ejpmr, 2018,5(10), 391-394

SJIF Impact Factor 4.897

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Case Report

ISSN 2394-3211

EJPMR

ASKIN TUMOR PRESENTING AS SECONDARY MALIGNANCY AFTER PRIMARY BREAST CANCER: A RARE CASE REPORT

Dr. Sonia Chhabra[1,2], Dr. Padam Parmar[3,4]*, Dr. Ritika Vashisht[2,5], Dr. Sunita Singh[2,6], Dr. Rajeev Sen[2,7] and Dr. Taruna Yadav[3,8]

[1]Professor, [2]Department of Pathology, PT BDS PGIMS, Rohtak, Haryana, [3]Assistant Professor, [4]Department of Pathology, Dr S.N. Medical College Jodhpur, [5]Resident, [6]Senior Professor, [7]Senior Professor and Head of Department, [8]Department of Diagnostic and Interventional Radiology, AIIMS, Jodhpur,
Department of Pathology, PT BDS PGIMS, Rohtak, Haryana.

***Corresponding Author: Dr. Padam Parmar**

Assistant Professor, Department of Pathology, Dr S.N. Medical College Jodhpur.

Article Received on 18/08/2018 **Article Revised on 07/09/2018** **Article Accepted on 28/09/2018**

ABSTRACT

Surgery and adjuvant radiation or chemotherapy is treatment of choice in treatment of breast cancer. With harmful effect of irradiation and chemotherapy, various secondary malignancies develop in breast cancer treatment. We reported a case of askin tumor (primitive neuroectodermal tumor of chest wall) in known case of breast cancer in 60 years old female who had received treatment 5 years back and was on follow up.

KEYWORDS: Breast cancer, irradiation, secondary malignancy, askin tumor.

INTRODUCTION

Breast cancer is usually treated with surgery followed by adjuvant radiation and chemotherapy. Irradiation of surrounding tissues in breast region during treatment can cause secondary cancers and increase risk of other primary malignancies in various sites.[1,2] Askin tumor (primitive neuroectodermal tumor) is a rare tumor commonly occur in childhood as compare to adult in the thoracopulmonary region.[3] This tumor was first described by Askin and Rosai in 1979.[2] We reported a case of askin tumor in 60 years old female who was treated for breast cancer with surgery and adjuvant radiotherapy.

CASE REPORT

A 60 years old female presented to surgery department with chief complaints of chest mass since 6 months. She was operated for carcinoma breast in 2009 (diagnosed infiltrating ductal carcinoma) and received 6 cycles of chemotherapy. On physical examination, mass was hard, non-mobile, about 14x13x7 cm in size. Routine investigation including biochemical and haematological parameters were in normal limits. CECT chest axial section revealed well defined enhancing soft tissue mass lesion in left chest wall. Few hypoenhancing areas are seen in anterior part of lesion without calcification and rib erosion. (Figure 1) Recurrence of primary breast malignancy was the first differential in view of medical history.

FNAC was done from the mass which revealed blood only, even on repeated aspirations. Frozen section done which was suggestive of small round cell tumor. Then excision of the mass was done and sent to department of pathology for histopathological examination. Specimen was received in multiple pieces measuring 12x10x5 cms. Histological sections revealed peritheliomatous pattern and rosette of small round cells with scant cytoplasm, high N: C ratio revealing. (Figure 2) On IHC, these cells were negative for CK, LCA and strongly positive for CD99 (Figure 3), focally positive for synaptophysin and S-100. On the basis of histological features and immunohistochemistry, diagnosis of Ewing sarcoma family tumor/ PNET was made.

