Original Article

An Etiological and Clinicopathological Study of Breast Lump in Rajasthan, India, with Special Reference to Carcinoma Breast

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ABSTRACT

Objectives: Carcinoma of the breast is the most common cause of cancer death in women worldwide; in Indian women, it is second only to cervical cancer. The aim of this study was to study the etiological and clinicopathological features of patients presenting with a breast lump in the desert city of Jodhpur, India, with special reference to breast cancer.

Material and Methods: This was a retrospective study that involved 648 patients over a 5-year period from 2011 to 2015 in Jodhpur city, Rajasthan.

Results: The most common type of lump encountered was fibroadenoma (53.6%) followed by malignancy (51.7%). Of breast cancers, 99.1% were in females with a preponderance in premenopausal women (56.1%). The most affected age group was the fifth decade. Only 11.9% of cases presented within 1 month and 3.75% had a history exceeding 4 years. Lump size was more than 15 cm in 3.07% and <1 cm in 2.7%, with most situated in the upper outer quadrant (54.2%). Most of the patients were in tumor-node-metastasis Stage II (45.4%); the reported mortality rate was 4.1% and recurrence rate was 2.97%. Infiltrating duct carcinoma constituted the majority (86.7%) of cases. Modified radical mastectomy was the most performed procedure (37.2%) and the most favored chemotherapy regimen was CMF. Gynecomastia constituted 2.6% of all breast lumps, while tuberculosis made up 0.46%.

Conclusion: Our results show that the patterns of breast disease are in keeping with the demography of the region. However, clinical presentation appears to be strongly influenced by sociocultural factors such as ignorance, taboos and parity, as well as rural habitation and access to health care. We emphasize the need for proper documentation, especially a cancer registry.

Keywords: Carcinoma, Mastectomy, Fibroadenoma

INTRODUCTION

Cancer of the breast is nowadays the most common cause of death from cancer in women in most parts of the world. It is the most common malignant disease and the most common cause of death in Western Countries, whereas in Indian women, it is the second most common cause of death, cancer cervix being the first.

Any woman in her lifetime stands a one in 14 chance of developing the disease and there is even some evidence that the annual incidence and mortality rates are increasing throughout the Western hemisphere.

The etiopathology of benign breast disease is somewhat known. Most of these diseases occur due to the deviation from normal development and involution. These may be in the form of hyperplasia, fibrosis, papillomatosis, or cyst formation.

The etiology of breast carcinoma is still unknown but certain factors such as age (increase with age), genetic (familial breast cancer), diet (rich in fat), gender (female), and hormonal (oral contraceptive pills and hormone replacement therapy) are implicated. Breast cancer may arise from the epithelium of the duct system anywhere from the nipple end of the major lactiferous duct to the terminal duct unit, which is the whole breast. The most common pathology is infiltrating duct carcinoma. The other lesions of the breasts, for example, antibioma, galactocele, etc., are equally important. At times, they simulate malignancy so closely that differentiation on clinical grounds is difficult. Most diagnoses of breast disease are nowadays made with triple assessment, that is, combination of clinical, radiological, and cytological features.

This retrospective study was conducted: (1) To determine the incidence and etiological aspects of breast lump (malignant and benign); (2) to evaluate various modes of presentation of breast lumps with special reference to cancer; and (3) to study various treatment modalities, over a 5-year period (2011–2015). There is incomplete health documentation in this region which is essential to measure the cancer burden on the population. Inadequate records of the patient's history, clinical signs and symptoms, and treatment modalities imply that there should be a cancer registry at the nodal hospitals for better understanding of epidemiological and etiological aspects of breast disease in the region.

MATERIAL AND METHODS

This study included cases clinically diagnosed as breast lump and the total number of cases studied was 648 over 5 years (2011–2015). This retrospective study was conducted in the Departments of Surgery, Mathura Das Mathur Hospital and Mahatma Gandhi Hospital attached to Dr. Sampurnanand Medical College, Jodhpur, Rajasthan. The study was conducted in accordance with the Declaration of Helsinki and was approved by the local Ethics Committee of the institute. Records of histopathologically proven cases from outdoor clinics and patient from other hospitals were obtained from the pathology department and some private laboratories.

The bedhead tickets of patients were obtained from the records room, thoroughly studied, and detailed information was extracted. Personal information such as name, age, sex, address, habitation, and registration number were recorded. The clinical diagnosis and affected side as well as marital status were noted. The presenting complaint with duration such as lump, pain, discharge, ulceration, retracted nipple, arm edema, bone pain, and swelling of axilla was noted. Details of past and family history were also noted.

