

## A Case Report of Double Positive Peripheral T Cell Lymphoma- Not Otherwise Specified in A Young Pregnant Female

### Abstract

Peripheral T-cell lymphoma (PTCL) comprises 5–20% of all non-Hodgkin lymphomas (NHL). These all have different morphological patterns, phenotypes, and clinical presentations making it a diverse group of lymphomas. PTCL, not otherwise specified (PTCL-NOS), is a subtype considered to have a poor prognosis and a low overall survival rate of only about 30–40%. We report a case of primary cutaneous PTCL-NOS presenting in a young pregnant female with multiple progressive, tender, and necrosed nodules all over her body for 3 months. Her skin biopsy findings led us to suspect malignancy, and via immunohistochemistry (IHC), her diagnosis was confirmed. Cutaneous lymphoma is a dangerous albeit rare entity and should be kept in mind when the commoner differentials have been ruled out.

**Keywords:** *Peripheral T-cell lymphoma, not otherwise specified, primary cutaneous T-cell lymphoma, PTCL-NOS*

**Nishi Trivedi,  
Jigna Padhiyar,  
Nayan Patel,  
Sanjay Gandhi**

*Department of Dermatology,  
Venereology and Leprosy,  
Gujarat Cancer Society Medical  
College, Hospital and Research  
Centre, Ahmedabad, Gujarat,  
India*

### Introduction

Peripheral T-cell lymphoma (PTCL) comprises 5–20% of all non-Hodgkin Lymphomas (NHL). These all have different morphological patterns, phenotypes, and clinical presentations making it a diverse group of lymphomas. Many studies have shown epidemiological variation in PTCL with a higher incidence in India than in other western countries.<sup>[1,2]</sup> There are numerous subtypes of PTCL; the most common being PTCL, not otherwise specified (PTCL-NOS), an umbrella term when features do not conform to known entities within the 2008 WHO classification. This subtype is considered to have a poor prognosis and a low overall survival rate of only about 30–40%.<sup>[3]</sup> Manifestations of cutaneous PTCL-NOS include papules, patches, plaques, tumors, ulceration, or a combination of these manifestations. Most cases present with late-stage nodal disease; however, extranodal involvement is also known.<sup>[4]</sup> We report a case of PTCL-NOS presenting in a young pregnant female with multiple, tender, and necrosed nodules all over her body.

### Case Report

A 25-year-old female with 5 months of amenorrhea presented with multiple painful nodules of 3 months duration over face, trunk [Figure 1a-c], both arms, and on left leg associated with low-grade fever since 2 days. The nodules were multiple, discrete, and skin colored, soft to firm over the face and scalp with the largest being of size 7 cm × 6 cm × 3 cm. Some nodules were centrally necrosed. Similar skin-colored nodules were present over back and both arms ranging from 1 cm in diameter to the largest of 3 cm diameter. Oral and genital mucosa revealed no lesions. All sensations were intact and the patient had no nerve enlargement. After considering the history and examination findings, a differential diagnosis of leprosy, leishmaniasis, and cutaneous lymphoma was kept. The patient was thoroughly investigated and relevant investigations are mentioned in Table 1. Hence, a final diagnosis of primary cutaneous peripheral T-cell lymphoma-not otherwise specified (PTCL-NOS) was made and the patient was referred to an oncologist. Her TNM staging was found to

**Address for correspondence:**  
Dr. Nishi Trivedi,  
Department of DVL, OPD  
35, Gujarat Cancer Society  
Medical College, Hospital and  
Research Centre, Opposite  
DRM Office, Naroda Road,  
Ahmedabad - 380 025,  
Gujarat, India.  
E-mail: nishi.trivedi04@gmail.  
com

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be T3bN2M0 and she was started on the CHOP regimen which includes cyclophosphamide, doxorubicin, vincristine, and prednisolone. Her pregnancy was continued at the discretion of her oncologist along with chemotherapy and she delivered a full-term male child of birth weight 1,300 g having completed four cycles of chemotherapy [Figure 4a and b]. Post-delivery, her skin lesions again started to increase in number and size. The patient started to show an inability to recognize relatives, and hence, cerebrospinal fluid examination was ordered which revealed malignant cells. A computed tomography scan of the abdomen and pelvis was carried out which showed multiple enlarged lymph nodes and multiple lytic lesions in the vertebrae. She was given palliative radiotherapy but she succumbed to her illness in March 2021 leaving behind a healthy baby boy.

