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Staging of Breast Carcinoma in Aldywanyia City and Effect of Co-Vid 19 Pandemic Infection on it; Comparison Study.

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Abstract

Introduction:

Staging of invasive breast carcinoma is essential for treatment and prognosis. TheTNM staging which is anatomical staging that depends on tumor size, lymph nodes metastasis and distant metastasis is still used but to be more accurate, it must be associated with the biological variants which are of prognostic and predictive significant .

Patients and methods;

Retrospective random study that include 172 patients that is divided in to two groups. Group A operated before the pandemic attack of co-vid 19 virus and include 118 patients and group B that operated during 2020(year of pandemic infection)and include 54 patients . Comparison in staging is done between two groups to assess the effect of co-vid 19 virus pandemic on the staging.

Result:

Group A include 118, size of tumor (T) as follow T1: 26(22%), T2: 74 (63%),T3: 16 (13%), T4 2(2%).

The lymph nodes metastasis: in 31(26%) cases there is no involvement of axillary lymph nodes (N0) while the metastasis is seen in 87(74%)

Staging of this group as following, stage 1 is seen in 13(11%) cases, stage 2 is seen in 53(45%) and stage 3 is seen in 52 cases (44%)

In group B that include 54 cases, size of tumor as follow T1: 3 (5%), T2: 38 (70%), T3:10 (19%), T4 3(5%).

Only 6 cases (11%) are presented with the negative axillary lymph nodes while the metastasis in axillary lymph nodes is seen in 40(74%).

Staging is as follow: stage 1 is seen in one case (2%), stage 2 is seen in 13 cases (24%), stage 3 is seen in 40 cases (74%).

Conclusion:

The ratio of large size tumor and locally advanced disease in our city is unacceptably high due to delay in the presentation. The co-vid 19 pandemic infection worse the condition further. Awareness of population and breast self –examination are essential to catch the mass in the smaller size and increase the number of cases at early stage and this is important factor in decreasing the mortality on short term in developing countries .

Key words: staging, breast carcinoma, co-vid 19

Introduction:

Breast carcinoma (BC) is the most common malignant tumor that affect females which form 10%of new cancer diagnosed worldwide each year in both sexes accounting for one fifth of cancer in females.(1) 10 fold difference in the incidence rates of BC worldwide.(2)

The best option in the treatment of breast carcinoma, as any solid tumor, is the surgical treatment. For the surgical treatment to be curable, early diagnosis is essential otherwise the surgical treatment is palliative. The screen mammography is sensitive in the diagnosis of early breast cancer andDCIS. It improves the mortality 30% (3)

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Staging of BC is essential for proper treatment and prognosis. The anatomic stage that utilizes the tumor size, lymph nodes status and distant metastasis (T.N.M.) is still useful.

Number of axillary lymph nodes with secondary metastasis is the most important predictive factor of 10 and 20 year survival rate. Resection and pathological examination of more than 10 lymph node of level 1 and 2 axillary lymph nodes can accurately predict distant metastasis. (4)Tumor size is less important than lymph nodes status in prognosis although may correlate with axillary lymph nodes metastasis , but this is not always true, large size tumor may stay locally for long time while in some cases there are small size tumor with distant metastasis so the lymph nodes status is not always reflect the chronology of disease .

Other biological variable factors are needed to incorporate with anatomical staging to be more accurate, and are of prognostic and predictive values. The biological marker is growing field and many factors are used, but estrogen receptors (ER), progesterone receptor (PR), human epidermal growth factors receptor (HER2-neu), Ki-67, gene array are most useful.

The combination of ER, PR, and HER2-neu can arrange in 4 subgroups that has significant therapeutic and prognostic values. Althought the above factors are important as prognostic and predictive factors, the 4 years survival of patients in stage 1 is the same whatever the subgroup. (5)

Patients and methods:

retrospective random study that include stagingof 172cases of invasive breast carcinoma (IBC) during 2018 and 2019 and 2020 in Al-Dywanyia city.

During 2020, there is seeming obligatory delay in the diagnosis and even treatment due to the effect of pandemic infection of co-vid 19 viruswhich lead to difficulty in medical services and regarding this delay , we divide the patients into two groups A and B . Group A includes 118 patients that has been operated upon them in 2018-2019 before the pandemic attack and group B that include 54 patients that has been operated on themin 2020, during the pandemic attack.

The staging is done pathologically rather than clinically depending on the histo-pathological reports.

Use the TNM classification.

The tumor size (T) divides into T1(less than 20 mm), T2 (between 20-50 mm), and T3 (more than 5 cm) and T4 (skin or chest wall involvement).

Lymph nodes involvement (N):

N1 is defined by involvement of 1-3 axillary lymph nodes, N2 is between 4-9 axillary lymph nodes, and N3 is more than 10 lymph nodes.

