Research, Society and Development, v. 12, n. 1, e20812138017, 2023
(CC BY 4.0) | ISSN 2525-3409 | DOI: http://dx.doi.org/10.33448/rsd-v12i1.38017

Primary Non Hodgkin Lymphoma on the left breast of a 53 year old woman: A rare case report

Linfoma Não-Hodgkin Primário na mama esquerda de mulher de 53 anos: Relato de caso raro

Linfoma No Hodgkin Primario en la mama izquierda de una mujer de 53 años: Reporte de un caso raro

Received: 11/15/2022 | Revised: 12/19/2022 | Accepted: 01/06/2023 | Published: 01/08/2023

Putu Erika Paskarani
ORCID: https://orcid.org/0000-0003-2869-9071
Udayana University, Indonesia
E-mail: erika_paskarani@unud.ac.id
Mellinda Wijaya
ORCID: https://orcid.org/0000-0002-0376-4992
Udayana University, Indonesia
E-mail: Wijaya_mellinda@yahoo.com
Ni Putu Sriwidyani
ORCID: https://orcid.org/0000-0002-6910-9472
Udayana University, Indonesia
E-mail: sriwidyani@unud.ac.id
Ni Gusti Ayu Agung Manik Yuniawaty Wetan
ORCID : https://orcid.org/0000-0003-1345-5162
Udayana University, Indonesia
E-mail: manikyw@gmail.com

Abstract
Primary breast lymphoma (PBL) is a rare but distinct subtype of extranodal lymphoma, comprising 0.5% of breast malignancies, approximately 1% of all non-Hodgkin's lymphomas (NHL) and <3% of extranodal lymphomas. Because the cases are rare, the diagnosis is difficult to establish by routine histopathological examination alone. This paper reports a case of a 53-year-old woman, complaining of a lump in the left breast. The lump is said to have been noticed since approximately 2 years ago on the nipple. The patient said that initially the lump was the size of a grape and then realized that it had enlarged since 3 weeks ago with a more chewy texture. Ultrasound of the left mammary, heterogeneous solid lesion with indistinct borders with dilatation of the drawerous duct with the appearance of intraductal calcification filling the superolateral and superomedial quadrants of the left mammary suggestively malignant (BIRADS 5). The microscopic appearance of the FNAB suggested a malignant round cell tumor. Based on the results of the biopsy and immunohistochemical examination, the results were positive CD 45, CD 20 positive, CD 3 negative, and Ki67 positive in 90% of tumor cell nuclei. It was concluded that it was a non-Hodgkin's lymphoma, with a large diffuse pattern. The patient was reported did not survive.
Keywords: Left breast; *Primary Non-Hodgkin lymphoma.*

Resumo
O linfoma primário da mama (PBL) é um subtipo raro, mas distinto, de linfoma extranodal, compreendendo 0,5% das neoplasias malignas da mama, aproximadamente 1% de todos os linfomas não-Hodgkin (NHL) e <3% dos linfomas extranodais. Como os casos são raros, o diagnóstico é difícil de ser estabelecido apenas pelo exame histopatológico de rotina. Este trabalho relata o caso de uma mulher de 53 anos com queixa de nódulo na mama esquerda. Diz-se que o caroço foi notado desde aproximadamente 2 anos atrás no mamilo. O paciente disse que inicialmente o caroço era do tamanho de uma uva e depois percebeu que havia aumentado há 3 semanas com uma textura mais mastigável. Ultrassonografia da mama esquerda, lesão sólida heterogênea de bordos indistintos com dilatação do ducto gavetal com aspecto de calcificação intraductal preenchendo os quadrantes superolateral e superomedial da mama esquerda sugestivamente maligno (BIRADS 5). A aparência microscópica da PAAF sugeria um tumor maligno de células redondas. Com base nos resultados da biópsia e do exame imuno-histoquímico, os resultados foram positivos para CD 45, CD 20 positivo, CD 3 negativo e Ki67 positivo em 90% dos núcleos das células tumorais. Concluiu-se tratar-se de linfoma não-Hodgkin, de grande padrão difuso. O paciente foi relatado não sobreviveu.
Palavras-chave: Mama esquerda; Linfoma não Hodgkin primário.

