



CASE REPORT

POSSIBLE SERUM MARKERS FOR RENAL TRANSITIONAL CELL CARCINOMA: REPORT OF A CASE WITH THE REVIEW OF LITERATURE

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ABSTRACT

Urothelial tumors of the upper urinary tract are relatively rare malignancies of urinary system. Despite the presence of specific serum parameters for prostate and testicular cancer, new markers need to be identified for renal and urothelial cancers. We report a case of huge renal pelvis tumor with high serum levels of carcinoembryonic antigen (CEA) and erythrocyte sedimentation rate (ESR). No distant metastasis was evident preoperatively. Radical nephroureterectomy was performed and the tumor was histologically diagnosed as high grade urothelial carcinoma of the renal pelvis. Surgical margins were negative and marked decrease in serum level of CEA and normalization of ESR, were noticed immediately after surgery.

Keywords: Carcinoembryonic antigen, Urothelial tumor, Erythrocyte Sedimentation Rate, Renal pelvis, Serum markers

RENAL TRANSİZYONEL HÜCRELİ KARSİNOM İÇİN OLASI SERUM BELİRTEÇLERİ: LİTERATÜRÜN GÖZDEN GEÇİRİLMESİ İLE BİRLİKTE BİR OLGUNUN SUNUMU

ÖZET

Üriner sistemin üst bölümünün ürotelyal tümörü, relatif olarak nadir görülen malignitelerden biridir. Prostat ve testis kanserlerine özgü serum belirteçleri bilinmesine rağmen, renal ve ürotelyal tümörler için spesifik belirteçlerin tanımlanmasına ihtiyaç vardır. Bu makalede, yüksek preoperatif serum düzeyine sahip Karsinoembryonik antijen (CEA) ve Eritrosit sedimentasyon hızına (ESR) sahip olgu sunulacaktır. Preoperatif metastazı olmayan hastaya uygulanan radikal nefroureterektomi operasyonu sonrası, histolojik tanı yüksek grade'li renal pelvis ürotelyal karsinomu olarak rapor edilmiştir. Cerrahi sınırlar negatif olup serum CEA ve ESR düzeyinde postoperatif erken dönemde tamamen düzelme görülmüştür.

Anahtar Kelimeler: Karsinoembriyonik antijen, Ürotelyal tümör, Eritrosit Sedimentasyon Hızı, Renal pelvis, Serum belirteçleri

INTRODUCTION

Carcinoembryonic antigen (CEA) is one of the widely used human tumor markers in oncological practice. Although CEA is not accepted as a reliable marker in the diagnosis of a primary tumor, it can safely be used in the post-surgical monitoring of patients with

various malignancies. However, there is still a dilemma as to whether or not CEA should be accepted as an ideal marker for urothelial cancers¹⁻⁴. Hence, most of the urologists do not check serum tumor marker levels for screening purposes when bladder or renal tumors are suspected.

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Our patient was referred from an internist, thus serum markers and acute phase reactants like erythrocyte sedimentation rate (ESR) had already been evaluated. The elevated levels of these two parameters preoperatively, convinced us that a re-evaluation of the patient with these tests during the postoperative period was necessary.

The latest studies with ESR, accept its prognostic value in renal tumors, but contrary to CEA, there is not enough data concerning its predictivity on urothelial tumors⁵.

Herein, we report a case of a huge renal pelvis tumor with high preoperative serum levels of CEA and elevated ESR, of which both parameters were normalized immediately after surgery.

CASE REPORT

A 56-year-old male presented to the Internal Medicine Department of our hospital with the chief complaint of an abdominal mass on the right side. Physical examination did not reveal any abnormalities except a palpable, non-tender, semi-mobile mass extending to the flank area on the right side of the abdomen. On ultrasonography and MR Imaging; a large infiltrating cystic lesion originating from the right kidney, filling the right retroperitoneum and displacing the intraabdominal organs, was demonstrated (Figure 1). Laboratory examination revealed an elevated level of serum CEA (18,2 ng/ml) (Normal range: 0-4 ng/ ml); high ESR (57 mm/ hours) (Normal range: 1-20 mm/ hrs); normal levels of CA 19-9 and alpha fetoprotein. Afterwards, the patient was referred to our department for further evaluation and treatment. With an initial diagnosis of malignant right renal cystic tumor, a total nephroureterectomy was performed. The histopathological diagnosis was urothelial carcinoma, grade 3. The tumoral invasion was documented in the perirenal tissues, but all surgical margins were negative microscopically. On cystoscopic evaluation, no tumoral tissue was observed. The serum level of CEA and ESR immediately decreased to normal ranges after the operation (CEA: 3,2 ng/ ml; ESR: 3 mm/ hours).

