Clinicopathological Spectrum of Cutaneous Lymphomas and Distinction of Early Mycosis Fungoides from its Mimics—A Retro-Prospective Descriptive Study from Southern India

Abstract

Background: Cutaneous lymphomas (CLs) could be either primary (PCL) or secondary; the former comprises cutaneous T-cell lymphomas (CTCLs) and cutaneous B-cell lymphomas (CBCLs). Mycosis fungoides (MF) is the most common PCL. Diagnosis of early MF and distinguishing it from benign inflammatory mimics is challenging. This study aims to assess the clinicopathological spectrum of CL and to characterize early MF from its mimics using clinical characteristics, histopathological features, and ancillary techniques. Materials and Methods: This retro-prospective descriptive study was conducted in a tertiary-care institute, for over 5 years. Clinically as well as histopathologically suspected and biopsy-proven CL and their mimics were included. Cases were reviewed and subgrouped based on clinical and histopathological parameters and immunohistochemistry (IHC). Data were analyzed using descriptive statistics and a Chi-square test at a 5% level of significance. Results: Among PCL, CTCL comprised 84% (21/25) and CBCL was 16% (4/25); the most common CTCL was MF at 81% (17/21). Histologically, atypia of dermal infiltrate (100%), epidermotropism (91.7%), basal alignment of lymphocytes (91.7%), clear halosed cells (91.7%), wiry collagen (66.7%), granulidsign (50%), eccrine infiltration (66.7%), and follicular infiltration (50%) were significantly associated with early MF. Spongiosis (84.6%), pigment incontinence (84.6%), exocytosis (76.9%), and parakeratosis (76.9%) were significantly associated with inflammatory mimics. There was no significant difference in the downregulation pattern of CD7 (P = 0.206) between early MF and its mimics. The four cases of CBCL in our study were plasmablastic lymphoma, diffuse large B-cell lymphoma, follicular lymphoma, and lymphoblastic lymphoma. Conclusion: MF was the most common PCL. Histological parameters showed a significant difference, whereas IHC did not show any significant difference between early MF and its mimics.

Keywords: Cutaneous B-cell lymphomas (CBCLs), cutaneous lymphomas (CLs), cutaneous T-cell lymphomas (CTCLs), epidermotropism, MF mimics, mycosis fungoides (MF)

Introduction

Cutaneous lymphomas (CLs) are a heterogeneous group of neoplasms that could be either primary or secondary. Skin is the second most common site of extranodal involvement by lymphoma next to the gastrointestinal tract. The annual incidence of primary cutaneous lymphomas (PCL) is 1:100,000. In the western population, 75–80% of PCLs are cutaneous T-cell lymphomas (CTCLs) (whereas nodal lymphomas are B-cell-predominant) and 20–25% of cases are cutaneous B-cell lymphomas (CBCLs). About 50% of CTCLs are mycosis fungoides (MF), and it is the most common PCL.

It is important to distinguish PCL from secondary CL as both may share the same histological features but differ in their clinical course, prognosis, and treatment. Clinically, cutaneous manifestations of CLs are patches, papules, plaques, nodules, tumors, and erythroderma. The most challenging task for both dermatologists and pathologists is to establish the diagnosis of early MF. In the early stage, a clinical lesion may mimic many benign inflammatory lesions. The histological features may also create confusion and sometimes be non-conclusive due to the paucity of findings in the early biopsies. Hence, in such cases, follow-up with repeat
biopsy and clinicopathological correlation is vital to avoid underdiagnosis/overdiagnosis.

There are only limited studies available on CL. Our study aims to assess the spectrum of CL and to establish histological parameters in diagnosing early MF as well as to distinguish it from non-specific inflammatory dermatoses by clinicopathological correlation and immunohistochemistry.

