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A Breast Cancer in a Man in Ndola-Zambia: A Short Case Presentation

Mugala DD*, Benaya C and Simutowe M

Department of Medicine, Ndola Teaching Hospital, University of Copper Belt, Zambia

Abstract

Men Breast Cancer (MBC) is uncommon and occurs after the age of 60 years. Among men Prognosis is poor as Prognosis a course of a medical condition is discovered at a late stage. where Infiltrating ductal carcinoma accounts for (70-90%) of male breast cancers. *In situ* but not invasive carcinoma is exclusively ductal, and it accounts only 7% of the breast cancer cases in males. It is observed that 50-75% of breast cancer cases are spread to lymph nodes. The etiology of male breast cancer is unknown. An excess risk has been associated with the testicular disorders, benign breast disease including gynecomastia, Klinefelter syndrome, etc., Preliminary evidence suggests that *BRCA2* is a strong cause. The carriers of the males with *BRCA2* mutation have an increased lifetime risk of breast cancer with 80-fold in it. It is also known that there is also a risk of breast cancer associated with undescended testes and it is also related to orchiectomy, orchitis, testicular injury, etc., with an increasing number of children the decreasing trend in risk was observed gradually. Where It is also known that Liver cirrhosis is associated with increased levels of estrogens possibly via high levels of endogenous estrogens.

Keywords: *BRCA2*; Estrogens; Gynecomastia; Intraoperative; MBC; Mammography; Testicular; Ultrasonography

Introduction

We accept that in United States the Breast cancer is uncommon among men; the yearly diagnosed are 1500 new cases. It is also a fact that the optimal management of breast cancer in men is unknown because this disease is very often. It is known that a review of the literature over a 10-year period always shows how uncommon this issue is by Giordano, et al. [1]. The scientific study of infectious diseases and their causes of breast cancer also have provided insights into the pathogenesis and etiology in both sexes related to breast cancer [2]. It is histologically not distinguishable that individual carcinomas are types of ductal origin that are observed from both the male and female breast, but these situations are more common in men than women. However, it is clear observed with the increase of age in men causes the risk of breast cancer. It is known also that Men Breast Cancer (MBC) is an uncommon but serious problem in men. Where as in US Men account for less than 1% of all cases of breast cancer. Estimates for 1995 showed that there were only 1400 (0.76%) of the 183,400 cases of breast cancer in the United States that occurred in men [3]. From the above paragraph we have already discussed that Prognosis is poor, but it is easy to detect the breast cancer as men have so little breast tissue [4-11].

Infiltrating ductal carcinoma accounts for most cases (70-90%) of male breast cancers. *In situ* but not invasive carcinoma is exclusively ductal and accounts for 7% of cases. The spread to lymph nodes are observed in 50-75% of cases [11]. In Zambia we do not have the records. History is known that the earliest reference to breast cancer that the Edwin Smith Surgical Papyrus from Egypt contents, shows that MBC dates were from 3000 to 2500 years B.C. [3]. Despite all this, knowledge relevant to many aspects of the disease in men is still limited

Robert W. Crichlow adds on the fact that carcinoma of the male breast is a rare neoplasm and comprises only 1% of all breast carcinomas and less than 1.5% of malignant tumors in men. He adds on that important differences exist between the men and women in clinical presentation and prognosis. Males present at a later age and often after a longer delay. The tendency for ulceration of the overlying epidermis is far greater in men than women. Prognosis appears to be worse overall for men [4]. Palade et al., points out that in 20 years they registered 10 observations of male breast cancer (MBC), represented 1.3% out of 767 patients with breast cancer [12]. Most men with breast cancer present with a mass in the breast, the evaluation of which should include a tissue diagnosis [5]. The adequate local 38 therapy includes total removal of the breast only If the presence of invasive cancer is established.

The difficulty of discovering MBC is that it tends to occur at an older age in men than in women as mentioned above, the problem is that it usually presents itself as a painless, central breast lump. Although male breast cancer is 100 times less common than female breast cancer, the 42 prognoses for men is worse than that for women, probably because of delay in diagnosis [6]. A small share of breast cancer, those cases arising at a young age, causes due to the inheritance of dominant susceptibility genes conferring disease with a high risk [7]. The survival rates for men and women are similar in the stage of age-adjusted to 5-years, but comorbidities in older men lead to worse prognosis.

