Challenging barriers in geriatric oncology: a comprehensive case report on mycosis fungoides in an elderly male

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ABSTRACT

Background: Among extranodal non-Hodgkin lymphomas, primary cutaneous lymphomas rank as the second most prevalent. These lymphomas can originate from T cells, B cells, or natural killer cells. Cutaneous T cell lymphomas (CTCLs) form a diverse group of lymphomas that display clinical distinctions from systemic lymphomas, despite potential similarities in histology Mycosis fungoides (MF) stands out as the most prevalent subtype of CTCL. Pierre-Antoine-Ernest Bazin outlined the transformation from patches - defined as non-infiltrated lesions exhibiting erythema, scaling, and atrophy - to infiltrated plaques and tumors. Histologically, this progression is marked by the increase of small to medium-sized epidermotropic CD4+ T lymphocytes that have folded nuclei.

Case Presentation: We present a case of an 85-year-old man with a known history of vascular dementia who presented with a lesion on his left posterior thigh. After no improvement with a potent steroid cream, a punch biopsy of the lesion was done and confirmed the diagnosis of MF, tumor stage. However, due to the patient's poor clinical frailty and ECOG performance score, the intent of treatment was palliation.

Conclusion: This case report aims to discuss the challenges in the diagnosis and management of cancer in elderly patients with significant comorbidities. We will also highlight the management pathway of MF.

Keywords: Mycosis Fungoides, geriatric-oncology, palliative, case report.

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Background

Mycosis fungoides are predominant in African-American people and more common in males than females. The incidence of Cutaneous T-Cell Lymphoma (CTCL) increases considerably with age, with the average age at diagnosis being in the mid-50s and a fourfold increase in incidence observed in patients over 70 years of age [3]. The annual incidence of Mycosis fungoides in the United Kingdom is 0.4 per 100,000 people. It has been identified that this accounts for approximately 55% of CTCLs [4]. The treatment approach for Mycosis Fungoides varies based on the stage at diagnosis. Management options include a mix of skin-targeted therapies (such as topical agents and phototherapy), radiotherapy, and systemic treatments. For young patients with resistant and progressive MF, stem cell transplantation may be considered as a viable option [5].

The exact causes of MF remain elusive, but it is generally accepted that it is due to a combination of factors. Environmental influences, genetic predispositions, and possibly infectious agents such as human T-cell leukemia virus type 1 are all associated with triggering abnormal lymphocyte activity or transformation. While the exact interplay of these elements is complex and not yet fully understood, it underscores the multifactorial nature of MF etiology [5].

Case Report

An 86-year-old male, with a background of vascular dementia, presented with a non-healing lesion on his left posterior thigh (Figure 1). Despite initial treatment with clobetasol propionate, the lesion persisted and showed signs of progression. Given the concern for malignancy, a punch biopsy was performed. The biopsy showed a dense infiltrate of cytologically atypical lymphoid cells infiltrating and ulcerating through the epidermis. Toward the edge, subtle epidermotropism was appreciated (Figures 2 and 3). Immunohistochemistry confirmed a T-cell phenotype CD3