Details of local examination were noted including size of lump, location (quadrant) consistency, temperature, surface, tenderness, fixity, and lymph node status of axilla. Both local and systemic examinations were done to assess the nature and extent of the disease. All investigations including complete blood count, liver function tests, and fine-needle aspiration cytology (FNAC) of breast lump and lymph nodes, ultrasonography (USG) of abdomen and pelvis, USG of breast, X-ray chest, and mammography were performed. Histopathological examination of lump was noted in detail including estrogen/progesterone status. The staging system used was tumor node metastasis (TNM) staging.

The treatment modality in each case whether surgery, chemotherapy, or radiotherapy was noted including details of any operative procedure. The number of total hospital admissions, surgical admissions, and admission of females for cancer were obtained from the records room. Details from private laboratories and from the pathology department were obtained but they were often incomplete including only name, age, sex, year, and histopathology reports.

RESULTS

A total of 648 cases were included in our study: 293 malignant and 241 benign cases were obtained from the records room, 15 malignant and 72 benign cases were obtained from the pathology department, and only 27 cases were obtained from private laboratories all of which were malignant. Only surgical outdoor cases and cases from private hospital were taken from the pathology department.

Type of lump

The most common type of lump in the study was fibroadenoma (53.6%) followed by malignancy (51.7%), ANDI (25.2%), inflammatory lump (7.34%), gynecomastia (5.43%), antibioma (2.87%), and galactocele, tuberculosis, fat necrosis, and phyllodes (0.95%). Duct papilloma, duct ectasia, and lipoma were extremely uncommon.

Sex

In case of malignant lump, 332 (99.1%) were female while 3 (0.9%) were male. In benign lump, 297 (94.89%) were female and 16 (5.11%) were male.

Age

The age distribution of the various types of breast lumps is shown in Table 1.

The most common age group for malignant lumps was 41–50 years. This group comprised about 35.22% of malignant lumps followed by the 51–60 years age group (19.40%).

Symptoms

The pattern of presenting complaints sorted by type of lump is depicted in Table 2.

In our study, lump was the most common presentation of malignant disease (94.2%) followed by pain (25.9%), retracted nipple (6.4%), and ulceration (4.8%). The most common presenting symptom of benign breast disease was lump (92.5%) followed by pain, present in 33.6% of cases, discharge in 8.71% of cases, and ulceration in 1.96% of cases.

Staging

The clinical stage of breast cancer cases at presentation is depicted in Table 3.

Most of the patients were in Stage II (45.4%) followed by Stage III (37.2%). Early breast cancer and locally advanced breast cancer were present in 54.3% and 42.1% of cases, respectively.

Treatment modalities for carcinoma of the breast

The distribution of various therapeutic modalities employed for breast carcinoma is listed in Table 4.

Modified radical mastectomy was done in 37.2% of cases. Simple mastectomy was done in 6.48% of cases of malignant breast disease. Simple mastectomy with axillary sampling was done in 1.02% and simple mastectomy with axillary clearance was done in 1.70% of cases.

Histopathology

The histopathological distribution of breast carcinoma cases is listed in Table 5.

In our study, the largest number of cases diagnosed histopathologically was of infiltrating duct carcinoma (63.2%) followed by infiltrating duct carcinoma with metastasis (23.5%); thus, infiltrating duct carcinoma constituted 86.7% overall.

Table 1: Age distribution of various breast lumps.

Age in years	Malignant lumps		Inflammatory lumps		Gynecomastia lumps		Cystic lumps		Others	
	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%
0–10	0	0	1	0.43	0	0	0	0	1	0.36
11–20	3	0.89	3	13.04	7	41.17	0	0	66	24.3
21–30	20	5.97	13	56.52	7	41.17	1	50	110	40.6
31–40	60	17.9	3	13.04	1	5.88	1	50	46	16.9
41–50	118	35.22	3	13.04	1	5.88	0	0	34	12.5
51–60	65	19.40	0	0	0	0	0	0	3	1.10
61–70	45	13.43	0	0	0	0	0	0	7	2.58
71–80	19	5.67	0	0	1	5.88	0	0	3	1.1
Above 80	5	1.49	0	0	0	0	0	0	1	0.36
Total	335	100	23	100	17	100	2	100	271	100

Table 2: Presenting complaints.