Mammography is the process of using low-energy X-rays to examine the human breast for diagnosis and screening is required for Palpable breast masses in men. Wesley D. Block and Derek Muradali point out that mammography has a sensitivity of 92% and specificity of 90% for male breast cancer (n=104) [8]. Ann W Hsing et al., point out that the etiology of male breast cancer is unknown, Other writers suggests that obesity increases the risk of male breast cancer, possibly through hormonal mechanisms [9,10]. The Risk factors for male breast cancer include History of the family, genes mutations age, radiations of the chest and altered testosterone-estrogen levels (for e.g., due to liver cirrhosis, gonad dysfunction, estrogen use, obesity) [8] Preliminary evidence suggests that *BRCA2* is a strong cause. However, it does not confer a substantially elevated risk of ovarian cancer in contrast to BRCA1 [7].

David B. Thomas and Margarita Jimenez et al., suggest the following; an increased risk of breast cancer is most strongly associated

***Corresponding author:** Mugala DD, Department of Medicine, Ndola Teaching Hospital, University of Copper Belt, Zambia, Tel: +260 21 2612590; E-mail: mugaladdc1@yahoo.com

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with undescended testes and is also related to orchiectomy, orchitis, testicular injury, late puberty, and infertility; A decreasing trend in risk was observed with an increasing number of children. high blood cholesterol, rapid weight gain, benign breast conditions, and hesitancy obesity are the Relative risks that estimates the breast cancer in men [11,12]. About 90% of tumors are estrogen-receptor-positive, among them tamoxifen is a standard adjuvant therapy, but some of the individuals could also benefit causes from chemotherapy technique. In men, an increase in risk of breast cancer has been associated with testicular pathology and dysfunction, and a decrease in risk has been related to high fertility, a history of prostate cancer, and exogenous androgens [2]. Whereas an Immunohistochemical analysis shows that the tumors are positive only for progesterone and estrogen receptors more frequently in men rather than women.

It is also known that Liver cirrhosis is associated with increased levels of estrogens possibly via high levels of endogenous estrogens, which increases the risk of breast cancer in men [13-15]. Mostly men from united states die from breast cancer rather than from testicular cancer. where 9355 men diagnosed with breast cancer in the United States from 2004-2008, there were 1934 deaths, compared with 1758 deaths from 39,641 cases of testicular cancer. Karin and David et al., think that the developing breast cancer were greater in men with relative odds and who developed their mammary neoplasm before the age of 45 with the first-degree relatives than in men with older first-degree affected relatives; the risk in men with an affected sister was greater in those under age 60 than in older men [13].

The problem of MBC may also include Occupational risks which include: high temperature environments and exhaust fumes, but electromagnetic fields have not been implicated. Hyper estrogenisation resulting from Klinefelter's, gonadal dysfunction, etc., also increase risk as it exposure to radiation, Michael Hayes Samuelson says gynecomastia won't lead to MBC [14]. However, two observations of gynecomastia have been noted as a possible risk factor for MBC [12].

How do we diagnose MBC? Diagnosis of the breast cancer in men is mainly based on examination with clinical testing, followed by ultrasonography, mammography etc., whereas the Aspiration cytology makes it possible to confirm the malignancy tumors.

The intraoperative pathology examination confirms malignancy with resection biopsy and makes wider excision possible during the same procedure [11]. The Presentation of the tumor is usually a lump or nipple inversion, but is often late, with more than 40% of individuals having stage III or IV disease. Most tumors are ductal type only but *in situ* only 10% are ductal carcinomas [14]. The Surgical removal is usually mastectomy with axillary clearance or sentinel node biopsy.

Case Presentation

We present (F.K.) a case of a male patient who is 57-years-old. He complained of a breast lump on the right for 5-years that was gradually increasing in size.