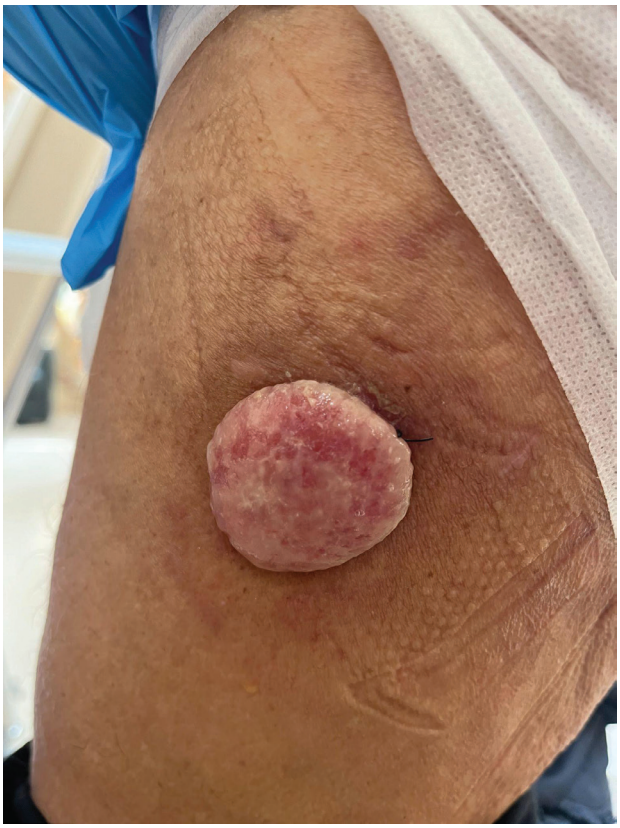

Figure 1. *Raised erythematous lesion in the right posterior thigh. The punch biopsy of the lesion confirmed Mycosis fungoides.*

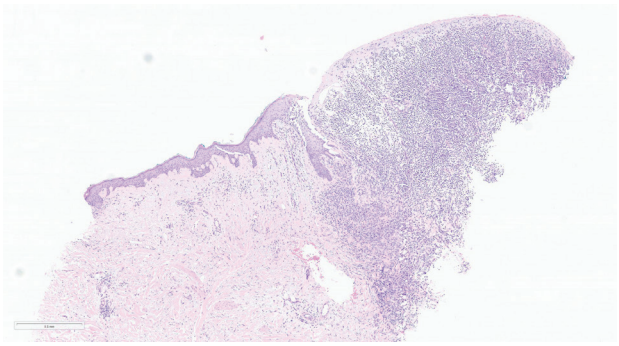

Figure 2. *Histopathology image. Hematoxylin and Eosin stain. Magnification power ×20. This biopsy shows a dense infiltrate of cytologically atypical lymphoid cells infiltrating and ulcerating the epidermis. Subtle epidermotropism can be seen towards the margin.*

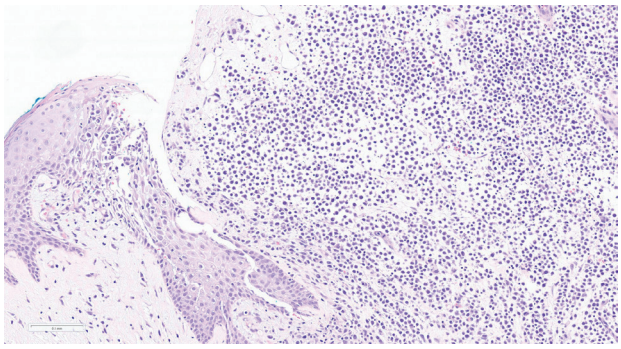

Figure 3. *Histopathology image. Hematoxylin and Eosin stain. Magnification power ×40. This biopsy shows a dense infiltrate of cytologically atypical lymphoid cells infiltrating and ulcerating through the epidermis. Subtle epidermotropism can be seen at the edge.*

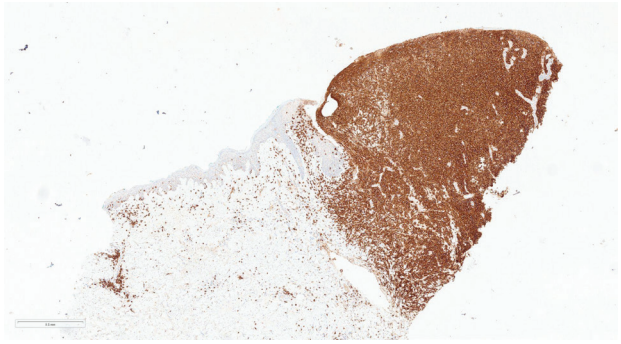

Figure 4. *Immunohistochemistry at magnification ×40 confirming CD3 T-cell phenotype.*

