Breast Cancer and Erythroderma: Case Report

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Câncer de Mama e Eritrodermia: Relato de Caso

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ABSTRACT

Introduction: Exfoliative erythroderma is a rare event associated with several diseases such as psoriasis, eczema, malignant neoplasms, medication use, among others. **Case report:** A 63-year-old patient presented diffuse rash that started in January 2018, evolving with generalized skin desquamation and ulcer formation with chills. Did not report family history of cancer. In the anamnesis, there was no report of any type of eczema, preexisting skin disease or use of medicinal plants. Malignant breast cancer of luminal A molecular subtype was identified later. After mastectomy with lymphadenectomy, there was only partial improvement of erythroderma. Currently using doxorubicin. **Conclusion**: The patient presented an initial clinical condition consistent with what is expected from erythroderma, which may be associated with the emergence of malignant breast neoplasm. The present report is important because it can help in differential diagnoses for erythroderma, even in the presence of an atypical clinical case.

Key words: Breast Neoplasms; Dermatitis, Exfoliative; Mastectomy, Radical.

RESUMO

Introdução: A eritrodermia esfoliativa é um evento raro que está associado a diversas doenças como psoríase, eczemas, neoplasias malignas, uso de medicamentos, entre outras. **Relato do caso**: Paciente de 63 anos apresentou quadro de exantema difuso iniciado em janeiro de 2018, evoluindo com descamação generalizada da pele e formação de úlceras, sentindo calafrios. Não referiu histórico de câncer na família. Na anamnese, não houve relato de nenhum tipo de eczema, doença de pele preexistente ou uso de plantas medicinais. Foi identificada neoplasia maligna de mama do subtipo molecular luminal A, posteriormente. Após mastectomia com linfadenectomia, houve apenas melhora parcial do quadro da eritrodermia. Atualmente, em uso de doxorrubicina. **Conclusão**: A paciente apresentou quadro clínico inicial condizente com o que se espera de eritrodermia, que pode estar associada ao surgimento de neoplasia maligna de mama. O presente relato é importante, pois pode auxiliar em diagnósticos diferenciais para a eritrodermia, mesmo na vigência de um quadro clínico atípico.

Palavras-chave: Neoplasias da Mama; Dermatite Esfoliativa; Mastectomia Radical.

RESUMEN

Introducción: La eritrodermia exfoliativa es un evento raro asociado con varias enfermedades como psoriasis, eccema, neoplasmas malignos, uso de medicamentos, entre otros. **Relato del caso**: Paciente de 63 años presentó una erupción cutánea difusa que comenzó en enero de 2018, que evolucionó con descamación generalizada de la piel y formación de úlceras, con escalofríos. No informó antecedentes familiares de cáncer. En la anamnesis, no hubo informes de ningún tipos de eccema, enfermedad cutánea preexistente o uso de plantas medicinales. La neoplasia de mama maligna del subtipo molecular luminal A se identificó más tarde. Después de la mastectomía con linfadenectomía, solo hubo una mejoría parcial en la eritrodermia. Actualmente usa doxorrubicina. **Conclusión**: La paciente presentó un cuadro clínico inicial consistente con lo que se espera de la eritrodermia, que puede estar asociada con la aparición de neoplasma maligno de mama. El presente informe es importante porque puede ayudar en los diagnósticos diferenciales de eritrodermia, incluso en presencia de un cuadro clínico atípico.

Palabras clave: Neoplasias de la Mama; Dermatitis Exfoliativa; Mastectomía Radical.

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INTRODUCTION

Erythroderma (exfoliative dermatitis) consists in a syndromic condition with universal desquamation and erythematous eruption, it is a pattern of cutaneous manifestation of innumerous diseases including psoriasis, eczema, malignant neoplasms, or drug use. It involves 80% to 90% of the cutaneous surface with certain grade of edema and pruritus present often[1]. It is a rare disorder, its incidence is from 1 to 70 per 100 thousand inhabitants. In a condition of erythroderma, it is paramount that the physician rejects neoplasia as cause because it can be a paraneoplastic syndrome, regardless of studies indicating that it can represent less than 1% of the cases[2,3].