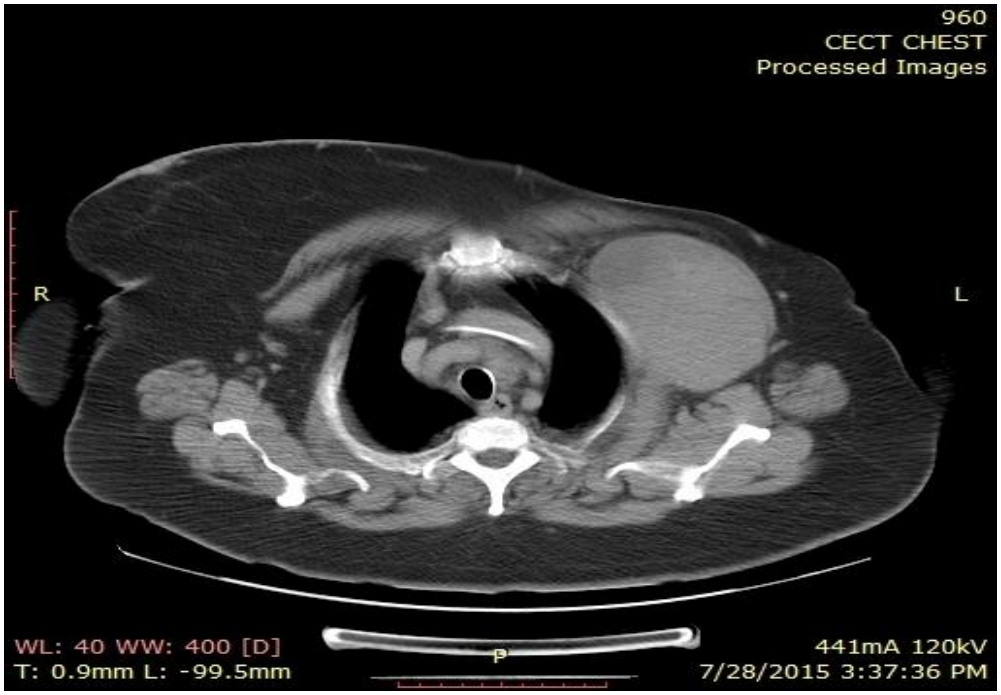

Fig 1: CECT chest axial section revealed well defined enhancing soft tissue mass lesion in left chest wall without rib erosion.