Resumen

El linfoma de mama primario (PBL) es un subtipo raro pero distinto de linfoma extraganglionar, que comprende el 0,5 % de los tumores malignos de mama, aproximadamente el 1 % de todos los linfomas no Hodgkin (LNH) y <3 % de los linfomas extraganglionares. Debido a que los casos son raros, el diagnóstico es difícil de establecer solo mediante un examen histopatológico de rutina. Este artículo reporta el caso de una mujer de 53 años que consulta por un bulto en el seno izquierdo. Se dice que el bulto se notó hace aproximadamente 2 años en el pezón. El paciente dijo que inicialmente el bulto era del tamaño de una uva y luego se dio cuenta de que se había agrandado desde hace 3 semanas con una textura más masticable. Ecografía de mama izquierda, lesión sólida heterogénea de bordes indistintos con dilatación de cajonera con aspecto de calcificación intraductal llenando los cuadrantes superolateral y superomedial de mamaria izquierda sugestivamente maligna (BIRADS 5). El aspecto microscópico de la PAAF sugería un tumor maligno de células redondas. Según los resultados de la biopsia y el examen inmunohistoquímico, los resultados fueron CD 45 positivo, CD 20 positivo, CD 3 negativo y Ki67 positivo en el 90% de los núcleos de células tumorales. Se concluyó que se trataba de un linfoma no Hodgkin, con un gran patrón difuso. Se informó que el paciente no sobrevivió.

Palabras clave: Pecho izquierdo; Linfoma no Hodgkin primário.

1. Introduction

Primary lymphoma of the breast is often defined as lymphoma confined to one or second breast and or gland sap regional clear. Primary Non-Hodgkin lymphomas in the breast are rare, accounting for 1.7% to 2.2% of extra-nodal lymphoma and 0.38% to 0.7% of all type Non-Hodgkin's lymphoma. Though lymphoma breast secondary is also rare, with a reported incident of 0.07%, this consists of 17% of all metastatic malignancy to the breast so that represents the metastatic tumor group's biggest boobs. (Chan et al., 2019)

Lymphoma non-Hodgkin could appear in the gland sap clear or network lymphatic other such as the tonsils, spleen, and thymus (nodal lymphoma) or outside gland sap clear (lymphoma extranodal) which can be categorized as primary and secondary. Lymphoma extranodal could appear on the skin, stomach, eyes, breasts, and bones. Report case this will describe case a 53-year-old woman with a left mammary tumor with lymphoma Primary non-Hodgkins.

2. Methodology

This is a descriptive study of the case report type. In general, case study research is centered on a phenomenon, which is described in as much depth as possible (Yin, 2017; Pereira et al., 2018). Analysis of the medical record for description of the clinical case, being presented in chronological order, and literature review using scientific databases. Our research ethics committee did not conduct any ethical clearance for the case report due to its already discussed at the clinicopathological conference and approved by the clinician, patient, and pathologist. Following ethical principles, the patient consented to disseminating the data and displaying images of his case for academic purposes through the signing of a Free and Informed Consent Form.

