Annals of Oncology Case Reports

Case Report
Published: 21 Mar, 2018

A Case Report of Two Primary Cancer; Breast Cancer with Adrenal Gland Metastatic and Second Primary Neuroendocrine Tumor in Colon; A Rare Case in Al-Bashir Hospital

Shaimaa Shamoun* and Ahmed N Shamout

Department of Clinical Oncology and Radiation Therapy, Al-Bashir Hospital, Al-Ashrafiyah, Amman, Jordan

Abstract

A 68 years old female, was diagnosed as a case of right breast cancer in 2013. Modify Radical Mastectomy (MRM) was done and the pathology report showed Invasive Ductal Carcinoma (IDC), stage T3N3M0. Immunohistochemistry (IHC) study revealed (Triple positive). Patient refused to treat by chemotherapy. Patient was given Herceptin 440 mg 16 cycles for one year, Aromacin tab for 5 years and 50 gray/25 fractionation radiation therapy was applying on right breast. After one year and half, patient complained from severe diarrhea 8 times per day watery contents, vomiting and suffered from lower abdominal pain. PET scan for whole body on October/2014 was done the result showed ascending colon is highly suspicious for malignancy and moderately hypermetabolic left adrenal mass. Subtotal colectomy surgery was done, the pathology report of biopsy revealed low grade malignant neuroendocrine neoplastic lesion stage of T3N1M0 physician prescribed sandostatin LAR 20 mg monthly due to neuroendocrine lesion.

On Jan/2016, cancer recurrence in the same right breast, IHC revealed ER+, PR-, Her 2+, physician decided to change aromacin to faslodex 250 mg s.c for 6 cycles. Radiation therapy was applied 20 gray/10 fractionation on scar. On may/2016, CAP-CT scan result revealed two enlarged left axillary L.N and left soft tissue density adrenal mass (3.0*2.3). Excisional lymph node was done which revealed IDC, ER+, PR-, Her2+. Physician decided to discontinue faslodex and switch to aromacin 20 mg monthly. CAP-CT which was done on Feb /2017; single left axillary L.N 1 cm, small hypodense lesion (spleen 4 cm), left adrenal lesion (2.2*2.6 cm) and osteolytic lesion were noted in iliac areas, so the physician considered those results a metastatic areas from breast and prescribed tykerb 84 tab, Patient now on (sandostatin 20 mg I.M, Herceptin 440 mg, aromacin tab and tykerb tab) monthly, zometa 4 mg q3 months, patient now still on follow up with a good condition.

Conclusion: Breast cancer metastatic to left adrenal gland which is extremely rare especially when they originate from IDCs. The present case is the seventh breast cancer metastatic to the adrenal gland in the literature up to our search. Neuroendocrine tumor was happened in colon after one year and half which was a rare second primary malignancy (SPM) among female breast cancer.

Keywords: Breast cancer; Neuroendocrine tumor; Gene; Adrenal gland; Second primary

OPEN ACCESS

****Correspondence:***
Shaimaa Shamoun, Department of Clinical Oncology and Radiation Therapy, Al-Bashir Hospital, Al-Ashrafiyah, Amman, Jordan, Tel: 00962796009383; E-mail: Shai_Aviv@hotmail.com

Received Date: *14 Feb 2018*
Accepted Date: *12 Mar 2018*
Published Date: *21 Mar 2018*

Citation:
Shamoun S, Shamout AN. A Case Report of Two Primary Cancer; Breast Cancer with Adrenal Gland Metastatic and Second Primary Neuroendocrine Tumor in Colon; A Rare Case in Al-Bashir Hospital. Ann Oncol Case Report. 2018; 1(1): 1001.

Introduction

Breast cancer is the most common cancer among female in the world, it is approximately around 25% of all cancers in 2012 [1]. Invasive Ductal Carcinoma (IDC) is the most common histological type of breast cancer, accounting for up to 85% of all breast cancer [2]. The most common organs can Invasive Ductal Carcinoma (IDC) easily metastasis are lungs, bone, brain, liver, but less frequently it can also spread, ovaries, spleen, pancreas, kidneys [3]. Metastasis to adrenal glands from breast tumors is rare especially when they originate from IDCs [4]. Neuroendocrine tumor of colon is increasingly diagnosed in the US, with an annual incidence of 1 per 100,000 [5]. Most common site is GI tract accounting for more than 60% of NET [6]. Approximately 50% of patients are asymptomatic, but sometimes patients suffer from rectal bleeding, pain, and diarrhea, even during the metastatic stage [7].

