

## A Review of Breast Cancer in Men

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### ABSTRACT

Men Breast Cancer (MBC) is uncommon and occurs after the age of 60 years. Among men the prognosis is poor as the cause of a medical condition is discovered at a late stage where infiltrating ductal carcinoma accounts for 70-90% of male breast cancers. The In situ but not invasive carcinoma is exclusively ductal, and it accounts only 7% to 8% 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, obesity, 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. It is also known that Liver cirrhosis is associated with increased levels of estrogens possibly via high levels of endogenous estrogens.

**Keywords:** Alcohol, BRCA2, Estrogens, Gynecomastia, Intraoperative, MBC, Mammography, Testicular, Ultrasonography, Smoking

### INTRODUCTION

We accept that in United States the Breast cancer is uncommon among men; the yearly diagnosed patients 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 unknown. 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 estimation of the burden of cancer in terms of incidence, mortality and prevalence is a first step to appreciating appropriate control measures in a global context, says Parkin [2]. He goes on to say that the latest results of such an exercise, based on the most recent available international data, show that there were 10 million new cases, 6 million deaths and 22 million people living with cancer in 2000. He points out the fact that the most common cancers in terms of new cases in 2000 were lung (1.2 million), breast (1.05 million), colorectal (945 000), stomach (876 000) and liver (564 000). It is believed that the world population growth and ageing imply a progressive increase in the cancer burden that is 15 million new cases and 10 million new deaths are expected in 2020.

Jemwal et al. [3] state that Cancer is also an emerging public health problem in Africa. They go on to say that there are 715,000 new cancer cases and 542,000 cancer deaths. These occurred in 2008 on the continent, it is expected that these numbers will double in the next 20 years simply because of

the growth population and of the aging of people. They go on to point out that cancers of prostate, female breast, lung cancer, are diagnosed at much higher frequencies now than in the past because of changes in lifestyle factors and detection practices associated with urbanization and economic development. There are certain issues about Africa: Firstly, it is now a fact that Breast cancer in women and prostate cancer in men have now become the most commonly diagnosed cancers in many Sub-Saharan African countries, it is said. Secondly, in most African countries, cancer control programs and the provision of early detection and treatment services are limited despite this increasing burden. In fact it is actually believed that malignancies constitute a large burden on society both the more and the less economically developed countries alike. The occurrence of cancer is increasing because of the growth and aging of

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the population, as well as an increasing prevalence of established risk factors such as smoking, overweight (Obesity), physical inactivity and changing reproductive patterns associated with urbanization and economic development. The workers on the GLOBOCAN estimated, about 14.1 million new cancer cases and 8.2 million deaths occurred in 2012 worldwide. Torre et al. [4] go on to say that over the years, the burden has shifted to less developed countries. Sub-Sahara region is one of the areas. These areas currently join the account for about 57% of cases of the diseases and 65% of cancer deaths worldwide. It is also known that Lung cancer is the leading cause of cancer death among males in developed countries, and has surpassed breast cancer as the leading cause of cancer death among females specifically in more developed countries. In less developed countries breast cancer remains the leading cause of cancer death among females. Sasco et al. [5] point out that the male breast cancer is a rare tumor in all parts of the world. Approximately 1% of all breast cancers occur in men, but the male to female ratio is higher among black people than among white populations. This effect can be seen in US cancer registries and even more markedly in African data. They go on to say that there exists a positive correlation on a population scale between male breast cancer and prostate cancer. Seven case-control studies of male breast cancer are available and a pooled analysis was conducted of the most commonly suspected risk factors. Male breast cancer appears to be associated with marital status: They go on to point out the Mantel-Haenszel exposure odds ratio (EOR): For never married cases=1.6; 95% confidence limits (CL)=1.1, 2.3, religion (EOR for being Jewish=2.1; 95% CL=1.4, 3.2), previous breast pathology (EOR for positive history of benign breast disease=2.7; 95% CL=1.7, 4.2), gynecomastia (EOR for positive history=6.2, 95% CL=3.4, 11.4), previous testicular pathology (EOR for positive history=2.2; 95% CL=1.5, 3.3), previous liver diseases (EOR for positive history=1.6; 95% CL=1.0, 2.4) and family history of breast cancer (EOR for first-degree relative with breast cancer=2.5; 95% CL=1.7, 3.7). They point out that there seems to be no association found with smoking history. Other potential risk factors such as reproductive history, education, occupation, anthropometric variables, association with various diseases and specific exposures such as drug use were not systematically evaluated in all studies and provide sometimes contradictory results.