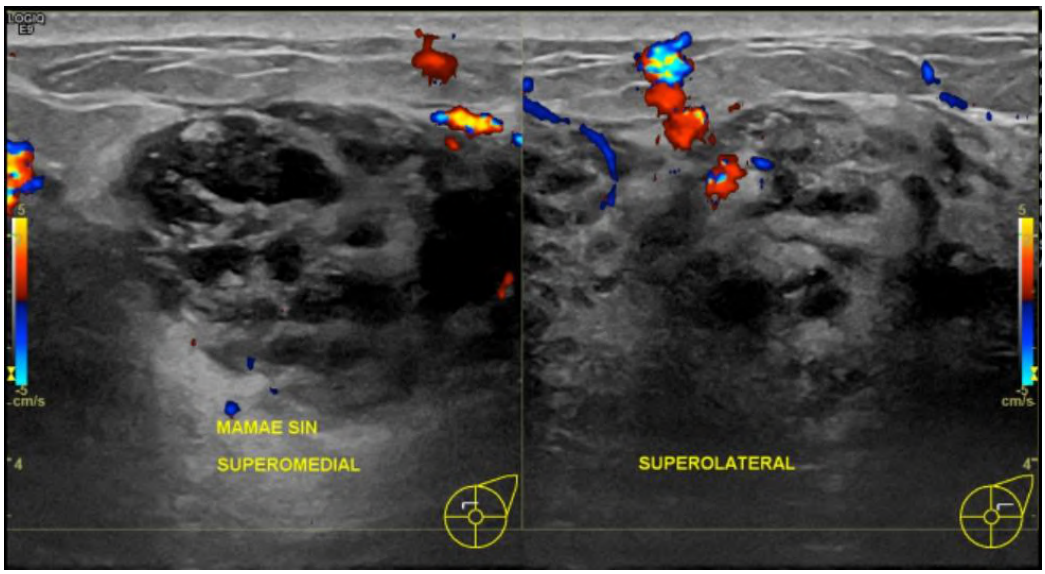
3. Case Report

A female, 53 years old come with a complaint lump in her breast left. Bump said realized since not enough over 2 years ago under the nipple. The patient says at first bump a life-size seed fruit Grape then realized that grown-up 3 weeks ago with the texture Becoming chewier. Based on history previously known patients menstruate at an age not enough over 12 years. The patient has history of birth control implants since 30 years old. On history inspection obstetrics and gynecology, the patient has 2 children with a history of one abortion. The patient previously have a history of disease chronic that is pressure blood tall but said not controlled. The history of tumors or cancer in a family no known by the patient.

Based on an inspection physique patient found no there are abnormalities in vital signs. On examination physique found in the region breast left looks breast asymmetric with there is mass solid in the region superomedial quadrant measuring 7x7 cm. Mass found solid, mobile, and surface no bumpy. On ultrasound examination, the mammary lesson multiple cysts in

the right mammary (BIRADS 2), a lesion congested with irregular border in the right mammary (BIRADS 4A), lesion congested heterogeneous limit no assertive accompanied Lactiferous duct dilatation with description intraductal calcification meets superolateral and superomedial quadrant of the left mammary suggestive malignant (BIRADS 5), and not look bilateral axillary lymphadenopathy, supraclavicular nor bilateral interclavicular when this.

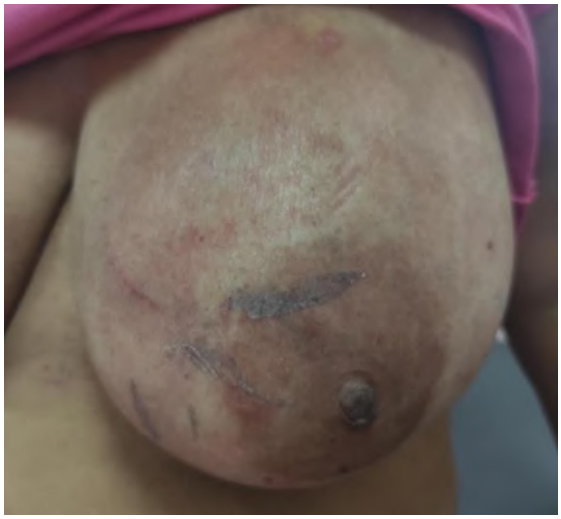
Figure 1 - Ultrasound of the left mammary. lesson congested heterogeneous limit no assertive accompanied Lactiferous duct dilatation with description intraductal calcification meets superolateral and superomedial quadrant of the left mammary suggestive malignant (BIRADS 5).



Source: Authors.

Patients then conducted an inspection Fine Needle Aspiration Biopsy (FNAB). FNAB macroscopically found mass palpable in the region of left breast, mobile and hyperaemic, size 5x4x3cm (Figure 1). In FNAB, 5 punctures were performed on the left breast with a G25 needle, obtained ingredient aspirate mixed blood and fluids cloudy. FNAB has created in smear 7 slides and daubed with coloring diff quick.

