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Spectrum of C3 Glomerulopathies: A Single-Center Experience

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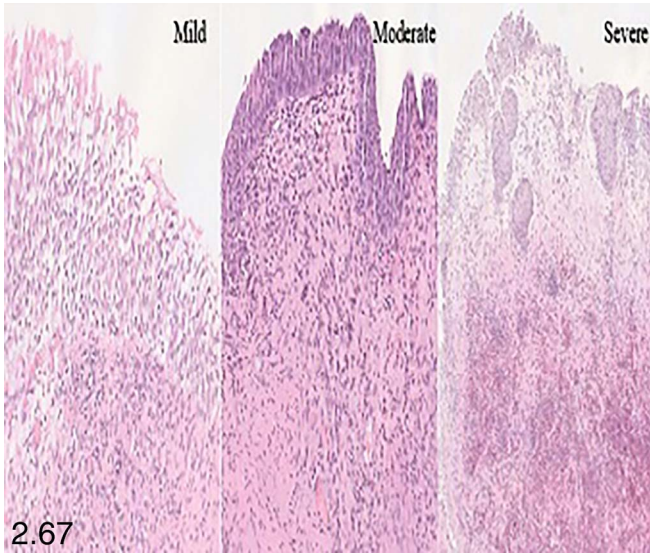
Context: Eosinophilic cystitis is an uncommon diagnosis that can mimic urothelial carcinoma. Multiple etiologies are suggested, affecting both adult and pediatric populations.

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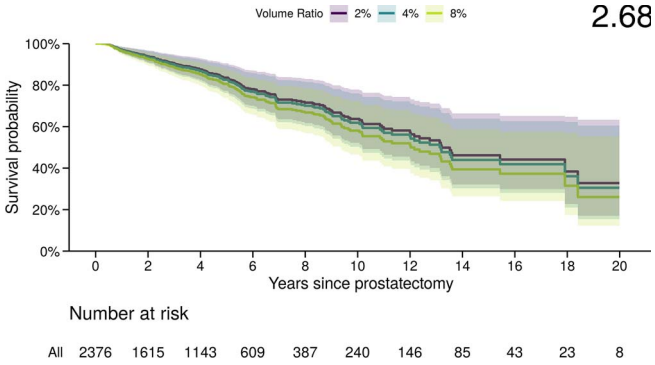
Context: Quantification of cancer volume in prostatectomies is not included as a risk factor for biochemical recurrence (BCR) in current nomograms. We hypothesize that a lack of standardized methods for estimation contributes to conflicting reports in the literature.

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

glomerulonephritis (C3D-GN) and dense deposit disease (DDD). The goal of this study was to demonstrate a spectrum of C3GNs.

Design: The study searched 3165 renal biopsies to identify C3GNs and their clinical indices over an 8-year period.

Results: Thirteen C3GNs out of 3165 biopsies (0.41%) were identified, including 11 C3D-GNs and 2 DDD, with 7 female and 6 male patients (Table). The median age was 44 years (ranging from 5 to 69). The average urine protein to creatinine ratio was 4.09 mg/mg (ranging from 1.1 to 21). The median serum creatinine (sCr) was 4.06 mg/dL (ranging from 1.10 to 9.09). All patients with C3/C4 levels showed normal (N) C4 levels and 78% showed low C3 levels. Light microscopy ranged from mesangial proliferative pattern to membranoproliferative pattern. Immunofluorescent stains were consistent with dominant 2+ to 3+ stronger C3 staining than other stains. Electron microscopy ranged from mesangial deposits to subendothelial deposits or ribbon type of intramembranous deposits in DDD.

Conclusions: Our data indicate that C3GN cases had a consistent finding of dominant C3 staining, and low serum C3 in most, but exhibited a wide range of clinical and pathologic changes in pediatric to elderly patients. The findings support the previously reported characteristics of C3GN.

Are We Recognizing Gleason Pattern 5 on Preoperative Prostate Biopsies? A Comparison Between 2 Academic Institutions

(Poster No. 70)

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Context: Gleason pattern 5 (GP5) in prostate cancer is associated with worse outcomes and may be underrecognized on core biopsies (bx).