Complaints	Malignant lumps (335)		Inflammatory lumps (21)		Cystic lumps (2)		Gynecomastia lumps (14)		Other benign lumps (204)	
	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%
Lump breast	276	94.2	17	81	2	100	14	100	190	93.1
Pain	76	25.9	6	28.5	1	50	4	4	70	34.3
Discharge	14	4.8	13	61.9	0	0	0	0	8	3.92
Ulceration	14	4.8	0	0	0	0	0	0	4	1.96
Retracted nipple	19	6.48	0	0	0	0	0	0	0	0
Swelling arm	13	4.4	0	0	0	0	0	0	0	0
Swelling axilla	5	1.7	0	0	0	0	0	0	0	0
Bone pain	1	0.3	0	0	0	0	0	0	0	0
Cough and fever	4	1.36	0	0	0	0	0	0	0	0
Dyspnea	4	1.36	0	0	0	0	0	0	0	0

Table 3: Clinical staging of carcinoma breast.

Stage	No. of cases	Percentage	Tumor	No. of cases	Percentage
Stage-I	26	8.9	Tis	9	3.07
Stage-II	133	45.4	T0	0	0
Stage-III	109	37.2	T1	26	8.87
Stage-IIIA	15	5.1	T2	136	46.4
Stage-IV	10	3.4	T3	122	41.6
Total	293	100	T4	-	-

Table 4: Treatment of malignant breast lumps.

Type of operation	No. of cases	Percentage
Simple mastectomy	19	6.48
Simple mastectomy with axillary sampling	3	1.02
Simple mastectomy with axillary clearance	5	1.70
Modified radical mastectomy	109	37.20
Sector mastectomy	1	0.34
Radiotherapy alone	5	1.70
Surgery and radiotherapy	27	9.2
Hormone therapy	90	30.7
Toilet mastectomy	9	3.07
Chemotherapy alone	23	7.8
Chemotherapy and radiotherapy	9	3.07
Surgery and chemotherapy	154	52.5
Surgery, chemotherapy, and radiotherapy	18	6.1

Table 5: Histological classification of malignant lumps.

Type of malignancy	No. of cases	Percentage
Infiltrating duct carcinoma	212	63.2
Intraductal carcinoma	6	1.79
Medullary carcinoma	10	2.98
Colloid carcinoma	6	1.79
Paget's disease and infiltrating duct carcinoma	2	0.59
Comedocarcinoma	5	1.49
Infiltrating duct carcinoma with metastasis	79	23.5
Carcinoma *in situ* lobular	9	2.68
Carcinoma *in situ* ductal	6	1.79
Total	335	100

DISCUSSION

In our study, malignant lumps (51.70%) outnumbered benign lumps (48.30%). The probable reasons behind the higher percentage of malignant lump detection are better patient awareness, frequent use of FNAC, and mammography as diagnostic tools. Carcinoma breast is the most common malignancy (16.4%) in this region among females. Paymaster (1964) and Mehta (1981) reported 23.6% incidence of breast cancer among all female cancers in Jodhpur (1969–1980).[1] Prajapati *et al.*[2] noted carcinoma breast in 54.8% of patients presenting with lump, which is similar to our results.

Baptist *et al.* (1973)[3] and Haque *et al.* (1980)[4] both reported 37% incidence of benign breast lump. In our study, the ratio of malignant to benign breast disease was 1:0.93. The cause of this ratio is due to recent media publicity, and growing breast cancer awareness has increased referral to hospital clinics for breast symptoms. This is more true for Western society; in our series, this ratio is due to non-existence of a cancer registry, improper records in private hospitals and of OPD patients, and poor awareness about breast cancer in rural populations.

The incidence of breast disease among total hospital admissions was 0.28% and 0.81% among surgical admissions. The incidence of breast malignancy among all female cancers was 20.5% (during the same period among hospital admissions, total cases were 1810). In nearby Jaipur region, breast cancer formed 19.41% of all female cancers (Sharma *et al.*, 1994).[5] In Western countries, the incidence reported is 32% of all female cancers.[6]

Rural and urban ratio

Among malignant lump cases, 52.2% dwelt in rural areas and 47.8% were urban. Among benign lump cases, 68.5% were rural and 31.5% were urban. Most of the population in this region resides in rural areas and even the population residing in urban areas follow a similar lifestyle to those in rural areas. Hence, the incidence of breast cancer in rural and urban areas cannot be compared meaningfully. Nagrani *et al.*, reported that in India, living in rural areas decreases the risk of developing breast cancer.[7]

Religion

In our study, of malignant lump cases, 92.5% were Hindu and 7.56% Muslim and only one case was Christian. Similarly, of benign lump cases, 88.8% were Hindu and 11.2% Muslims. This great difference among communities is due to the fact that Hindu community is predominant as compared to minorities, that is, Muslims and Christians. Another reason may be that Muslim women have more children than Hindu women, and probably both multiparity and lactation are responsible for their lower incidence of breast cancer.

