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Tafaul-Al-Ahsa Cancer Foundation Wins EXCELLENCE AWARD for Cancer Awareness Initiatives at Gulf Cancer Awareness Week 2024





The Gulf Oncology Society meeting resulted in fruitful outcomes, with young doctors showing keen enthusiasm for assuming leadership roles and implementing impactful initiatives.

The Official Journal of the Gulf Federation For Cancer Control

Table of Contents

Original Articles

Comparison of Acute Toxicities, Overall Treatment Time and Quality of Life in Head and Neck Cancer Patients Treated with IMRT and Helical Tomotherapy **07**
Yashaswini B R, Kumara Swamy, Chundru Swaroopa, Vikram Maiya

Assessment of Radiation Induced Pneumonitis and Pericarditis in Patients Undergoing Breast Conservative Treatment Using Hypofractionated Simultaneous Integrated Boost Technique **15**
Senthamizhan Sundaramoorthy, Gunaseelan Karunanidhi, Pravati Pal, Sunitha.V.C, Hanumitha Radhakrishnan

Histopathological Study of Breast Cancer at the Oran University Hospital Center on a Population from Western Algeria **30**
F.Z.Boussouf, A.Medjdoub, Z.Tahari, F.Z.Tahari, H.Ouldcadi, S. Seddiki, T.Sahraoui.

Assessing Mismatch Repair Expression by Immunohistochemistry in Colorectal Adenocarcinoma –Insight from a Tertiary Care Centre **35**
Rachana Lakhe, Rajeev Doshi, Preeti Doshi, Amrutraj Patil, Ravindra Nimbargi

Cost of Healthcare Services in Geriatric Neuro–oncology: A descriptive Analysis **42**
Zainab Saif Al–Siyabi, Omar Al–Mahrouqi, Osama Al–Senani, Suha Al–Amri, Zainab Al–Ajmi, Anfal Al–Nazwani, Fatema Taheri, Hashim Al–Hashimi, Mallak Al–Sheriyani, Mustafa Talib Al–Ani, Shima Al–Shamli, Salim Al–Abri, Tariq Al–Saadi

Establishing and Monitoring an Effective Management of Benign Nontoxic Multinodular Goitre in Kuwait "Utilizing Two Different Dose Levels of Recombinant Human TSH in Combination with Radioactive Iodine" **49**
Iman Al–Shammeri, Michael Masoomi, Nael Al–Shammeri, Fawaz Al–Abdali, Amna Al–Shagooli

Laparoscopic Versus Open Surgery for Colorectal Cancers: Clinical and Pathological Outcomes from a Single Institution in Bahrain **64**
Khaled Nazzal, Layla Hasan, Asma Alqaseer, Hussain A. Abdulla, Aalaa S. Majed, Mohamed A. Abushwemeh, Esra S. Salman, Mohamed Arafa, Ahmed Jawad

Clinical Outcomes and Dosimetric Evaluationof Interstitial Brachytherapyin Gynecological Malignancies **69**
NV Vinin, Adarsh Dharmarajan, Joneetha Jones, EK Nabeel Yahiya, Geetha Muttath, Nayan Sneha

Review Article

Epidemiological, Diagnostic and Therapeutic Aspects of Hepatocellular Carcinoma in Morocco: A Case Series and Review of Literature **75**
Imane Zouaki, Adil Aiterrami, Zouhour Samlani, Sofia Oubaha, Khadija Krati.

Case Report

Polycythemia Vera Masked by Megaloblastic Anemia **91**
M. Loukhnati, K.Khalil, FE. Lahlimi, I.Tazi

Managing Inconsistent Bladder Volumes in the Prostate Cancer Patient Using Daily Online Adaptive RT: A Case Report **94**
Venkada Manickam Gurusamy, Yoganathan Sullimullur Arunachalam, Mohamed Riyaz Poolakundan, Sarah Fiona Mc Cabe, Rabih Wafiq Hammoud, Noora Al–Hammadi

