

## Case Report

# A case report of male breast cancer in a 14-year-old patient

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**Received:** 20 September 2021

**Accepted:** 05 October 2021

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### ABSTRACT

Breast cancer is one of the most common malignancies. This malignancy can originate from the epithelium of the ducts or lobules of the breast. Although rare, breast cancer can also be found in men. The incidence of breast cancer in men is <1% of the total breast cancer and it is estimated that 1 in 100.00 men worldwide is diagnosed with breast cancer. Breast cancer in pediatric patients is rare. Incidence of breast cancer in pediatric is estimated to be 0.2-0.8/100.000 for females with less than 20 years old. In this case report is a 14-years-old male with ten years history of a mass in his right breast. At first the mass was said to be as small as a marble, then since last year the mass have grown bigger. Biopsy and histopathology examination were performed to confirm the diagnosis. The result of histopathology examination was ductal invasive carcinoma. The patient and family refused to undergo chemotherapy. The incidence of breast cancer in pediatric is rare, and it has high mortality rate in pediatric patient.

**Keywords:** Breast cancer, Men, Pediatric

### INTRODUCTION

Breast cancer is one of the most common malignancies.<sup>1</sup> This malignancy can originate from the epithelium of the ducts or lobules of the breast. Although rare, breast cancer can also be found in men.<sup>2</sup> The incidence of breast cancer in men is <1% of the total breast cancer and it is estimated that 1 in 100.00 men worldwide is diagnosed with breast cancer.<sup>1</sup> An analysis of a large population showed that men with breast cancer were older at diagnosis with an age range from 47-77 years with the mean age is 60 years.<sup>3,4</sup> Breast cancer can also be found in pediatric patient. The incidence of breast cancer in pediatric less than 0.1% of all breast cancer and it is estimated to be 0.2-0.8/100.000 for females with less than 20 years old.<sup>5</sup> Although it is a rare disease in pediatric population, when it is compared with adults, this disease has been shown to be more aggressive in pediatric population.<sup>5</sup>

The cause of breast cancer in men is remind unknown. There are some predisposing factors that can cause breast cancer in men such as family history of breast cancer,

radiation exposure, estrogen administration, and disease associated with hyper-estrogenism, such as cirrhosis or Klinefelter's syndrome. In addition, another risk factors such as testicular undescended, orchitis, and infertility may increase the risk of breast cancer in men.<sup>6</sup> Although several risk factors of breast cancer in men have been identified, most cases occur with increasing age with mean age of onset at 60 years.<sup>3,7</sup> It is estimated that 10% of men with breast cancer have a genetic predisposition such as BRCA1, BRCA2, PTEN, P53, and CHEK21 gene mutations. However, BRCA2 is the most related gene mutation and it has been reported that there is an increased risk of 5-10% in men who carry mutations in the tumor suppressor gene BRCA2.<sup>1,6</sup>

In 75% cases of breast cancer in men, patient generally complaints with painless mass in the sub-areolar area. Nipple retraction, nipple discharge, ulceration, and pain may also present as additional symptoms.<sup>1,7</sup> The diagnosis of breast cancer also requires other examinations such as mammography and ultrasonography (USG).<sup>7</sup> On mammography examination the tumor will appear hyperdense with lobulated mass

with spiculated margins or structural distortion, this due to the different structure of breast tissue in men.<sup>1</sup> Findings on ultrasound examination will show an irregular hypoechoic solid mass with posterior acoustic shadow. A doppler ultrasound will show an increase in blood flow. Cytological examination and fine needle aspiration biopsy can be used, but in most cases the use of biopsy is preferred because it allows for making a definitive diagnosis.<sup>1,7</sup> Histopathologically, most types of breast cancer in men are invasive ductal carcinoma (80%), only 10% with ductal carcinoma in situ (DCIS). As much as 1% of men with breast cancer originate from the lobular, this is because the development structure of male breast depends on the presence of estrogen stimulation.<sup>7</sup>

The prognostic of breast cancer in men is determined by the size of tumor and the involvement of the lymph nodes. It is reported that men with lymph node involvement, has 50% higher risk of mortality.<sup>6</sup> Patient with tumor size between 2-5 cm had 40% higher mortality risk compared with those with smaller tumor.<sup>6</sup> Breast cancer mortality in men was found to be higher in men aged over 65 years.<sup>6</sup>

### CASE REPORT

This 14-years-old boy patient presented to the department of surgery at general hospital Patut Patuh Patju with ten years history of a mass in his right breast. At first the mass was said to be as small as a marble, then since last year the mass have grown bigger. There was no history of pain, and no discharge or itching. The patient was in good condition without taking any medication. A family history of similar complaints was found in the patient's grandmother.

