

## Case report

**Primary cutaneous CD4<sup>+</sup> small or medium T-cell lymphoproliferative disorder: a case report and review of treatment options**Aleksandar Godic,<sup>1✉</sup> Mark J. Wilsher<sup>2</sup><sup>1</sup>Clapham Park Dermatology, London, UK<sup>2</sup>North West London Pathology, Imperial College Healthcare NHS Trust and Unilabs IHS, London, UK**Abstract**

Primary cutaneous CD4<sup>+</sup> small or medium T-cell lymphoproliferative disorder (PCSMMLPD) is a rare indolent cutaneous lymphoid proliferation accounting for approximately 2% of all cutaneous lymphomas. It typically presents as a solitary nodule on the face, neck, or upper trunk and is associated with an excellent prognosis. This review evaluates current treatment options for PCSMMLPD and discusses outcomes reported in the literature. Management strategies include watchful waiting, surgical excision, low-dose radiotherapy, topical or intralesional steroids, and, in selected cases, systemic therapies such as methotrexate or doxycycline. Spontaneous regression following diagnostic biopsy has also been documented. Analysis of the largest published series demonstrates that complete surgical excision provides the highest rate of complete remission and the lowest risk of recurrence, making it the preferred first-line treatment for localized disease. Low-dose radiotherapy is highly effective for patients that are unsuitable for surgery, for recurrent lesions, or for lesions on the face, whereas topical or intralesional steroids may achieve remission in selected cases but are associated with a higher likelihood of requiring additional treatment. Relapses are uncommon and generally occur within the first 2 years after diagnosis, supporting regular clinical follow-up during this period. Staging examinations are no longer recommended in patients with a typical clinicopathological presentation. Overall, PCSMMLPD has an excellent prognosis, and conservative skin-directed therapies are usually sufficient to achieve durable disease control, with surgical excision remaining the treatment of choice.

**Keywords:** CD4, cutaneous, lymphoma, medical dermatology, T cells, therapy treatment**Received:** 5 January 2026 | **Returned for modification:** 4 June 2026 | **Accepted:** 3 July 2026**Introduction**

Primary cutaneous CD4<sup>+</sup> small or medium T-cell lymphoproliferative disorder (PCSMMLPD) is a rare, indolent, benign skin condition that presents as a solitary nodule. However, multiple nodules or plaques can appear, but this is rare. It accounts for approximately 2% of all cutaneous lymphomas (1). It has an excellent prognosis with appropriate treatment. This article evaluates treatment options. They include watchful waiting, surgical excision, low-dose radiation, topical and intralesional steroids, or, in some cases, methotrexate or doxycycline. Surgical excision remains the treatment of choice and provides the highest rate of complete resolution and the lowest rate of relapse.

**Case report**

A 53-year-old female patient presented with a several-month history of a nodule on the mid back, which was progressively enlarging (Fig. 1). On examination, the nodule was non-erythematous, 1 cm in diameter, hard on palpation, immobile, and painless (Fig. 1). There were no other skin abnormalities, nor associated lymphadenopathy or organomegaly. The patient was feeling well and did not report any other symptoms, such

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as night sweats, weight loss, or fever. She had an unrelated medical history of right carotid artery dissection and was taking bisoprolol. She reported that her brother had been diagnosed with melanoma.

The histology report following the lesion biopsy showed a dense, superficial, and deep lymphoid interstitial, perivascular, and periadnexal infiltrate comprising mixed lymphoid cells and histiocytes. No prominent atypia was noted. A small spongiotic inflammation was also seen. Eosinophils were inconspicuous (Fig. 2).

An alcian blue / periodic acid–Schiff (ABPAS) stain showed no dermal mucin. No fungi were reported. There were frequent T cells expressing Pan-T cell markers (CD2, CD3, CD5, and CD7). The CD4:8 ratio was approximately 4:1. There were also frequent B cells with aggregates highlighted by CD20 and CD79a. CD10 showed minimal staining, CD23 showed some dendritic cell meshworks, CD30 stained a few activated lymphoid cells, CD1a highlighted some Langerhans cells, and CD68 highlighted frequent histiocytes. Kappa and lambda ISH both showed limited expression. A *Treponema*/spirochaete immunomarker was negative. PD-1 immunohistochemistry was unavailable.

The B/T cell clonality study result showed negative clonal immunoglobulin heavy chain and kappa light chain gene rearrangements. It was positive for the detection of clonal T cell receptor beta (306-nucleotide fragment) and gamma (169-, 200-, 211-, and 240-nucleotide fragments) chain gene rearrangements.

A second hematology opinion was requested and, upon specimen examination, this confirmed a dense dermal, periadnexal, and perivascular lymphoid infiltrate mainly comprising small T lymphocytes, which were overwhelmingly CD4<sup>+</sup> and showed less staining than other T cell markers (CD3, CD5, CD2, CD8). CD30 was negative. CD20/CD79a/CD23 also highlighted some small B cell aggregates. PCR revealed T-cell monoclonality and B-cell polyclonality.