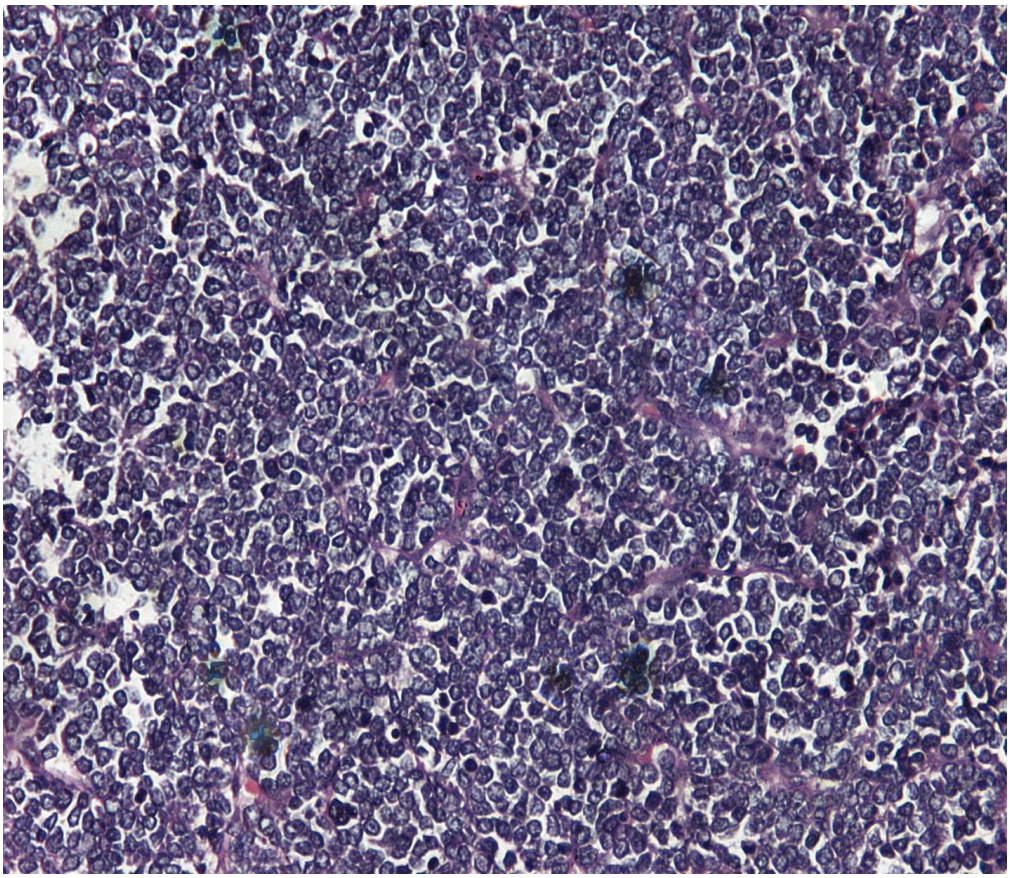

Fig 2: H&E stained sections revealed small round cell tumor.(200x).

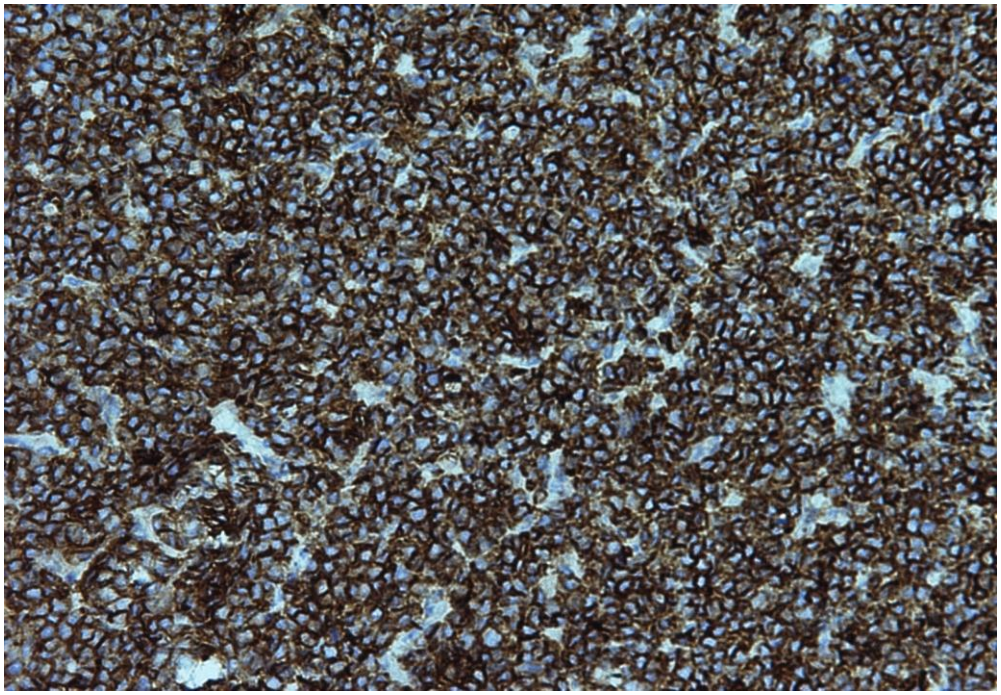

Fig. 3: Positive CD99 in small round malignant cells. (IHC, 200x).

DISCUSSION

Breast cancer is the most common cancer in women worldwide. Breast cancer is usually treated with surgery followed by adjuvant radiation and chemotherapy. Association between radiation exposure and cancer is well known. Irradiation of surrounding tissues in breast region can cause secondary cancers.[1] The second malignancy refers to a new primary cancer in a person who has survived an earlier cancer. Patient treated with adjuvant therapy in breast cancer showed increased risk of leukaemia, gynaecological cancers, gastrointestinal cancers, sarcomas, lung cancer and other.[1,2] In our case, askin tumor was diagnosed with primary breast cancer.