The evidence known is that the analytical epidemiology of male breast cancer is similar with the epidemiology of female breast cancer, with a potential role of factors related to hormonal status. It is also known that the relative hyperestrogeny in men is potentially linked to increased risk of disease. It is also believed that Genetics may also play a role; the high risk is linked to a familial history of breast cancer. There is also a major risk in patients with Klinefelter's syndrome. It is known that these studies are not only carried in Europe and America, they are also carried out

in Africa. For example a Stage, estrogen receptor status, treatment and survival of 29 men with breast cancer attending the Breast Clinic was carried out in the Johannesburg Hospital between 1976 and 1985 and were reviewed. Most patients had loco-regionally advanced disease at presentation.

What are causes of male breast malignancy is a common question. Torre et al. [4] and Jemal et al. [3] say that the risk factors associated with the leading causes of cancer death include tobacco use in lung, colorectal, stomach and liver cancer, overweight and obesity and physical inactivity in breast and colorectal cancer and infection in liver, stomach and cervical cancer. So a substantial portion of cancer cases and deaths can be prevented by applying effective prevention measures, such as tobacco control. A meta-analysis of alcohol drinking and cancer risk. Bagnardi et al. [6] suggest that the evidence is provided by the epidemiological literature on the association between alcohol consumption and the risk of 18 neoplasms. They performed a search of the epidemiological literature from 1966 to 2000 using several bibliographic databases. Meta-regression models were fitted considering linear and non-linear effects of alcohol intake. They found that strong trends in alcohol consumption risk were observed for cancers of the oral cavity and pharynx, esophagus and larynx. Less strong direct relations were observed for cancers of the stomach, colon and rectum, liver, breast and ovary. It was seen that these diseases, showed significant increased risks in ethanol intake of 25 g per day. They also demonstrated that there was no either significant or consistent relation for cancers of the pancreas, lung, prostate or bladder. Boffetta and Hashibe [7] put in more details that there is a causal association been established alcohol consumption and cancers of the oral cavity, pharynx, larynx, esophagus, liver, colon, rectum and in women breast; an association is suspected for cancers of the pancreas and lung. There is evidence that suggests that the effect of alcohol is modulated by polymorphisms in genes encoding enzymes for ethanol metabolism. They give the examples like alcohol dehydrogenases, aldehyde dehydrogenases and cytochrome (P450 2E1), folate metabolism and DNA repair. They conclude that the mechanisms by which alcohol consumption exerts its carcinogenic effect have not been fully defined, although possible events include; a genotoxic effect of acetaldehyde, the main metabolite of ethanol, increased estrogen concentration, which is important for breast carcinogenesis and also a role of solvent for tobacco carcinogens. The other types of evidence include production of reactive oxygen species and nitrogen species and changes in folate metabolism. Alcohol consumption is increasing in many countries and is an important cause of cancer worldwide. It is known that in the sub-Sahara regions men's alcohol consumption is well established but female consumption is also on the rise. More evidence is known by other workers, for example, Castellsagué et al. [8] show that

it is not only alcohol consumption, but joint effects of tobacco smoking and alcohol drinking, may lead to Cancer causing. They analyzed data from a series of 5 hospital-based case-control studies of squamous-cell carcinoma of the esophagus conducted in high-risk areas in South America. A total of 830 case subjects and 1779 control subjects were included in the pooled analysis. All exposure characteristics of amount, duration, cessation and type of alcohol and tobacco consumed were strongly related to esophageal-cancer risk in both sexes. Women had the same exposure profile as men, but the magnitudes of the associations were lower than were those among men. In their study it was evident that black-tobacco smoking was associated with a 2-fold increased risk as compared with the smoking of blond or mixed tobacco and more details showed that Alcohol and tobacco alone were strongly related to the risk of esophageal cancer. Particularly the history of simultaneous exposure to cigarette smoking and alcohol drinking had a strong suggestive effect on risk for cancer. Worse still, it was the evidence that a mixed exposure of heavy alcohol drinking and black-tobacco smoking identified the group with the highest risk for developing esophageal cancer (odds ratio=107). They concluded that moderate cigarette smoking without drinking and moderate alcohol drinking without smoking had a negligible effect on esophageal-cancer risk. But, simultaneous exposure to the same moderate amounts increased the risk 12 to 19-fold in men and in women, respectively. There was no specific evidence on the effect of smoking and alcohol on the breast malignancy in men. In Denmark, France, Germany, Italy and Sweden, Guénel et al. [9] investigated the role of alcohol drinking in male breast cancer using data collected in a population-based case. In their study, the cases were 74 histologically verified male breast cancer patients aged 35-70 years. The controls (n=1432) were selected from population registers and frequency-matched to the cases by age group and geographic area. They checked for consistency, so a separate analysis was conducted using as controls the patients with a rare cancer other than male breast recruited simultaneously in the European study (n=519 men). They found that the risk of developing breast cancer in men increased by 16% (95% CI: 7-26%) per 10 g alcohol per day ( $p<0.001$ ). An odds ratio of 5.89 (95% CI: 2.21-15.69) was observed for alcohol intake greater than 90 g/day, as compared with light consumers (<15 g/day). They concluded that the relative risk of breast cancer in men is comparable to that in women for alcohol intakes below 60 g/day.