We reported a rare case of metastatic invasive breast ductal carcinoma to the left adrenal glands in addition second primary cancer in colon which called low grade malignant neuroendocrine

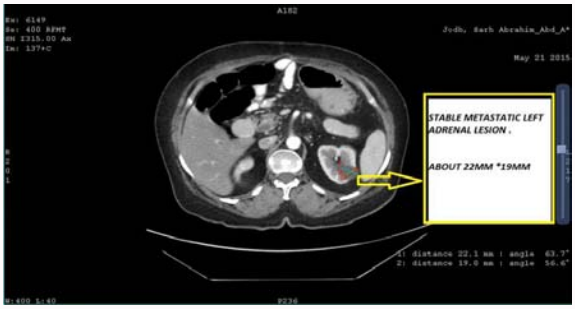

Figure 1: CAP-CT scan was revealed left adrenal mass lesion (2.2*1.9 cm) on May/2015.

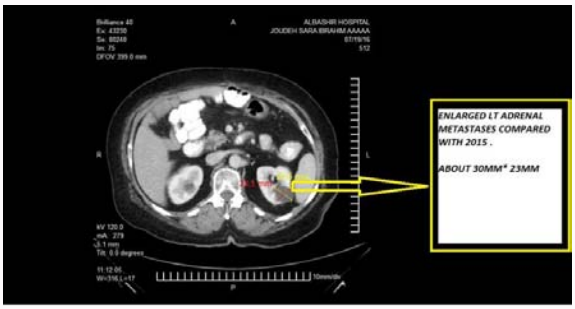

Figure 2: CAP-CT scan was revealed left soft tissue density adrenal mass (3.0*2.3) on July/2016.

neoplastic lesion. Up to our knowledge this case is the seventh to be presented in the literature that described metastatic to adrenal gland. The present study was approved by the Ethics Committee of Al-basheer Hospital and ministry of health after get acceptance from head of oncology department and the written informed consent was provided by the patient.

Case Presentation

A 68 years old female, was diagnosed as a case of right breast cancer in 2013. She had negative medical and family history regarding breast cancer. Her first menstrual history was at age 15. She became a pregnant at 20 years old. The patient has 12 children all of them were breast feeding. Modify Radical Mastectomy (MRM) was done and the pathology report showed that the histopathology type of tumor was (IDC), moderately differential (comedo type), tumor size 7 cm in greatest dimension and lumph node involvement by tumor 16/19. Finally stage T3N3M0. Immunohistochemistry (IHC) study for hormonal receptors was done and revealed ER positive, PR positive and Her 2 positive (Triple positive). Patient refused to treat by chemotherapy but she accepted to treat by hormonal and target therapy. Patient was given Herceptin 440 mg i.v16 cycles for one year, Aromacin tab was prescribed for 5 years and 50 gray/25 fractionation radiation therapy was applying on right breast.

After one year and half, patient complained from severe diarrhea 8 times per day watery contents, vomiting and suffered from lower abdominal pain. Physician prescribed drugs to alleviate the pain and to return bowel movement to the normal but patient still suffered from diarrhea despite of drug administration. So physician decided to do PET scan for whole body on October/2014, the result showed hyper metabolic colonic wall thickening (ascending colon) is highly suspicious for malignancy and moderately hyper metabolic left adrenal mass.

On November/2014 patient was doing colonoscopy which was revealed moderate differentiation adenocarcinoma. Subtotal colectomy surgery was done, the pathology report of biopsy ileum, cecum, ascending colon, transverse colon and right hemicolectomy revealed low grade malignant neuroendocrine neoplastic lesion (well differentiated), and stage of T3N1M0. Special immunostains was done and results were as follows: NSE, chromogranin A, S-100 were all positive for neoplastic cells, while CD36, vimentin V9 were positive in fibro vascular areas surrounding neoplastic cell. Physician prescribed sandostatin LAR 20 mg monthly due to neuroendocrine lesion. On may/2015 patient was doing CAP-CT which showed abnormal finding soft tissue density left adrenal mass lesion (2.2*1.9 cm). See Figure 1.