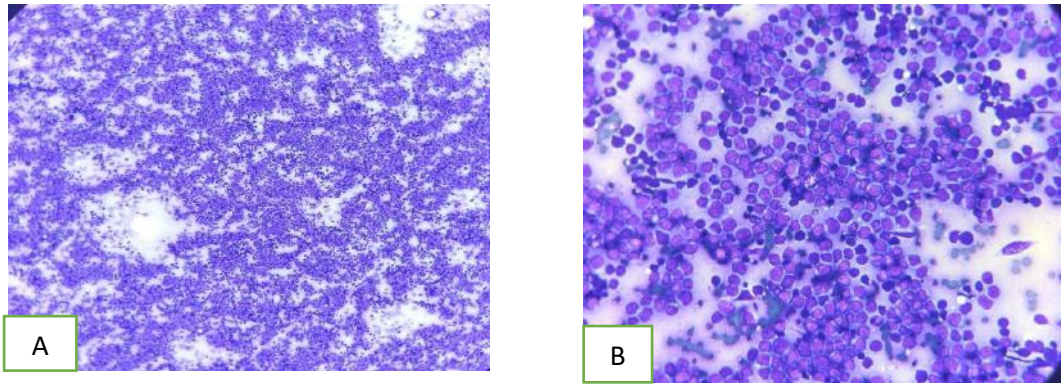
Figure 2 - Photo Clinical Sinistra Breast.



Source: Authors.

On FNAB microscopy found scatter cells with morphology relatively monotonous round, cytoplasm basophilic Narrow, rounded nucleus, irregular nuclear membrane, and prominent nucleoli. Easy mitosis was found and in focus other, there are group cells multinucleated. The background behind the preparation of lymphocytes and basophilic amortized material. On the FNAB impressive something a malignant round cell tumor.

Figure 3 - Microscopic from FNA examination.

