Case Report

Incidental renal cell carcinoma with endometrial adenocarcinoma: A rare case report

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Abstract

Incidental detection of two primaries call for oncosurgeon's own judgment to decide the best therapeutic approach as no guidelines exist for the rarity of condition. This is the rare case of incidental renal cell carcinoma in a patient of endometrial carcinoma. Renal cell carcinoma was detected on preoperative MRI in a patient who presented as postmenopausal bleeding and histology proven endometrial carcinoma. Final histology confirmed dual primaries with uterine primary being endometrioid adenocarcinoma, whereas renal primary was clear cell carcinoma stage II. Estrogen receptors (ER) have been identified in Hamster and Mouse kidneys as well as in renal cell carcinoma tissues. High plasma estrogen found in some patients of synchronous renal and endometrial cancer may partly explain the association of these two primaries, though not in all cases. Increased serum leptin levels and a common low penetrance susceptibility gene have been reported in both these cancers.

Key words

RCC - Renal cell carcinoma, Endometrial Carcinoma, ER- Estrogen receptor, PPARG- Peroxisome proliferators activator receptor gamma, Serum leptin levels.

Introduction

Although the incidence of multiple malignancies in a patient is less than 4% [1]. This case of renal cell carcinoma with second primary tumor - endometrial carcinoma, is extremely rare with only five cases reported till now, with Lam, et al. [2] reported first such case. The reason for the frequent observation of two tumors in same

individual is poorly defined. In synchronous tumors a common etiology, such as exposure to the same hormone or carcinogen, is often postulated [3-5]. We here in report case of incidental RCC with endometrial adenocarcinoma.

Case report

A 56 year old multipara (G2P2L2) reported in the department of obstetrics and gynaecology of Mahatma Gandhi university of health sciences and technology on July 2015 with postmenopausal bleeding per vagina. She had attained menopause ten years ago and never used oral contraceptive pills. Patient was morbidity obese and a known case of diabetes and hypertension since 10 years. Patient had a history of jaundice 30 years back, frozen shoulder 4 years back and right eye cataract surgery 3 years back. There was no history of genital or colonic malignancy in her family. She had bilateral pedal edema and generalised edema since 3 years. Vaginal examination showed normal cervix and vagina. Rectal examination showed normal rectal mucosa, uterus size is within normal limits and pouch of doughlas is free. On per speculum examination cervix is flushed with uterus and slight bleeding is present. Her Haematological and Biochemical parameters were within normal limit. Sonography of the pelvis showed antiverted enlarged bulky uterus with polypoidal growth within the cavity and increased myometrial echogenicity. Magnetic Resonance Imaging (MRI) of abdomen and pelvis reveal well defined rounded exophytic lesion arising from upper pole of right kidney with central necrotic areas and heterogenous polypoidal soft tissue mass within the endometrial cavity and few subcentimeter sized nodes in retroperitoneum and mesentry. Preoperative evaluation including respiratory, cardiac and gastrointestinal systems was normal. She underwent radical hysterectomy and after one week right radical nephrectomy was done. Her post-operative recovery was smooth. Radical hysterectomy specimen received at department of pathology for histopathological examination. On Gross examination, uterus and cervix measured 9cmx5.5cmx3.5cm, uterocervical canal is patent with endomyometrium measuring 1.5cm. On serial cutting, no fibroid is seen. Endometrial cavity is completely filled with soft, friable grey white growth extending throughout the lumen. Microscopy of tissue section from cervix showed chronic non-specific cervicitis. Sections given and studied from endometrium and myometrium showed with well differentiated endometrial carcinoma and less than 50% of myometrium is involved with tumor. Vascular invasion was seen. (**Figure – 1** and **Figure - 2**) No extension of tumor was seen in endocervix. Both fallopian tubes and ovaries appears morphologically normal. After one week right radical nephrectomy specimen received at department of pathology for histopathological examination. Right nephrectomy specimen kidney with perinephric fat measured 10cmx9cmx7cm. Ureter measured 5.5 cm in length. A grey white to grey brown growth measuring 2.5 cm in diameter is seen on the upper pole of kidney. Microscopic examination of tissue section showed nests of epithelial cells with clear cytoplasm and a distinct cell membrane, separated by a delicate branching network of vascular tissue. Nuclei are slightly larger with finely granular chromatin and small nucleoli. Histopathological features are suggestive of renal cell carcinoma- clear cell type nuclear grade – II according to Fuhrman nuclear grading system. No infiltration in perinephric fat and ureter was seen. No vascular invasion was seen. (**Figure – 3** and **Figure - 4**)

