

Unexpected high serum level of CA 125 in male patient suffering from metastatic papillary carcinoma: a case report

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SUMMARY

This report describes a case of male patient with metastatic papillary carcinoma of unknown primary origin with unusual high levels of CA 125. Laboratory tests in serum and plasma (urea, creatinine, uric acid, sodium, potassium, total bilirubin, ALT, AST, GMT, ALP, C-reactive protein, and glucose) were normal except C-reactive protein (57.6 mg/l). Computer tomography scan showed tumorous formations situated in the area of both kidneys. According to the literature we performed more detailed laboratory investigation (CEA, CA 125, CA 15-3, CA 19-9, AFP) and we found only serum level of CA 125 significantly elevated (> 600 kU/l). The results of recent studies suggest that CA 125 might be useful as a serum tumor marker also in patients with other carcinomas apart ovarian cancer.

Key words: tumor marker, CA 125, papillary carcinoma.

SOUHRN

Klapková E., Průša R., Kukačka J., Kotaška K., Škapa P.: Neočekávaně vysoká hladina CA 125 v séru u pacienta postiženého metastatickým papilárním karcinomem – kazuistika

Kazuistika popisuje případ pacienta s metastatickým papilárním karcinomem z neznámého zdroje s neobvykle vysokou hodnotou CA 125. Analyty stanovené v séru a plasmě (urea, kreatinin, kyselina močová, sodný kation, draselný kation, celkový bilirubin, ALT, AST, GMT, ALP, C-reaktivní protein a glukóza) byly v referenčním rozmezí kromě C-reaktivního proteinu (57,6 mg/l). Pomocí počítačové tomografie byly prokázány tumorózní útvary v oblasti obou ledvin. V souladu s literaturou bylo provedeno podrobnější laboratorní vyšetření (CEA, CA 125, CA 15-3, CA 19-9, AFP), kde byla prokázána významně zvýšená hladina CA 125 (> 600 kU/l). Výsledky některých studií poukazují na to, že CA 125 by mohl být vhodným nádorovým markerem také u pacientů s jinými druhy karcinomů než s karcinomem ovaria.

Klíčová slova: tumorový marker, CA 125, papilární karcinom.

Introduction

CA 125 is a high-molecular-weight (> 200 kDa) mucin-like glycoprotein recognized by the monoclonal antibody OC 125. The half-life of CA 125 is 2–6 days. CA 125 is a product of the MUC 16 gene (chromosome 19p13.3) [1, 3, 10]. It is mainly known as a marker for ovarian cancer, but it may also be elevated in many other malignant diseases including adenocarcinoma of pancreas, lung and breast cancers and renal carcinoma [11]. CA 125 is also useful in detecting residual disease in cancer patients following initial therapy. The level of CA 125 correlates with tumor stag [6, 7]. In the detection of recurrent disease, use of CA 125 level as an indicator is about 75% accurate.

Papillary renal tumors comprise approximately 10% of renal parenchymal neoplasms [5]. Papillary renal cell carcinoma (RCC), defined histologically as a malignant epithelial tumor of the kidney with a minimum of 50% papillary architecture and, more recently, by a combination of histological and cytogenetic features, represents between 7% and 15% of renal carcinomas [4].

Case report

A 76-year-old man was admitted to the hospital with suspicion of renal cell carcinoma. Blood examination showed (erythrocyte count $4.34 \cdot 10^{12}/l$, haemoglobin 140 g/l, elevated ESR 12/38 mm. Laboratory tests in serum were within normal reference intervals – urea 4.8 mmol/l, creatinine 76 $\mu\text{mol}/l$, uric acid 419 $\mu\text{mol}/l$, sodium 136 mmol/l, potassium 4.5 mmol/l, total bilirubin 8.6 $\mu\text{mol}/l$, ALT 0.18 $\mu\text{kat}/l$, AST 0.40 $\mu\text{kat}/l$, GMT 0.23 $\mu\text{kat}/l$, ALP 0.89 $\mu\text{kat}/l$, glucose 5.7 mmol/l, albumin 40 g/l, total protein 66 g/l, α -fetoprotein 3.5 IU/ml. Only C-reactive protein was increased up to 18.4 mg/l. His urinalysis revealed occurrence of leucocytes – 99/ μl (IRIS IQ 200, by automatic urine microscopy, reference range 0–20/ μl) and clusters of leucocytes. Other urine analytes were within the normal range.