Male breast cancer

The male-to-female ratio of breast malignancy was 1:110. The incidence of male breast carcinoma in our study was 0.9%.[8] reported <0.5% incidence. The incidence in this study is slightly higher than the world literature but less than Indian

reports. Less than 1% of all breast cancer cases develop in men, and only one in a 1000 men will ever be diagnosed with breast cancer.[9-12]

Pre- and postmenopausal cancer

Breast malignancy was more common in premenopausal women (56.1%) than postmenopausal women (43.9%). Among the benign lesions, 90.7% of women were premenopausal. Breast cancer is more common in nulliparous women and breastfeeding in particular appears to be protective. Furthermore, protective is having a first child at an early age, especially if associated with late menarche and early menopause.[8] Benign breast disease is strongly associated with menopausal and hormonal status.[13]

Age group

The most common age group for malignant lumps was 41–50 years. This group comprised about 35.22% of malignant lumps followed by the 51–60 years age group (19.40%) [Table 1]. There were three cases reported in the age group of 11–20 years. The mean age of malignant lump presentation was 41 years. In Jaipur region, Sharma *et al.* (1994) observed that the majority of carcinoma breast was in the age group of 40–50 years (37.8%) and 50–60 years (30.3%).[5] In our study, the 41–60 years age group consisted of 54.62% and the second most common group was between 21 and 40 years age (23.88%).

Carcinoma breast is extremely rare below the age of 20[8] and we have reported 0.89%. The disease occurs generally a decade earlier in Indians as compared to White populations. In our study, the average age was 41 years, earlier as compared to Western women. Henderson reported that most age-incidence curves show a small plateau at approximately 50 years when many women are undergoing menopause followed by a steeper rise thereafter.[14]

The most common age group for benign lumps was 21–30 years (41.85%) followed by 11–20 years age group (24.28%). Incidence among the age group of 15–25 years is higher for benign lesions of the breast (i.e., fibroadenoma).[8] Similar observation was reported by Baptist *et al.* (1973).[3] The youngest patient was 10 years old and the oldest 81 years old. Among gynecomastia cases, the most common age was 11–30 years. Adolescent girls and young women are more likely to have fibroadenomas than older adult women.[15]

Site of disease

In our study, laterality of malignant lumps was almost equal with 49.25% on the right and 47.16% on the left. Garfinkel *et al.* concluded that breast cancer in women occurs more often in the left than in the right breast.[16] The incidence of bilateral carcinoma was 3.58%, out of which 11 cases were medullary carcinoma and nine were lobular carcinoma *in situ*.

Benign lumps were more common on the left side (50.15%) as compared to the right (46.00%). Only 3.83% of benign lumps were bilateral and all were cases of fibroadenosis.

Size of lump

The most common size ranges of malignant lumps (maximal diameter on palpation) in our series were between 2–4 cm (32.4%) and 4–6 cm (24.5%). Lump size was more than 15 cm in 9 cases (3.07%) and <1 cm in 8 cases (2.7%). In a study of 124 cases of palpable breast carcinoma, Ballo and Sneige found invasive ductal carcinoma in 115 patients; invasive lobular carcinoma in seven patients; and lymphoma and angiosarcoma in one patient each. Lesions ranged in size from 1 cm to 12 cm, and the mean size was 4.4 cm.[17]

There is a remarkable difference in presentation of cancer cases in our country as compared to Western populations. In West Rajasthan (Jodhpur) due to illiteracy, taboos, and inadequate medical facilities in the rural area, patients visit referral hospitals only at advanced stages of the disease, for example, large size and fungating growth with metastasis. In developed countries, patients present early with small tumors and due to regular screening for breast cancer may even present in the *in situ* stage.

Among benign cases, the most common size range of the lump was 2–6 cm (63.9%). The largest benign lump (fibroadenoma) was 10 cm in size. Majority of gynecomastia, cystic, and inflammatory lumps were of 2–4 cm size. The average size reported by Haagensen[18] was 1–5 cm. Rosen[19] stated that most fibroadenomas were not larger than 3 cm; out of these, five cases showed features of a complex fibroadenoma. Robbins[20] reported a giant size of 10 cm.