In despite of low mortality rates, exfoliative dermatitis related morbidity is considerable because quite often is of chronic evolution with debilitating symptoms and signs as intense pruritus and desquamation, which emphasizes the relevance of early diagnosis, because it may result in early and correct intervention according to the etiopathogenesis of each case[4].

This study has the objective of reporting a case of a patient with breast malignant neoplasm with erythroderma condition. To count with a more comprehensive and thorough discussion of the theme, a bibliographic review was carried out.

METHOD

It is a one individual case study selected according to clinical, radiologic, and histopathological findings encountered in the physical exam and in the chart carried out at Amazonas Foundation of Oncology Control (FCecon). The Institutional Review Board of the Amazonas Federal University approved the study (CAAE: 16066619.0.0000.5020) and the informed consent form (ICF) was signed prior to the commencement of the study.

CASE REPORT

Female, 63 years, and 10 months old patient, retired, widow, from Manaus-AM, incomplete elementary school, Brown race. On January 2018, a sudden pruritus initiated in the extremities with abrasions and desquamation; after a few days, evolved to diffuse rash and onycholysis which made her seek the dermatology unit of a reference health facility where she initiated anti-histaminic (loratadine) and corticosteroid-based cream to reduce the pruritus because of suspicion of allergic reaction, however, no improvement occurred. The patient denied concomitant allergic diseases or drug allergy, denied *diabetes mellitus*, but presented diagnosis of systemic arterial hypertension. Did not report family cancer history. In the anamnesis, there was no report of any type of eczema, pre-existing skin disease or use of medicinal plant, including any type of topic medication utilized previously.

On May 2018, the mammography result classified as BI-RADS 5 indicated the presence of irregular solid nodes in the right breast and enlarged lymph nodes in the right axilla.

At this time, the skin lesions intensified, with several abrasions, intense desquamation and lichenification, with ulcerated lesions in the buttocks (Figure 1). Reported intense xeroderma and increase of sensitivity all over the body surface, with intense pruritus associated to frequent chills. She was referred to FCecon on May 2018. At the physical examination, presented palpable tumor in the right breast of approximately 7 centimeters with axillary positive moveable lymph node at right. After complementary exams, clinical staging was determined as T3N1M0 and classified as stage IIIA. Lab tests presented normocytic and normochromic anemia (hematocrit: 28.6%), associated to eosinophilia (4%), and increased C-reactive protein (2.98 mg/dL), the other lab tests were within the standards of normality, including urea, electrolytes and serum IgE.

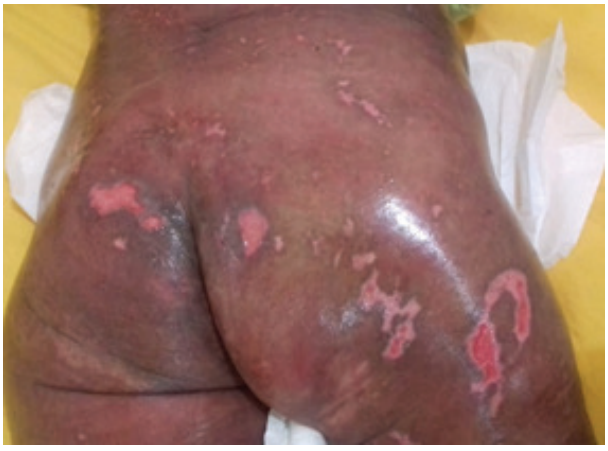

Figure 1. Lesion in buttocks

Still on May 2018, the skin biopsy in the region of the right buttock revealed intense mononuclear infiltrate, superficial and perivascular, vascular edema, and ectasia present in papillary dermal, in addition to lymphocytes T and B, without atypia. In the same date, the biopsy of the left buttock (Figure 2) had the same findings. The immunohistochemistry revealed expression of CD-31, CD-34, CD-20, and CD-3, which favored the diagnosis of inflammatory dermatitis, lacking criteria to determine the diagnosis of T cells cutaneous lymphoma or psoriasis.

