

## Case Reports

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**STAUFFER SYNDROME IN TRANSITIONAL CELL CARCINOMA OF THE BLADDER**

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**Summary.-** OBJECTIVE: To present the case of a woman with the diagnosis of transitional cell carcinoma of the bladder and Stauffer's syndrome.

METHOD: The clinical and radiological files were analyzed, and a bibliographic review was performed.

RESULTS: We present an 82 year old female with a four month history of hematuria, presenting in the emergency

room where abnormal hepatic profile was documented. The diagnosis of bladder tumor was established and she underwent transurethral bladder resection. The pathological report showed transitional cell bladder cancer, with complete resection. Metastasis and infectious hepatic dysfunction were discarded. The hepatic profile became normal days later, so Stauffer's syndrome diagnosis was performed.

CONCLUSION: This is the first report to our knowledge of this paraneoplastic syndrome in transitional cell carcinoma of the bladder.

**Keywords:** Stauffer's Syndrome. Bladder cancer. Paraneoplastic syndrome.

**Resumen.-** OBJETIVO: Presentar el caso clínico de una mujer con cáncer de células transicionales de vejiga y síndrome de Stauffer.

MÉTODO: Se realizó revisión del expediente clínico y radiológico así como una revisión de la literatura.

RESULTADO: Mujer de 82 años de edad la cual presenta un cuadro de hematuria de cuatro meses de evolución, a su ingreso a urgencias se le encuentra hepatopatía por laboratorio. Se realiza el diagnóstico por imagen de un tumor vesical por lo que fue sometida a una resección transuretral de vejiga teniendo como resultado un cáncer de células transicionales de vejiga, se descartó que la hepatopatía se asociara a metástasis o cuadro infeccioso, los parámetros hepáticos mejoraron posterior a la remoción total del tumor, motivo por el cual se concluyó que se debía a un síndrome de Stauffer.

CONCLUSIÓN: Este representa el primer reporte de este síndrome paraneoplásico asociado a cáncer de células transicionales de vejiga.

**Palabras clave:** Síndrome de Stauffer. Cáncer de vejiga. Síndrome paraneoplásico.

## CORRESPONDENCE



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**INTRODUCTION**

It is estimated that a total of 70,980 cases of bladder cancer were diagnosed in the USA in 2009. In this country it is the fourth most common cancer, being three times more frequent in men than in women (1). In Spain in 2008 the incidence of bladder cancer was 11,386 for men and 4029 for women the mortality was 4893, being the most for Europe (2).

The classic clinical picture is silent hematuria in 80 % of the cases; nonetheless irritative symptoms are frequent (3). The paraneoplastic syndromes associated with transitional cell carcinoma of the bladder, such as polyomyositis, hypercalcemia, thrombocytosis, leukemoid

reaction, encephalomyelitis and dermatomyositis, have been reported as isolated cases (4-8).

The objective of this article is to present a Stauffer's syndrome associated with a transitional cell carcinoma of the bladder. In our knowledge this case represents the first case of a Stauffer's syndrome in association with a transitional cell carcinoma of the bladder.

**CASE REPORT**

We present the case of a 82 year old female, with no relevant family history, without any history of smoking or alcoholism. Nulliparous. With a surgical history of: hysterectomy at 69 years of age, right hip replacement at 70 years of age. She denies any allergic reaction or transfusions. She starts with her current condition four months ago with intermittent total macroscopic hematuria with amorphous type clots, which causes deterioration of her general state, asthenia, adynamia and hyporexia, reasons why she attends the emergency room. She has no history of any drug ingestion. Upon her arrival at the emergency room, she is anemic, with vital signs with BP 100/60, HR 110 x', RR 28x', Temp 36.5 C, she is pale and dyspneic. On her physical examination, it is of notice a holosystolic heart murmur and the presence of hepatosplenomegaly, the rest appears normal. Her blood work on admission showed Hemoglobin 3.7 gr/dL, Hematocrit 12.2%, leukocytes 11,000, platelets 379,000, glucose 103 mg/dl, urea 116 mg/dL, Cr 1.81mg/dL, Na 133 mEq, K 4.26 mEq/L, Cl 104 mEq/L, PT 20.7 sec (Test 12.2), TPT 29.50 sec, INR 2.04, Total bilirubin 1.32 mg/dL, ALT 962 U/L, AST 1,124.1 U/L, Alkaline phosphatase 159 U/L, LDH 1,306 U/L. An abdominal CT scan was performed, showing liver, spleen, kidneys and pancreas of normal characteristics, the bladder showed an image of heterogeneous densities that occupied 70 %, suggestive of a bladder tumor. The patient was stabilized and admitted to the OR, having surgical findings of a bladder tumor dependent of the lateral right wall, the back wall and the ceiling of the bladder, which was resected completely in an optimal manner, with a histopathological report of a transitional cell carcinoma of the bladder grade 2 of the World Health Organization, without bladder muscle involvement.