The estimated number of cancer cases and deaths attributable to alcohol drinking in 2002 by the WHO sub region, based on relative risks of cancers of the oral cavity, pharynx, esophagus, liver, colon, rectum, larynx and female breast obtained from recent meta and pooled analyses and data on prevalence of drinkers obtained from the WHO Global Burden of Disease project shows the fact that there is

a total of 389,100 cases of cancer. These are attributable to alcohol drinking worldwide, representing 3.6% of all cancers (5.2% in men, 1.7% in women). The corresponding figure for mortality is 232,900 deaths (3.5% of all cancer deaths).

It is known that Men Breast Cancer (MBC) is an uncommon but it is a serious problem in men. Carcinoma of the male breast accounts for 0.8% of all breast cancers. A considerable debate exists concerning the prognosis of breast cancer in male patients compared with that in female patients. Some studies have observed worse prognosis for men; others suggested the higher mortality rates were primarily due to delayed diagnosis. Borgen et al. [10] carried a study of survival time from diagnosis with invasive disease to death resulting from breast cancer of 58 men treated between 1973 and 1989 was compared with survival of 174 women treated between 1976 and 1978 who were matched by stage of disease and age at diagnosis. All patients were treated by mastectomy and axillary dissection. The results showed the following: In tumors which were less than 2 cm in 70% of cases and 55% were free of axillary metastases. The histology of the tumors differed significantly by gender ( $p<0.05$ ). Significantly more men had estrogen receptor-positive tumors (87%) than did women (55%,  $p<0.001$ ). Survival at 10 years was similar for male and female patients. Epidemiologic studies of breast cancer in men have provided insights into the pathogenesis and etiology of breast cancer in both sexes. Thomas [11] points out the facts that the incidence and mortality rates of breast cancer among countries and racial and ethnic groups have been observed mainly in women but these problems also occur in men. In women the fact clearly indicates that the causes of these variations are primarily risk factors related to the female. It is known that it occurs in women at the change in the rate of increase at the usual age of menopause; the assumption is that the midlife change in the rate of increase with age in women is due to the reduction in ovarian hormone production at menopause. In men the risk of breast cancer goes on to occurring as age increases. These data conflict with the conventional even in prognosis, the wisdom shows that breast cancer in men carries a worse prognosis than the disease in women. Individual carcinomas from both the male and female breast are histologically indistinguishable, but histologic types of ductal origin occur relatively more frequently in men than in women and those of lobular origin are very uncommon in men, reflecting the absence of lobular structures in the normal male breast. Spatz [12] clarifies more details in that breast cancer occurs at an older age in men than in women, usually it presents as a painless, central breast lump. It is known that male breast cancer is 100 times less common than female breast cancer; however, the prognosis for men is worse than that for women as has been said. This is because of the delay in diagnosis. Men with breast cancer have a high prevalence of metastatic disease at the time of diagnosis. So although Carcinoma of the male breast (MBC) it is an uncommon phenomenon, it is

accounting for less than 1% of all malignancies in men. It represents a biologically heterogeneous disorder and its clinical course may vary from indolent and slowly progressive to rapidly metastatic disease. Most of the MBC current knowledge regarding its biology, natural history and treatment strategies has been drawn from its female counterpart. The information regarding the prognostic relevance of new molecular markers is not fully understood.

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. 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 because it is clearly observed that the increase of age in men is a causing the risk of breast cancer.

Between 1983 and 1987, the incident cases (n=227) were diagnosed and obtained from 10 population-based cancer registries of the surveillance, epidemiology and end results program of the National Cancer Institute. The Controls (n=300) were selected by random digit dialing and from Medicare eligibility lists. The exposure status were defined as ever having been employed in a job which was classified as involving potential exposure to electromagnetic was assigned without knowledge of case/control status. Demers et al. [13] found out the following: An elevated risk was found for any job with exposure (odds ratio (OR)=1.8, 95% confidence interval (CI) 1.0-3.7) and risk was highest among electricians, telephone linemen and electric power workers (OR=6.0, 95% CI=1.7-21) and radio and communications workers (OR=2.9, 95% CI=0.8-10). They found that the risk did not vary with duration of exposed employment. The risk was highest among subjects who were first employed in jobs with exposure before the age of 30 years and who were initially exposed at least 30 years prior to diagnosis. These results were due to the theory that electromagnetic fields may be related to breast cancer in men.

