

CASE REPORT

Appendicular and breast cancers in an old lady: a case report

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Abstract

The presence of two or more malignant tumors of different histological entities in an individual is referred to as multiple primary malignant neoplasms (MPMN). These are becoming more frequently encountered and reported in clinical practice nowadays. Majority of MPMN are diagnosed in elderly, where senility might alter the management plan. Despite the increased reporting of MPMN in the literature, only a few elaborated on the management of such cases. Also, the combination of synchronous primary appendicular and breast cancers—to our knowledge—has never been reported. Here we present the first report of an appendicular adenocarcinoma synchronously presenting along with invasive ductal carcinoma of the breast. We highlight the diagnostic essentials and the multidisciplinary management approach including surgical excision and adjuvant therapy.

INTRODUCTION

Multiple primary malignant neoplasms (MPMN) is defined as the presence of two or more malignant tumors of different histological entities in an individual [1]. MPMN are a common occurrence. The incidence among all malignancies ranges from 0.4 to 21% from different studies and countries [2]. The risk of developing it varies from 1 to 16% with different initial cancer primaries [3], with prevalence of 0.73–11% [4].

The exact mechanisms delineating why MPMN occur are still unclear. However, this can be partly explained by the fact that the prolonged average life span leads to an increased likelihood of developing new cancers [5]. Better patient surveillance and follow ups also help with the early detection of de novo and recurrent cancer [6]. The carcinogenic effects of many chemo-therapeutic agents and radiotherapy used in the treatment of cancers may also play a role in the etiology.

Criteria to diagnose MPMN were established by Warren and Gates in 1932 and it includes (i) presence of two or more primary tumors in the same individual, (ii) different histological entity and (iii) exclusion of metastasis [2]. Synchronous cancers

are second tumors occurring simultaneously or within 6 months after the first malignancy. Metachronous cancers are secondary tumors that develop after more than 6 months from the first malignancy [7]. Among patients with MPMN, double cancers are commonly observed, triple cancers occur in 0.5% and quadruple or quintuple cancers occur in <0.1% [8]. The aim of this article is to report synchronous cancers of the appendix and the breast diagnosed at the same admission in an elderly lady with emphasis on management.

CASE HISTORY

A 70-year-old female patient without previous medical problems, presented to our tertiary care institute after being diagnosed to have an appendicular adenocarcinoma incidentally discovered post-appendectomy. Review of slides revealed a 1.5 cm mucinous type adenocarcinoma of the appendix with lymphovascular invasion and a positive proximal margin. The pathological staging was initially T3NxMx as the tumor was invading the muscularis propria into the subserosa but not reaching the serosal surface and there were no lymph nodes

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submitted. Upon her presentation to our clinic, she denied any symptoms apart from a painless right breast lump, which she felt a few months earlier but did not seek medical advice, as it was not changing much. Physical examination was normal, except for a palpable non-tender right breast lump retro-areolar $2 \times 2 \text{ cm}^2$, mobile, firm, without skin tethering or axillary lymph nodes. Staging computed tomography (CT) also showed the two suspicious lesions in her right breast. Breast ultrasonography and mammogram confirmed the two lesions. Lesion number 1 at 2 o'clock was a multifocal retro-areolar lesion slightly medially with skin thickening and extension to the nipple. Lesion number 2 at 5 o'clock was infero-centrally, both were category 5 according to the breast imaging reporting and data system. No suspicious axillary lymph nodes were present neither clinically nor radiologically.

Histopathology of the core cut biopsies from both lesions revealed the following: Lesion number 1 invasive ductal carcinoma (IDC), not otherwise specified (NOS) grade II. Lesion number 2 IDC with mucoid feature, estrogen receptors and progesterone receptors were 50% positive, while (Her2 neu) were negative in both lesions.

The diagnosis of MPMN was discussed with the patient. Tumor board discussed and implemented the management plan. Surgical resection without neoadjuvant treatment was recommended.

After anesthesia evaluation, an informed consent was obtained from the patient.

The patient underwent right simple mastectomy as a step one procedure, axillary surgery (sentinel lymph node or axillary dissection) was labeled unnecessary and was not done as it will not affect her prognosis. Post-operative course went uneventful. The wound was healing nicely and the surgical site drain was removed on Day 5 post-operative.

Around Day 7 post-operative the patient underwent laparoscopic right hemicolectomy as a step two procedure and tolerated it well with an uneventful post-operative hospital course.