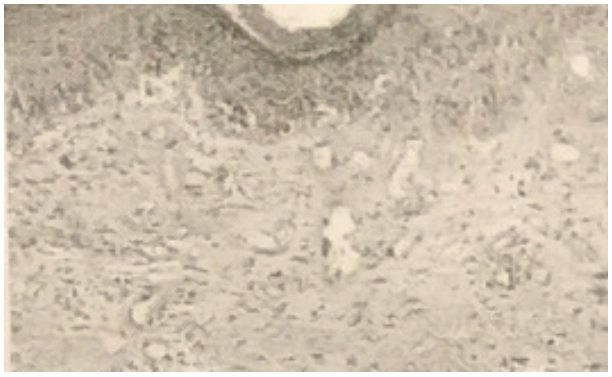

Figure 2. Skin biopsy of the left buttock showing dermal lesion with acanthosis, parakeratosis and discreet spongiosis (HE x 10)

During the months of May and June, reported partial improvement of the symptoms and reduction of chills after beginning of hydroxyzine.

On August 2018, the biopsy of the right breast revealed a breast invasive carcinoma and immunohistochemistry showed positive estrogen receptors (10%) and progesterone receptors (40%), elevated rate of proliferation with Ki-67 in 10% of the cells, but negative for human epidermal growth factor receptor 2 (HER2), characterized as subtype molecular luminal A. In September, initiated hormone therapy with anastrozol.

On November 2018, mastectomy with right axillary lymphadenectomy was performed and in December, because of relapse, new axillary approach was conducted, but dermatitis failed to improve.

After thoracic tomography on January 2019 with suspicious axillary lymph nodes, a biopsy of the right axillary lymph node was performed on February and metastasis was confirmed. In March, a new axillary surgery approach was decided and carried out in April. In May, initiated tamoxifen, 20 mg daily dose and in June was discontinued and initiated capecitabin (metronomic dose). In August 2019 reported improvement of pruritus and dryness of mucosa although intense xeroderma and generalized desquamation persisted.

During the consultation on November 2019, she presented mild improvement of the condition with the use of moisturizing lotion and reduction of pruritus but still with chills and occasional dyspnea. The physical exam revealed she was in regular, active condition, pale and dehydrated without hepatosplenomegaly. The skin was parchment-like, further to oral mucosa lesions and bilateral symmetric lower limbs edema without pitting edema. Presented conjunctive hyperemia, generalized desquamative lesions, including the scalp, further to erosive lesions in lower limbs with blisters in the right upper limb (Figure 3).

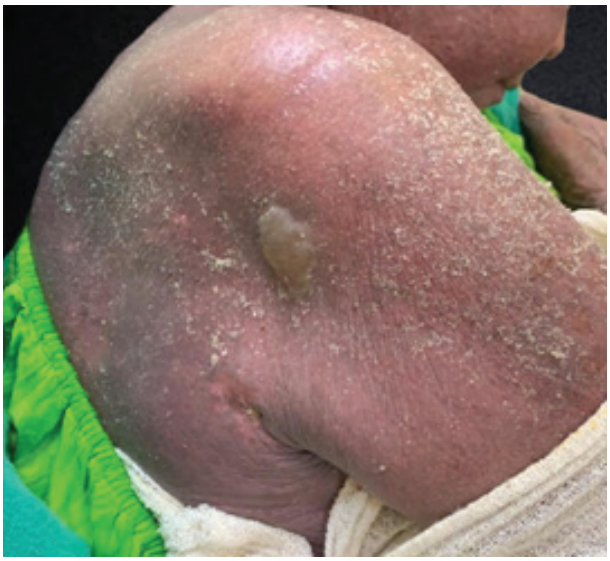

Figure 3. Blister and desquamation in upper limb region

On February 2020, after thoracic tomography, it was confirmed the progression of the disease with large right pleural effusion, lymph node enlargement and in abdomen tomography, hepatic nodes were visualized. In April, capecitabin was discontinued and initiated liposomal doxorubicin 49 mg. The patient is in outpatient follow up.