History of presenting complaints

The lump was first noticed 5 years ago, and it was initially small. It was on the right and was not painful. It was said to be gradually increasing in size but of little bother to the patient. Initially the lump was regular, no associated nipple discharge and the skin above it was said to be normal. But one year prior to presenting, the patient developed a whitish foul-smelling discharge from right nipple. It was painful and later became more irregular with shinny overlying skin [15].

The patient is married with five children, they are two boys and three girls. His libido is said to be normal. Patient does not take alcohol and gives no history of liver disease. He is HIV negative and his past medical history is unremarkable.

Review of Systems

Cardiovascular system

Patient gives no history of chest pain, no shortness of breath, no pedal swelling, and he can lie flat without becoming breathless.

Respiratory system

Patient gives no history of cough, chest pain or coughing out blood.

Gastrointestinal system

Patient gives no history of abdominal pain or distention, no yellowing of eyes or body itchiness, no weight loss, constipation or blood in stool. The Genitourinary and the Neurological systems were normal

Past medical history

He had no history of admissions for significant illnesses and he was not on any treatment drugs like using Antiretroviral drugs, Cimetidine, ketoconazole or testosterone antagonists.

Family history

There is a significant history of his mother who had a unilateral Gigantomastia. He is the eighth born out of 13 children which comprised of three girls and ten boys.

Social history

The patient is a Teacher by profession. He does not smoke nor take alcohol.

General Examination

A middle-aged male was examined, his general condition was good. He was of fair built and not in respiratory distress. He was not pale, jaundiced or cyanosed and he was well hydrated. The left breast was normal (hypoplastic) with no palpable lymph nodes in the left axilla. The examination of Abdominal case was normal: there was no caput medusae, no spider-naevi, and liver span was normal. Testicular examination revealed normal sized testicles. Prostate examination reveals a normal sized prostate with ed normal texture. Whereas the examinations of Cardiovascular and respiratory organs were normal.

Clinical Findings

Examination of the right Breast: He had a breast tumor. The size was 4 × 5 cm, it was fixed to the nipple and overlying skin. There was nipple retraction and nipple discharge. There was Peau d`orange appearance of the overlying skin. The mass was hard, nodular and was moderately fixed to the chest wall. Mobility was further reduced on tensing the pectoralis major muscle. The weight was occupying all the four quadrants but was more prominent in the upper outer quadrant. Axillary (right) examination revealed mobile lymph nodes which were discrete. There were no palpable supraclavicular and cervical lymph nodes (Figures 1 and 2).

Operative Procedures

An Incision was made was made in normal skin with transverse

Figure 1: Lump in the nipple breast.

Figure 2: Lump swelling in a nipple.

elliptical Incision. Dissection was done until the tumor was almost enucleated, what remained was an area of fixation to the pectoralis major. The tumor was excised together with a small part of the pectoralis major.

Level two lymph node dissection was done, lymph nodes were free and mobile but were hard. The wound was washed with saline and a tube drain was left *in situ*. The wound was closed in two layers with vicryl suture (Figures 3-6).