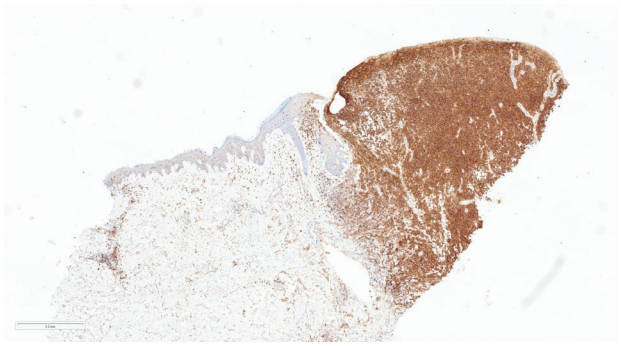

Figure 5. *Immunohistochemistry at magnification ×40 confirming CD4 T-cell phenotype.*

and CD5 (Figure 4), with these cells also expressing CD4 (Figure 5) but not CD8 (Figure 6). These findings are typical of Mycosis Fungoides. The patient's medical history was significant for hypertension, hyperlipidemia, and a previous transient ischemic attack. Furthermore, his functional status was poor, with an Eastern cooperative oncology group performance score of 3 and a clinical frailty scale score of 7, indicating severe impairment in daily activities and mobility.

Treatment and Outcome

Due to the patient's advanced age, significant comorbidities, and poor functional status, conservative management was deemed appropriate. However, as the lesion started to bleed and cause discomfort, the patient was referred to the oncology department for palliative intervention. Palliative radiotherapy was considered the most suitable option to control bleeding and alleviate symptoms. A single session of radiotherapy was administered over 1 day, resulting in effective control of bleeding and improvement in the patient's comfort level. The patient subsequently developed more lesions in his left upper arm (Figure 7) that required palliative radiotherapy to control pain and bleeding.

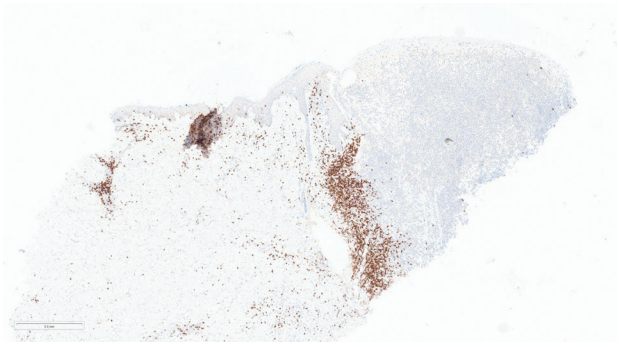

Figure 6. *Immunohistochemistry at magnification ×40 showing the absence of CD8.*

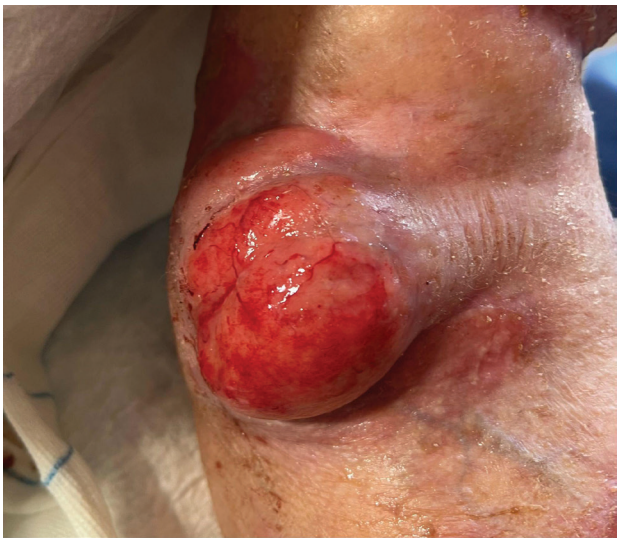

Figure 7. *Mycosis fungoides Tumor stage: Raised erythematous, bleeding lesion at the left elbow.*

The presented case underscores the complexities involved in managing mycosis fungoides tumors in elderly patients with significant comorbidities. While aggressive treatments such as chemotherapy or immunotherapy may offer disease control, they may also pose significant risks in this population. Palliative interventions, such as radiotherapy, can provide effective symptom relief and improve quality of life, even in the absence of curative intent.