Materials and Methods

This was a retro-prospective descriptive study conducted in the department of pathology in collaboration with the department of dermatology, over 5 years from January 2013 to December 2018 after obtaining the approval of the Institute Ethics Committee. Cases were studied retrospectively (2013–2016) as well as prospectively (2017–2018). Inclusion criteria: All biopsy-proven retrospective (2013–2016) cases of cutaneous hemato lymphoid neoplasms diagnosed as CTCL, CBCL, secondary cutaneous involvement by lymphoma, leukemic infiltrate, and pseudolymphomas were initially retrieved. Old cases where slides/blocks were not available and cases of clinically suspected CL, but biopsy-proven clear-cut benign inflammatory conditions were not included. Prospectively (2017–2018), in addition to biopsy-proven cutaneous hemato lymphoid neoplasms, all new clinically and histopathologically suspected CL (mimics) were also studied. Exclusion criteria: Cases of leukemia cutis and cutaneous involvement by non-lymphoid hematopoietic neoplasms were excluded from further analysis. Clinical and laboratory details were collected from medical records and hospital information databases. Immunohistochemistry (IHC) analysis using markers like CD3, CD4, CD5, CD7, CD8, and CD20 was performed in suspected cases of CTCL. Various panels of IHC analyses were also performed in other cases based on correlation with clinical details and histological features.

The cases were first analyzed individually by the examiners, and a review diagnosis was made in consultation over a multiheaded microscope. In cases, where the review diagnosis differed from the originally reported diagnosis, a consensus diagnosis was made after discussion with the reporting faculty and the clinician and re-review. For the purpose of the study, the review diagnosis (concordant cases) or the consensus diagnosis (discordant cases) has been taken as the final diagnosis.

Definition of various terms used in the study

- **Patch:** lesion of any size without significant elevation or induration.
- **Plaque:** lesion of any size with significant elevation or induration.
- **Tumor:** Solid or nodular lesion ≥1 cm with evidence of the depth and/or vertical growth.
- **Erythroderma:** Generalized erythema over more than 70% to 80% of the body surface area.
- **Poikiloderma:** The association of cutaneous pigmentation, atrophy, and telangiectasia.
- **Epidermotropism:** Atypical lymphocytes infiltrating the epidermis without any signs of inflammation like spongiosis and edema.
- **Basal alignment:** Presence of single lymphoid cells, closely opposed to the basal layer of the epidermis.
- **Pautrier’s micro-abscess:** Clusters of 4 or more lymphocytes with a surrounding clear halo.
- **Grandiosity sign:** Atypical cells in the epidermis that appear slightly larger than the lymphocytes in the dermis.
- **Clear haloed lymphocytes:** Single epidermotropic lymphocytes with no tendency to coalesce are separated from the surrounding keratinocytes by clear spaces.
- **Papillary dermal fibrosis (wiry collagen):** Thickened bundles of collagen in a haphazard array in the papillary dermis.
- **PCL:** Lymphoma involving the skin with no evidence of extracutaneous disease at the time of diagnosis.
- **Secondary CL:** An already known case of nodal/extranodal lymphoma diagnosed earlier presenting with skin lesions with skin biopsy showing infiltration by lymphoma.

Statistical analysis

All data collected were imported to SPSS software IBM PASW statistics (SPSS) – version 19.0. The categorical variables were expressed as percentage. The continuous variables were expressed as mean with standard deviation or median with interquartile range. Characterization of early MF from its mimics using histopathological features and ancillary techniques was studied using the Chi-square test, and statistical significance was calculated. All statistical analyses were carried out at a 5% level of significance, and a P value less than 0.05 was considered significant.

Results

Distribution of cases

A total of 69 cases including CLs, non-lymphoid hematopoietic neoplasm, and lymphoma mimics were initially screened. The overall spectrum of cases is shown in Table 1.

The 52 cases of CL and its mimics were studied in greater detail. Among the 17 cases of non-lymphoid cutaneous hematopoietic malignancies, cases of Langerhans cell histiocytosis (LCH) and mastocytosis did not pose any diagnostic challenge with CL, whereas a few cases of leukemia cutis were clinical mimics of CL. Since all these cases could be diagnosed with careful evaluation, these were not discussed under lymphoma mimics.