Results:

In group A that includes 118 patients, tumor size is T1 in 26(22%) casesand T2 in74 (63%) cases and T3 in 16(13%) cases while T4 is only 2(2%) cases.

In group B that include 54 cases, tumor size is T1 in only 3 (5%) cases, T2 in 38(70%) cases, T3 in 10 cases (19%)and T4 in 3(5%) cases .

In group A, the number of cases that are presented with negative axillary lymph nodes are 31(26%), 34(29%) cases are presented with N1, and 53(45%) are presented with N2, N3.

In group B, only 6(11%) cases are presented with negative axillary lymph nodes (N0) and 8(15%) presented with N1 while 40 cases are presented with N2, N3.

In staging of group A, 13(11%) cases are in stage 1, 52(44%) cases are in stage 2, while 53(45%) cases are in stage 3.

In group B, one case (2%) only presented in stage 1 and 13 (24%) cases are presented in stage 2 while 40(74%) cases are presented with locally advanced stage 3.

Of total number of cases, the size of tumor is T1 in 29(17%) cases in both groups, 16(55%) cases of them are presented with metastasis in axillary lymph nodes. The sizes of tumor in T2 are seen in 112 cases, and 92(82%) cases of them are presented with metastasis in axillary lymph nodes.

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Cases that presented with size T3 and T4are 31,28(90%) of them has secondary axillary lymph nodes metastasis.

Tables legends:

Table 1: classification of patients according to the age.

Table 2: classification according to the sizes of tumor.

Tables 3: classification of patients according to the lymph nodes metastasis.

Tables 4: relation of size of tumor to axillary lymph nodes metastasis in total number of patients.

Table 5: staging of breast carcinoma

Table 1: classification of patients according to age

Age group	20-39 years	40-49 years	50-59 years	60-80 years	Total cases
2018-2019	24 (20%)	35 (30%)	37 (31%)	22(19%)	118
2020	12(22%)	19(35%)	13(24%)	10(19%)	54
Total patients	36 (21%)	56(32.5%)	49(27.5%)	32(19%)	172

Table 2: classification according to the sizes of tumor

Size of tumor	T1	T2	T3	T4	total
2018-2019	26 (22%)	74(63%)	16(13%)	2(2%)	118
2020	3 (5%)	38(70%)	10(19%)	3(5%)	54
Total cases	29(17%)	112(65%)	26(15%)	5(3%)	172

Table 3: classification of patients according to the lymph nodes metastasis

Lymph nodes metastasis	N0	N1	N2 and N3
2018-2019	30 (26%)	34 (29%)	53(45%)
2020	6 (11%)	8 (15%)	40 (74%)

Tables 4: the relation of tumor size to the lymph modes metastasis in both groups

Size of tumor	Number of cases	No lymph nodes metastasis	Involvement of lymph nodes N1, N2, N3.
T1	29	13(45%)	16(55%)
T2	112	20(18%)	92 (82%)
T3	31	3 (10%)	28(90%)

Table 5: staging of breast carcinoma

Number of patients	Stage 1	Stage 2	Stage 3
2018-2019	13 (11%)	Total cases: 52(44%) stage 2 A : 22 stage B : 30	53 cases (45%)
2020	1(2%)	Total cases: 13 (24%) Stage 2 A: 6 Stage 2 B: 7	40 (74%)cases

Discussion:

The probability of lymph nodes metastasis is related to the size of primary tumor in the breast and it increases as the size of carcinoma increases .(6) in our study, when the size is less than 2 cm, the number of cases with

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secondary metastasis in axillary lymph nodes is 16 cases(55%) . when the size between 2-5 cm ,the number of cases with secondary metastasis are 92(82%) cases and when the tumor is more than 5 cm(T3,T4), the number of cases with metastasis of lymph nodes are 28 (90%) cases so the percentage of metastasis increase linearly with size of tumor from 55% in T1 to 82% in T2 to 90% in T3.(6)Although the axillary lymph nodes involvement reflects chronology of primary tumor in some cases but on other-hand even small size tumor may be presented with metastasis and 16(55%) cases with T less than 2cm has metastasis in lymph nodes and if age adjusted, the percentage increases to 70% in early onset IBC. Hence the lymph nodes involvement is of biological significant and marker for potential metastasis, rather than reflection of chronology of tumor.3 cases (9%) of patients with T3, T4has negative axillary lymph nodes, in spite of attain large size.So Lymph nodes enlargement is evolutional step in some cases but in other cases is marker for potential metastasis. (7)

In group A that includes 118 patients,the study of pathological specimens show31(26%) of cases are presented with negative axillary lymph nodes, with no evidence of distant metastasis at time of surgery. 87 cases (74%) are presented with metastasis to axillary lymph nodes, in contrast withthe published series in USA, 60% of symptomatic invasive ductal carcinoma of non-special type presented with metastatic axillary lymph nodes; this ratio drops to 25% in screen detected cases. (8)

In staging of this group, T1N0 (Stage 1) are seen in 13(11%) cases, stage 2 A are seen in 22 cases (T1N1 in 6 cases, T2N0 in 16 cases) , stage 2 B are seen in 30 cases (T2N1: 28, T3 N0 :2) so the total cases in stage 2 are 52 (45%) cases. In group A , although 30 (25%) of cases are presented with negative axillary lymph nodes, only 13(11%) of them are in stage 1, whichindicates that in some cases the disease is still localized to the breast without evidence of lymph nodes or distant metastasis even attain a large size so education of female in breast health and breast self -examination lead to early diagnosis and improve mortality. Absence of axillary lymph nodes is a marker of low potential metastasis and indolent tumor.

