

Triple Malignancies

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ONCOLOGY | CASE REPORT

A case report for three different malignancies in one patient

A. Rasmy^{1,2*}, M. Faris¹ and K. Saber³

Abstract: *Introduction:* The occurrence of multiple primary cancers (MPC) is rare. Only a few cases and patient reviews of an association of triple malignancy have been reported. *Case presentation:* We report here a case of a 56-year-old Saudi woman attended initially to us in 2012 as a case of breast cancer with a history of renal cell carcinoma treated in 2005. Our patient was treated with surgery for renal cell carcinoma and remained in good control for 7 years, when she developed a left breast mass and by work up she was diagnosed as a case of left breast cancer which was later treated by surgery and chemotherapy, and also because of the presence of rectal thickness in her work up which was confirmed by PET-CT, she also underwent colonoscopy with biopsy which confirmed as a rectal adenocarcinoma of primary Lower GIT origin which was later treated by surgery. *Conclusion:* Although the association of MPC can be considered a rare occurrence, improving survival in cancer patients has made this situation more frequent.

Subjects: Medicine; Oncology; Breast Cancer; Gastrointestinal Oncology; Urologic Oncology

Keywords: cancer; malignancy; triple; chemotherapy

1. Introduction

The increasing effectiveness of cancer therapies and the improvement of diagnostic tools have led to better survival rates among cancer patients. This situation has made the problem of developing

ABOUT THE AUTHOR

Ayman Rasmy is currently working in the Adult Oncology Department at King Fahad Specialist Hospital, Dammam (KFSH-D)-KSA. This hospital is one of Biggest Tertiary JCA Accredited hospitals in KSA that accepts cancer patients who have been diagnosed in other hospitals in the Eastern area in KSA for treatment, including interesting and complicated cases like this with triple malignancies, which is rare in the oncology field.

Once this patient finished her treatment with response in the last assessment, I, as one of the treating team, was interested to publish this case to forward our experience to both oncologist and non-oncologist colleagues about how to treat patient with more than one malignancy by using of the standard guidelines in addition to clinical judgment of the treating physician which finally can give the patient a great chance of cure.

PUBLIC INTEREST STATEMENT

The primary purpose of this case report is to provide our experience how to deal with the case of sequential triple malignancies regarding the proper diagnosis, treatment in the oncology field which including surgery, chemotherapy, target therapy, hormonal therapy, and radiotherapy based on both standard guide line and clinical judgment of the treated physicians.

We also want to let our colleagues in the oncology and non-oncology fields to see how there is great success in the treatment of the cancer patients by publishing this difficult case. Specially, we want to highlight that there is rarity to see patient with the triple malignancies worldwide.

Finally, we want to inform all colleagues in all specialties that; the best way to deal with this kind of patient is to be in with one of the multi-disciplinary team.



subsequent primary tumors more frequent. In the literature, the prevalence of multiple primary cancers (MPC) is estimated between 0.73% and 11.7%, and the incidence is increasing with age (Spratt & Hoag, 1996).

According to the surveillance, epidemiology, and end results; cancer registries of the National Cancer Institute and cancer survivors had a 14% higher risk of developing a new malignancy than would have been expected in the general population. Females had a slightly higher relative risk than males for all subsequent cancers combined, and the most implicated sites were breast, colon, lung, and melanoma of the skin (Curtis et al., 2006).

Despite its low incidence, the association of two malignancies in a single patient has been widely reported in the literature, while only a few cases of three malignancies have been described. The aim of this article is to present an exceptional case of an elderly woman treated initially for renal cell carcinoma and after that she developed a second malignancy described as a left breast cancer, and while she is on adjuvant chemotherapy, rectal carcinoma was discovered.

2. Case presentation

This is a 57-year-old Saudi female patient. She was admitted to another hospital in 2005 with right renal tumor. The history started with recurrent attacks of right loin pain and she was investigated in the clinic in the form of ultrasound and CT scan, which showed evidence of right renal tumor, for which she was admitted for right radical nephrectomy. She initially underwent embolization of the right kidney in view of large size of the tumor and then right radical nephrectomy done as well as repair of iatrogenic pleural injury. She tolerated the procedure well, the pathology was transitional cell carcinoma of the right renal pelvis, and she was discharged in stable condition.

The patient was again admitted in 2007 and underwent right retrograde study and cystoscopy. The retrograde study showed right ureteric filling defect and recurrent bladder tumor, which was resected. It was decided to follow her up again for the right ureteric filling defect, which was most probably right ureteric tumor, residua of the previous renal tumor.

One month later, the patient was again admitted and underwent cystoscopy, which revealed a small bladder tumor at the site of the right ureteric orifice. TURBT was done and then right ureterectomy was done. The Pathology came as muscular hypertrophy.

The patient was again admitted one month later and cystoscopy was carried out and it was decided to inject mitomycin in the bladder and fulguration of the small recurrent tumor, she tolerated the procedure well and was discharged home with regular follow-up after that.

