published literature deals with isolated case reports. We undertook a retrospective study to assess the incidence and the histopathologic subtype.

Design: We searched our surgical files between 1992 and 2021 for secondary testicular tumors.

Results: A total of 256 orchiectomies were performed for neoplastic processes, including 238 for primary tumors: 126 seminomas, 82 malignant germ cell tumors, 14 Leydig tumors, 5 Sertoli tumors, 2 granulosa tumors, and 9 malignant lymphomas. Eighteen were performed for secondary neoplasms: 6 regional lesions including 3 sarcomas (leiomyosarcoma, myofibroblastic tumor, and liposarcoma) and 1 case each of periurethral adenocarcinoma, mesothelioma, and desmoplastic round cell tumor. The remaining 12 cases were 4 large cell lymphomas, 1 multiple myeloma, 1 myeloid sarcoma, 1 lymphoblastic leukemia, 2 Merkel cell carcinomas, and 1 case each of squamous cell carcinoma of the lung, prostatic adenocarcinoma, and renal cell carcinoma. Twelve tumors were intraparenchymal testicular metastasis and 6 tumors included 3 spermatic cord and 1 case each of epididymis, scrotum, and rete testis. There were 40% synchronous clinical manifestations. Nine were metachronous lesions and in 2 cases the testicular mass was the first manifestation, 1 of Merkel cell carcinoma, and 1 of lung squamous cell carcinoma.

Conclusions: Our study shows that secondary tumors of the testis account for 7%. The majority of them (70%) are regional neoplasms with direct invasion and hematopoietic lesions. Distant metastatic tumors are uncommon, 2% of the cases and 28% of all secondary tumors. Unusual clinical presentation can be confused with a primary testicular tumor.

IgG4-Related Interstitial Nephritis Ranges From Kidney Mass to Acute Kidney Injury

(Poster No. 66)

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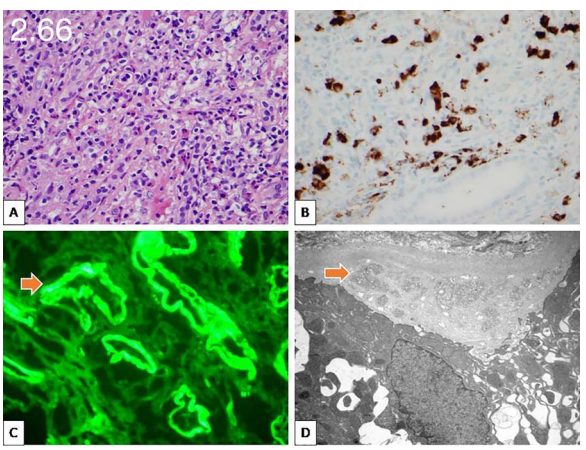
Context: IgG4-related interstitial nephritis (IRIN) can present as either a renal mass or with acute kidney injury (AKI). The goal of this study was to present our 4 IRIN cases with different clinical scenarios.

Design: Over the past 5 years, we identified 4 cases of IRIN. Each case was evaluated.

Results: Case 1 involved a 60-year-old man with a 3-cm kidney mass. The core biopsy revealed storiform fibrosis and increased IgG4-positive plasma cells (>30 per high-power field), thus diagnosed as IRIN. Case 2 involved a 69-year-old man with medical history of polymyalgia rheumatica and low complements who developed AKI (serum creatinine at 2.8 mg/dL). Light microscopy revealed diffuse interstitial nephritis with significant $IgG4^+$ plasma cells (Figure 2.66). Immunofluorescent (IF) staining showed positive IgG staining along tubular basement membranes (TBM) and electron microscopy (EM) showed deposits along TBM, supporting a diagnosis of IRIN. Case 3 involved an 82-year-old woman who had base serum creatinine at 2.02 mg/dL and underwent a total nephrectomy, which showed 2.5-cm yellow mass and features of IRIN microscopically. In case 4, a 62-year-old man with history of lymphoma developed AKI (serum creatinine of 5.29 mg/dL) and the renal biopsy revealed typical IRIN including all features seen in case 2.



Conclusions: A renal biopsy from renal mass may be needed to confirm IRIN and avoid unnecessary surgical intervention. Also, IRIN

can be accompanied by other immune disorders. IgG4 staining and IF/EM findings of TBM deposits are all helpful to reach a final diagnosis of IRIN.

Eosinophilic Cystitis: A Single Institutional Review of 26 Cases

(Poster No. 67)

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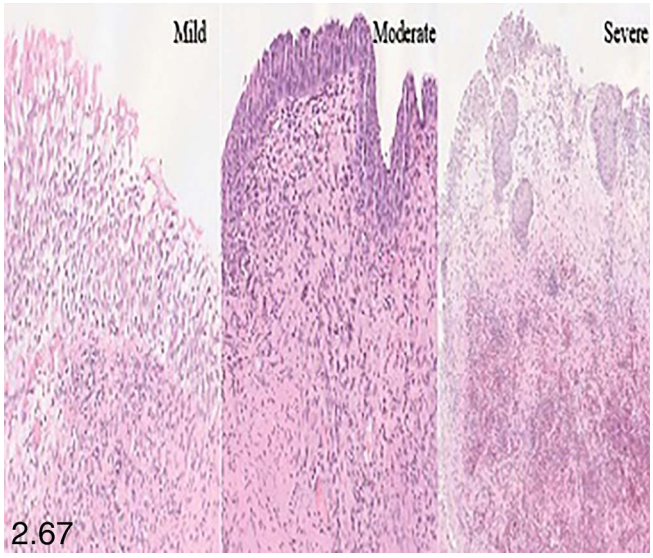
Context: Eosinophilic cystitis is an uncommon diagnosis that can mimic urothelial carcinoma. Multiple etiologies are suggested, affecting both adult and pediatric populations.