DISCUSSION

Because of its atypical condition, this case is remarkable as exfoliative dermatitis is a rare disorder, of difficult treatment and remission of lesions[5,6]. Erythroderma is commonly associated to preexisting dermatoses (psoriasis, atopic dermatitis or contact dermatitis), drugs-induced reaction and occasionally, solid tumors, but 25% of the cases are idiopathic[7,8]. Regardless of being commonly associated to malignancies as leukemia and lymphoma, laryngeal, gastric, esophageal among other can occur. Neoplasms should be disregarded early based in the clinical correlation[6,9].

Cutaneous lymphomas of cells T are important differential diagnosis, the main types are: mycosis fungoides and Sézary syndrome (when leukemization occurs). Cutaneous biopsy and cytometry for circulating malignant T cells (Sézary cells) elucidate the diagnosis in early phases and may not be noticed by quantity of insufficient cells[10]. For the patient in question, the results of the cutaneous biopsy and immunohistochemistry did not reveal findings to determine the diagnosis for these diseases.

In several cutaneous manifestations associated to malignant tumors, including erythroderma there

is no neoplastic cells but possibly may be related to the interaction of cytokines (interleukins 1,2,8) and molecules of cellular adhesion (VCAM-1, ICAM-1, E-selectin and P-selectin), leading to the transmigration of lymphocytes and mononuclear cells[11,12]. One lymphocytic infiltrate (positive and macrophage CD8), associated to dyskeratosis of basal keratinocytes is found in the epidermal-dermal junction[12]. Epidermal necrosis, vesiculations or subepidermal blisters may occur in chronic situations[11,13].

Clinical history is the most important element of the clinical condition. The disease presents itself insidiously and gradually, except in drug-induced cases, begins with spreading erythematous plaques and may affect the total body surface[8]. The desquamation is larger and scaly in the acute phase, while in the chronic, tend to be smaller and dryer; hypo or hyperpigmentation of the affected regions may occur too[14], like the patient of this study. Frequently the lab tests reveal increase of serum IgE, anemia, increased erythrocyte sedimentation rate, eosinophilia, lymphocytosis, and hypoproteinemia[2]. Initially, the patient presented eosinophilia and hypochromic and normocytic anemia.

In the exfoliative erythroderma, erythema onsets before the desquamation that can vary according to the basal disease. As this process is chronic, hairs (diffuse alopecia at variable degree), nails can be affected and appearance of ectropium. Generally, the patient presents intense pruritus, resulting in areas of lichenification and occasionally, abrasions with intermittent infection. Because of loss of heat and electrolytes, there are constant chills as the patient of this case[13]. Likewise, because of the condition, bacterial complications may occur[1]. The patient's clinical condition of this study was consistent with erythroderma and skin biopsy had findings compatible with the disease (hyperkeratosis and acanthosis).

The primary treatment of erythroderma consists in optimized hydration and correction of hydroelectrolytic disorders in the hospital[7,8]. Topic corticosteroids with oral anti-histaminic are correct for most of the cases, however, the reversion of the case will be contingent upon the causing agent since the drugs induced effects after the interruption have faster recovery[12], while it is imperative the surgical removal of solid tumors for those caused by malignancies[7].

It is important to emphasize that for patients with palpable breast nodes, the diagnostic investigation must occur early because it increases the odds of effective treatment and reduces mortality and the breast ambulatorial biopsy has a significant impact in the early detection of the disease[15].

CONCLUSION

The importance of this case consists in presenting new evidences about the theme and highlight that erythroderma may be associated to breast malignant neoplasm, being important an etiological diagnosis to be weighed mainly for those patients where there is no pre-existing dermatosis.

CONTRIBUTIONS

Maykom de Lira Barbosa, Yara Ayami Mattos Abe and Hilka Flávia Barra do Espírito Santo Alves Pereira contributed substantially for the study conception and design, analysis and interpretation of the data, wording and critical review. Fábio de Queiroz Medeiros contributed substantially for the analysis, interpretation of the data and wording. All the authors approved the final version to be published.

DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interests to declare.

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None

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