Early in 2012, the patient noticed left breast mass during self-breast examination and the mass was a single mass, not associated with any other masses, painless, mobile, and not associated with skin changes or nipple discharge or nipple changes. The patient has no family history of breast cancer. She has no other risk factors for breast cancer and she is married and has four children.

Mammogram was done and showed a left upper outer highly suspicious mass, BIRAD 5 in the left breast with highly suspicious satellite tiny mass at the upper central aspect of the left breast (see Figure 1). Ultrasound of breast was also done, which showed a highly suspicious left breast at 2 to 3 o'clock with a tiny satellite lesion at 12 o'clock. MRI breast was requested and it showed highly suspicious left outer breast mass with satellite lesion at 12 o'clock, in keeping with multifocal involvement with no skin, chest wall invasion or suspicious axillary lymph node. No contralateral suspicious features.

The patient underwent true-cut biopsy from the mass at 12 o'clock and biopsy which was done outside from the mass at 3 o'clock was reviewed by our pathologist, both lesions showed invasive ductal carcinoma.

Figure 1. Radiological finding (Mammogram) for breast lesion.

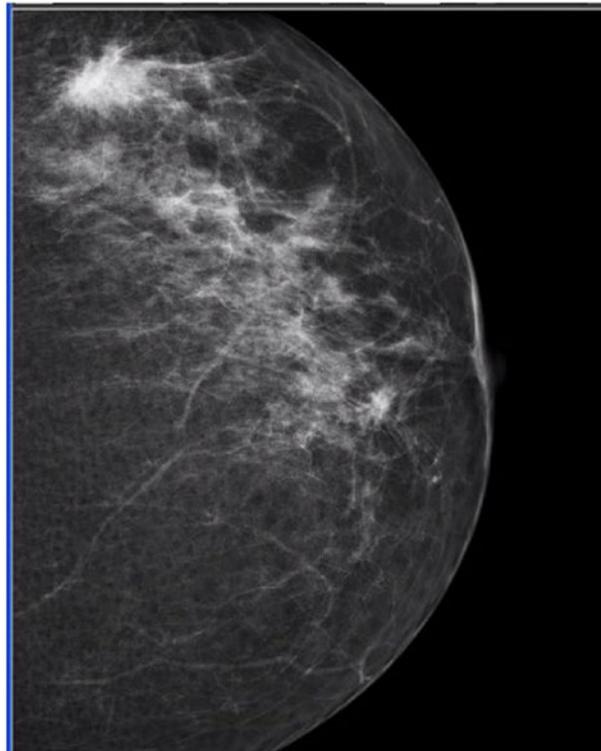
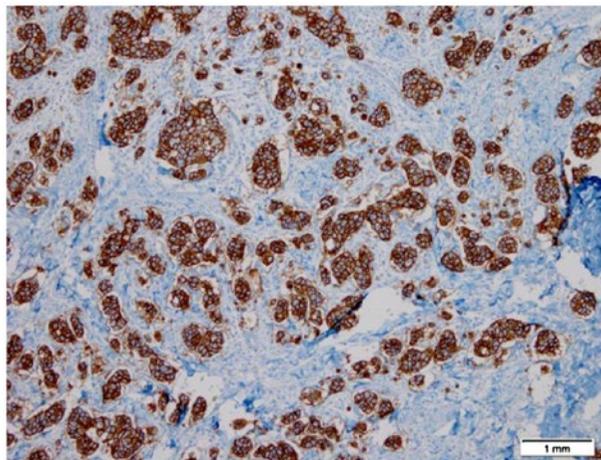


Figure 2. Pathological finding for breast cancer with HER2 positive finding.

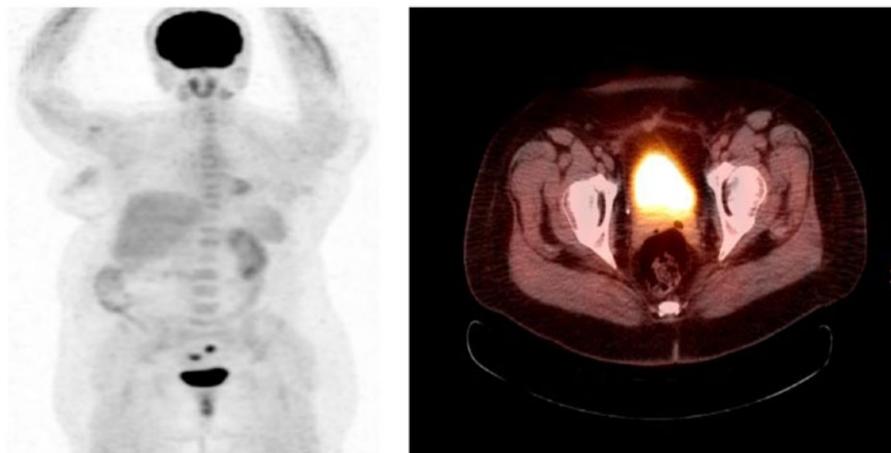


So in August 2012, anterior resection of recto-sigmoid was done with pathology which showed polypoid tumor invades submucosa and the edge of muscularis propria (pT2) with negative LN (0/5) with negative all margins for malignancy.