Discussion

Although the etiology of endometrial and renal cell carcinoma (RCC) is unknown, there is some evidence that hyper estrogenic state, obesity and genetic predisposition may be the high risk factors. Estrogen receptors have been identified in hamster and mouse kidneys [6, 7] and RCC tissues [8, 9]. Di Silverio F. [10] reported high plasma estrogen levels in 1 out of his 4 cases of RCC with endometrial carcinoma supporting the causal relationship. Obesity, which is associated

with high leptin levels (cytokine derived from adipocyte) in postmenopausal women with endometrial carcinoma [11]. Leptin also promotes endometrial growth and invasiveness [12]. In addition, Horiguchi, et al. [13] found 38% of RCCs with renal vein invasion had high leptin receptor expression and high levels of serum leptin possibly due to leptin stimulated cell proliferation and induced activation of signal transducers [14]. We have not done leptin levels in our patient; however, it is possible that obesity in our patient must have contributed to high leptin levels. Genetic predisposition in obese patients with malignancies has been studied over the years and there is some evidence that PPARG (Peroxisome proliferators activator receptor gamma) is a receptor that under genetic control regulates differentiation and cell growth. Smith, et al. [15] observed that PPARG serves as a common low penetrance susceptibility gene for cancers associated with obesity and high fat intake (such as endometrium, ovary, prostate, kidney and cervix). In our patient preoperative imaging lead to the detection of incidental RCC as a second primary. Adjuvant therapy in such scenario will depend on the histology of tumor in terms of local invasion, nodal status and adequacy of margins. Prognosis in these cases depends on biological potential of either primary. However, in our case we believe that endometrial cancer is likely to be more aggressive.

Figure – 1: and **Figure – 2:** H&E 10X and 40X view showing Endometrial Carcinoma.

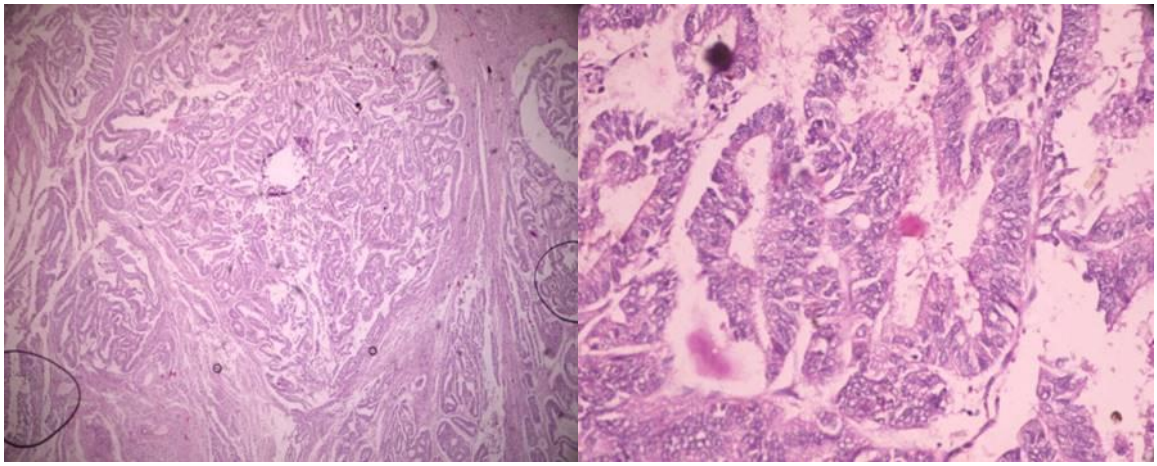
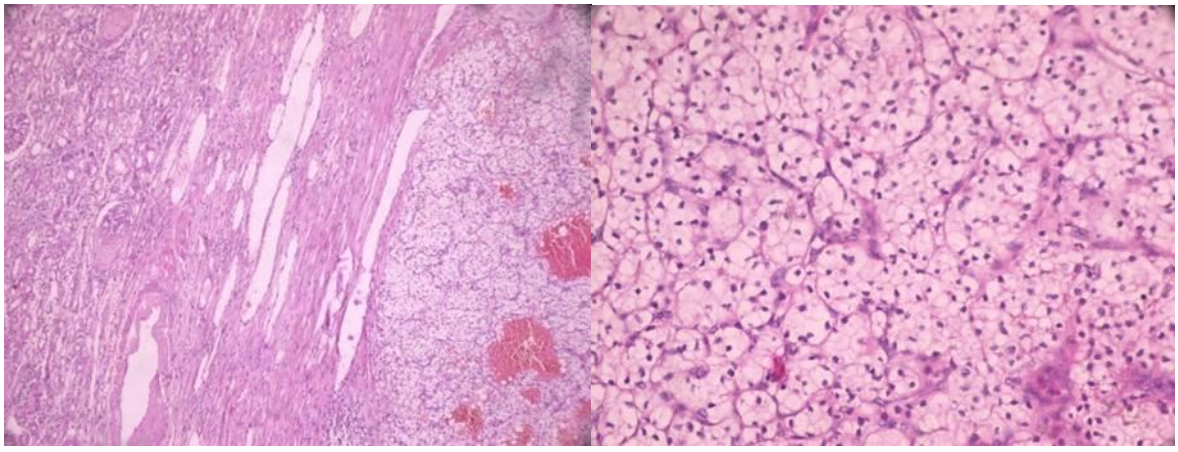


Figure – 3: H&E 10X view showing normal appearing section of kidney along with Clear cell type Renal cell carcinoma. **Figure – 4:** H&E 40X view showing Clear cell type Renal cell carcinoma.



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