Duration

Most cases of malignant lump (53.2%) presented with a history of 1–6 months duration. Only 11.9% of cases presented within 1 month though 3.75% had a history extending more than 4 years. Prajapati *et al.* observed that 81.5% of patients with breast lump presented after a month of noticing the lump.[2]

Although duration at presentation did not match other Indian and Western studies, still the duration of presenting features such as lump and discharge was relatively late in our study, with 21.3% of cases presenting after 1 year. Our patients, mostly villagers, illiterate or socially backward are often quite ignorant of the disease. They try to hide the lesion for a long time until it enlarges, ulcerates, or becomes foul smelling. Benign lumps most commonly presented within 6

months. Only 2.38% of benign lumps presented after 4 years of onset. Haagensen found that delay and tumor size, when taken together, were quite closely related to prognosis as measured by 5-year and 10-year survivals.[21]

Clinical breast examination in women aged 19–40 years is recommended approximately every 3 years and yearly for women aged 40 years and older.[22]

Symptoms

In our study, lump was the most common presentation of malignant disease (94.2%), followed by pain (25.9%), retracted nipple (6.4%), ulceration (4.8%), and nipple discharge (4.8%) [Table 2]. Other symptoms were arm swelling (4.4%), axillary swelling (1.7%), bone pain (0.3%), and cough and fever (1.36%).

The most common presenting symptom of benign breast disease was lump (92.5%) followed by pain, present in 33.6% of cases, discharge in 8.71% of cases, and ulceration in 1.96% of cases which may have been due to caustic application. Retracted nipple was not present in a single case.

Site

The most common site for carcinoma breast was the upper and outer quadrant (54.2%) followed by the upper and inner (10.6%). In 28 cases (9.95%), the lump extended beyond one quadrant, and 6 cases (2.04%) had the lump just behind the nipple. The lump occupied the whole breast in 10.92% of cases. This is inconsistent with Western data: 60% for upper and outer quadrant, 12% for upper and inner quadrant, and just behind the nipple, followed by lower and outer (10%) and inner (6%).[8] In our study, upper outer quadrant lumps were 54.2%. Rathi *et al.*[23] and Khemka *et al.*[24] also observed the upper and outer quadrant as the most common site for breast lumps.

The most common site of fibroadenoma was the upper and outer quadrant (56.0%) followed by almost equal frequency of upper and inner (13.6%) and lower and inner quadrants (13.4%). The lump was present just behind the nipple in 5.8%.

Lee postulated that the high proportion of both malignant and benign disease arising in the upper and outer quadrant is a reflection of the greater amount of breast tissue in this quadrant.[25] As most benign breast lumps are treated as outdoor patients except patients with lump and pain, the figure represents only patients admitted for the treatment of lump.

Staging

Malignant breast disease is classified on the basis of TNM staging in this study. Most of the patients were in Stage II (45.4%) followed by Stage III (37.2%) [Table 3]. Early breast

cancer and locally advanced breast cancer were present in 54.3% and 42.1% of cases, respectively.

Higher percentage of locally advanced cancer is probably because many people in this region are illiterate and ignorant. Although they notice the breast lump, they do not seek medical advice till late. The other reasons are lack of screening facility, poor follow-up, and poverty. Metastatic breast cancer was in 3.4% of cases. Baptist *et al.*[3] reported 42% of cases in Stage III, Huguley and Brown remarked on the higher proportion of early pathologic stage disease among women who detected their lesion by breast self-examination over women who discovered their lesion accidentally (27% vs. 22%).[26]

Treatment modalities

Modified radical mastectomy was done in 37.2% of cases. Simple mastectomy was done in 6.48% of cases of malignant breast disease. Simple mastectomy with axillary sampling was done in 1.02% and simple mastectomy with axillary clearance was done in 1.70% of cases [Table 4]. Radical mastectomy was not done. In only one case sector, mastectomy was done. Among treatment plans, the most common mode of therapy was surgery combined with chemotherapy (52.5%). In Stages I and II, total patients were 159. Treatment records of 36 cases were inadequate and were not included in the surgery count. Out of these 36 cases, 25 absconded and 11 cases refused surgery. The most common chemotherapy used was CMF (cyclophosphamide, methotrexate, and 5 FU). In 90 cases, hormone therapy was given. Oophorectomy was not done in any younger patient for ovarian ablation as a hormone treatment. Chemotherapy alone was given in 23 cases (7.7%). Surgery followed by radiotherapy was given in 27 cases (9.2%).