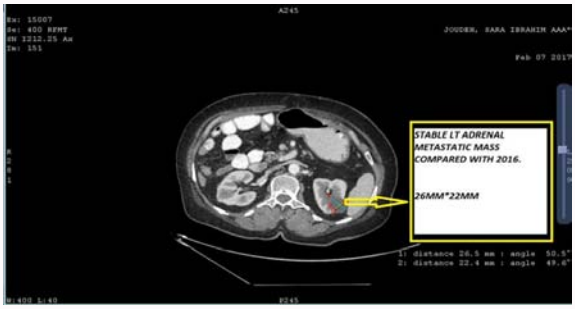

Figure 3: CAP-CT scan was revealed left adrenal lesion (2.2*2.6 cm) on Feb /2017.

On January/2016, patient has two nodules at the site of scare, after removing them, the histopathology report showed (recurrence in the same right breast), IDC, grade 2 moderately differentiated, IHC were done and revealed ER+, PR-, Her 2+, physician decided to change aromacin to faslodex 250 mg s.c for 6 cycles and radiation therapy was applied 20 gray/10 fractionation on scar. On may/2016 mammogram was done on left breast, which was shown cluster group of macrocalcification in UOQ and need for further evaluation, CAP-CT scan was done and revealed two enlarged left axillary L.N and left soft tissue density adrenal mass (3.0*2.3) see Figure 2. Excisional lymph node was done which revealed IDC, ER+, PR-, Her 2+ and the right breast mass re-excision showed foci of giant cell. Physician decided to discontinue faslodex and switch to aromacin 20 mg monthly. Pt still on Herceptin 440 mg + sandostatin 20 mg monthly.

On august/2016 patient has osteopenia according to bone densitometry report, physician prescribed zometa 4 mg i.v every 3 months. Patient now on follow up, left breast ultrasound was shown ill defined hypoechoic lesion with post a coustic shadow with extension to the nipple about 3*1.2 cm retroareolar. The result of CAP-CT which was done on Feb/2017; single left axillary L.N 1 cm, small hypodense lesion (spleen 4 cm), left adrenal lesion (2.2*2.6 cm) see Figure 3 and osteolytic lesion were noted in iliac areas, so the physician consider those results a metastatic areas from breast and prescribed tykerb tabs.

Patient now on (sandostatin 20 mg I.M, Herceptin 440 mg, aromacin and tykerb tabs) monthly, zometa 4 mg q3 months, patient now still on follow up.

Discussion

Patients with right sided breast cancer are more likely to have a relative with breast cancer. Right Breast cancer is usually happened

Table 1: Reported cases of metastatic adrenal gland from Invasive ductal carcinoma.

References	No of case	Authors	years	Location	Tumor size	Sign & symptoms	Immunohistrochemistry
12	1	1 Liu et al, 2010	64	Left adrenal gland	6	Asymptomatic	C-erbB-2+, GCDFP-15+
11	2	Yoshitomi et al, 2012	46	Right adrenal gland	NA	Asymptomatic	E-cadherin+, CK+
13	3	Akhtar et al, 2012	45	Left adrenal gland	2.8	Pain in abdomen, shortness of breath	ER+, PgR+, HER 2+
14	4	Eren et al, 2012	38	Left adrenal gland	4	Asymptomatic	NA
15	5	Andjelić-Dekić et al, 2014	58	Left adrenal gland	NA	Asymptomatic	HER2+
16	6	TAO HE et al, 2016	35	Left adrenal gland	2.5	Asymptomatic	ER+, PR+, Her2+

in younger women have genetic and history relation, more negative receptors with smaller tumor size and metastasis to the bone early and more aggressive behaviors compared to the left side breast cancer [8] but in this case patient has 68 years old and has no any cancer history of her family, tumor size 7 cm and metastatic to adrenal gland first which is non consist with literature review but there is a congruent with aggressiveness of disease comparing with Nosheen Fatima retrospective study in 2013.

