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Original Research Article

# A Retrospective Study to Determine Incidence of Adenocarcinoma Bladder in Patients with Cystitis Cystica ET Glandularis

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**Abstract**

**Background:** The present study was undertaken for assessing the incidence of adenocarcinoma bladder in patients with cystitis cystica et glandularis (CCG).

**Materials & methods:** Retrospective reviewing of all the patients diagnosed with CCG was done. Record of all the patients was done in which cystoscopy and biopsy findings were available. Complete demographic and clinical details of all the patients were assessed. Total sample size was 250. On the basis of histopathological findings, patients with confirmed diagnosis of adenocarcinoma were separately analyzed. All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software.

**Results:** The overall incidence of adenocarcinoma patients was 3.2 percent. Mean age of the patients with adenocarcinoma was 39.8 years. Out of these 8 patients, 6 were males while 2 were females.

**Conclusion:** There is associated risk of malignancy among patients with CCG.

**Keywords:** Adenocarcinoma, Bladder, Cystitis Cystica ET Glandularis



## Background

Cystitis cystica et glandularis (CCG) is most often encountered as an incidental finding and has a predilection for the trigone area of the bladder. Grossly, it may appear as a raised nodular lesion with an intact urothelial surface. Microscopically, the cysts are well-defined nests of urothelium resembling von Brunn's nests, which are nests of benign urothelial cells in the lamina propria, but with central cystic dilation of the lumen lined by luminal cuboidal and columnar cells [1- 3].

Von Brunn's nests are one of the most common lesions in the lower urinary tract. Up to 60% of bladders analyzed postmortem showed evidence of cystitis cystica et glandularis, most commonly in the bladder neck and trigone. For unknown reasons, the urothelium undergoes metaplasia into cuboidal or columnar cells, with or without goblet cells, which can irritate the bladder in some individuals. On rare occasions, a congregate of goblet cells can cause lesions as well as lower urinary tract symptoms [4-6]. CCG is mostly asymptomatic and detected incidentally or at times may present with irritative lower urinary tract symptoms, hematuria, and occasionally hydroureteronephrosis. Some of these lesions, especially the intestinal type, when widespread, may mimic

adenocarcinoma on the cystoscopic examination [5-7]. Hence, under the light of above-mentioned data, the present study was undertaken for assessing the incidence of adenocarcinoma bladder in patients with cystitis cystica et glandularis.

## Materials and Methods

The present study was undertaken for assessing the incidence of adenocarcinoma bladder in patients with cystitis cystica et glandularis. Retrospective reviewing of all the patients diagnosed with CCG was done. Record of all the patients was done in which cystoscopy and biopsy findings were available. Complete demographic and clinical details of all the patients were assessed. Total sample size was 250. On the basis of histopathological findings, patients with confirmed diagnosis of adenocarcinoma were separately analyzed. All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software.

## Results

Data records of a total of 250 subjects were analyzed. Mean age of the subjects was 38.4 years. Hematuria was seen in 118 subjects while dysuria was seen in 94 subjects. 12 patients gave history of recurrent urinary tract infection. Diabetes and hypertension were seen in 21 subjects and 28 subjects respectively. Out of 250 subjects, adenocarcinoma was found to be present in 8 subjects. Hence, the overall incidence of adenocarcinoma patients was 3.2 percent. Mean age of the patients with adenocarcinoma was 39.8 years. Out of these 8 patients, 6 were males while 2 were females.

**Table 1: Demographic profile**

| Variable | Value |
|---|---|
| Total number | 250 |
| Hematuria | 118 |
| Mean age | 38.4 (years) |
| Dysuria | 94 |
| Diabetes | 21 |
| Hypertension | 28 |
| History of recurrent urinary tract infection | 12 |

**Table 2: Incidence of adenocarcinoma**

| Variable | Number | Percentage |
|---|---|---|
| Patients with adenocarcinoma of bladder | 8 | 3.2 |
| Patients with adenocarcinoma of bladder | 242 | 96.8 |
| Total patients | 250 | 100 |

## Discussion

Cystitis cystica is a hyperproliferative condition where initial submucosal masses of epithelial cells, termed ‘Brunns nests’, undergo cavitation to form fluid-filled cystic structures. This is thought to represent a local immune response to a chronic inflammatory stimulus and has been associated with recurrent urinary tract infection. When present in children, it very rarely affects the male population. In one study by Milošević *et al*. looking at patients with confirmed cystitis cystica and no concurrent urinary tract abnormality over a 20-year period, of the 127 patients identified, only two were male. Cystitis glandularis occurs when there is metaplasia in a mucous secreting epithelium and is characterised by a central lining of cuboidal or columnar cells. It is a rare entity in children, and there have been only a handful of reported cases in the literature [6-9]. Hence, under the light of above mentioned data, the present study was undertaken for assessing

the incidence of adenocarcinoma bladder in patients with cystitis cystica et glandularis.