Final pathology results of the right breast specimen showed 2 cm IDC NOS grade II retro-areolar at the upper inner quadrant, 1.3 cm tumor IDC with mucoid features at the lower inner quadrant, no lymphovascular invasion was seen and margins were all negative.

The right colon specimen showed 5 mm invasive mucinous adenocarcinoma with invasion into the muscularis propria of the colonic wall and into the pericolic fat and negative lymph nodes (0/13).

She was followed as an outpatient and started on hormonal therapy for her breast cancer.

Adjuvant chemotherapy was not indicated. Regular follow up for 1 year showed no evidence of recurrence or metastasis up to date and planned to continue.

DISCUSSION

As the reported cases in MPMN are increasing, and the double cancers is the most commonly noticed, it was interesting to determine the common pairs. According to The Surveillance, Epidemiology, and End Results (SEER) Program of the National Cancer Institute, the two most common tumor pairs of MPMN in women were breast–breast carcinoma and breast–colon carcinoma pairs [3].

Establishing the diagnosis of MPMN is of clinical significance because it excludes metastasis and hence alters management plans. In our case, immunohistochemistry was used to ensure that the two tumors were different and not metastatic.

Similar to the literature, multidisciplinary tumor board decision was to proceed with surgical resection of both primaries

followed by adjuvant hormonal therapy targeted towards the breast lesions. Axillary sentinel lymph node biopsy (SLNB) was labeled unnecessary in such age. As in females above 70 with clinically node negative breast cancer and who proceed to surgery for treatment of the breast, SLNB is not always necessary [9].

Resecting both tumors simultaneously was tempting; however, several reasons impacted the decision of resecting each in a separate procedure. Taking into consideration that there is no consensus in the literature with regards to the optimal approach. Our patient underwent a simple right mastectomy followed by a laparoscopic right hemicolectomy 7 days apart in order to avoid prolonged surgery time, the added associated morbidity, increased risk of blood loss and risk of combining a clean with a clean contaminated procedure.

The majority of the reported cases of MPMN focused on the presentation and diagnosis but lacked management details and long term follow up. MPMN so far are treated case by case without any special guidelines. However, the old age, limited number of cases, different tumor nature and site and the poor understanding of such cases exact pathophysiology deserves more data on management and follow up to identify pitfalls if any.

Fortunately, prompt diagnosis and multidisciplinary approach for the most common MPMN, still makes the prognosis very promising [3].

CONFLICT OF INTEREST STATEMENT

None declared.

REFERENCES

- Warren S, Gates O. Multiple primary malignant tumors: a survey of the literature and statistical study. *Am J Cancer* 1932;16:1358–414.
- Liu Z, Liu C, Guo W, Li S, Bai O. Clinical analysis of 152 cases of multiple primary malignant tumors in 15,398 patients with malignant tumors. *PLoS One* 2015;10:e0125754 doi:10.1371/journal.pone.0125754.
- Hayat MJ, Howlader N, Reichman ME, Edwards BK. Cancer statistics, trends, and multiple primary cancer analyses from the Surveillance, Epidemiology, and End Results (SEER) Program. *Oncologist* 2007;12:20–37.
- Demandante CG, Troyer DA, Miles TP. Multiple primary malignant neoplasms: case report and a comprehensive review of the literature. *Am J Clin Oncol* 2003;26:79–83. doi:10.1097/00000421-200302000-00015.
- Spratt JS, Hoag MG. Incidence of multiple primary cancers per man-year of follow up: 20-year review from the Ellis Fischel State Cancer Hospital. *Ann Surg* 1966;164:775–84.
- Irimie A, Achimas-Cadariu P, Burz C, Puscas E. Multiple primary malignancies—epidemiological analysis at a single tertiary institution. *J Gastrointestin Liver Dis* 2010;19:69–73.
- Mortel CG. Multiple primary malignant neoplasms: historical perspectives. *Cancer* 1977;40:S1786–92. doi:10.1002/1097-0142(197710)40:4+<1786::AID-CNCR2820400803>3.0.CO;2-2.
- Zhao J, Tan Y, Wu Y, et al. A rare case of eight multiple primary malignant neoplasms in a female patient: a case report and review of the literature. *Oncol Lett* 2015;9:587–90. doi:10.3892/ol.2014.2789.
- Cameron JL. Chapter 126: The management of the axilla in breast cancer. Special cases and management of the axilla. In: McCartan D, Gemignani ML, eds. *Current Surgical Therapy*, 12th edn. Philadelphia, PA: Elsevier 2017, 694–5.