A total of 29 cases of CLs were studied. The total number of biopsies studied for these 29 cases was 57 due to either
Table 1: Overall spectrum of CLs, non-lymphoid hematopoietic neoplasms, and lymphoma mimics studied

| Diagnosis                                      | n (%)       |
|------------------------------------------------|-------------|
| Total                                          | 69 (100%)   |
| Primary Cutaneous T-cell lymphoma (CTCL)       | 21 (30%)    |
| Mycosis fungoides (MF)                        | 17          |
| Primary cutaneous anaplastic large cell lymphoma (ALCL) | 01          |
| Cutaneous aggressive epidermotropic CD8 + cytoxic T-cell lymphoma | 01          |
| Subcutaneous panniculitis-like T-cell lymphoma (SPTCL) | 01          |
| Peripheral T-cell lymphoma (PTCL)              | 01          |
| Early MF mimics                                | 13 (19%)    |
| Contact dermatitis                             | 03          |
| Psoriasis                                      | 02          |
| Eczema                                         | 02          |
| Subacute spongiotic dermatitis                 | 02          |
| Polymorphous light eruptions                   | 01          |
| Inflammatory dermatosis (not categorized)      | 03          |
| Primary Cutaneous B-cell lymphoma (CBCL)       | 04 (6%)     |
| Follicular lymphoma (FL)                       | 01          |
| Diffuse large B-cell lymphoma (DLBCL)          | 01          |
| Plasmablastic lymphoma (PL)                    | 01          |
| Lymphoblastic lymphoma (LBL)                   | 01          |
| Secondary cutaneous lymphoma (CL)              | 04 (6%)     |
| Nodal FL                                       | 01          |
| DLBCL                                          | 01          |
| ALCL                                           | 01          |
| Extra nasal NK/T-cell lymphoma                 | 01          |
| Pseudolymphoma                                 | 10 (15%)    |
| Pseudolymphoma T-cell pattern                  | 08          |
| Pseudolymphoma B-cell pattern                  | 02          |
| Leukemia cutis                                  | 07 (10%)    |
| Acute myeloid leukemia (AML)                   | 01          |
| Pre-T acute lymphoblastic leukemia (ALL)       | 02          |
| Pre-B ALL                                       | 02          |
| T prolymphocytic leukemia (PLL)                | 01          |
| Chronic myeloid leukemia (CML)                 | 01          |
| Langerhans cell histiocytosis (LCH)            | 06 (9%)     |
| Mastocytosis                                   | 03 (4%)     |
| Extramedullary hematopoiesis (EMH)             | 01 (1%)     |

remaining four cases of CTCL [Figure 2] were primary cutaneous anaplastic large cell lymphoma (ALCL), subcutaneous panniculitis-like T-cell lymphoma, cutaneous aggressive CD8 positive T-cell lymphoma, and peripheral T-cell lymphoma (PTCL). The four cases of CBCL were plasmablastic lymphoma, diffuse large B-cell lymphoma (DLBCL), follicular lymphoma, and lymphoblastic lymphoma. The review diagnosis of CTCL, CBCL, and secondary CL was concordant with the original diagnosis. However, most of the inflammatory mimics of early MF (categorized after scrupulous review) had been diagnosed as CTCL on the original diagnosis.