50 cases (44%) are presented withlocally advanced stage (stage 3).so the ratio of locally advanced stage is high in compare to that reported in developed country .only 5% is reported in UK but the figure is much high in in developing world.(7)So in nearly half of IBC are presented as locally advanced disease.Regarding the size of primary breast carcinoma, in cases of group B that are treated in 2020, only 3(5%) cases presentwith T 1, in compare to group A that are treated in 2018-2019, 26(22%) cases are present in T1 . This finding reflects the effect of delay in treatment that continues for months (because of pandemic of co-vid 19) on the size of mass which decrease the number of small size tumor (T 1)by 4 folds.

Staging of cases that operated in 2020, one case presented with stage 1(2%) (T1N0) compare to 13(11%) cases in stage 1of cases operated in 2018-2019.

one case is presented with T1N1(stage A1) , and 5 cases are with T2 N0 and 7 cases with T2N1, so total cases in stage 2 are 13 (24%) cases are presented with stage 2. In comparison with cases operated on 2018-2019, 52(44%) of operatedcases in stage 2and 40(74%)cases are presented with locally advanced stage. The delay in diagnosis and treatment of carcinoma of breast for few months change the staging of the disease significantly in a manner that drop the percentage of stage 1 from 11% before the pandemic to 2 % after pandemic (4 folds)and stage 2 drops from 44% to 24% (2 folds)while the locally advanced tumor(stage 3) increases from 44% to 74%. This finding shows how much the importance of early diagnosis of breast carcinoma. Even in the period before the pandemic attack, the disease is diagnosed at relatively late stage as our study show (table 2 and table 5) and the tumor attain large size at time of diagnosis due to defect in breast education program and not awareness of population to the significant of breast self -examination .in the USA prior to 1974 before routine used of mammography, improvement in survival related to more effectivebreast education program and use of breast self-examination. (9)Recent studies show the breast self- examination of no value in improvement of survival in developed countries due to good health system and Mammography is more routinely accessible but not in developing countries, the matter is different because the medical services are not available and the women must be educated to examine her breast to detect the mass as small as possible . (10, 11)

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Conclusion:

Axillary lymph nodes metastasis has both chronological and biological significant, and negative axillary lymph nodes is a marker of indolent tumor, so the disproportion between the cases of negative lymph nodes and cases of stage 1 reflectslarge sizes of tumor in the breast due to delay in diagnosis of primary tumor rather than aggressive behavior. On other-hand, some cases especially the early onset IBC, even the size of tumor is small (T1), it presented with locally advanced stage.

Generally the disease are presented with large size tumor and locally advanced stage in our study.Education of the population and breast self- examination is essential for the diagnosis of disease at early stage before attain large size in our city because of abscent of screen mamograghy.The pandemic infection of co-vid 19 is further worse the disease and increases the ratio of locally advanced stage due to delay in the presentation of patients and even delay in treatment.

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References

1-Ferlay J, et al: GLOBOCAN 2000: Cancer incidence, Mortality, Prevalence Worldwide, IARC Cancer Base No. 5. (10).2001, Lyon, France; IARC

2-Parkin DM, et al: cancer incidence in five continents. 1997, LYON: IARC Press, V111

3- KellyK, et al. sabiston textbook of surgery, 19 editions, 2012.

4-Fisher B, Slack NH. Number of lymph nodes examined and the prognosis of breast carcinoma .Surg Gynecol Obstet. 1970. 131: 79-88.

5- Howlader N, et al. Differences in Breast Cancer Survival by Molecular Sub types in the United States. Cancer Epidemiology Biomarkers Prev. 2018; 28: 28.

6- S Koscienlny et.al. Br J Cancer.1984 Jun.

7- Richard Sainsbury .short practice of surgery, 26 theditions.2012

8- Kelly K, et al.Schwartz, principles of surgery. 10 editions, 2015.

9-lawrence N Shulman, et al.breast cancer in developing countries:opportunities for improved survival. J Oncol.2010; 2010:595167.

10-Thomas DB,et al. randomized trial of breast self –examination in shangghai:final results. Journalof thenational cancer institute. 2002; 94(19):1445-1457.

11-Vainio H, et al. breast cancer screening.Lyon, France: IARCPress; 2002.