The patient subsequently underwent head and neck, chest, and abdominal CT and brain MRI imaging, and the reports did not show systemic involvement of the lymph nodes and internal organs.

In the absence of systemic involvement, the lesion was diagnosed as a primary small- or medium-T-cell lymphoproliferative disorder. The patient subsequently underwent complete surgical excision, achieving complete resolution, and remains in remission 1 year after treatment at the time of writing.

## **Discussion**

Primary cutaneous CD4<sup>+</sup> small or medium T-cell lymphoproliferative disorder (PCSMPLD) is a rare, indolent, benign skin condition that presents as a solitary nodule; multiple nodules or plaques are rare. It accounts for approximately 2% of all cutaneous lymphomas. It has an excellent prognosis with appropriate treatment. It most commonly affects the face, neck, and upper trunk. Nodules can be present for years and the same size, and they are asymptomatic. It equally affects men and women. There are no racial or geographic differences. It is more common in adults (1).

PCSMPLD derives from pleomorphic atypical T lymphocytes with small- to medium-sized nuclei on histology (2). Historically, it was initially classified as primary cutaneous peripheral T-cell lymphoma, unspecified group. In 2005, it was recognized in the WHO-EORTC classification as a benign indolent tumor but kept in the lymphoma group (1). Over the next few years, growing evidence from clinical presentation, histology reports, and immunohistochemistry studies, clonality studies, and excellent response to treatment led to its reclassification in 2018 as a lymphoproliferative disorder, which was then recognized as a separate entity in the fifth WHO-EORTC edition (3).

The histology report shows a dense, nodular, or diffuse periadnexal and perivascular infiltration of small- to medium-sized CD4<sup>+</sup> T-cells in the dermis. Epidermotropism is minimal or absent. The T-cells express follicular helper T-cell markers (TFH), such as PD-1, BCL-6, ICOS, CD10, and CXCL13. The variable expression of TFH markers and their dynamic acquisition and loss suggest a partially developed TFH phenotype (4, 5). Clonality studies support the polyclonal origin of T lymphocytes (Fig. 2).

This article evaluates treatment options. They include surgical excision, low-dose radiation, topical steroid creams and ointments, intralesional steroids, watchful waiting, or, in some cases, methotrexate or doxycycline. Treatment decisions also depend on the localization of the lesion. Low-dose radiotherapy is

especially recommended for facial lesions. Staging examinations are no longer recommended in patients with a typical clinicopathological presentation.

Spontaneous resolution following diagnostic biopsy has also been reported. Since WHO removed PCSMLPD from the lymphoma list, chemotherapy is no longer recommended (6). We analyze the two largest reviews published so far (7, 8). In the first review, 517 patients were reported across 13 articles and underwent 14 different treatments. In the second review, 86 patients underwent four different treatments.

A common feature of both articles is that surgical excision remains the treatment of choice, providing the highest rate of complete resolution and the lowest rate of relapse (7, 8). All patients that underwent complete excision (39/86) achieved complete resolution; in one patient, a relapse at a distant site was observed after monitoring, and in two patients relapses were observed at the distant and primary sites, with one patient subsequently responding partially to radiotherapy.

Spontaneous resolution was reported in 16 patients that underwent diagnostic biopsy (16/47), and 31 patients needed first subsequent treatment. Twenty of these were treated with topical steroids (20/31), and 11 with radiotherapy (11/31). Complete resolution was achieved in 12 and 11 patients, respectively, and seven patients required second subsequent treatment: five with radiotherapy, one with methotrexate, and one with re-excision (8).

Relapse was observed in 10 patients (10/86): three at the primary site and seven at the distant site. In addition to the relapse mentioned above in patients that underwent surgical excision, one patient relapsed at a distant site after diagnostic biopsy and after the first subsequent treatment with a topical steroid, one patient relapsed at a distant site after the first subsequent treatment with a topical steroid and the second subsequent treatment with methotrexate, and three patients relapsed after the first subsequent treatment with radiotherapy. In one patient, a relapse was observed at the primary site following spontaneous resolution after diagnostic biopsy (8).

It is worth mentioning that most patients relapsed within 2 years from the first presentation, supporting monitoring every 6 months for the first 2 years, and thereafter annually for 1 year (8).

## **Conclusions**

Primary cutaneous CD4<sup>+</sup> small or medium T-cell lymphoproliferative disorder is a rare cutaneous lymphoid proliferation with an indolent clinical course and excellent prognosis. Accurate diagnosis relies on correlation of clinical findings, histopathology, immunophenotyping, and molecular studies to distinguish it from more aggressive cutaneous T-cell lymphomas. This case report and review of treatment options highlights the typical presentation of a solitary lesion, successful management with complete surgical excision, and sustained remission during follow-up. Current evidence supports surgical excision as the preferred treatment for localized disease because of its high rate of complete remission and low risk of recurrence. Low-dose radiotherapy is an effective alternative in selected patients, particularly for lesions in cosmetically sensitive areas or when surgery is not feasible. Given that most relapses occur within the first 2 years after diagnosis, regular clinical follow-up during this period is advisable. Greater awareness of PCSMLPD and its favorable biological behavior may help avoid unnecessary investigations and overtreatment.