Design: We conducted a retrospective clinicopathologic review of patients with eosinophilic cystitis from 2003 to 2021. Patient age, sex, symptoms, cystoscopic findings, and history of bladder instrumentation were recorded. Histologic changes in urinary bladder mucosa were reviewed. Mucosal eosinophilic infiltration was graded as mild (scattered eosinophils in the lamina propria), moderate (visible small clusters of eosinophils without brisk reactive changes), or severe (dense eosinophilic infiltrate with ulcer formation and/or muscularis propria infiltration) (Figure 2.67).



Results: Twenty-six patients (17 males and 9 females with median age of 58 [12–85] years) were studied. Presenting symptoms were hematuria (8 of 23; 35%), neurogenic bladder (6 of 23; 26%), and lower urinary tract symptoms (5 of 23; 22%). Fifteen percent (4 of 26) of patients had history of urothelial carcinoma of urinary bladder. Cystoscopy revealed erythematous mucosa (10 of 23; 43%) and/or urinary bladder mass (7 of 23; 30%). In patients with available medical records, 12 of 22 patients (55%) had history of long-term/frequent catheterization. Histologically, intensity of eosinophilic infiltrate was categorized into mild (4 of 26; 15%), moderate (9 of 26; 35%), and severe (13 of 26; 50%) cases. Proliferative cystitis (19 of 26; 73%), and granulation tissue (15 of 26; 58%) were additional common findings. All cases of long-term/frequent instrumentation cases had moderate or severe eosinophilic infiltrate.

Conclusions: Eosinophilic cystitis can mimic urothelial carcinoma and should be considered in the differential diagnosis, particularly in patients with long-term/frequent catheterization.

Tumor Volume as a Risk Factor of Biochemical Recurrence: A 30-Year Retrospective Cohort Study

(Poster No. 68)

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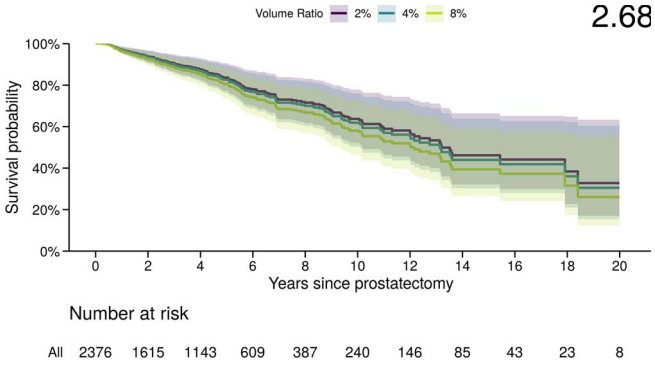
Context: Quantification of cancer volume in prostatectomies is not included as a risk factor for biochemical recurrence (BCR) in current nomograms. We hypothesize that a lack of standardized methods for estimation contributes to conflicting reports in the literature.

Design: This single-institution retrospective cohort study consists of consecutive radical prostatectomies for prostate adenocarcinoma between 1990 and 2020. Exclusion criteria were hormone therapy before prostatectomy, incomplete resection, metastatic disease, and no postoperative serum prostate-specific antigen (PSA) values. Tumor volume was estimated by overlaying a grid on slides of entirely submitted prostates. Biochemical recurrence was defined as 2 postoperative PSA measurements >0.2 ng/mL. Tumor volume and the ratio of tumor volume to prostate volume was evaluated using multivariate Cox regression adjusted for age at diagnosis, preoperative PSA, margin status, pathologic T/N stage, and grade.

Results: We found 2485 cases with a median follow-up of 4.1 years (interquartile range, 1.6–6.7). BCR was found in 235 cases. Each 1-cm^3 increase in tumor volume was associated with a 6% (95% CI, 2%–10%, $P = .001$) increase in the risk of BCR after adjusting for standard covariates. Each 1% increase in the tumor volume ratio was associated with a 3% (95% CI, 2%–5%, $P < .001$) increase in the risk of BCR after similar adjustments. Survival curves for BCR from fitted multivariate Cox regression models of the selected tumor volume ratios for a high-risk subgroup are shown in Figure 2.68.



Conclusions: Consideration should be given to standardized quantification of tumor volume based on prostatectomy specimens to provide improved prognostication about the risk of BCR.

Spectrum of C3 Glomerulopathies: A Single-Center Experience

(Poster No. 69)

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Context: C3GNs represent a rare type of glomerulopathy due to the activation of alternative complement pathway, including C3-dominant

C3GN Cases

Age, y/Sex	Pro Cr	sCr	C3/4	MPO Intensity+, Glom/All G
67/F	...	3.29	...	1+, 1/1
41/M	3.5	...	...	0, 0/10
30/F	5.6	1.02	N/N	2+, 2/12
20/F	...	0.91	...	0, 0/2
69/F	8.9	1.4	H/N	1+, 2/4
59/M	1.9	4.13	L/N	2+, 3/9
65/M	0.3	9.09	L/N	0, 0/9
59/F	1.1	1.1	...	0, 0/3
44/M	...	4.0	L/N	0, 0/3
23/M	1.5	13.3	L/N	0, 0/7
64/F	21	10.2	L/N	2+, 7/14
5/F	6	5.2	L/N	3+, 9/9
15/M	4.67	7.57	L/N	1+, 5/18