The patient was followed up on floor due to the hepatopathy that she presented, a viral hepatic blood work was negative and the patient presented gradual regression to normal values of hepatic function tests, until she reached normal values 10 days after (Table I). Given the presentation and evolution of the clinical picture in this patient it was concluded that the hepatopathy was due to a Stauffer's syndrome.

TABLE I. HEPATIC FUNCTION TESTS, WITH A 48 HOUR FOLLOW-UP BETWEEN EACH ONE.

	TB mg/dL (0-1.5)	DB mg/dL (0-0.5)	IB mg/dL (0.0-1)	AST U/L (9-55)	ALT U/L (6-66)	LDH U/L (125-243)	AP U/L (40-150)	PT Seg	INR (0.8-1.2)	Albumin (3.5-5)	Globulin (2.5-4)
Examen 1	1.32	0.95	0.37	1,124.1	962	1,306	159	20.7	2.04	3.2	3
Examen 2	1.17	0.71	0.46	606.8	936.4	678	135	16.7	1.53	2.8	2.6
Examen 3	1.40	0.84	0.56	66.5	332	257	67	17.7	1.65	2.1	2.1
Examen 4	0.67	0.37	0.30	37.7	170.5	234	68	14.9	1.4	1.8	2.5
Examen 5	0.54	0.29	0.25	24.3	96.4	227	70	14	1.2	2.1	2.8

TB: Total bilirubin      DB: Direct bilirubin      IB: Indirect bilirubin  
 AST: Aspartate aminotransferase      ALT: Alanine aminotransferase      LDH: Lactic dehydrogenase  
 PT: Prothrombin time      INR: International normalized ratio

## DISCUSSION

The paraneoplastic syndromes are defined as a collection of signs and symptoms that occur in patients with cancer, in systems that are not related with the primary site of the tumor, these are not caused by the cancer itself at a distance or by a nutritional deficiency. The phenomenon of paraneoplastic syndromes, normally occur because:

**A.** Biologically active substances (Hormones, hormone precursors, or substances related to hormones);

**B.** Modulation of the immune system due to autoimmunity, production of immune complexes or immunosuppression; **C.** Unknown causes (9).

The association between the bladder cancer and the paraneoplastic syndromes is uncommon; most cases reported are associated with neurological symptoms (5).

Stauffer's syndrome is seen in 3 to 20 % of renal cell carcinomas, it is characterized by a generalized hepatitis with lymphocytic infiltration, cellular degeneration of the liver and elevation of hepatic enzymes and also abnormal levels of products synthesized on the liver all of it in the absence of liver metastasis and jaundice. Transaminase and alkaline phosphatase elevation with prolongation of prothrombin time are seen in 66 % of the cases (10). Clinically the patients present with hepatosplenomegaly, fever and weight loss. The pathogenesis is not yet clear. Some believe that the tumor itself secretes hepatotoxins or lysosomal enzymes that simulate the cathepsins and hepatic phosphatases that in turn lead to hepatic cellular damage; others suggest that the hepatotoxins secreted by the tumor lead directly to hepatic damage and subsequent immune system activation (9). The hepatitis associated with this case was considered a paraneoplastic syndrome given its presentation, it is not drug related nor was it attributed to a viral illness, excluding the diagnosis of toxic hepatitis and infectious hepatitis, the diagnosis of ischemic hepatitis was not considered for this case due to the fact that the patient never presented hemodynamical instability nor cardiac failure. This case represents the first of its kind, in that it associates the presentation of a Stauffer's syndrome with a transitional cell carcinoma of the bladder.

## CONCLUSION

The presence of a paraneoplastic syndrome in transitional cell carcinoma of the bladder is rare, having the knowledge of these syndromes will allow us to identify them and associate them with the presence of cancer. This article describes the first case reported of a Stauffer's syndrome associated with transitional cell carcinoma of the bladder.

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