Special Review

Evaluating Primary and Secondary Prevention Interventions for Oral Cancer: Insights from the IARC Handbooks on Cancer Prevention Volume 19 Volume 19, Oral Cancer Prevention **100**
Samar Alhomoud

Conference Highlights/Scientific Contributions

• **News Notes** **102**

• **Advertisements** **107**

• **Scientific Activities** **108**

Original Article

Histopathological Study of Breast Cancer at the Oran University Hospital Center on a Population from Western Algeria

F.Z.Boussouf[1], A.Medjdoub[1,2], Z.Tahari[1,2], F.Z.Tahari[2,3], H.Ouldcadi[1], S. Seddiki[1], T.Sahraoui[1].

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Summary

Breast cancer (BC) is the most common cancer among women worldwide and also in Algeria. Despite therapeutic progress, it remains a cancer with serious physical and psychological consequences.

Materials and methods: The objective of this study was to perform a histological analysis on 244 patients from the western Algerian population who were receiving treatment at the Oran University Hospital.

Results and discussion: The findings of our study indicates that women are more likely to be affected, with a predominance of tumors in the right breast (77%), we also found that (72%) of patients had a personal history risk of developing breast cancer. The majority of the cases that were examined were in the age range of 40 to 50. In addition, we noticed that unemployed and married women were the most affected, with (86% and 95%, respectively). Total of (63%) patients used contraceptives known to be endocrine disruptors and (68%) of cases were breast–feeding.

Our results revealed that the most frequent histological type is the infiltrative ductal carcinoma (77%) followed by the ductal carcinoma in situ which is (13%), on the other hand the infiltrative lobular carcinoma presents a very low percentage (9%). The SBR II grade is the most dominant with (81%) followed by the SBRIII grade (18%) and no cases of SBR I grade were observed.

Conclusion: Breast cancer is one of the most complex and difficult to control diseases, especially in developing countries. Breast cancer screening remains a powerful way of improving early detection and survival rate. The Findings of our study demonstrate that histopathological analysis provides an important prognostic information and, if the grading protocol is followed consistently, reproducible results can be obtained for a favorable prognosis and management of breast cancer to reduce the burden of the disease.

Key words: Breast cancer, risk factor, histopathology, chemotherapy and radiotherapy.

Introduction:

Breast cancer is becoming a major public health problem. It is a malignant tumor of the mammary gland and arises in the cell units that secrete milk; the ducto–lobular units of the breast, mainly in women[(1)].

The incidence of breast cancer is increasing in developing countries due to increased life expectancy, increasing urbanization and the adoption of Western lifestyles[(2)].

Algeria is one of the African countries most affected by breast cancer, the country ranks first in terms of incidence and mortality compared to other types of cancer, 28.6 per 100,000 inhabitants in a total of 4271 cases suitable every year. The death rate is 15.6 per 100,000 population with a rate of 2197 deaths per year[(3)].

Several risk factors for developing breast cancer have been recognized, such as family history, advanced age,

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environmental factors and hormonal risk factors. Knowledge of these factors allows taking appropriate measures for the prevention and screening of this type of cancer[4].

It is therefore important to identify effective preventive measures aimed at reducing mortality associated with this cause of the disease, and the only prevention tool to date that has been shown to be effective in reducing the mortality rate from breast cancer is screening using simple methods (self–touch and clinical examination) and non–invasive examination (mammography/ultrasound)[5].

To better assess the prognosis of these tumors, it is recommended to classify them according to the SBR histological prognostic classification. Early diagnosis is essential to improve the prognosis of this disease, as it progresses relatively slowly and is dominated by the risk of metastasis[6].

The purpose of our work was to carry out a histopathological study of breast cancer in the population of western Algeria.

Materials and methods

The case study was conducted during 2022 on a population of 244 patients ranging in age from 30 to 75 years. These patients are from western Algeria and all have breast cancer.

Tissue samples were fixed in 10% formalin solution for three hours, followed by classical histological steps: dehydration and paraffin embedding at 56°C. The obtained blocks were cut with a microtome into 4–micrometer sections. Sections were dewaxed then rehydrated and stained with hemaluneosin.