In the 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. From the above paragraph we have already discussed that prognosis in men is poor, but it is easy to detect the breast cancer as men have so little breast tissue. 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. 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. Despite all this, knowledge relevant to many aspects of the disease in men is still limited. Crichlow [14] 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 the 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. Palade et al. [15] 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. Most men with breast cancer present with a mass in the breast, the evaluation of which should include a tissue diagnosis. The adequate local 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. 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. 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. Block and Muradali [16] point out that mammography has a sensitivity of 92% and specificity of 90% for male breast cancer (n=104). Hsing et al. [17] points out that the etiology of male breast cancer is unknown. Other writers suggest that obesity increases the risk of male breast cancer, possibly through hormonal mechanisms. 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). 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. Occurrence of male breast cancer, a rare disease, peaks at age 71 years. Familial cases usually have BRCA2 rather than BRCA1 mutations: That is what above is said. Occupational risks include high temperature environments and exhaust fumes, but electromagnetic fields have not been implicated as Demers et al. [13] have found hyper estrogenisation resulting from Klinefelter's, gonadal dysfunction, obesity or excess alcohol, all increase risk as does exposure to radiation, whereas gynaecomastia does not. However, some workers think gynecomastia does lead to MBC. Thomas et al. [18] suggest the following: an increased risk of breast cancer is most strongly associated 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 estimate the breast cancer in men. 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. 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. 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 to 2008, there were 1934 deaths, compared with 1758 deaths from the 39,641 cases of testicular cancer. Rosenblatt et al. [19] 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. 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. However, two observations of gynecomastia have been noted as a possible risk factor for MBC. Other workers feel gynecomastia does not lead to MBC.

Workers like Weiss et al. [20] say the same but make it clearer. They say that the suspected genetic factors in MBC include AR gene mutations, CYP17 polymorphism, Cowden syndrome and CHEK2. They add on by saying that the epidemiologic risk factors for MBC include disorders relating to hormonal imbalances, such as obesity, testicular disorders (e.g. cryptorchidism, mumps orchitis and orchiectomy) and radiation exposure. They add on that the suspected epidemiologic risk factors include prostate cancer, prostate cancer treatment, gynecomastia, occupational exposures (e.g. electromagnetic fields, polycyclic aromatic hydrocarbons and high temperatures), dietary factors (e.g. meat intake and fruit and vegetable consumption) and alcohol intake. These discussions bring out so many differences and also agreements and disagreements concerning MBC in men.

In the European Institute of Oncology, Gennari et al. [21] performed a study showing data in which p21Waf1 and

p27Kip1 proteins were evaluated in a series of male breast cancer patients. Their data also suggested that the immunohistochemical evaluation of p21Waf1 and p27Kip1 expression in male breast carcinomas may be a further useful marker for selecting patients who express functional proteins that can be predictive for the most efficient endocrine response. In searching for more conservative treatment, they introduced in their clinical practice sentinel node biopsy, and if present, the sentinel node biopsy of the internal mammary chain was noted. The potential clinical implications of complete nodal staging were far-reaching and gave them a major new opportunity to stratify male patients with breast cancer for appropriate surgery as well as giving valuable prognostic information. They concluded that MBC has biological differences compared with female breast cancer.