The patient was planned for surgery and she underwent left mastectomy with sentinel lymph node biopsy on the left side. The sentinel lymph node turned to be negative. The pathology came as Invasive Duct carcinoma, Grade II with Positive ER (60–80%), PR (40–70%) and HER2 (+3) (see Figure 2).

After recovery from surgery, patient started to receive adjuvant chemotherapy in the form of AC (Doxuribcin/ Cyclophosphamide) for four cycles then Taxens / Herceptin, she received total four cycles of taxens and after that she continue on Herceptin for total one year (17 cycles finished on 9 September 2013) and after that started to receive Letrozole 2.5 mg/PO daily.

Figure 3. PET-CT finding for rectal cancer lesion.



Before Mastectomy, the work up by CT Chest, Abdomen and pelvic showed no evidence of metastatic lesion but showed asymmetric mural thickening at the upper part of the rectum which was confirmed by PET-CT that showed hyper metabolic lesion at the recto-sigmoid region with SUV6.8max with recommendation for colonoscopy (see Figure 3).

The colonoscopy with different biopsies was done, the biopsy from polyp at 70 cm showed normal mucosa and also showed in biopsy taken randomly from colon, but unfortunately the biopsy that taken from rectal lesion at 8 cm from anal verge showed moderate differentiated adenocarcinoma confirmed as primary colorectal origin by markers which were positive for CX2 and CK20 but negative for CK7.

3. Discussion

MPC may be synchronous or metachronous depending on the interval between their diagnosis. Synchronous cancers are defined as malignant tumors that present either simultaneously or within a six-month period of identification of the original tumor, each of which must be distinct with no possibility of one being the metastasis of the other. Cancers diagnosed beyond the six-month interval are referred to as metachronous cancer (Campos, Salazar, & Cabral, 2012).

A literature review on 1,104,269 cancer patients concluded that the prevalence of multiple primary malignancies occurs in 11.7% (Irimie, Achimas-Cadariu, Burz, & Puscas, 2010).

Németh et al. (1996), mentioned that multiple primary malignancies are common, in a study encountered in 3–5% of malignant tumors which are most often secondary, triple tumors occur in only 0.5%, quadruple tumors in 0.3% of malignant tumors.

Beisland, Talleraas, and Bakke (2006), in a study of over 1,425 patients with RCC found that 16% had one tumor, 1.6% had two tumors, and 0.2% had three other primary malignancies. Generally, 46.7% of tumors occurred as metachronous tumors. The most common second malignancy was the cancer of prostate. Eight cases of breast cancer as a second tumor were reported all in females. No male breast cancer was reported. A cumulative risk of developing second primary malignancy in males with RCC was found as high as 26.6%. They concluded that patients with RCC have significantly higher risk of developing other subsequent primary malignancies.

In a study by Wegner (1992), the occurrence of a second primary neoplasm was found in 144 cases (3.3%) over 4,353 patients who were treated for urologic cancers over a 19 years period.

Koyama, Furukawa, and Tanaka (1995) studied 104 patients with multiple primary tumors and found an incidence of multiple tumor occurrences of 9% in patients with primary urologic tumors.

For primary and secondary tumors, the most common finding was tumors of bladder and prostate followed by tumors of the kidney and prostate. The most common non-urologic secondary tumor after primary urologic tumor was colon cancer (Shoshtar, Hossein, & Moslemi, 2013).

Some case reports of synchronous or metachronous triple primary carcinomas were reported in the literature, such as triple synchronous involvement of the kidney, bladder and prostate cancers, or metachronous triple involvement of the bladder prostate, and renal cancers (Momma, Saito, & Hirose, 2003).

However, no case of triple primary cancer of kidney, prostate and male breast cancer was reported in the literature. All the metachronous RCC with breast cancer was reported in female patients (Arikan-Sengul et al., 2009).

Arikan-Sengul et al. (2009) studied 17 female RCC cases associated with secondary gynecologic tumors. They found 10 cases (60%) of RCC associated with breast carcinoma as the most common association.

The etiology of multiple primary malignant tumors is complex and includes environmental factors, genetic predisposition, previous medical treatment, gender-specific factors, hormonal factors, and interactions of these factors (Rasool et al., 2013).

For treatment of these lesions, the most aggressive tumor should be treated in appropriate with the age and general condition of the patient. After improving the overall patient general condition, other malignancies should be managed appropriately (Rabbani, Grimaldi, & Russo, 1998).

4. Conclusions

MPCs occur rarely. The etiology remains controversial and a large number of cancer patients have to be followed for long periods to obtain adequate data about the development of subsequent additional malignancies.

Consent

Written informed consent was obtained from our patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

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Competing interests

The authors declare that they have no competing interests.

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Source: Author with consent of the patient.

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