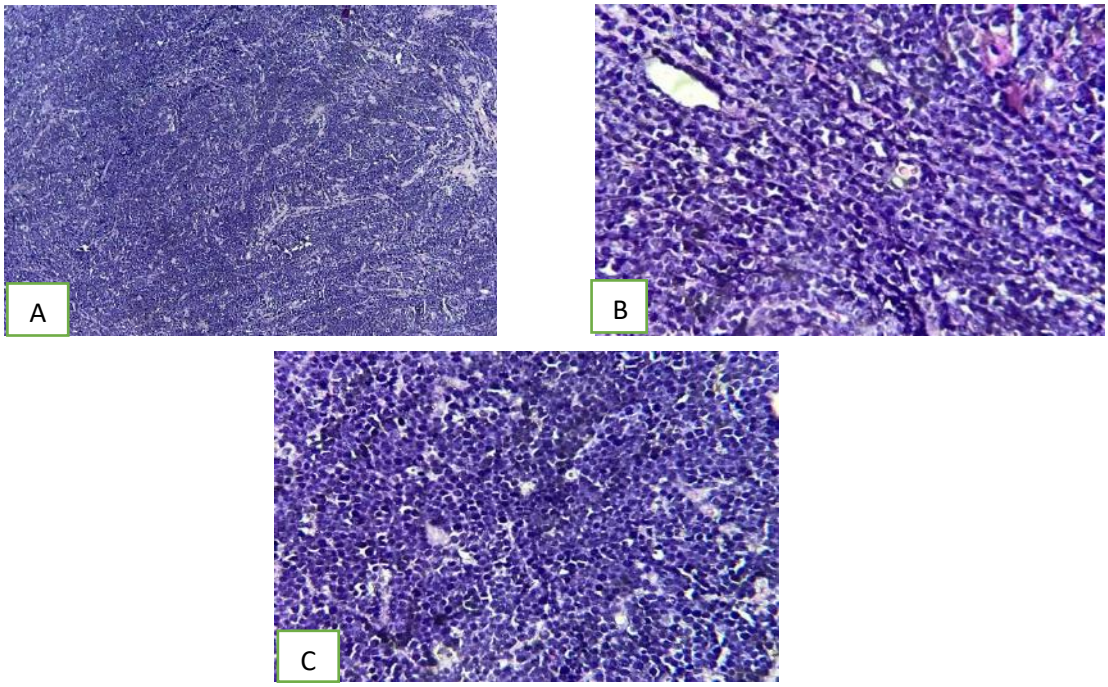


A. Smear with scatter cells with the formation of relatively monotonous round arranged diffuse (Diff quick, 4x).
B. Cells shaped round size currently until big (2x size lymphocytes mature) cytoplasm basophilic narrow (Diff quick, 100x).
Source: Authors.

One week after conducted by FNAB. Then next with an inspection biopsy. Network a biopsy of the left mammary was sent to laboratory Pathology Anatomy with size sent network _ to part laboratory Pathology Anatomy in the form of 1 piece network with size 2,3x1,9x0,7 cm, color white, consistency chewy. Processed whole in 2 cassettes.

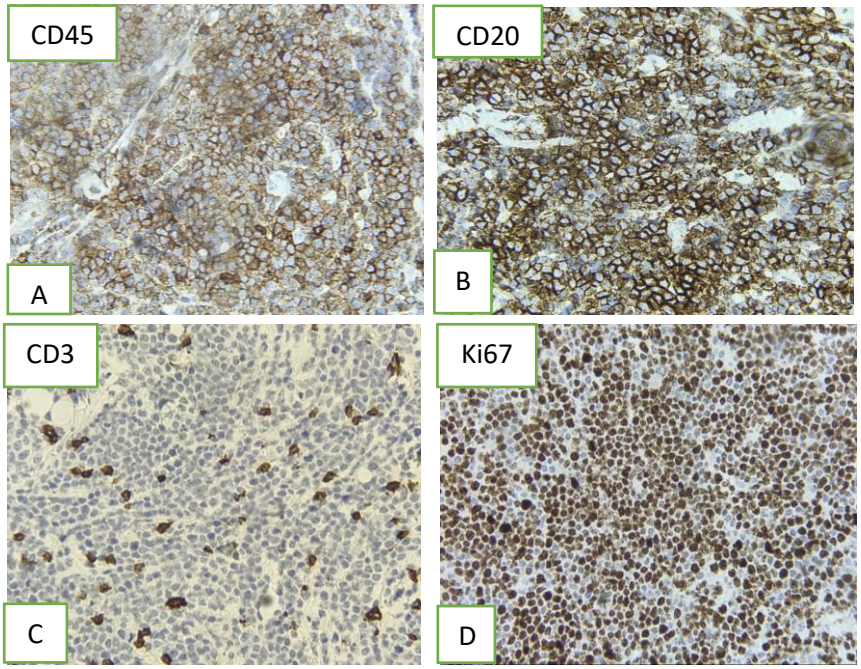
Based on the results breast biopsy left to found a network containing stacked tumor mass diffuses partially linear infiltrative between the connective tissue stroma and fat (Figure 2). The mass with morphology cell shaped round monotonous sized currently until big with cytoplasm narrow. Round nucleus, irregular nuclear membrane, hyperchromatic part chromatin spread equally with a single prominent nucleolus. Mitosis 28/10 LPB. Based on morphological diagnosis with outward appearance routine show something non-Hodgkin lymphoma, diffuse pattern with size currently until big. In patients, this conducted inspection immunohistochemistry is as the following diffuse positive CD 45, diffuse positive CD 20, negative CD 3, and Ki 67 positive for 90% of tumor cells. From the picture clinical, radiological, histopathological, and examination immunohistochemistry case this concluded as lymphoma Non-Hodgkin diffuse pattern, size currently until big. After the biopsy patient was treated for repair condition post-operation, the condition of patient the worse, and finally patient died.

Figure 3 - Microscopic view from network biopsy left breast .



A. The tumor mass is composed diffuse (H&E, 40x).
B. Mass with linear pattern (H&E, 100x).
C. The mass with morphology cell shaped round monotonous , sized medium-large with cytoplasm basophilic narrow. Round nucleus, irregular nuclear membrane , hyperchromatic part chromatin spread equally with single nucleoli inconspicuosly (H&E 400x).
Source: Authors.