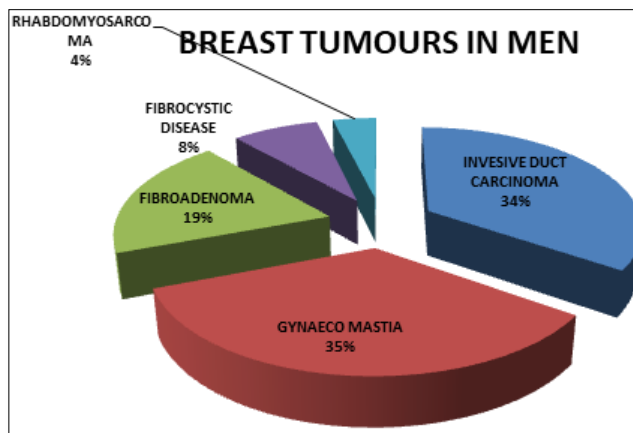
The familial aggregation of breast cancer in males also requires a study. Rosenblatt et al. [19] investigated a population-based case-control study. In their study the cases were ascertained from 10 surveillance, epidemiology, and end results program registries in the United States between 1983 and 1986. Controls were identified by random-digit dialing and from lists of Medicare recipients. In their study, the relative odds of developing breast cancer were similar in men with affected paternal and maternal relatives and in men with affected mothers and sisters. The risk chances of getting cancer in a male increased with the number of affected relatives to the man. They confirmed the fact that the development of breast cancer was greater in men with first-degree relatives who developed their mammary neoplasm before the age of 45 than in men with older first-degree affected relatives; the enhancement of risk in men with an affected sister was greater in those under age 60 than in older men. Easton et al. [22] add on to this familial effect of MBC. They say that Breast cancer is known to have an inherited component, consistent in some families with autosomal dominant inheritance; in such families the disease often occurs in association with ovarian cancer. Previous genetic linkage studies have established that in some such family disease occurrence is linked to markers on chromosome 17q. Their work reports the results of a collaborative linkage study involving 214 breast cancer families, including 57 breast-ovarian cancer families; this represents almost all the known families with 17q linkage data. Their point is that under the genetic model used in the analysis, the most estimate of the proportion of linked breast-ovarian cancer families was 1.0 (lower LOD-1 limit 0.79). In contrast, there was significant evidence of genetic heterogeneity among the families without ovarian cancer, with an estimated 45% being linked. These results suggest that a gene(s) on chromosome 17q accounts for the majority of families in which both early-onset breast cancer and ovarian cancer occur but that other genes predisposing to breast cancer exist. By examining the fit of the linkage data to different penetrance functions, the cumulative risk associated with the 17q gene was estimated.

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. 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. When survival is adjusted for age at diagnosis and stage of disease, outcomes for male and female patients with breast cancer is similar. Surgery is usually mastectomy with axillary clearance or sentinel node biopsy. Because 90% of tumors are hormonal receptor positive, tamoxifen is the standard adjuvant therapy. Indications for radiotherapy and chemotherapy are similar to female breast cancer. For metastatic disease, hormonal therapy is the main treatment, but chemotherapy can also provide palliation.

Mugala et al. [23] 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 histopathologies 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 [24-26]. The average age of all our patients was 31.8. The most common lesions we found out in their patients were the following:

**Table 1.** The most common lesions in men.

Tumor	No. of Patients	(%)
Invasive Duct Carcinoma	9	33.3
Gynaeco Mastia	9	33.3
Fibroadenoma	5	18.5
Fibrocystic Disease	2	7.4
Rhabdomyosarcoma	1	3.7



**Chart 1.** The most common lesions in men.

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 (Table 1 and Chart 1). In our experience in the last six years from October 2011 to November 2017 we had only seen this man as our man diagnosed with a breast cancer [27,28].

Because of this case, as workers we felt it was essential to publicize the following case.

**CASE PRESENTATION**

We present (F.K.) a case of a male patient who was 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 a small lump on his breast. 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 shiny overlying skin.

The patient was married with five children; they were two boys and three girls. His libido was said to be normal. The patient did not take alcohol and gave no history of liver disease. He was HIV negative and his past medical history was unremarkable.

**REVIEW OF SYSTEMS**

**Cardiovascular system**

Patient gave no history of chest pain, no shortness of breath, no pedal swelling and he could lie flat without becoming breathless [29].

### Respiratory system

Patient gave no history of cough, chest pain or coughing out blood [30].

### Gastrointestinal system

Patient gave 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 [31].

### PAST MEDICAL HISTORY

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

### Family history

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

### Social history

The patient was a teacher by profession. He never smoked nor takes 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 normal texture. On the examination of cardiovascular and respiratory organs, there was nothing abnormal [32,33].

### 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 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 [34].

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.

### INVESTIGATIONS

Full blood count, cross match, liver function tests and renal 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 [35-37].

### 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, 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. Hsing et al. [17] 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. 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). Preliminary evidence suggests that BRCA2 is a strong cause [38].

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 [39].

In the history and examination of our patient, we found that he was nonalcoholic and a non-smoker 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. His mother had gynecomastia and we read about this and found that two team workers say it can lead to breast cancer but one group team feel it does not lead to breast cancer [40]. So we cannot say his cancer came out because of his mother. In terms of first degree female relatives particularly his sisters, we could not trace any history in his life. So in terms of what caused his breast cancer, we cannot assert.

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