Clinical characteristics

The distribution of age and gender in CLs and mimics is given in Table 2. Multiple lesions were observed in 18/21 (85.7%) cases of CTCL, and 4/4 (100%) cases of secondary CL. CBCL showed a single lesion in 3/4 (75%) of cases. The most common sites of involvement observed in CTCL were trunk and extremities and were seen in 16/21 (76.2%) cases. Trunk involvement was also observed in CBCL and secondary CL. Types of the lesions [Figure 3] observed were patch, papule, plaque, nodule, tumor, erythroderma, and their various combinations. Among the MF cases, 12/17 (70.6%) had presented with patch/papule/plaque (early MF), whereas the rest presented as nodule/tumor (late stage of MF). The mean duration of the lesion for CTCL, CBCL, and secondary CL was 2.84 ± 3.81, 2.59 ± 2.65, and 1.17 ± 1.21 years, respectively. Other notable clinical characteristics in CTCL lesions were the presence of erythema in 15/21 (71.4%), scaling in 13/21 (61.9%), pruritus in 10/21 (47.6%), and variation in shape and size of lesion in 20/21 (95.2%) cases. Hypopigmentation was noted in 8/21 (38%) and hyperpigmentation in 3/21 (14.3%) cases. Ulceration was seen in 6/21 (28.6%) cases. Past history of treatment was present in 10/21 (47.6%) cases. Follow-up biopsy was performed in 11/21 (52.4%) cases, and 6/21 (28.6%) cases showed relapse.

Lymph node (LN) biopsy in CTCL showed reactive dermatopathic change in 4/7 (57.14%) cases and infiltration in 1/7 (14.3%) cases. Bone marrow (BM) biopsy in CTCL showed infiltration in 1/8 (12.5%) cases. None of the cases of CBCL where LN biopsy (1/1) or BM biopsy (3/3) was performed showed involvement/infiltration. All cases of secondary CL where LN biopsy (3/3) or BM biopsy (4/4) were done showed involvement/infiltration.

Histological parameters in CLs

Histological parameters such as location, intensity, and pattern of infiltrates were studied. CTCL showed predominantly superficial dermal involvement in 13/21 (61.9%) of cases, and CBCL showed predominantly deep dermal involvement in 3/4 (75%) of cases. Secondary CL showed deep dermal involvement in 2/4 (50%) and repeat biopsies or sampling from multiple sites, out of which primary CL constituted 25/29 (86.2%) and secondary CL constituted 4/29 (13.8%), whereas CTCL and CBCL constituted 21/25 (84%) and 4/25 (16%), respectively, among primary CL. The most common type of CTCL was MF which constituted 17/21 (81%). The type and variants of MF [Figure 1] were 8/17 (47%) classical type, 7/17 (41.2%) hypopigmented variant, and 1/17 (5.9%), each of folliculotropic and granulomatous variants. The
dermis + subcutaneous involvement in 2/4 (50%) of cases. The dense intensity of infiltrates was seen in 15/21 (71.4%) cases of CTCL and all cases of CBCL and secondary CL. The patterns of infiltration in CLs are shown in Table 3. Other histological parameters, some of which are specific to CTCL, were also recorded to distinguish it from inflammatory mimics.

Characterization of early MF from its mimics

The comparison of clinical characteristics, histological parameters [Figure 4], and IHC profile [Figure 5] between early MF (n = 12) and its mimics (n = 13) are given in Table 4. The mimics of early MF we came across in our study were contact dermatitis, psoriasis, eczema, subacute spongiotic dermatitis, polymorphous light eruptions, and inflammatory dermatosis (not categorized). We have also observed other inflammatory mimics such as pseudolymphomas with T-cell and B-cell patterns in our study; however, they did not pose diagnostic challenges to early MF.[Figure 6]

Discussion

PCL and secondary CL in our study constituted 25/29 (86.2%) and 4/29 (13.8%), respectively. The proportion of PCL was slightly higher than secondary CL compared to other studies from Asia conducted in Korea by Han et al[3] which recorded 377/517 (73.2%) and 140/517 (26.8%), respectively and from a western country, Brazil, by Bittencourt et al.[4] who documented 85/112 (75.9%) and 27/112 (24%), respectively.

Among CTCLs, the most common type observed in our study was MF which constituted 17/21 (81%), and it was similar to other studies, but the proportion was higher when compared to studies from Asian countries like Japan[5] which documented 11/25 (44%) and Taiwan[6] recorded 52/84 (62%) of MF cases. The proportion was almost similar when compared to a study from the West in Argentina[7] which recorded 294/387 (76%), and a previous study carried out in India[8] documented 103/133 (78%) MF cases. The lower proportion of MF among the oriental studies could be due to the greater reported prevalence of primary cutaneous CD30 positive T-cell
lymphoproliferative disorders and PTCL which would be included under CTCL.