Investigations

Full blood count, cross match, liver function tests and renal

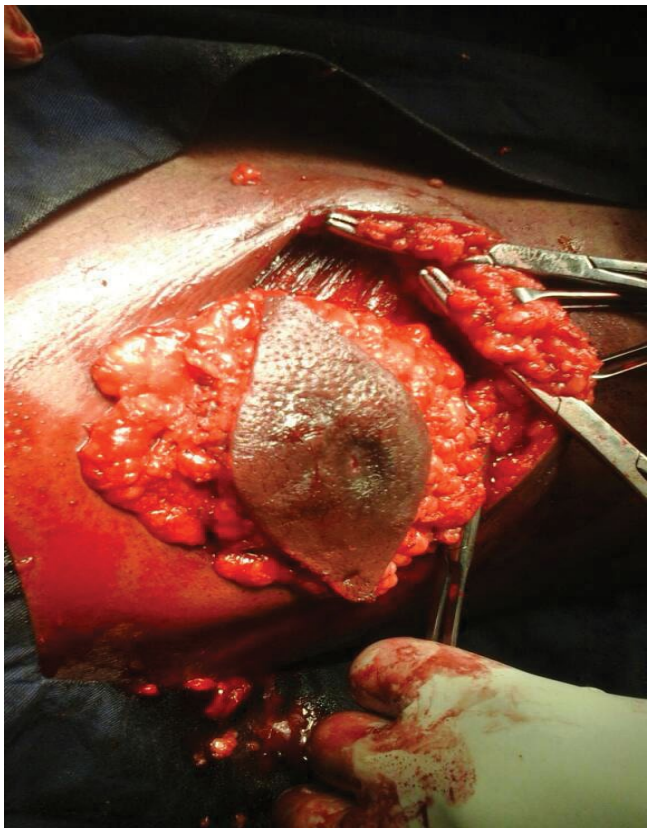


Figure 3: Excision of the lump.

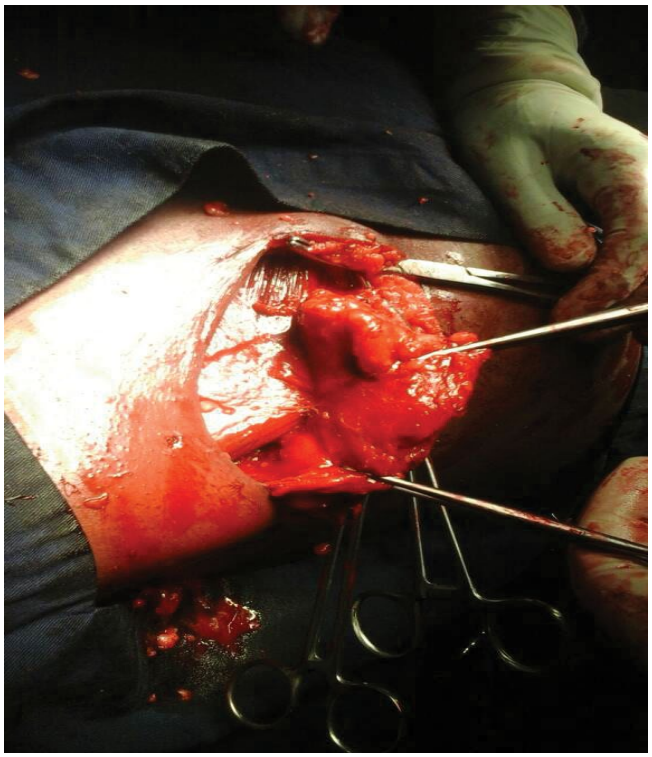


Figure 4: Excising the complete lump.

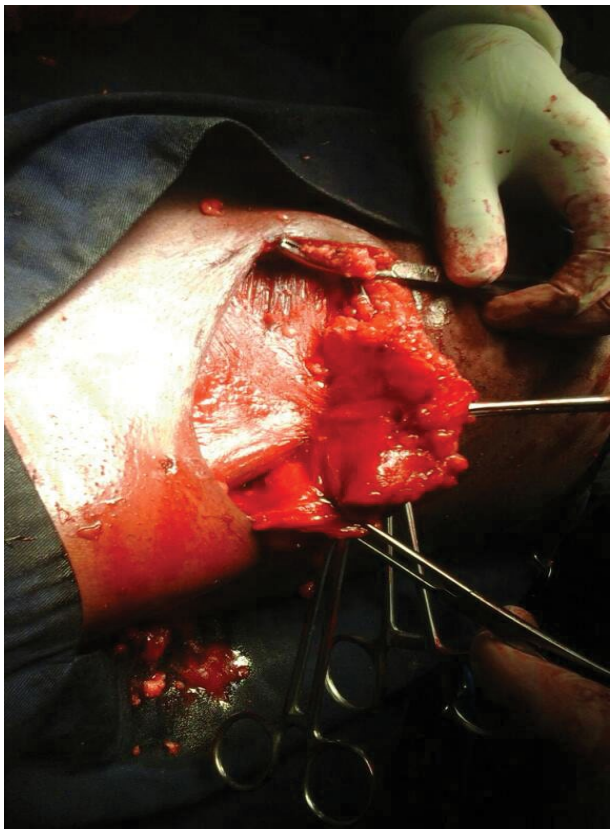


Figure 5: Searching for lymph nodes.