Figure 4 - Reviews immunohistochemistry network biopsy .



A. CD45 dazzling positive diffuse across the membrane (CPI, 400x)
B. dazzling CD20 positive diffuse across the membrane (CPI, 400x)
C. CD3 negative ((CPI, 400x)
D. Ki67 positive in 90% of tumor cell nuclei ((CPI, 400x)
Source: Authors.

3. Result and Discussion

Primary lymphoma of the breast is often defined _ as lymphoma confined to one _ or second breast and or gland sap regional clear, with no existence history of lymphoma before; presentation with mass or symptom dominant in the breast in the patient without known lymphoma. _ This consist of a variety of subtype histology, but lymphoma B cells are the most common. Lymphoma primary breast (PBL) is a subtype of lymphoma rare extranodal, consisting of 0.5% malignancy breasts, about 1% of all non-Hodgkin's lymphoma (NHL), and <3% lymphoma extranodal. The most common histology is lymphoma cell B size large, diffuse pattern (DLBCL). Lymphoma breast primer seldom occurs, accounting for 0.5% of all neoplasm malignant breasts and about 2% of all lymphoma extranodal. According to SEER program data, incidents of lymphoma primary breast have increased Over several decades last. From 0.66 cases per 1 million women in 1975-1977 to 2.96 cases per 1 million women in 2011-2013.

Patients most in women between a decade to seven life, but can also be in women with susceptible ages 15 - 90 years in some reported cases. Though many types of lymphoma can Becomes Primary lymphoma of the breast, present three types of histology from amount whole case lymphoma; among them diffuse large B-cell lymphoma (40-73% of cases), extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue (MALT lymphoma 9-25% of cases), and follicular lymphoma (13-19%). of several reports, the most were diffuse large B cell lymphoma (84%) or MALT lymphoma (64%). (Chan JKC et al., 2019)

The etiology of DLBCL is not yet known until the moment this. This tumor usually appears de novo (primary) but can also be a transformation from less lymphoma aggressive (secondary), such as lymphocytic leukemia / small lymphocytic lymphoma, lymphoma follicular, marginal zone lymphoma, or Hodgkin lymphoma nodular lymphocyte predominant. Underlying Immunodeficiency _ is a factor risk significant. DLBCL that occurs in patients immunodeficiency is more often positive against EBV than case sporadic. In DLBCL cases without overt immunodeficiency, the level of EBV infection varies from 3% in the western population to about 10% in Asian and Latin American populations . (Alwan,. 2008)

The complaint most frequent inpatient occur is enlargement unilateral breast without existing pain complaints. Lesions just detected moment conducted mammography. Patients seldom show existing complaints of skin redness, swelling, or nipple retraction.

Cells DLBCL neoplastic usually express B - cell markers such as CD19, CD20, CD22, CD79a, and PAX5. Immunoglobulins surface and cytoplasmic (usually IgM, followed by IgG and IgA) can be shown in 50-75% of cases. Index proliferation of Ki-67 is usually high (>40% and possibly >90% in several cases). (Examination results immunohistochemistry is as follows CD 3 negative, CD 20 positive diffuse, CD45 positive diffuse, and Ki 67 positive in 90% of tumor cells. From the picture histopathology and appearance immunohistochemistry, both differential diagnoses can be removed because the tumor is positive diffuse with a positive CD20 appearance. Where appropriate for Non-Hodgkin Lymphoma, Diffuse Large B cell Lymphoma.*staging* lymphoma Non-Hodgkin same as in Hodgkin 's lymphoma use classification Ann Arbor's *staging that* can be seen in Table 1. (Surov, et al.(2012))