Discussion

Staging evaluation in patients with Mycosis fungoides

1. All patients should undergo a full body examination with particular attention to abnormal lesions and organomegaly.
2. Routine skin biopsy for histopathology and immunophenotyping. TCR gene clone rearrangement clonality is optional.
3. Blood tests include complete blood count, liver function tests, LDH, and renal function. Blood analysis for TCR gene rearrangement and possible association with skin clonality is optional.
4. Blood analysis for abnormal lymphocytes by checking Sezary cell count or flow cytometry. [5]

TNMB staging for Mycosis fungoides

T (skin)	
T1	Limited patch/plaque (involving < 10% of total skin surface)
T2	Generalized patch/plaque (involving 10% of total skin surface)
T3	Tumor(s)
T4	Erythroderma
N (lymph node)	
N0	No clinically abnormal peripheral lymph nodes
N2	Clinically abnormal peripheral lymph nodes; histologically involved (nodal architecture uneffaced)
N3	Clinically abnormal peripheral lymph nodes; histologically involved [nodal architecture (partially) effaced]
Nx	Clinically abnormal peripheral lymph nodes; no histological confirmation
M (viscera)	
M0	No visceral movement
M1	Visceral involvement
B (blood)	
B0	No circulating atypical cells (<5% of lymphocytes)
B1	Low blood tumor burden (5% of lymphocytes are Sezary cells, but not B2)
B2	High blood tumor burden (1,000/ml Sezary cells and positive clone)

Treatment

Patients with early-stage disease (stage IIA or below) should be treated with skin-oriented therapies. These include topical steroids, psoralens plus ultraviolet A, narrow band ultraviolet B (nb-UVB), and topical cytostatics. Systemic treatment with retinoids or interferons may be used for patients who have failed skin-related therapies. Local radiotherapy is recommended for patients with localized disease [5].

Patients with stage IIB disease may be treated with radiotherapy in addition to available topical treatments. Patients with highly symptomatic, generalized thick plaques should be treated with topical electron beam therapy to the skin. Systemic therapy with interferon alpha or retinoids in combination with skin therapy is usually the treatment of choice in patients with more extensive disease or in patients with the refractory disease [5].

In patients with advanced (Stage IV) and refractory disease, systemic therapies such as gemcitabine, liposomal doxorubicin, and brentuximab vedotin are recommended.

Multi-chemotherapeutic agents would be the next step if they fail single-agent systemic therapy [5].

Discussion Continued

Aging is one of the strongest and most predictable risk factors for the development of cancer. Unfortunately, cancer in the elderly is on the rise with more than 60% of cancer patients being older than 65 [6]. Age makes dealing with cancer very complex. In older adults, many malignancies are only diagnosed at an advanced stage, as early symptoms are often mistakenly associated with other diseases or age-related conditions. As a result, cancer treatment often begins later, complicating the therapeutic process, increasing the potential for serious adverse effects, and reducing the likelihood of a favorable treatment outcome [7].

The population of older adults is very heterogeneous and is characterized by significant differences in physical, mental, and emotional health between individuals of the same age. Therefore, clinical teams must carefully consider a variety of factors when formulating cancer treatment strategies, including the presence of comorbid non-communicable diseases such as hypertension or diabetes, as well as the patient's overall physical fitness. Older patients may be more susceptible to treatment-related toxicities that can significantly impact their quality of life [8]. The discrepancy between a person's chronological and biological age can be considerable. This highlights the importance of not relying solely on chronological age when assessing an older person's organ function, as this could lead to inaccurate assessments. Aging leads to changes in the functional capacity of organs, which must be taken into account when planning and dosing treatments. Age-related changes in organ function can affect all aspects of pharmacokinetics and pharmacodynamics. This complexity complicates both the treatment of cancer and the maintenance of patients' quality of life [9].

Consequently, treatment plans for older adults should be premised on a comprehensive geriatric cancer assessment. This assessment integrates the patient's preferences and functional capacities with expert support from a multidisciplinary team, ensuring that care is tailored to the individual. A geriatric assessment can modify cancer treatment strategies, prompt non-cancer-related interventions, and enhance communication regarding care planning and age-related concerns. Furthermore, this assessment can reduce complication and toxicity rates, increase the chances of completing treatment, and result in improved physical functioning and overall quality of life [10].