Computer tomography scan of abdomen and pelvis followed immediately. CT scan showed a tumorous formation (10 cm in diameter) situated in the area of the right kidney. Another expansive formation with cystic component (87 mm in diameter) was found in the left kidney. Left ureter was dislocated by cystic expansion process, which was found in retroperitoneal

region at the level of aortal bifurcation, and there was another expansive process in *cavum Douglasi*. A massive ascites was displayed in the subhepatic area. Blood examination repeated one week later showed normal results except C-reactive protein (57.6 mg/l). According to the literature we performed more detailed laboratory investigation (CEA, CA 125, CA 15-3, CA 19-9, AFP – ADVIA Centaur, Bayer) and we found only serum level of CA 125 significantly elevated (> 600 kU/l, reference range 0–17.2 kU/l). All other tumor markers (CEA, CA 15-3, CA 19-9, AFP) were within normal reference intervals. The patient underwent a core needle biopsy of the abdominal tumor mass infiltrating the omentum. Three samples of tumor tissue were obtained and processed according to the standard histopathological techniques with the hematoxylin-eosin and mucin staining. All samples were fully representative and contained structures of papillary tumor with areas of solid papillary growth pattern. Neoplastic cells displayed a relatively uniform cytological appearance without evidence of mucin secretion (Fig. 1). Immunohistochemical staining of tumor tissue was strongly positive for wide-spectrum cytokeratin CK AE-1/AE-3 and negative for mesothelial marker, CK 5/6, CEA, calretinin, WT-1, TTF-1 and CDX2. On the basis of histopathological analysis, the diagnosis of metastatic papillary carcinoma of unknown primary origin was proposed.

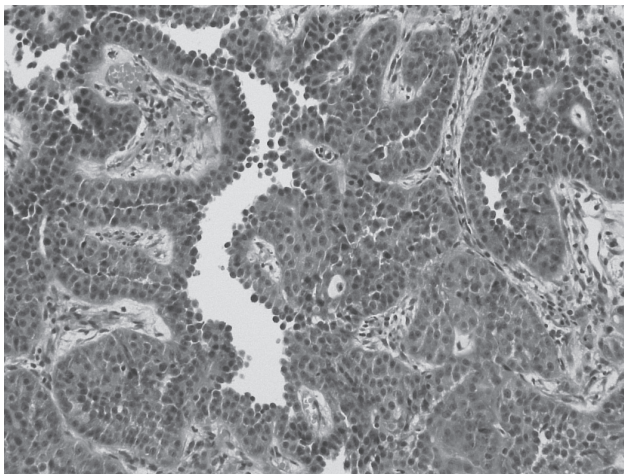


Fig. 1. Papillary carcinoma, hematoxylin-eosin staining (200x)

Discussion

From this case is evident that tumor marker CA 125 might be useful marker for various cancers including renal cell carcinoma as was shown in various studies [6, 7, 8].

A few studies concentrated the determination of this tumor marker in sera of patients with renal cell carcinoma. Grankvist et al. [6] analyzed serum levels of five tumor markers in patients with renal cell carcinoma. They observed significantly increased serum level of CA 125 with higher clinical stage. This study displayed that CA 125 was an independent prognostic factor for patients with renal cell carcinoma and appears to be useful as a serum tumor marker in the clinical manage-

ment of such patients suffering from renal carcinoma[6]. Ljunberg et al. [7] described that serum level of CA 125 has been found to be elevated in 30 to 60% of patients with renal cell carcinoma, depending on the stage and histological grade.

Another study investigated expression of CA 125, CD44 and EMA (epithelial membrane antigen) in renal cell carcinoma and their role as prognostic factors. They reported the results on tissue CA 125 expression in this disease [7]. They found a correlation between CA 125 expression and T stage and grade. The results showed that CA 125-negative patients had better survival. This is in accordance with the results of Grankvist et al. [6].

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