Table 1 - Classification *Staging* Ann Arbor [9]

stage	Description
I	Involvement of a single lymphatic site (eg, nodal region, Waldeyer ring , thymus, or spleen) (I); or localized involvement of a single extralymphatic organ or site in the absence of lymph node involvement (IE).
II	Involvement of a single lymphatic site (eg, nodal region, Waldeyer ring , thymus, or spleen) (I); or localized involvement of a single extralymphatic organ or site in the absence of lymph node involvement (IE).
III	Involvement of lymph node regions on both sides of the diaphragm (III), which may also be accompanied by extralymphatic extension associated with involvement of adjacent lymph nodes (IIIE) or with involvement of the spleen (IIIS) or both (IIIE,S).
IV	Diffuse or *disseminated* involvement of one or more extralymphatic organs , with or without involvement of the associated lymph nodes; or isolated extralymphatic organ involvement in the absence of involvement of adjacent regional lymph nodes, but in association with disease at a distant site. *Stage* IV includes involvement of the liver or bone marrow, lungs (other than by direct extension from elsewhere), or cerebrospinal fluid.
Valid for every stage	
A	No symptoms
B	Fever (temperature > 38.0ºC), night sweats, weight loss >10% for no apparent reason in the last 6 months.
E	Involvement of a single extranodal site adjacent to or proximal to a known nodal site.
S	*Splenic* (spleen) involvement

Source: Authors.

Therapy The standard for advanced DLBCL is R - CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone). 3.9 However after the condition biopsy patient Keep going worsened and reported the death.

the prognosis for lymphomas involving breasts either primary or secondary considered gloomy with a level continuity lives 5 years ranging between 9 and 85%. Factor most important prognostic is subtype histology and clinical stage at diagnosis, according to The Lugano classification system, which is taken from edition 8th of Union International Cancer Control (UICC). TNM classification. In general, 60-70% of patients show localized, with IE staging, and general existence enlargement of the axillary tail lymph nodes at diagnosis (stage II). Staging than some _ patient with primary bilateral DLBCL breast controversy (stage IE vs IV). The International Prognostic Index (IPI) is very useful for prognosis.

4. Conclusion

Patients most women between a decade to seven life, but can also be women with susceptible ages 15 - 90 years in some reported cases. among them diffuse large B-cell lymphoma (40-73% of cases). Case this report a 53-year-old woman complained existence lump on her breast left, and more grown up not enough more than 2 weeks. From the picture of clinical, radiological, histopathological, and examination immunohistochemistry cases this concluded as primary non-Hodgkin lymphoma, diffuse pattern, medium-large cell type.

References

Ronchi, M.Montella, V.Argenzio et al., “Diagnosis of anaplastic large cell lymphoma on late peri-implant breast seroma: management of cytological sample by an integrated approach,” *Cytopathology*, 29(3), 294–299, 2018. tttttView at: Publisher Site | Google Scholar

AJCC: Hodgkin and non-Hodgkin lymphomas. In: Zelenetz D.A, Jaffe SE, et al., editors. AJCC Cancer Staging Manual. 8th ed. New York: Springer, 2010, p. 937-955.

Alcaide ER, Castellón J.N, P Bueno PS, et al.. Primary Breast Lymphoma: Case Report. *Clin Oncol*. 2021;6(1):1810. [Google Scholar]

Alwan, H. al M. 2008. Non Hodgkin's Lymphoma of the Breast, FRCS, Dean of Al-Mustansiriya College of Medicine, MMJ 2008; 7:31-33p

Anuradha, Sinha, A., & Ramrakhiani, D. (2005). *Primary Non-Hodgkin’s Lymphoma of the Breast. Acta Cytologica, 49(6), 661–665.* doi:10.1159/000326257

Chan JKC, Ferry JA, Cheng CL, 2019. Haematolymphoid tumors of the breast. In Ferry JA editors. WHO Classification of Breast Tumors . 5 TH Edition Chan JKC. p. 240-242.

Cheah, C. Y., Campbell, B.A., & Seymour, J. F. (2014). *Primary breast lymphoma. Cancer Treatment Reviews, 40(8), 900–908.* doi:10.1016/j.ctrv.2014.05.010 [PubMed] [CrossRef] [Google Scholar]

Cheson, BD et al. (2014) 'Recommendations for initial evaluation, staging, and response assessment of hodgkin and non-hodgkin lymphoma: The lugano classification', Journal of Clinical Oncology , 32(27), p. 3059–3067. doi:10.1200/JCO.2013.54.8800.