On physical examination, vital signs and general status are within normal limits. Examination of the breast showed a mass on the right breast measuring 5 cm in diameter, and there was a retraction of the nipple. No discharge was found. The mass was swollen and doesn't feel painful. An enlarged lymph node was found in the left axillary region measuring 1 cm in diameter. Ultrasound was performed and showed an irregular solid mass, measuring 5×2 cm. The mass was suspected of being malignant (BIRADS V).

A biopsy incision was performed to make a definitive diagnosis of the tumor. The tissue was taken measuring 3×1.5×1 cm. The result of histopathological examination showed a tissue consist with anaplastic epithelial cell, with pleiomorphic round oval nuclei arrange in groups and distributed between the connective tissue stroma. The conclusion obtain is invasive ductal carcinoma. After the results was out, we suggest the patient to do chemotherapy, but the patient and family refused. We tried to communicate with the patient's family but there was no response.



**Figure 1 (A and B): Mass on the right breast with nipple retraction.**



**Figure 2: Ultrasound was performed and showed an irregular solid mass (BIRADS V).**

### DISCUSSION

Breast cancer is the most common malignancy.<sup>1</sup> Although rare, breast cancer can also be found in men.<sup>2</sup>

The incidence of breast cancer in men is <1% of the total breast cancer. An analysis of a large population showed that men with breast cancer were older at diagnosis with an age range from 47-77 years with the mean age is 60 years.<sup>3,4</sup> The cause of breast cancer in men is remind unknown. There are some predisposing factors that can cause breast cancer in men such as family history of breast cancer, radiation exposure, estrogen administration, and disease associated with hyperestrogenism, such as cirrhosis or Klinefelter's syndrome. In addition, another risk factors such as testicular undescended, orchitis, and infertility may increase the risk of breast cancer in men.<sup>6</sup> Although several risk factors of breast cancer in men have been identified, most cases occur with increasing age with mean age of onset at 60 years.<sup>3,7</sup> BRCA2 is the most related gene mutation and it has been reported that there is an increased risk of 5-10% in men who carry mutations in the tumor suppressor gene BRCA2.<sup>1,6</sup> In 75% cases of breast cancer in men, patient generally complaints with painless mass in the sub-areolar area. Nipple retraction, nipple discharge, ulceration, and pain may also present as additional symptoms.<sup>1,7</sup> To make a definitive diagnostic, the surgeon preferred to use biopsy.

This case report demonstrates that breast cancer can occur not only in women but also in men. Based on the risk factors that the age of occurrence of breast cancer is 60 years, but in this case, it occurs at the age of 14 years. Breast cancer in pediatric patients is rare. Incidence of breast cancer in pediatric is estimated to be 0.2-0.8/100.000 for females with less than 20 years old.<sup>8</sup> Compared with adult's patient, the breast cancer in pediatric has shown to be more aggressive.<sup>8</sup> There was a further analysis showed that pediatric patient present with late-stage disease, nodal metastases and nodal lympho-vascular invasion. If the prevalence of these poor prognostic factors supports are high, the pediatrics patient needs for vigilant diagnosis and treatment of this disease.<sup>8</sup>

#### **Limitations**

The limitations of this case reports were the patient did not want to performed further treatment of the malignancy. Further evaluation in such cases is needed as an evaluation of appropriate therapy in these cases.

## **CONCLUSION**

Breast cancer is a malignancy that not only occurs in women, but can also occur in men. The incidence of breast cancer in men is low but it has a high mortality rate especially in pediatric patient. Breast cancer in pediatric patients is rare, thus early detection such as biopsy must be done to rule out malignancy.

## **ACKNOWLEDGEMENTS**

Authors would like to thank department of surgery, Patuh Patju general hospital West Lombok for the support to authors in this work.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: Not required*

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**Cite this article as:** Dewi PAK, Raditha IN. A case report of male breast cancer in a 14-year-old patient. *Int J Res Med Sci* 2021;9:3451-3.