Types and variants of MF observed in our study were classical type (47%), hypopigmented variant (41.2%), folliculotropic variant (5.9%), and granulomatous variant (5.9%). Studies from the United States,[9] Korea,[3] and Japan[10] recorded pagetoid reticulosis, follicular, syringotropic, and granulomatous variants, but the hypopigmented variant was not documented in any of these studies. However, a study conducted in Kuwait[11] documented that 77/193 (40%) of cases had hypopigmented lesions alone or with any combination, of which 43/193 (22%) had pure hypopigmented variant MF. Another study from Mumbai[8] also documented 32/103 (32%) cases of the hypopigmented variant.

The demographic profile showed almost an equal gender distribution with a male-to-female ratio of 1: 1.04 (49% males and 51% females) in CL. Hence, no gender predisposition was noted in our study, which is in contrast to the western study by Bradford et al.[9] which showed male preponderance. The age ranged from 7 to 75 years with a mean age of 39.90 ± 16.21 years and a median age of 37 years. A study conducted in Iran by Naeini et al.[12] among 99 cases showed a similar demographic profile with ages ranging from 5 to 80 years (median age of 36 years) at diagnosis and constituted 45 men and 54 women with a male-to-female ratio of 1:1.2. In a study from Japan by Vonderheid et al.,[13] the male-to-female ratio was 1.8:1 and the age ranged from 20–83 years with a median age of 62 years. A similar study from South India by Khader et al.[14] showed a male-to-female ratio of 2.5:1, and the age ranged from 30–91 years with a median age of 53 years.

The mean duration of the lesion for CL was 2.27 ± 3.39 years. The mean durations of the lesion for CTCL, CBCL, and secondary CL are 2.84 ± 3.81, 2.59 ± 2.65, and 1.17 ± 1.21 years, respectively. There is a paucity of literature on the duration of the lesion for various types of CL.

| Table 3: The distribution of patterns of infiltrate in CLs |
|-----------------------------------------------------------|
| Patterns of infiltrate | CTCL (n=21) | CBCL (n=4) | Secondary CL (n=4) |
|-----------------------|--------------|------------|-------------------|
| Perivascular          | 05 (23.8%)   | 0 (0%)     | 0 (0%)            |
| Perivascular + periadnexal | 03 (14.3%) | 0 (0%)     | 0 (0%)            |
| Predominantly perifollicular | 01 (4.8%)  | 0 (0%)     | 0 (0%)            |
| Band-like lichenoid infiltrate | 06 (28.6%) | 0 (0%)     | 0 (0%)            |
| Diffuse               | 05 (23.8%)   | 02 (50%)   | 03 (75%)          |
| Nodular               | 0 (0%)       | 02 (50%)   | 01 (25%)          |
| Lobular panniculitis  | 01 (4.8%)    | 0 (0%)     | 0 (0%)            |