According to Local Breast Cancer Recurrence; the risk of local recurrence decreased with event-free time. Overall, it was 1% after 3 event-free years and 3% within 5 years after diagnosis, it differed by subtype, with ER-positive, PR-positive, HER2-negative breast cancer with the lowest risk and triple-negative with the highest risk. The risk was 2.2% with triple and with ER+, PR-, HER2- was 2.4% [9]. Comparing with our case the recurrence was done after 3 years in the same right breast with translation of receptors and after one year from the local recurrence spread to left side breast cancer with aggressive behavior may be due to rejection chemotherapy treatment.

In addition, in our case, breast cancer metastatic to left adrenal gland which is extremely rare especially when they originate from IDCs versus ILC which is associated with adrenal gland metastasis [10]. Up to our knowledge, only 6 cases have been reported previously in the literature (Table 1) [11-16]. The present case is the newest and the seventh in the literature. The adrenal gland metastases are asymptomatic in the majority of patients [17]. It is difficult to distinguish between primary adrenal gland tumor and metastatic adrenal gland, to identify the diagnosis, the physician must do CT scan with pathological examination [12] and to confirm the diagnosis, each patient who has a history of malignance and mass >2 cm in diameter in adrenal gland must be highly considered as a possible case of adrenal gland metastasis [17]. The patient in the present case was asymptomatic with no abdominal pain or other problems; however, she had a history of right and left breast carcinoma and a CAP-CT revealed left soft tissue density adrenal mass (3.0*2.3) which was considered as a possible metastasis.

According to second primary cancer in our case, neuroendocrine tumor was happened in colon after one year and half which was a rare Second Primary Malignancy (SPM) among female breast cancer. Our results are in contrast to previous studies in literature. The result of cohort study conducted by Hung M-H et al. in 2016 which demonstrate that the occurrence of second primary tumor was significantly higher for uterine, thyroid then bone and soft tissue cancers among female breast cancer patients [18]. In Dutch female breast cancer patients the standardized incidence ratios (SIRs) were elevated for cancers of the esophagus, stomach, colon, rectum, lung, uterus, ovary, kidney, and bladder cancers, and for soft tissue sarcomas (STS), melanoma, non-Hodgkin's lymphoma, and Acute Myeloid Leukemia (AML) respectively. Among patients age 50 years and older, radiotherapy was associated with raised STS risk, chemotherapy with increased risks of melanoma, uterine cancer, and AML; and hormonal therapy with uterine cancer [19]. Up to our search in pubmed, ELM data base, there was a rare case of multiple endocrine neoplasia type 1 (MEN1) which contains carcinoid tumors associated with breast cancer with the MEN1 gene mutation in a 45-year-old female was diagnosed with breast cancer. A germ-line MEN1 gene mutation was detected and it could be assumed that MEN1 syndrome may have possibly predisposed the present patient to breast cancer [20]. But in Furuuchi and his colleges study in 2000; APC gene mutations presented in 57% of colorectal cancers and in 18% of breast cancers. APC mutations were observed at a significantly high frequency in advanced stages of primary breast cancers (TNM classification, $P<0.05$) [21]. So there is APC gene mutation association between breast and colorectal cancers. However, additional case reports and studies are required to illustrate gene mutation and gene association between breast cancer and neuroendocrine tumors.

Conclusion

The present case is considered as a rare case of right breast cancer in patient has 68 years old and has no any cancer history of her family, with large tumor size 7 cm and metastatic to adrenal gland first which is non consist with literature review. Breast cancer metastatic to left adrenal gland which is extremely rare especially when they originate from IDCs. The present case is the seventh breast cancer metastatic to the adrenal gland in the literature up to our search. Neuroendocrine tumor was happened in colon after one year and half which was a rare Second Primary Malignancy (SPM) among female breast cancer. However, additional case reports are required to illustrate gene mutation and gene association between breast cancer and neuroendocrine tumors.

Acknowledgment

We would like to thank the daughter of patient for her participation and corporation to discuss this case study, she give us all radiology pictures with original reports and helped us by answering for all question and about her status with cooperative manner.

References

1. Ferlay j, Soerjomataram I, Dikshit R, Eser S, Mathers C, Rebelo M, et al. Cancer incidence and mortality worldwide: sources, methods and major patterns in GLOBOCAN 2012. Int J Cancer. 2015;136(5):E359-86.
2. Toikkanen S, Pylkkänen L, Joensuu H. Invasive lobular carcinoma of the breast has better short- and long-term survival than invasive ductal carcinoma. Br J Cancer. 1997;76(9):1234-40.