Design: Radical prostatectomies (RPs) with GP5 were identified retrospectively from 2 academic institutions (general [GEN] versus subspecialty [SS] models). Clinicopathologic variables such as RP and bx Gleason score (GS), margin status, extraprostatic or seminal vesicle involvement, pathologic stage, and biochemical recurrence were collected. Association of categorical and continuous values was assessed with χ^2 and Student *t* test, respectively.

Results: We identified 263 RPs with GP5 (70% SS, 30% GEN), with clinicopathologic variables summarized in the Table. RP GSs were $4+5=210$ (80%), $5+4=34$ (13%), $3+5=16$ (6%), and $5+5=3$ (1%). GP5 detection rate on bx was significantly higher in the SS than the GEN institution (64% versus 50%, $P=.03$). GP5 on bx was more likely to be identified if GP5 was the RP primary pattern: $5+4$ and $5+5$ (82% and 100%, respectively) versus $3+5$ and $4+5$ (50% and 57%, respectively) ($P=.01$). The largest upgrade was 2 cases with bx GS $3+3$. Identical GS on any bx and RP was found in only 47% of cases. Cases where GP5 was identified on bx had the following significant differences compared with those where GP5 was not identified: extraprostatic extension (82% versus 67%, $P=.008$), higher stage ($P=.003$), and more likely to undergo extended-template lymph node dissections ($P=.006$).

Conclusions: GP5 is underrecognized on bx and more likely to be identified in SS institutions. Detection of GP5 on bx impacts patient management and reasons for underrecognition should be further explored.

Comparison of Clinicopathologic Variables of Radical Prostatectomies (RPs) With Gleason Pattern 5[a]

	Subspecialty, No. (%) (n = 185)	General, No. (%) (n = 78)	*P*
Pattern 5 detected on preop biopsy? no; yes	66 (36); 119 (64)	39 (50); 39 (50)	**.03**
Age, mean, y	64	64	.93
RP margin status: negative; positive	77 (42); 106 (58)	25 (32); 53 (68)	.13
EPE: absent; present	40 (22); 144 (78)	23 (29); 55 (71)	.18
SVI: absent; present	106 (57); 79 (43)	43 (55); 35 (45)	.75
Tumor volume, mean, %	32	43	**.002**
Total No. positive LN, mean	0.3	1.1	**.001**
Total No. LN in PLND, mean	8.2	16.6	**<.001**
RP GS: 3 + 5; 4 + 5; 5 + 4; 5 + 5	9 (5); 149 (80); 26 (14); 1 (1)	7 (9); 61 (78); 8 (10); 2 (3)	.25
Pathologic T stage: 2; 3; 4	38 (20); 142 (77); 5 (3)	17 (22); 58 (74); 3 (4)	.85
Pathologic N stage: 0; 1	155 (86); 26 (14)	47 (60); 31 (40)	**<.001**
BCR: no; yes	89 (51); 84 (49)	39 (52); 36 (48)	.94

Abbreviations: BCR, biochemical recurrence; EPE, extraprostatic extension; LN, lymph nodes; PLND, pelvic lymph node dissection; RP GS, radical prostatectomy Gleason score; SVI, seminal vesicle invasion.
[a] Bolded *P* values indicate statistical significance.

Large-Cell Neuroendocrine Carcinoma of the Kidney: A Case Report and Review of the Literature

(Poster No. 71)

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Neuroendocrine carcinomas of the kidney are rare, with about 166 cases reported since 1966, of which the large cell variant (LCNEC) is exceedingly rare, with 6 definitive cases reported. These aggressive tumors are nonfunctional, and patients are usually asymptomatic. We report a new case of renal LCNEC in a previously healthy 45-year-old man who presented to the emergency room with 5 hours of acute onset epigastric and abdominal pain, nausea, vomiting, diarrhea, and chills. Computed tomography showed a large left renal mass with possible rupture and extravasation, 6-mm left lung nodule, and enlarged left-external iliac lymph node. Emergency surgical procedure confirmed the renal mass with rupture through Gerota fascia and associated