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Inverted Urothelial Carcinoma: A Clinical Enigma in Oncology

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Abstract

Inverted urothelial carcinoma (IUC) is a rare variant of bladder neoplasia characterized by an endophytic growth pattern that can mimic benign lesions. We present the case of a 79-year-old male patient with a history of arterial hypertension and persistent dysuria. An ultrasound revealed a sessile bladder mass. Histopathological examination confirmed the diagnosis of inverted urothelial carcinoma. This report analyzes the clinical presentation and histological findings, and discusses the diagnostic and therapeutic implications of IUC. Timely recognition is essential to avoid diagnostic errors and to guide appropriate treatment.

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Introduction

Inverted urothelial carcinoma (IUC) is a rare and infrequent variant affecting the urinary tract, particularly the bladder. Despite its clinical significance, this type of cancer remains a diagnostic challenge. Unlike conventional urothelial carcinomas, IUC is characterized by an unusual growth pattern in which tumor cells grow inward instead of proliferating on the urothelial surface. This phenomenon can mislead clinicians into interpreting it as benign lesions [1]. Clinically, patients may present with symptoms similar to other neoplasms or benign lesions, making diagnosis even more difficult. This carcinoma is known for its aggressive potential, high recurrence rate, and risk of progression. Therefore, considering IUC as a possible diagnosis is essential for differentiating it from benign lesions, guiding proper treatment, and improving outcomes [2].

Case Presentation

A 79-year-old male patient with a long-standing history of systemic arterial hypertension presented with 10

days of dysuria. He also reported progressive lower back pain, rated 7/10 on the pain scale, radiating to both flanks, and only partially relieved by NSAIDs. He had been previously treated with antibiotics for recurrent urinary tract infections without full symptom resolution. Additionally, he experienced an unintentional weight loss of approximately 15 pounds over the past two months.

Urinalysis findings were not consistent with the severity of symptoms. An ultrasound was performed, which revealed a sessile polypoid lesion on the anterior bladder wall with internal vascular flow, measuring 1.4 x 1.9 x 1.2 cm and a volume of 1.8 cc (Figure 1).

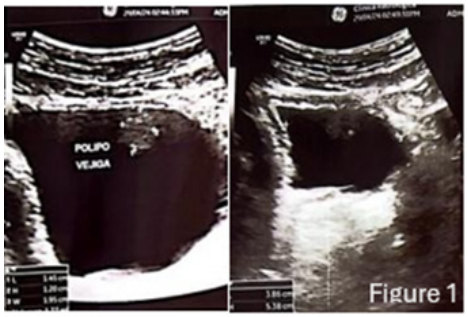

Figure 1: Ultrasound showing a sessile polypoid mass on the anterior bladder wall.

Upon further questioning, family members recalled an episode of hematuria during previous UTI treatment. Given the clinical findings and ultrasound results, the patient was admitted for transurethral resection of the mass. Pathological examination revealed an endophytic growth pattern formed by pushing, bulbous masses of monotonous cells, some with mild nuclear atypia (Figure 2). The neoplasm also showed cystic and intestinal-type glandular metaplasia, with a flattened urothelial surface (Figure 3). The final diagnosis was inverted urothelial carcinoma associated with glandular cystitis.

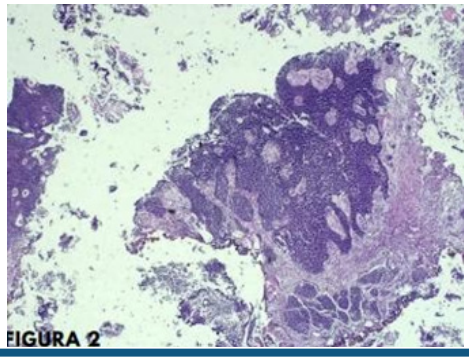

Figure 2: Pathology report suggestive of inverted urothelial carcinoma

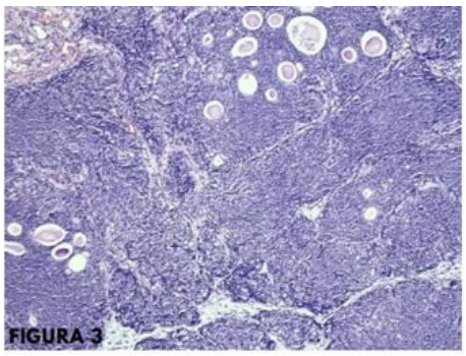

Figure 3: Pathology report suggestive of inverted urothelial carcinoma.

Discussion

Inverted urothelial carcinoma accounts for less than 1% of all urothelial carcinomas. It is characterized by abnormal proliferation of urothelial cells invading the underlying stroma rather than the superficial mucosa. This growth pattern distinguishes it from other types by its invasive trajectory into deeper tissues instead of protruding into the bladder lumen [3, 4]. It predominates in older adults and is more prevalent in men than in women. Due to its rarity and often subtle presentation, its true incidence is difficult to determine and is frequently underdiagnosed [3, 4, 5]. Clinical symptoms often resemble those of other bladder cancers, including hematuria, dysuria, and abdominal or lumbar pain. In many cases, it may remain asymptomatic until incidentally discovered on imaging studies [3, 4]. Diagnosis requires a combination of imaging techniques and histopathological confirmation.

Clinically, IUC is a significant neoplasm because it can be mistaken for benign urinary tract conditions. This diagnostic confusion can delay appropriate treatment and lead to erroneous therapeutic decisions, such as repeated antibiotic use without symptom resolution, negatively impacting patient health. Greater awareness of this condition can aid clinicians in including it in the differential diagnosis of bladder lesions.

Thus, inverted urothelial carcinoma represents a clinical enigma in many respects, but its detailed study and recognition as an independent entity is highly valuable in the field of urologic oncology.

Acknowledgement

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