The observation and acquisition of the images were obtained using an optical microscope equipped with a camera.

We applied the Scarff–Bloom–Richardson (SBR) histological prognostic classification[7], modified by Elston and Ellis[8] based on three parameters, namely the degree of tumor differentiation, nuclear atypia and mitotic activity[9].

Results :

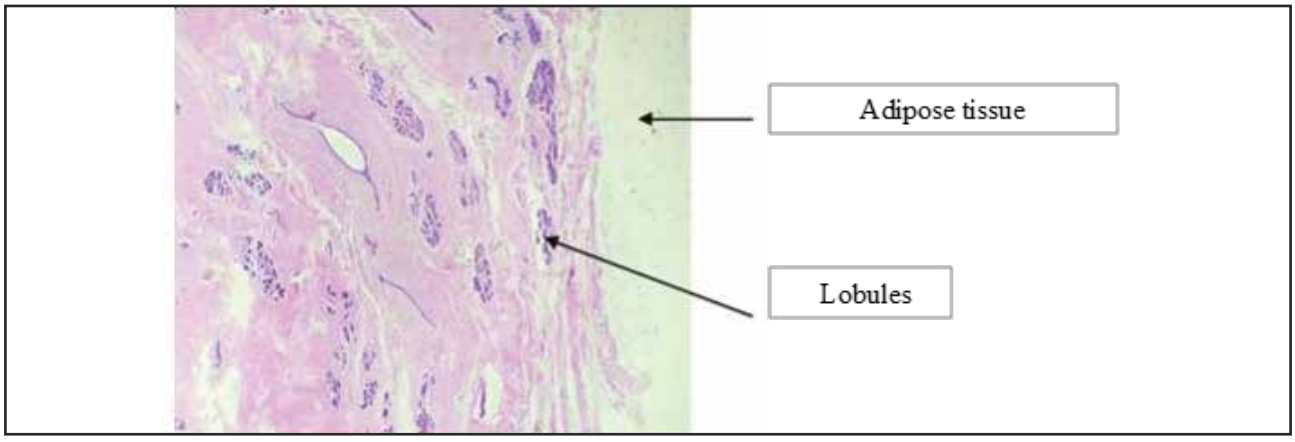


Figure 1: Histological section of a normal breast (GX40).