Data records of a total of 250 subjects were analyzed. Mean age of the subjects was 38.4 years. Hematuria was seen in 118 subjects while dysuria was seen in 94 subjects. 12 patients gave history of recurrent urinary tract infection. Diabetes and hypertension were seen in 21 subjects and 28 subjects respectively. Out of 250 subjects, adenocarcinoma was found to be present in 8 subjects. In a similar study conducted by Smith AK *et al*, authors retrospectively evaluated the association among florid CCEG, IM, and bladder carcinoma. They identified 136 patients from 1982 to 2006 with florid CCEG (n = 117) or IM (n = 19). Of the 117 patients with CCEG, a subset was identified with concurrent mucinous adenocarcinoma (n = 1; <1%), squamous cell carcinoma (n = 4; 3%), or urothelial carcinoma (n = 34; 29%) at diagnosis. Pure IM was identified concurrently with adenocarcinoma in 2 (10%), urothelial carcinoma in 4 (21%), and urothelial carcinoma with glandular differentiation in 1 (5%) of 19 patients. Follow-up for 103 patients (75%) ranged from 7 days to 23.7 years (median 2.6 years, mean 4.4). Only 1 new case of urothelial carcinoma was identified after 3 months in 1 patient with CCEG. None of the patients in their series had associated pelvic lipomatosis. Both florid CCEG and IM can be identified in benign bladder specimens or in conjunction with bladder carcinoma [10].

In the present study, the overall incidence of adenocarcinoma patients was 3.2 percent. Mean age of the patients with adenocarcinoma was 39.8 years. Out of these 8 patients, 6 were males while 2 were females. In 1950, a study by Immergut and Cottler implicated CG in the development of adenocarcinoma of the bladder. Since then, CG has occasionally been proposed as a precursor of adenocarcinoma by various studies. The intestinal subtype of CG and diffuse lesions has been described as premalignant; however, certain authors have considered CG to be a chronic and quiescent histologic lesion without any clinical significance. Furthermore, Smith *et al* found no evidence that CG increased the future risk of malignancy after follow-up for ~2.6 years. Furthermore, Corica *et al* considered that intestinal metaplasia was not a marked risk factor for bladder cancer [11- 14].

Similar results were reported in the study conducted by Agrawal A *et al*. They determined whether CCG is a precursor to malignancy and to study the correlation of its two histological variants: the typical and the intestinal metaplasia (IM) type CCG. A total of 64 patients, with 52 in the typical and 12 in the IM group were analyzed. The commonest symptom was hematuria (59.38%), followed by irritative bladder symptoms (51.56%). The median follow-up period was 5 years and 5 months (range: 7–96 months) and no patient progressed to adenocarcinoma. On comparing the two groups, the lesions were significantly more extensive in the IM group (50% vs. 15.38%). However, there were no differences in the symptoms or the development of malignancy between the two groups. At a median of 5 years and 5 months of follow up, CCG (including the IM-type) did not show any increase in the risk of malignancy [15].

## Conclusion

From the above results, the authors concluded that there is associated risk of malignancy among patients with CCG.

## References

1. Wiener DP, Koss LG, Sablay B, Freed SZ.The prevalence and significance of Brunn's nests, cystitis cystica and squamous metaplasia in normal bladders. J Urol. 1979; 122:317–321.
2. Smith AK, Hansel DE, Jones JS. Role of cystitis cystica et glandularis and intestinal metaplasia in development of

bladder carcinoma. Urology. 2008; 71:915–918.
3. Agrawal A, Kumar D, Jha AA, Aggarwal P. Incidence of adenocarcinoma bladder in patients with cystitis cystica et glandularis: a retrospective study. Indian J Urol. 2020; 36:297–302.
4. Li A, Zhou J, Lu H, *et al*. Pathological feature and immunoprofile of cystitis glandularis accompanied with upper urinary tract obstruction. Biomed Res Int. 2014; 2014:872170.
5. Milošević D, Batinić D, Tešović G, Konjevoda P, Kniewald H, Šubat-Dežulović M, *et al*. Cystitis cystica and recurrent urinary tract infections in children. Coll Antropol 2010; 34: 893–897.
6. Lopez-Beltran A, Menendez CL, Montironi R, Cheng L. Rare tumors and tumor-like conditions in urological pathology, Basel: Springer, 2014.
7. Huppmann AR, Pawel BR. Polyps and masses of the pediatric urinary bladder: a 21-year pathology review. Pediatr Dev Pathol 2011; 14: 438–444.
8. Waisman SS, Banko J, Cromie WJ. Single polypoid cystitis cystica and glandularis presenting as benign bladder tumor. Urology 1990; 36: 364–366.
9. Capozza N, Collura G, Nappo S, De Dominicis M, Francalanci P, Caione P. Cystitis glandularis in children. BJU Int 2005; 95: 411–413
10. Smith AK, Hansel DE, Jones JS. Role of Cystitis Cystica et Glandularis and Intestinal Metaplasia in Development of Bladder Carcinoma. Urology. 2008; 71(5): 915- 918
11. Immergut S and Cottler ZR: Mucin producing adenocarcinoma of the bladder associated with cystitis follicularis and glandularis. Urol Cutaneous Rev.1950; 54:531–534.
12. Mitre AI, Silveira CAP, Leite KR and Piovesan AC: Glandular cystitis: a rare benign condition presenting as a pseudo-tumor of the bladder. Clinics (Sao Paulo). 62:93–94. 2007.
13. Smith AK, Hansel DE and Jones JS: Role of cystitis cystica et glandularis and intestinal metaplasia in development of bladder carcinoma. Urology. 2008; 71:915–918.
14. Corica FA, Husmann DA, Churchill BM and Young RH: Intestinal metaplasia is not a strong risk factor for bladder cancer: study of 53 cases with long-term follow-up. Urology. 1997; 50:427–431.
15. Agrawal A, Kumar D, Jha AA, Aggarwal P. Incidence of adenocarcinoma bladder in patients with cystitis cystica et glandularis: A retrospective study. Indian J Urol. 2020;36(4):297-302.