3. Lacroix M. Significance, detection and markers of disseminated breast cancer cells. Endocr Relat Cancer. 2006;13(4):1033-67.
4. Barros NA, Ferreira A, Rocha MJ, Castro L. Unusual breast cancer metastasis. BMJ Case Rep. 2015;2015:bcr2014209125.
5. Yao JC, Phan AT, Chang DZ, Wolff RA, Hess K, Gupta S, et al. Efficacy of RAD001 (everolimus) and octreotide LAR in advanced low- to intermediate-grade neuroendocrine tumors: results of a phase II study. J Clin Oncol. 2008;26(26):4311-8.
6. Hallet J, Law CH, Cukier M, Saskin R, Liu N, Singh S. Exploring the rising incidence of neuroendocrine tumors: a population-based analysis of epidemiology, metastatic presentation, and outcomes. Cancer. 2015;121(4):589-97.
7. Wang AY, Ahmad NA. Rectal carcinoids. Curr Opin Gastroenterol. 2006;22(5):529–35.
8. Fatima N, Zaman MU, Maqbool A, Khan SH, Riaz N. Lower Incidence but more aggressive behavior of right sided breast cancer in pakistani women: does right deserve more respect? Asian Pacific J Cancer Prev. 2013;14(1):43-45.
9. Study Refines the Risk for Breast Cancer Recurrence. Medscape. 2016.
10. Bumpers HL, Hassett JM, Penetrante RB, Hoover EL, Holyoke ED. Endocrine organ metastases in subjects with lobular carcinoma of the breast. Arch Surg. 1993;128(12):1344-7.
11. Yoshitomi S, Tsuji H. A case of recurrent breast cancer with solitary adrenal gland metastasis treated with surgery and endocrine therapy. Gan To Kagaku Ryoho. 2012;39:2074-6.
12. Liu XJ, Shen P, Wang XF, Sun K, Sun FF. Solitary adrenal gland metastasis from invasive ductal breast cancer: An uncommon finding. World J Surg Oncol. 2010;8:7.
13. Eren OO, Ordu C, Selcuk NA, Akosman C, Ozturk MA, Özkan F, et al. Bilateral synchronous adrenal metastasis of invasive ductal carcinoma treated with multimodality therapy including adrenalectomy and oophorectomy. J Oncol Pharm Pract. 2016;22(1):157-60.
14. Akhtar K, Sherwani R, Kahkhashan E. Carcinoma breast metastasis to the suprarenal gland: An unusual presentation. Pol J Pathol. 2012;63(4):284-5.
15. Andjelić-Dekić N, Božović-Spasojević I, Milošević S, Matijašević M, Karadžić K. A rare case of isolated adrenal gland metastasis of invasive ductal breast carcinoma. Srp Arh Celok Lek. 2014;142(9-10):597-601.
16. He T, Liu J, Li Y, Jin L, Sun S, Ni L, et al. Left adrenal gland metastasis of breast invasive ductal carcinoma: A case report. Mol Clin Onco. 2016;4(5):859-62.
17. Suzuki H. Laparoscopic adrenalectomy for adrenal gland carcinoma and metastases. Curr Opin Urol. 2006;16(2):47-53.
18. Hung MH, Liu CJ, Teng CJ, Hu YW, Yeh CM, Chen SC, et al. Risk of second non breast primary cancer in male and female breast cancer patients: a population-based cohort study. PLOS One. 2016;11(2):e0148597.
19. Schaapveld M, Visser O, Louwman MJ, de Vries EG, Willemse PH, Otter R, et al. Risk of new primary nonbreast cancers after breast cancer treatment: a Dutch population-based study. J Clin Oncol. 2008;26(8):1239-46.
20. Jeong YJ, Oh HK, Bong JG. Multiple endocrine neoplasia type 1 associated with breast cancer: A case report and review of the literature. Oncol Lett. 2014;8(1):230-4.
21. Furuuchi K, Tada M, Yamada H, Kataoka A, Furuuchi N, Hamada J, et al. Somatic Mutations of the APC Gene in Primary Breast Cancers. Am J Pathology. 2000;156(6):1997-2005.