## Discussion

PTCL-NOS is a rare and aggressive lymphoma that may originate in the skin or involve the skin because of systemic disease. The primary cutaneous type has been reported previously but has not been studied sufficiently yet. The consensus is that when PTCL-NOS presents primarily in the skin, the prognosis is poor and it runs a rapid course.<sup>[5]</sup> PTCL-NOS are seen mostly in males with a median age of about 60 years<sup>[6]</sup> but our patient was a 25-year-old female. Symptoms such as fever, weight loss, and night sweats are called B symptoms and are associated with a lower survival rate. Our patient, however, had a low-grade fever for only 2 days with no other systemic complaints. Lymphoma and secondaries can both present as rapidly progressive nodules. We kept both T-cell and B cell lymphomas in our differential but markers for B cell type were negative. Since our patient was CD56+, our two differentials were primary cutaneous, extranodal natural killer/T-cell lymphoma, nasal type (PC-ENKTL), and primary cutaneous CD56+ peripheral T-cell lymphoma (PC-CD56+PTCL). The Epstein-Barr



Figure 1: (a) Shows multiple skin colored nodules with a few showing central necrosis over the back. (b and c) Show multiple skin colored and erythematous nodules with the largest over the right cheek showing central necrosis at the initial presentation

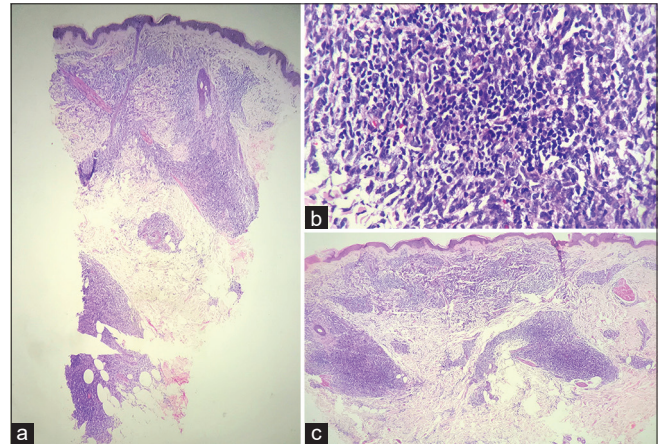


Figure 2: Shows atypical large lymphoid cells infiltrating the dermis with a narrow Grenz zone (a and c) HE;4X, (b) HE;40X]

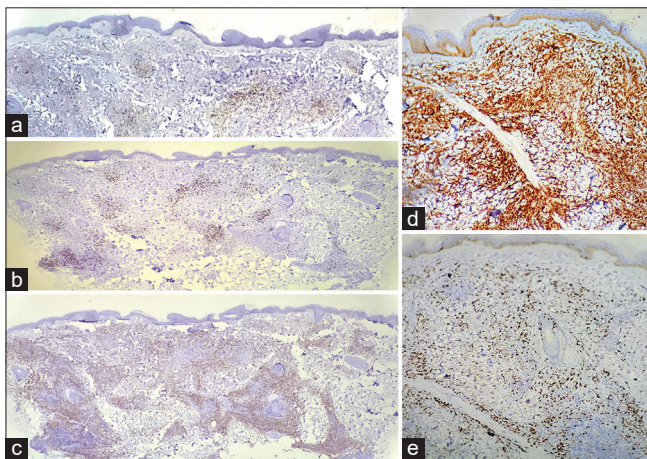


Figure 3: Immunohistochemical stains demonstrate (a) CD4 positivity[4X] (b) CD8 positivity[4X] (c) CD56 positivity[10X] (d) BCl2 positivity[4X] (e) Ki67 labeling index of 45–60% [10X]



Figure 4: (a and b) Show resolution of the lesions with the largest lesion much reduced in size post four cycles of chemotherapy

**Table 1: Summary of relevant investigations performed**

Investigation	Patient's results	Biological reference range
SGPT	58.30 IU/L	0-32 IU/L
ALP	159 U/L	38-94 U/L
USG inguinal region	Few subcentimetric and enlarged nodes noted in bilateral inguinal region, largest of size 30 mm ×20 mm in left inguinal region	
USG cervical region and nodular lesions	Multiple subcentimetric and enlarged nodes in level Ia, bilateral Ib, II and III, largest of size 30 mm ×14 mm in right Ib. Multiple well-defined variable-sized heterogeneously hypoechoic lesions seen over face and trunk	
USG whole abdomen	Absent left kidney, spleneculus of size 17 mm ×17 mm near mid-pole, gravid uterus with single live intrauterine pregnancy of 18 weeks	
Skin biopsy [Figure 2a–c]	Atypical large lymphoid infiltrate with narrow Grenz zone	
Immunohistochemistry [Figure 3a–d]	Immunopositive markers—CD3, CD2, CD10, CD5, Bcl2, CD4, CD8, CD56 Immunonegative markers—CD20, CD30, ALK, PAX5, CD7	
Ki67 proliferation index	45-60%	
Epstein–Barr virus study	Negative	

virus (EBV) and CD30 were found to be negative,<sup>[7]</sup> so our diagnosis was confirmed as PC-CD56+ PTCL. This was decided via the 2008 WHO classification. CD16 could not be carried out as it was not available in our institute. Considering the immunohistochemistry (IHC) findings, cutaneous  $\gamma/\delta$  T-cell lymphoma and subcutaneous panniculitis-like T-cell lymphoma were ruled out. ENKTL are thought to comprise two different lineages—NK lineage and T lineage. One of the distinct clinicopathological features includes tumor necrosis (present in our patient) which is more common in the NK cell lineage ENKTL. In the current case, CD7 was found to be lost. CD4+ and CD8+ phenotypes are seen in approximately 65% and 15% of the cases, respectively. Double positive or negative tumors make up only 10% of the cases.<sup>[8]</sup> The current case shows double positivity of CD4 and CD8 which makes it a unique case.