Ewing sarcoma and primitive neuroectodermal tumor (PNET) were originally identified as distinct clinicopathologic entities. Nowdays these have been accepted as single entity under the members of Ewings family of tumors. When PNET is localised to thoracopulmonary region, these are termed as askin tumors.[3,4] These are rare malignant small round cell tumors. Cells of origin are primitive nerve cells of the nervous system, but they can also identified outside the nervous system in especially in chest wall, pelvis and extremities.

Askin's tumor was first described by ASKIN et al in 1970.[5] It develops from soft tissues of the chest wall, particularly in the paravertebral region. They occur mainly in children and adolescents age groug, but can develop at any age. PNET within the thoracopulmonary region have been termed Askin tumors. This presents as a painful rapidly growing chest mass, often associated with respiratory symptom like cough and dyspnoea, weight loss or regional lymphadenopathy.[6] CT scan is investigation of choice to demonstrate intrathoracic extension and/or direct lung invasion.[7]

Cytologic smears of the tumor reveal small round malignant cells that contain scant amount of cytoplasm, fine granular chromatin and one to two prominent nucleoli. Two population of cells including large chief cells and smaller dark cells are present. The cytoplasm contains variable numbers of vacuoles due to presence of glycogen which can be demonstrated with periodic acid Schiff staining The typical feature is the presence of Homer-wright rosettes with fibrillary material in center.[8] On histology, small round cells with scant eosinophilic cytolpasm, similar to that of other round cell tumors (lymphoma, small cell osteosarcoma, desmoplastic small round cell tumor) are seen. Ewing family of tumor can not differentiate with other small round cell tumor on light microscopy alone. On immunohistochemistry, the tumor is positive for CD99, NSE and vimentin. The chromosomal translocation t(11,22) (q24;q12) is an additional diagnostic criteria. Treatment includes radical surgical resection, neoadjuvant and adjuvant chemotherapy and radiation. The prognosis is usually poor.[3]

REFERENCES

1. Zhang W, Becciolini A, Biggeri A, Pacini P, Muirhead CR. Second malignancies in breast cancer patients following radiotherapy: a study in Florence, Italy. BCR, 2011; 13: R38.
2. Kirova YM, De Rycke Y, Gambotti L, Pierga J-Y, Asselain B, Fourquet A. Second malignancies after breast cancer: the impact of different treatment modalities. Br J Cancer, 2008; 98: 870-4.

3. Sikri V, Sobti S. Askin tumour: A rare thoracopulmonary tumour in adults. Indian J Chest Dis Allied Sci, 2013; 55: 233-5.
4. Benbrahim Z, Arifi S, Daoudi K, Senraj M, Amara B, Benjelloun MC et al. Askin 's tumor : a case report and literature review. World Journal of Surg Oncol, 2013; 11: 10-3.
5. Askin FB, Rosai J, Sibley RK, Dehner LP, Mc Alister WH: Malignant small cell tumour of the thoracopulmonary region in childhood: a distinctive clinicopathologic entity of uncertain histogenesis. Cancer, 1979; 43: 2438-51.
6. Xu Q, Xu K, Yang C, Zhang X, Meng Y, Quan Q. Askin tumor: four case reports and a review of the literature. Cancer Imaging, 2011; 11: 184-8.
7. Sabati JM, Franquet T, Parellada JA, Monill JM, Oliva E. Malignant neuroectodermal tumour of the chest wall (Askin tumour): CT and MR findings in eight patients. Clinical Radiology, 1994; 49: 634-8.
8. Kumar PV. Fine needle aspiration cytologic findings in malignant small cell tumor of the thoracopulmonay region (Askin tumors). Acta Cytol, 1994; 38: 702-6.