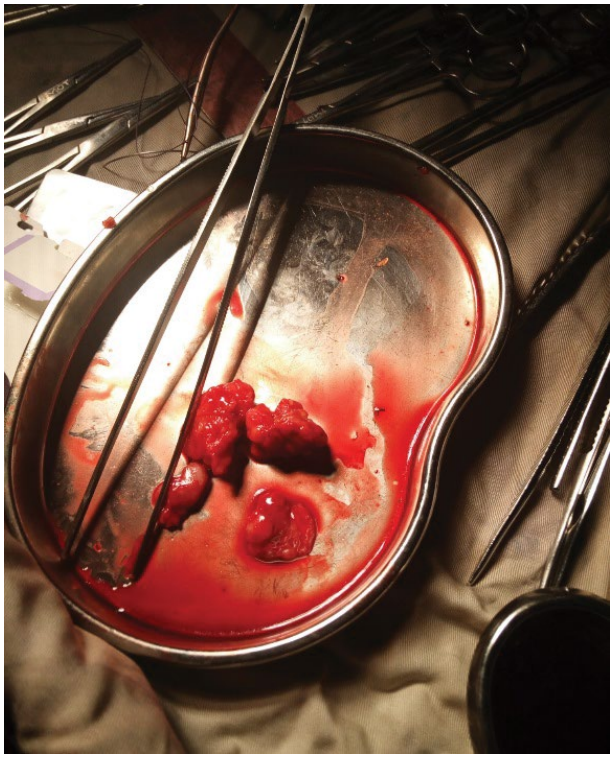


Figure 6: Lymph nodes.

function tests were normal. The Chest X-ray was normal. Excisional biopsy and axillary lymph node biopsy were done (post operatively) which revealed a ductal carcinoma with lymph node metastases (Figures 7-9).

Breast males tumors contribution in Ndola

Mugala and Ndlovu carried out a retrospective of Breast tumors at the Ndola Teaching Hospital from September 2005 to March 2016 a period of 10 years. In their study they found that 549 patients were operated on and their breast tumors were carried out and sent for histology. The histopathologist were carried out in the Pathology department. Their records were kept in the Laboratory record. There were 520 females and only 29 males. The oldest patient was 84 years old and the youngest age was at 10 years, however the most frequent age range of patient with breast tumor was between 10 and 20 years of age. The average age of all our patients was 31.8.

The most common lesions the found out in their patients were the following:

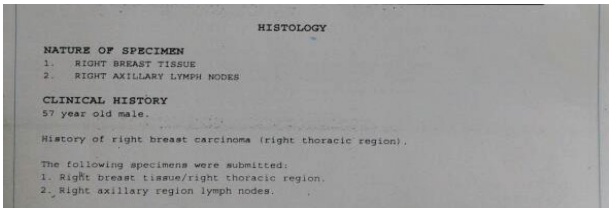
(A) Fibroadenoma lesions,

(B) Fibrocystic mastitis lesions

(C) Invasive Duct cell carcinomas

In ten years there were 9 invasive duct cell carcinoma male breast patients. But there was one man, with a breast cancer which was a Rhabdomyosarcoma. The youngest invasive malignancy was 17 years old and the oldest man was 74-years-old (Tables 1 and 2).

In our experience in the last six years from October 2011 to November 2017 we have only seen this man as our man diagnosed with a breast cancer (Figures 10 and 11).



HISTOLOGY

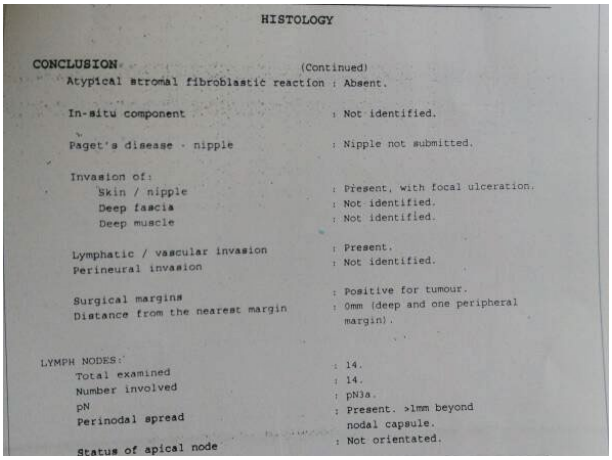
NATURE OF SPECIMEN
1. RIGHT BREAST TISSUE
2. RIGHT AXILLARY LYMPH NODES

CLINICAL HISTORY
57 year old male.