Hodby K, *et al.*<sup>[9]</sup> suggested an incidence of NHL in 1 in 6,000 pregnant women. NHL in pregnancy is known to be more aggressive and widespread at the time of diagnosis which was observed in our patient as well. The treatment decision requires a careful evaluation of the fetal and maternal risks posed by the disease and its therapy on an individual case basis. Several reports are documenting good maternal and fetal outcomes for those exposed to CHOP in the second and third trimesters. Our patient was in her second trimester at the time of the diagnosis, so the decision was taken by a multidisciplinary team including obstetricians, oncologists, hematologists, and dermatologists to start her on the CHOP regimen. The administration of chemotherapy at any stage of pregnancy is associated with an increased risk of intrauterine death, preterm delivery, fetal growth restriction, and low birth weight. The latter two were evident in our patient's child as well.

Due to the heterogeneity of PTCL-NOS and its poor outcomes, there is no standard of care for the treatment. CHOP regimen with or without consolidation radiotherapy is most often employed. The addition of etoposide to CHOP (CHOEP or dose-adjusted EPOCH) can help in some patients. Other regimens include hyper-CVAD (cyclophosphamide, vincristine, doxorubicin, and dexamethasone, alternating with methotrexate and cytarabine) and ACVBP (doxorubicin, cyclophosphamide, vindesine, bleomycin, and prednisone), but none of these regimens have been shown to be superior to the others.<sup>[10]</sup>

The limitations of this case report are that T-cell receptor (TCR) gene rearrangement and IHC for the same could not be carried out due to unavailability. Computed Tomography CT and Positron Emission Tomography PET scans could not be performed to rule out internal organ involvement initially as the patient was pregnant at the time of presentation. In conclusion, lymphoma should always be kept in the back of the mind when seeing a patient with rapidly progressive nodular lesions.

#### **Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

## References

1. Kesana SS, Ganesan P, Sagar TG, Kannan K, Ganesan TS, Danushkodi M, *et al.* Clinicopathological characteristics, prognostic factors, and outcomes in peripheral T-cell lymphoma: Experience from a single center in India. *Cancer Res Stat Treat* 2020;3:3-12.
2. Arora N, Manipadam MT, Nair S. Frequency and distribution of lymphoma types in a tertiary care hospital in South India: Analysis of 5115 cases using the World Health Organization 2008 classification and comparison with world literature. *Leuk Lymphoma* 2013;54:1004-11.
3. Federico M, Bellei M, Marcheselli L, Schwartz M, Manni M, Tarantino V, *et al.* Peripheral T cell lymphoma, not otherwise specified (PTCL-NOS). A new prognostic model developed by the International T cell project network. *Br J Haematol* 2018;181:760-9.
4. Wallett A, Ibbetson JS, Kearney D, Newland K, Sidhu S. Cutaneous manifestations of peripheral T-cell lymphoma, not otherwise specified: A case series highlighting the diagnostic challenges for this heterogeneous group. *Australas J Dermatol* 2015;56:197-201.
5. Tolkachjov SN, Weenig RH, Comfere NI. Cutaneous peripheral T-cell lymphoma, not otherwise specified: A single-center prognostic analysis. *JAm Acad Dermatol* 2016;75:992-9.
6. Weisenburger DD, Savage KJ, Harris NL, Gascoyne RD, Jaffe ES, MacLennan KA, *et al.* Peripheral T-cell lymphoma, not otherwise specified: A report of 340 cases from the International peripheral T-cell lymphoma project. *Blood* 2011;117:3402-8.
7. Takata K, Hong ME, Sitthinamsuwan P, Loong F, Tan SY, Liao JY, *et al.* Primary cutaneous NK/T-cell lymphoma, nasal type and CD56-positive peripheral T-cell lymphoma: A cellular lineage and clinicopathologic study of 60 patients from Asia. *Am J Surg Pathol* 2015;39:1-2.
8. Gupta V, Seshadri D, Khaitan BK, Nath D, Mridha AR. Peripheral T-cell lymphoma, not otherwise specified presenting with multiple tender cutaneous nodules and plaques. *Indian J Dermatol Venereol Leprol* 2015;81:313-5.
9. Hodby K, Fields PA. Management of lymphoma in pregnancy. *Obstet Med* 2009;2:46-51.
10. Zing NP, Fischer T, Zain J, Federico M, Rosen ST. Peripheral T-cell lymphomas: Incorporating new developments in diagnostics, prognostication, and treatment into clinical practice—PART 1: PTCL-NOS, FTCL, AITL, ALCL. *Oncology (Williston Park)* 2018;32:e74-82.