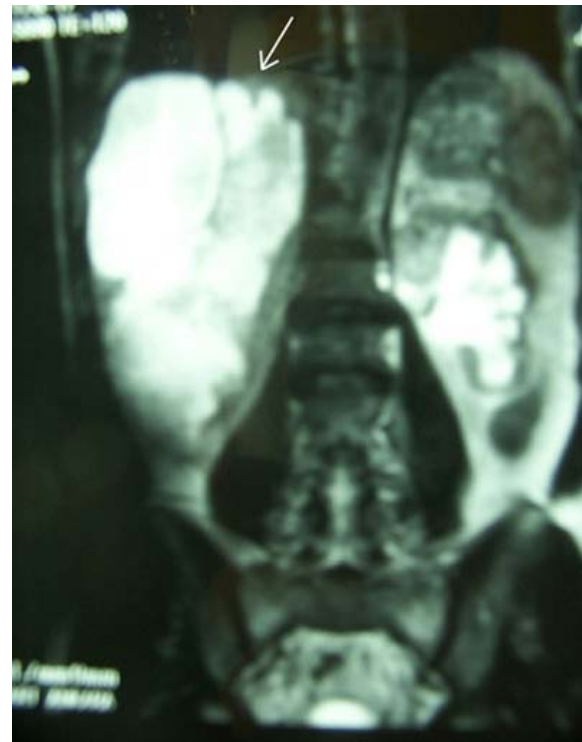


Figure 1: T2- weighted coronal MR image of the abdomen showing right renal tumoral lesion with cystic components (arrow)

DISCUSSION

Despite common use of tumor markers, especially in gastrointestinal malignancies, only a few serum markers were identified and used clinically for urological cancers. Several reports were published regarding the expression of CEA either in serum or in the tissue of patients with urological malignancies^{1,4,6,7}. In 1983, Huland et al.² evaluated serum and urinary CEA in patients with superficial bladder cancer and did not observe any prognostic correlation. Similarly, Stefanovic et al.³ evaluated 25 patients with bladder cancer and 42 patients with renal pelvis/ ureter tumor. They mentioned that serum and urinary levels of CEA had no diagnostic accuracy in urothelial tumors.

However; since the nineteen-seventies, research supporting the predictive value of CEA as a tumor marker for urothelial malignancies, started to be published^{1,4}. Subsequently; especially from Japan, numerous cases with elevated levels of CEA and urothelial malignancies, were reported. In



these papers, they proposed the follow-up of serum levels of CEA for the evaluation of treatment response^{8,9}.

These case reports suggest that the serum level of CEA is correlated with the extent of distant metastases rather than with the size of primary tumor. The presence of metastases in cases with high levels of CEA, might explain why extremely high levels were reached, although the size of the primary tumors were not great. Our case also confirms this hypothesis; he had a huge renal tumor without any distant metastasis and, a mild elevation in the serum level of CEA (18,2 ng/ ml) was noticed. Sugaya et al.⁹, reported a case of urothelial carcinoma of the renal pelvis with a serum CEA level as 523 ng/ ml. Multiple liver and bone metastases were detected in the patient and she died within 3 weeks.

ESR, a non-specific screening test for inflammatory and malignant diseases, should also be used as a prognostic indicator in renal cell carcinomas, and bladder tumors treated with radiotherapy as well^{5,10}. As for CEA, marked decline in ESR was observed in our patient immediately after the surgery. But; it is obvious that, further studies are necessary to elucidate the relation of urothelial tumors with ESR.

In conclusion, we suggest that a rise in the serum levels of CEA during the course of the disease, might suggest distant metastasis to the clinician. But, for primary urothelial tumors, new studies with large series are needed. In addition, determination of ESR should be beneficial in these patients. Especially, combined use of these tests may increase their specificity and accuracy.

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