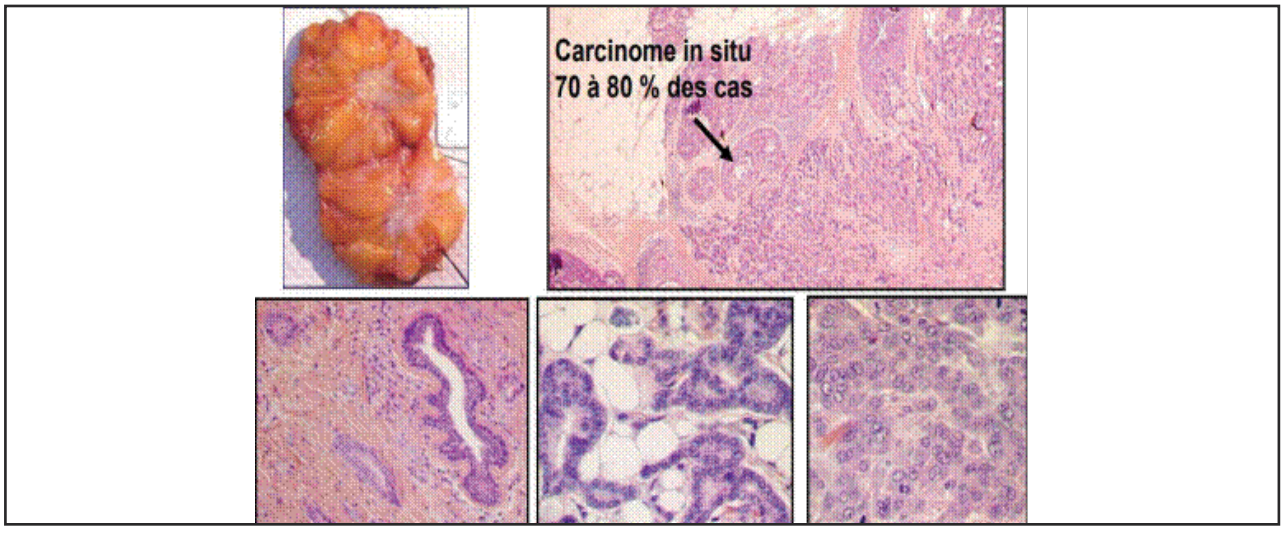


Figure 2: Histological section of a ductal mammary carcinoma in situ (GX100)

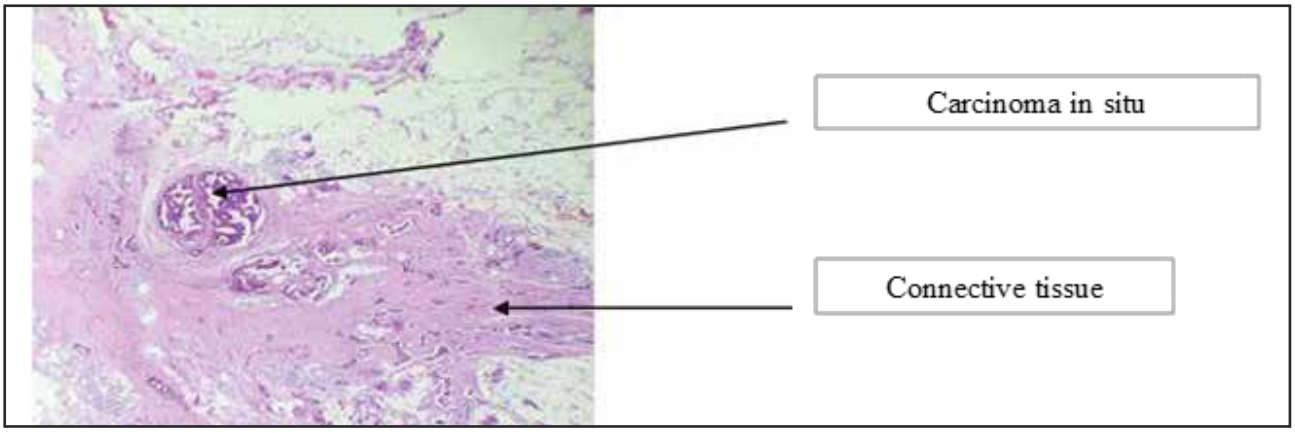


Figure 3: Histological section of a breast carcinoma in situ (GX40).

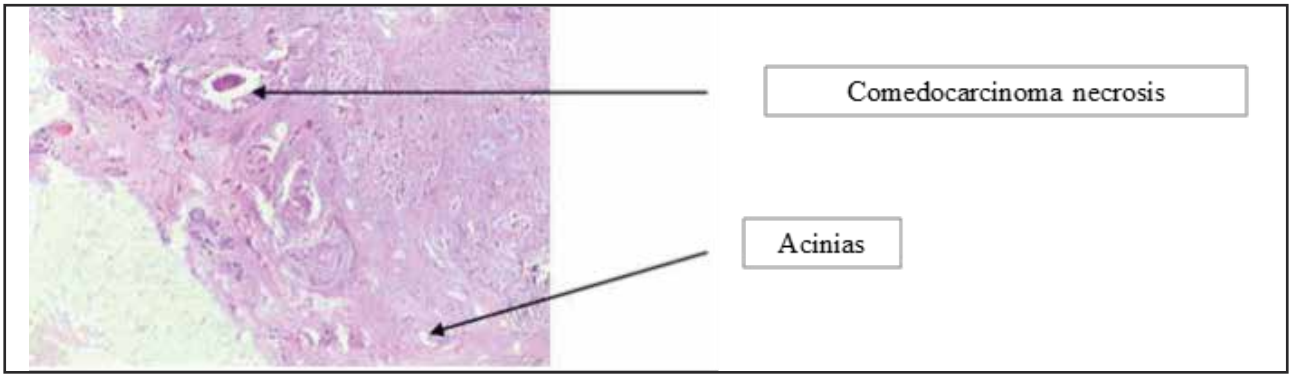


Figure 4: Histological section of a comedocarcinoma (GX10).