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Figure 1. The nodule on the mid back.

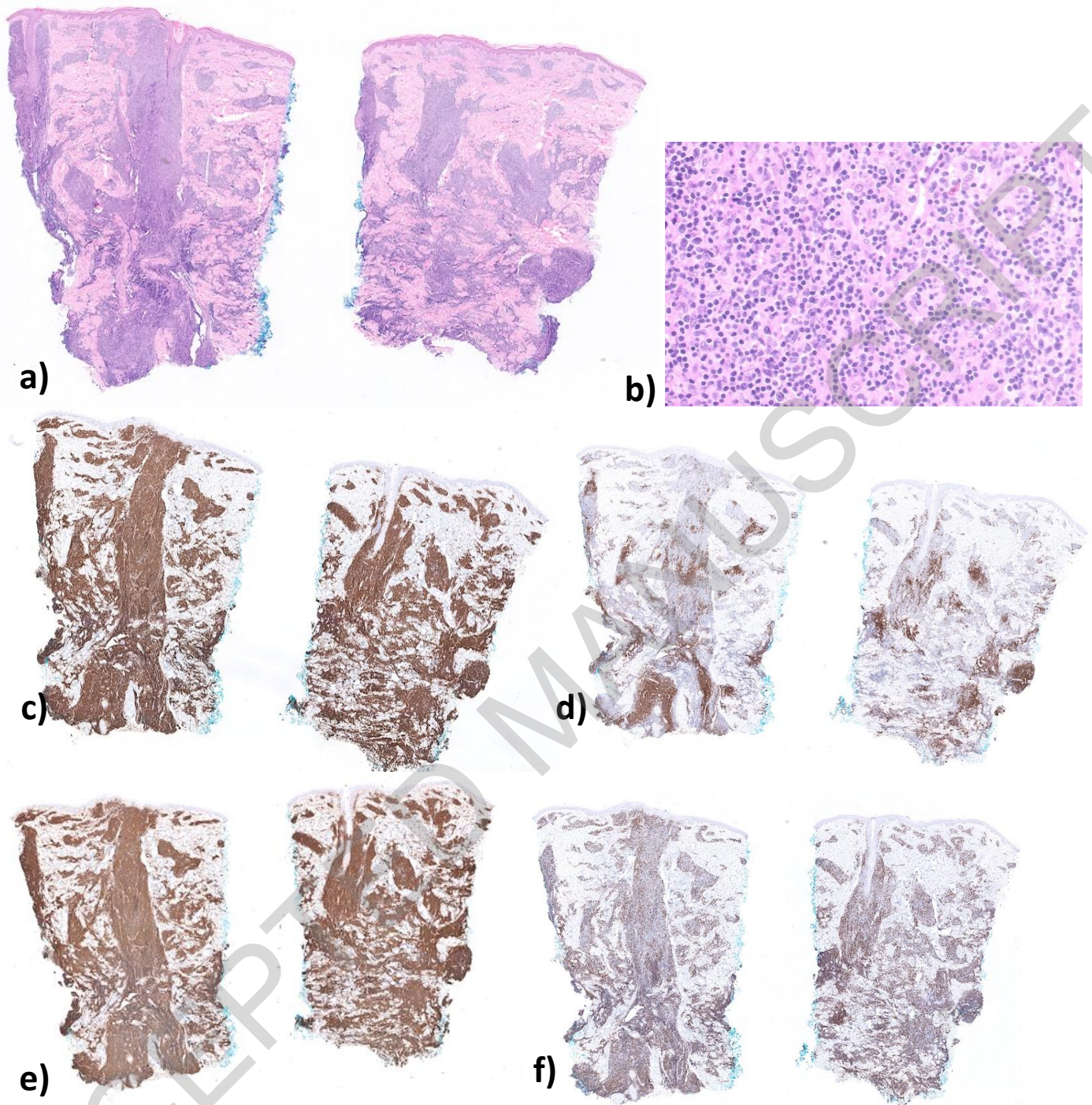


Figure 2. Primary cutaneous CD4<sup>+</sup> small- or medium-T-cell lymphoproliferative disorder identified in a biopsy sample from the nodule: A) florid lymphoid infiltrate (H&E overview scan), B) detail showing mixed small and medium-sized lymphoid cells (H&E ×40), C) T-cell-rich infiltrate (CD3 overview scan), D) B-cells were in the minority (CD79a overview scan), E) CD4<sup>+</sup> cells predominated (CD4 overview scan), F) CD8 (overview scan).