PROLONGED TREATMENT OF CHRONIC RENAL INSUFFICIENCY, ACQUIRED CYSTIC KIDNEY DISEASE, SIMULTANEOUS PRECANCEROUS LESIONS AND MULTIPLE TUMORS OF LEFT KIDNEY

Böör A., Jurkovič I., Havierová Z., Kočan P.
Department of Pathology, Faculty of Medicine, P.J.Šafárik University in Košice, Slovak Republic

Summary

Purpose of the investigation: Description of precancerous lesions and kidney tumors developing in a patient with chronic uremia treated by long-term hemodialysis.
Most important methods. Light microscopy, polarization and immunohistochemistry with CK1/CK3, CK5/6, CK7, CK8, CK20, EMA, Renal cell, CD10, Ki-67, PCNA, p53 and E-cadherin antibodies were used.
Main findings: After 11 years of hemodialysis treatment of end-stage diabetic nephropathy and chronic tubulointerstitial nephritis an urgent left-sided nephrectomy was performed because of pain and massive intrarenal bleeding. Biopsy revealed acquired cystic kidney disease associated with multiple precancerous lesions, several small papillary adenomas and a multifocal renal cell carcinoma with conventional and papillary structures with admixture of small foci of highly cellular sarcomatoid features. Severe vascular nephrosclerosis and uremic oxalosis were additional findings. The upper pole of the kidney was massively hemorrhagic.
Principal conclusions: This case illustrates the association of chronic renal insufficiency, uremic oxalosis, long-term hemodialysis, acquired cystic kidney disease and development of variable precursor intratubular and intracystic lesions progressing to several papillary adenomas and multifocal renal cell carcinomas with variegated microscopic structures in one kidney.

Kew words: prolonged treatment of chronic renal insufficiency – acquired cystic kidney disease – precancerous lesions – kidney tumors

Súhrn

Dlhodobá dialyzačná liečba chronickej obličkovej nedostatočnosti sprevádzaná získanou cystickou chorobou obličiek a súčasnými prednádorovými zmenami a mnohopočetnými nádormi ľavej obličky

Cieľ práce: opis a imunohistochemická analýza prednádorových zmien a nádora obličky u pacienta s chronickou obličkovou nedostatočnosťou liečenou dlhodobou hemodialýzou.
Metódy: Nefrektomický bioptický materiál (ľavá oblička), bol vyšetrený mikroskopicky a polaroskopicky. Ďalej boli na analýzu použité tieto protilátky: CK1/CK3, CK5/6, CK8, CK20, EMA, „Renal cells“, CD10, Ki-67, PCNA, p53 a E-cadherin.
Hlavné nálezy: Operačný preparát pochádzal z pacienta, liečeného pre renálnu insuficienciu 11 rokov hemodialýzou pre diabetickú nefropátiu a chronickú tubulointersticiálnu nefritídu. Indikáciou pre urgentnú nefrektómiu bola bolesť a masívne intrarenálne krvácanie. Spolu s nálezom vyššie uvedených obličkových ochorení zistili sme rozvinutý nález získanej cystózy vznikajúcej počas dlhodobej dialýzy, viaceré malé papilárne adenómy a multifokálne karcinómy z buniek obličky vykazujúce konvenčný, ďalej papilárny a sarkomatoidný charakter. Prítomné boli tiež známky ťažkej vaskulárnej nefrosklerózy a uremickej oxalózy. Horný pól orgánu bol masívne prekrvácaný.
Závery: Nami popísaný nález obsahuje súčasnú prítomnosť mikroskopických zmien vysvetľujúcich stav chronickej obličkovej nedostatočnosti s prítomnou uremickou oxalózou, kombinovaných so získanou cystózou vznikajúcou v dôsledku dlhodobej hemodialýzy. V takto zmenenom orgáne sa nachádzali dysplastické mikrotubulárne a intracystické zmeny, smerujúce ku vzniku viacerých papilárnych adenómov a multifokálnych karcinómov z buniek obličky, vyznačujúcich sa rôznorodou diferenciáciou.

Kľúčové slová: chronická renálna insuficiencia – získaná cystická choroba obličiek – prekarcenózne zmeny – nádory obličky

Čes.-slov. Patol., 46, 2010, No. 4, p. 105–110

INTRODUCTION

With the introduction and prolonged use of hemodialysis as a treatment modality for end-stage kidney patients Dunnill et al. (6) and many consecutive authors have later reported appearance of a new disease form called „acquired cystic kidney disease“ (ACKD), frequently complicated by renal cell neoplasms. The incidence of these tumors was higher than in the general population. A complex review of this topic has recetly been published by Bisceglia et al. (2).

Besides typical forms known in the category of spontaneous adult malignant renal tumors accumulated data have shown that these tumors may occasionally have distinctive histological features not easily referable to the categories described in the current WHO classification of kidney tumors (8). Also it has been noted that many of these tumors reveal tendency for multicentricity, bilaterality, earlier occurence, frequent presence of oxalate crystals within the tumors, and possibly an overall better prognosis (15). Therefore, attention was concentrated on various studies, including immunohistochemical, fluorescence *in situ* hybridization (FISH) and chromosome analysis along with reporting pertinent clinical data (4).

Rioux-Leclercq and Epstein (29) expressed the hope that their study will stimulate presentation of additional information on various aspects of this topic from other countries. The aim of our report supports this proposal. It is of interest that most of