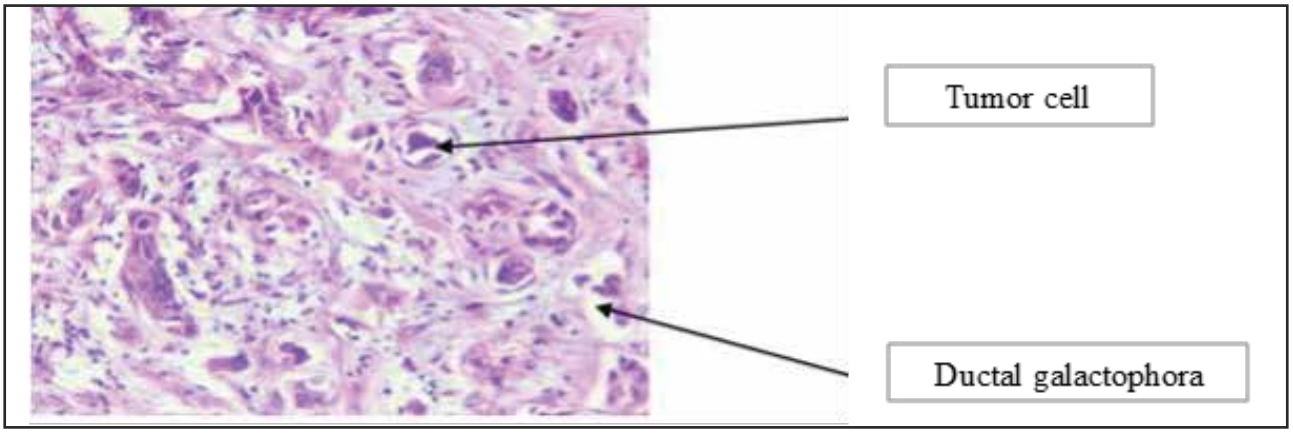


Figure 5: Histological section of an infiltrating mammary ductal carcinoma (GX100).

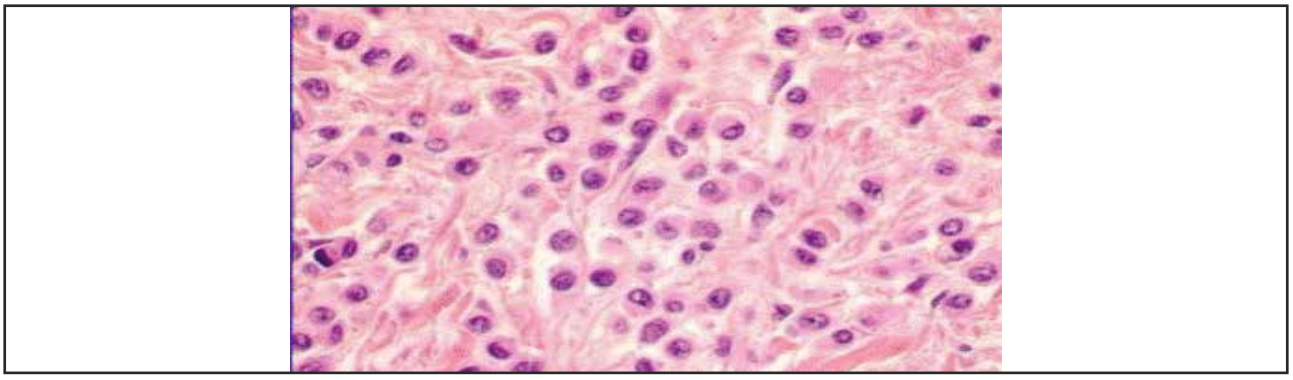


Figure 6: Histological section of an infiltrating lobular breast carcinoma (GX100)

Discussion

Our study consisted in carrying out an anatomopathological study involving 244 patients recruited from the hospital–university center of Oran (CHUO), all from the western of Algeria population. The aim was to identify risk factors for breast cancer.