Conclusion

Geriatric oncology is an emerging subspecialty that demands considerable attention. As life expectancy continues to rise, so too will the prevalence of cancer among older adults. The authors emphasize the need for collaboration between oncology and geriatric departments, as well as with allied healthcare professionals, to ensure high-quality care for the elderly population.

What is new?

Mycosis fungoides are unique due to their skin-centric presentation, gradual progression, and the specific characteristics of their lesions and histology. This manuscript outlines the management pathway and discusses the challenges in geriatric oncology.

Acknowledgments

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List of abbreviations

CTCL	Cutaneous T-Cell lymphoma
MF	mycosis fungoides

Conflict of interest

The authors declare that they have no conflict of interest regarding the publication of this case report.

Funding

No funding was needed for this case report.

Consent for publication

Written Informed consent was obtained from the patient's daughter as the patient passed away.

Ethical approval

Not applicable.

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References

1. Vaidya T, Badri T. Mycosis fungoides. 2023 Jul 31. In: StatPearls [Internet]. Treasure Island FL: StatPearls Publishing; 2024.
2. Miyashiro D, Sanches JA. Mycosis fungoides and Sézary syndrome: clinical presentation, diagnosis, staging, and therapeutic management. Front Oncol. 2023 Apr 14;13:1141108. https://doi.org/10.3389/fonc.2023.1141108
3. Hristov AC, Tejasvi T, Wilcox RA. Cutaneous T-cell lymphomas: 2023 update on diagnosis, risk-stratification, and management. Am J Hematol. 2023 Jan;98(1):193–209. https://doi.org/10.1002/ajh.26760
4. Hawkins N, Muszbek N, Evans R, McNamara L, Jones T. Overall survival in the UK in mycosis fungoides or Sézary syndrome cutaneous T-cell lymphoma: comparative effectiveness of mogamulizumab versus current standard of care. J Comp Eff Res. 2023 Oct;12(10):e230017. https://doi.org/10.57264/cer-2023-0017
5. Esmo (no date) Clinical practice guidelines- primary cutaneous lymphomas. [cited 2024 Sep 13]. Lugano, Switzerland: ESMO. Available from: https://www.esmo.org/guidelines/guidelines-by-topic/esmo-clini-

cal-practice-guidelines-haematological-malignancies/primary-cutaneous-lymphoma.
6. Guedes H, Marinho J, Neto E, Custódio S, Costa A, Veríssimo R. Geriatric assessment of older adults with cancer during acute hospitalizations: challenges and opportunities. Cureus. 2023 Sep 9;15(9):e44940. https://doi.org/10.7759/cureus.44940
7. Cancer and ageing (no date) UICC. [cited 2024 Sep 15]. Available from: https://www.uicc.org/what-we-do/thematic-areas/cancer-and-ageing.
8. Chen W, Altshuler RD, Daschner P, Salvador Morales C, St Germain DC, Guida J, et al. Older adults with cancer and common comorbidities-challenges and opportunities in improving their cancer treatment outcomes. J Natl Cancer Inst. 2024 Nov 1;116(11):1730–8. https://doi.org/10.1093/jnci/djae163
9. Marosi C, Köller M. Challenge of cancer in the elderly. ESMO Open. 2016 Apr 12;1(3):e000020. https://doi.org/10.1136/esmoopen-2015-000020
10. Hamaker M, Lund C, Te Molder M, Soubeyran P, Wildiers H, van Huis L, et al. Geriatric assessment in the management of older patients with cancer - a systematic review (update). J Geriatr Oncol. 2022 Jul;13(6):761–77. https://doi.org/10.1016/j.jgo.2022.04.008

Summary of case

1	Patient (gender,age)	85 year old, male
2	Final diagnosis	Mycosis fungoides
3	Symptoms	Skin lesion
4	Medications	Topical Steroid, radiotherapy
5	Clinical procedure	Punch biopsy, radiotherapy
6	Specialty	Dermatology, oncology, geriatrics