Crawshaw J, Sohaib SA, Wotherspoon A, Shepherd J H.Primary non-Hodgkin's lymphoma of the ovaries: imaging findings. The British Journal of Radiology, 80 (2007), p.155–p.158.

Ganjoo, K., Advani, R., Mariappan, M. R., McMillan, A., & Horning, S. (2007). *Non-Hodgkin lymphoma of the breast. Cancer, 110(1), p. 25–30.* doi:10.1002/cncr.22753

Gascoyne RD, Campo E, Jaffe ES, Chan WC, Chan JKC, Rosenwald A, Stein H, Swerdlow SH. 2017. Diffuse large B-cell lymphoma, NOS. In: Swerdlow SH, Campo E, Harris NL, Jaffe ES, Pileri SA, Stein H, Thiele J, editors. WHO Classification of Tumors of Haematopoietic and Lymphoid Tissues. Revised 4th edition. France: Lyon. p. 291-297.

Genco, I.S., Gur, H., & Hajiyeva, S. (2021). *Lymphoma of the breast: A clinicopathologic analysis of 51 cases with a specific emphasis on patients with a history of breast carcinoma. The Breast Journal, 27(5), 456–460.* doi:10.1111/tbj.14198

illalón-López JS, Souto-Del Bosque R, Méndez-Sashida PG. Linfoma no Hodgkin primario de la glándula mamaria. Reporte de un caso [Primary non-Hodgkin's lymphoma of the breast. A case report]. *Cir Cir*. 2017. Jan-Feb;85(1):70-75 https://doi.org/10.1016/j.circir.2015.09.009 10.1016/j.circir.2015.09.009 PMid: [PubMed] [CrossRef] [Google Scholar]

Marinopoulos, S. et al. (2017) 'Breast lymphoma in a patient with B-cell Non Hodgkin Lymphoma: A case report study', International Journal of Surgery Case Reports , 40, p. 1. doi:10.1016/J.IJSCR.2017.09.003.

Marra, A., Viale, G., Pileri, S.A., Pravettoni, G., Viale, G., De Lorenzi, F., Curigliano, G. (2020). *Breast implant-associated anaplastic large cell lymphoma: A comprehensive review. Cancer Treatment Reviews, 84, 101963.* doi:10.1016/j.ctrv.2020.101963

Parida, G. et al. (2017) 'Primary non-Hodgkin's lymphoma of the breast. A case report', Cirugía y Cirujanos (English Edition) , 85(1), pp. 70–75. doi:10.1016/J.CIRCEN.2016.12.005.

Pereira, A.S. et al. (2018). Metodologia da pesquisa científica. UFSM.

Pugliesi AR, Kersjes W, Degenkolb J, Vögele1 MI, Meixel A, Hesse MA, Ludwigsburg, Bissingen B, Gilching, Heidelberg. 2019. Hodgkin and non-Hodgkin lymphoma, The Radiological approach. European Society of Radiology in: www.myESR.org

Surov, A. et al. (2012) 'Primary and secondary breast lymphoma: prevalence, clinical signs and radiological features', The British Journal of Radiology , 85(1014), p. e195. doi: 10.1259/BJR/78413721.

Vignot, S., Ledoussal, V., Nodiot, P., Bourguignat, A., Janvier, M., Mounier, N., … Turpin, F. (2005). *Non-Hodgkin's Lymphoma of the Breast: A Report of 19 Cases and a Review of the Literature. Clinical Lymphoma, 6(1), 37–42.* doi:10.3816/clm.2005.n.025

Yang H, Lang R, Fu L. Primary breast lymphoma (PBL): a literature review. *Clinical Oncology and Cancer Research*. 2011;8:128-32. https://doi.org/10.1007/s11805-011-0570- 10.1007/s11805-011-0570- [CrossRef] [Google Scholar]

Yin, R. K. (2017). Case study. Canada: Sage Publications.