Numerous studies have shown that age is the most important risk factor for breast cancer [10]. Rare in women under the age of 30, the risk increases from 50 to 75 years old (the age group accounts for nearly 2/3 of breast cancer cases)[11]. This is close to our results on 244 cases studied, which showed that the most affected age group was patients between 40 and 50 years old, with a rate of 40%, which represents the first peak of age and the second peak represents patients aged between 30 and 40 years with a percentage of 23%.

In this study, (77%) of patients were affected in the right breast. In contrast, women with left breast disease accounted for (22%) of the patients studied. Our results show a frequent localization of breast cancer in the right breast, consistent with data from Dimassi et al.'s 2014 study with a predominance of tumors in the right breast of (53.2%) and (46.8%) in the left breast in total of 47 patients[12]. However, in another study in Tunisia, it was found that the left breast seemed to be the most affected compared to the right, with rates of (58% and 38% respectively) in total of 305 patients[13].

Other factors are associated with the occurrence and prognosis of breast cancer. The SBR (Scarff Bloom and Richardson) grade represents an essential parameter in cancer diagnosis and the results of our study showed that (81%) of patients were grade II and (18%) were grade III. The most common histological type in our study population was infiltrating ductal carcinoma, at a rate of (77%). This result is similar to the results of a Moroccan study showing that ductal carcinoma (IDC) is the most common type with (77.1%) of cases, followed by invasive lobular carcinoma (ILC) (15.3%)[14]. Similarly, another study by Oran Hospital and University Center showed that the IDC rate was 85%[4]. This shows that breast cancer is often diagnosed late in our patients.

Regarding personal history, our study showed that (72%) of our patients had pathological diseases, while (28%) did not. Similar results were found in another study that was carried out by Korichi Mohamed Anes in 2015 with rate of (25%), which noted that high blood pressure was the most common personal history with a frequency of (12.3%), followed by diabetes (9 ,5%) [15].

The results obtained in our study according to the occupation parameter showed a percentage of (86%) for women with no profession, (9%) for civil servants and (4%) for retired women, showing that women who do not work mark the first peak. According to marital status, married women had the largest proportion in our study (96%), while single women were (4%). This result was similar to the results of Gueye in Dakar (Senegal)[16].

In our study, breast cancer was associated with contraception, with (64%) of our patients using the pill and (4%) using condoms, while the remaining which is (31%) used nothing at all. Regarding oral contraception, our frequency was higher than that of Guendouz et al in Algeria, with (44.9% and 49.7%, respectively)[17, 18]

Breastfeeding is one of the protective factors against breast cancer. Unlike our study, which showed a high proportion of (68%) breastfeeding women and (31%) of our patients did not breastfeed. This cannot be associated to other studies.

In our study, (86%) of patients received chemotherapy and radiotherapy, while (13%) received no treatment.

The histological type of breast cancer is an important factor determining the prognosis of the disease. (Figure 1) represents the histology of a normal breast, the outer part of the breast being made up mainly of adipose tissue; Connective tissue completely surrounds the glands and fills the spaces between the lobes; This last part is formed of lobules. Histological sections (Figures 2, 3 and 4) showed small proliferation of cells without connective tissue invasion, identifying mammary carcinoma in situ, unlike the invasive carcinoma of the breast presented in (Figures 5 and 6) which is associated with massive proliferation of tumor cells.

Conclusion:

Breast cancer is one of the most complex and difficult to control diseases, especially in developing countries. Breast cancer screening remains a powerful way of improving early detection and survival rate. The Findings of our study demonstrate that histopathological analysis provides an important prognostic information and, if the grading protocol is followed consistently, reproducible results can be obtained for a favorable prognosis and management of breast cancer to reduce the burden of the disease.

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