History of right breast carcinoma (right thoracic region).

The following specimens were submitted:
1. Right breast tissue/right thoracic region.
2. Right axillary region lymph nodes.

Figure 7: Histology.

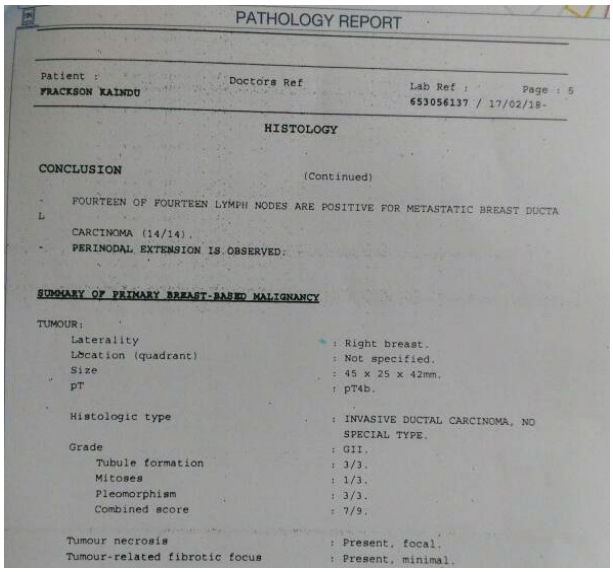


HISTOLOGY

CONCLUSION (Continued)

Atypical stromal fibroblastic reaction	: Absent.
In-situ component	: Not identified.
Paget's disease - nipple	: Nipple not submitted.
Invasion of:	
Skin / nipple	: Present, with focal ulceration.
Deep fascia	: Not identified.
Deep muscle	: Not identified.
Lymphatic / vascular invasion	: Present.
Perineural invasion	: Not identified.
Surgical margins	: Positive for tumour.
Distance from the nearest margin	: 0mm (deep and one peripheral margin).
LYMPH NODES:	
Total examined	: 14.
Number involved	: 14.
pN	: pN3a.
Perinodal spread	: Present. >1mm beyond nodal capsule.
Status of apical node	: Not orientated.

Figure 8: Histology conclusion.



PATHOLOGY REPORT

Patient : FRACKSON KAINDU | Doctors Ref | Lab Ref : 653056137 / 17/02/18- | Page : 5

HISTOLOGY

CONCLUSION (Continued)

- FOURTEEN OF FOURTEEN LYMPH NODES ARE POSITIVE FOR METASTATIC BREAST DUCTAL CARCINOMA (14/14).
- PERINODAL EXTENSION IS OBSERVED.

SUMMARY OF PRIMARY BREAST-BASED MALIGNANCY

TUMOUR:

Laterality	: Right breast.
Location (quadrant)	: Not specified.
Size	: 45 x 25 x 42mm.
pT	: pT4b.
Histologic type	: INVASIVE DUCTAL CARCINOMA, NO SPECIAL TYPE.
Grade	: GII.
Tubule formation	: 3/3.
Mitoses	: 1/3.
Pleomorphism	: 3/3.
Combined score	: 7/9.
Tumour necrosis	: Present, focal.
Tumour-related fibrotic focus	: Present, minimal.

Figure 9: Pathology report.

Age Distribution	15-24	25-34	35-44	45-54	55-64	65-74	75-84
No. of patients	6	3	4	4	5	5	2
Percentage	20.6	10.3	13.8	13.8	17.2	17.2	6.9

Table 1: The age distribution of breast tumors in men patients.