Histopathology

In our study, the largest number of cases diagnosed histopathologically was of infiltrating duct carcinoma (63.2%) followed by infiltrating duct carcinoma with metastasis (23.5%); thus, infiltrating duct carcinoma constituted 86.7% overall [Table 5]. Bane *et al.*[27] also found that infiltrating duct carcinoma was the most common (85%). The second most common was medullary carcinoma (2.98%) followed by lobular carcinoma (2.84%). Colloid carcinoma was 1.89% which matches the incidence of 1.67% found by Baptist *et al.*[3]

Carcinoma *in situ* constitutes only 1.4% of all biopsies. In our study, it was higher, at 4.47%. The lobular and ductal carcinoma *in situ* (DCIS) ratio was 1.5:1. Mammography has detected a predominance of DCIS over LCIS averaging a 3:1 ratio in many series. Medullary carcinoma represents 2.15% of histology. Paymaster and Gangadharan[28] observed an incidence of 2% and Kapur *et al.*[29] observed an incidence of 9.2%. Infiltrating duct carcinoma constitutes 78% of all

histology and colloid carcinoma 2%.[6] The percentage of histopathological confirmation in our series was 85%. Makki (2015) too reported invasive ductal carcinoma as the most common type of malignancy.[30]

Post-operative complications

Thirteen cases had post-operative complications, out of which two had stitch infection, six had arm edema, and two had flap necrosis, for which split skin grafting was done. Three patients developed pulmonary complications. No other complications were reported.

Mortality

The mortality rate among carcinoma breast patients was 4.1%. The recurrence rate was 2.97% out of which 72.7% were on the same side and 18.18% on the opposite side. One case had distant metastasis. Contralateral lesions were considered independent carcinoma breast as distinct from recurrence in the form of chest nodules or axillary nodes. This low rate of mortality, recurrence, and distant metastasis are artifactual due to poor documentation, incomplete records, and non-rigorous follow-up of patients.

Gynecomastia

Male benign breast enlargement (i.e., gynecomastia) constituted 5.43% of benign lumps and 2.6% of all lumps. The most common age group affected was 11–30 years though there was one case aged 76 years. Most cases of gynecomastia had lumps of size 2–4 cm (71.4%) followed by 4–6 cm in 28.57%. In all cases, there was uniform nodular enlargement of breast; all presented with complaints of lump, and 4 cases (22.66%) presented with lump and pain. In all cases, simple mastectomy was done and no post-operative complication was observed. Gynecomastia was the most common benign male breast disease and accounted for 3.8% and 4% of all the cases of benign breast disease as studied by Adeniji *et al.*[31] and Ochicha *et al.*[32]

Cystic lumps

There were three cases of galactocele in this study which constituted 0.95% of benign lumps and 0.46% of all lumps. Two cases were in the 31–40 years age group and one in the 21–30 years age group. The main presenting complaints were lump (73%), pain (26%), and discharge (12%). The size of lump was 3, 5, and 9 cm. In all cases, lumpectomy was done. There was no post-operative complication, mortality, or morbidity.

Inflammatory lumps and tuberculosis of breast

Inflammatory lumps in this study included both acute and chronic mastitis. These cases constituted 7.34% of benign lumps and 3.54% of all breast lumps. Incidence of tuberculosis of breast was 0.95% of benign lumps and 0.46% of all breast lumps. The ratio of tuberculosis of breast to carcinoma was 1:111. All cases of tuberculosis of breast were female with an average age of 31 years and having a unilateral lesion presenting with lump and discharge. Not a single case was associated with pulmonary tuberculosis. Lumpectomy was done in chronic mastitis and simple mastectomy was done in tuberculosis. One case of tuberculosis developed post-operative stitch infection which healed by secondary intention.

CONCLUSION

Our study retrospectively assessed the etiological and clinicopathological features of breast lump in Jodhpur, India, with special reference to breast cancer. The patterns of disease are in keeping with the demography of the region, but clinical presentation is strongly influenced by sociocultural factors such as ignorance, taboos and parity, as well as rural habitation and access to healthcare. Our results illustrate the need for proper documentation, especially a cancer registry. There is also a need for education in breast self-examination and promotion of breast cancer awareness and screening programs, especially among rural and socially disadvantaged populations.

Conflicts of interest

The author, Vipul D Yagnik, is the editor of this journal. He does not have any competing interest.

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