Tumour	No. of Patients	(%)
Invesive Duct Carcinoma	9	34
Gynaeco Mastia	10	35
Fibroadenoma	6	19
Fibrocystic Disease	2	8
Rhabdomyosarcoma	1	4
Total	29	100

Table 2: Breast tumor distribution in men.

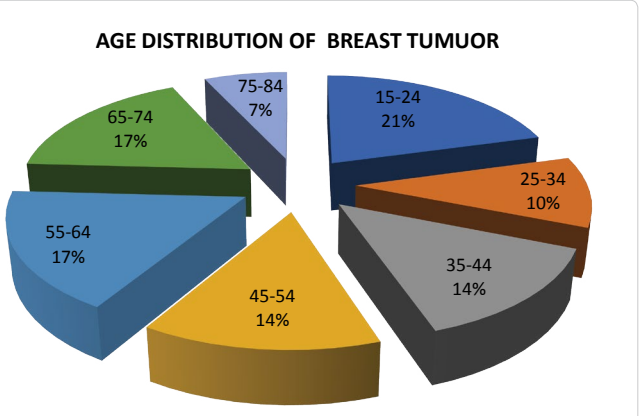


Figure 10: Age distribution of breast tumours in men patients.

Discussion

We accept that Breast cancer in men in Zambia is uncommon. In the United States, their yearly diagnosed cases are 1500 new cases. We do not have that data. We also know that Men Breast Cancer (MBC) often occurs at or after the age of 60 years. Our patient presented himself at the age of 57. In men, the prognosis is poor because it is discovered at a late stage [11], Infiltrating ductal carcinoma accounts for most cases (70-90%) of male breast cancers. In our patient the tumor was part of the pectoralis major as it was being excised. He had Level two lymph node at dissection, the lymph nodes were free and mobile but were hard.

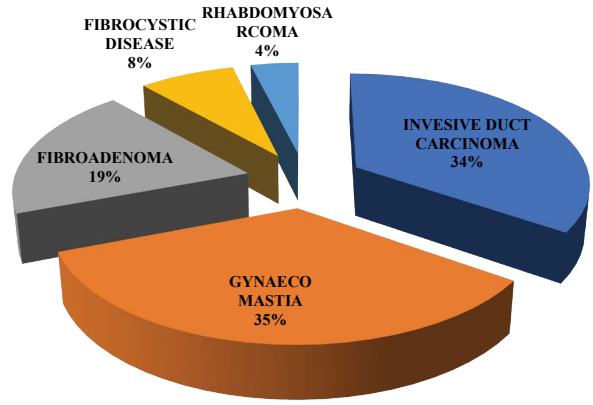


Figure 11: Breast tumours in men.

Ann W Hsing et al., point out that the etiology of male breast cancer is unknown, although an excess risk has been associated with Klinefelter syndrome, testicular disorders, benign breast disease including gynecomastia, use of exogenous estrogens, radiation [9]. Other writers suggest that obesity increases the risk of male breast cancer, possibly through hormonal mechanisms. They go on to say that the risk factors for male breast cancer include family history, gene mutations age, chest radiation and altered testosterone– estrogen levels (e.g., due to liver cirrhosis, gonad dysfunction, estrogen use, obesity) [8] Preliminary evidence suggests that *BRCA2* is a strong cause [7]. In our patient there was a significant history of his mother who had a unilateral Gigantomastia, although he had no history of Gigantomastia or Gynecomastia in his life its relationship may be or not be related.

Conclusion

The papers about MBC go on to say that, an increase risk in men of breast cancer has been associated with testicular pathology and dysfunction and Liver cirrhosis is also associated with increased levels of estrogens via high levels of endogenous estrogens, increases the risk of breast cancer in men [15].

In the history and examination of the patient, we found that our patient was nonalcoholic in his life. There was no obesity, he was married with five children, these were two boys and three girls. His libido was said to be normal. He was not pale, jaundiced or cyanosed and he was well hydrated. The testicular examination revealed normal sized testicles. The rectal examination revealed a normal sized prostate with normal texture. It was very difficult to prove any evidence that an issue caused the development of cancer in our patient.

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