Figure 2: (a) Primary cutaneous ALCL showing diffuse infiltration by the polymorphous population of atypical lymphoid cells in the dermis (H&E, 100×), (b) Primary cutaneous ALCL showing diffuse infiltration by the polymorphous population of atypical lymphoid cells with irregular hyperchromatic nuclei in the dermis (arrow shows atypical mitosis) (H&E, 400×), (c) SPTCL showing lobular panniculitis pattern of infiltration by atypical lymphocytes (H&E, 100×), (d) Cutaneous aggressive CD 8 positive T-cell lymphoma—diffuse infiltrates composed of atypical lymphoid cells admixed with few histiocytes and eosinophils (H&E, 400×), and (e) PTCL: biopsy from the plaque showing epidermal necrosis with many apoptotic bodies. Dermis shows crushing artifacts with a diffuse pattern of infiltration (H&E, 100×). (f) Epidermis showing apoptotic bodies and inflammatory infiltrates admixed with many degenerated atypical cells (H&E, 400×)
The most common sites of involvement observed in CTCL were trunk and extremities in 16/21 (76.2%) of cases which were similar to a study in Korea by Han et al.\(^3\) showing a similar site of involvement in 239/311 (76.92%) of cases. CTCL showed all types of lesions, whereas tumor was predominantly seen in CBCL in 3/4 (75%) of cases. A similar study from South India by Khader et al.\(^4\) among 35 cases also showed various types of lesions in CTCL. In our study, we found predominantly superficial dermal involvement in 13/21 (61.9%) of cases of CTCL. All 4 cases of CBCL showed predominantly deep dermal involvement. There are no studies in the literature to document the distribution of the location of the infiltrate in CL. Joseph et al.\(^5\) in his literature review mentioned that superficial dermal infiltrate was seen in the early stage of MF among CTCL. The band-like lichenoid infiltrate was the most common pattern observed in 6/21 (28.6%) cases, followed by perivascular and diffuse patterns, each constituting 5/21 (23.8%) cases in CTCL. We observed characteristic reactive dermatopathic change in 4/7 cases (57.14%) in CTCL. Vonderheid et al.\(^6\) documented dermatopathic lymphadenopathy in 118/251 (47%) of LN biopsies from CTCL patients.

**Early MF vs mimics**

Analysis of clinical parameters has shown statistical significance for the presence of multiple lesions \((P = 0.001)\) and variation in size and shape \((P = 0.002)\). Amorim et al.\(^7\) has documented multiple lesions of varying sizes in 101/102 (99.02%) cases. Furthermore, contact history to allergens \((P = 0.027)\) was recorded in 4/13 (30.8%) of cases with inflammatory mimics.

We found that atypia of dermal infiltrate, epidermotropism, basal alignment of lymphocytes, clear haloed cells, eccrine infiltration, wiry collagen, grandiosity sign, and follicular infiltration \((P < 0.05)\) were predominantly associated with MF and showed statistical significance. This was compatible
with similar studies carried out by Inchara et al.[17] and Smoller et al.[18] Santucci et al.[19] which documented that atypical lymphocytes and epidermotropism were the important histological parameters in early MF. Nikolov[20] found basal alignment of lymphocytes was an important criterion in MF.

In our study, we also observed that exocytosis ($P = 0.00$), spongiosis ($P = 0.015$), pigment incontinence ($P = 0.041$), and parakeratosis ($P = 0.047$) were significantly associated with inflammatory mimics. Similar studies were carried out by Inchara et al.,[17] and Arafah et al.[21] documented no significant association for the above parameters.

Comparing the IHC profile, results were not statistically significant as there was no difference observed between MF and mimics. Elisabeth Ralfkier[22] found that early lesions were difficult to distinguish from benign inflammatory lesions based on IHC interpretation, as the former did not show any immunophenotypic aberrancies. There was no significant difference in the downregulation pattern of CD7 ($P = 0.206$) between early MF and its mimics. This was compatible with a study conducted by Murphy et al.[23] in which they observed that CD7 downregulation alone is not the sole determinant of MF as it could be seen in other inflammatory conditions also. High CD8 positivity MF cases in our study could be due to the higher proportion of hypopigmented variants, as observed in a study conducted by Caelen et al.[24]

For the discordant cases, the consensus diagnosis was taken as inflammatory mimics due to the following reasons: All biopsies had some histological features which favored inflammatory etiology. Some of these cases had an IHC profile of the T-cell infiltrate with downregulation of CD7; however, in our observation, even the clear-cut inflammatory lesions for which IHC had been done and were excluded from further analysis also had similar IHC profiles. Some of the cases had subsequent biopsies which were clear-cut inflammatory and reported as such.
Table 4: Comparison of clinical characteristics, histological parameters, and IHC profile in early MF and MF mimics

| Parameters                                | Early MF (n=12) | MF mimics (n=13) | Statistical significance (P) |
|-------------------------------------------|-----------------|------------------|-----------------------------|
| **Clinical parameters**                   |                 |                  |                             |
| Number of skin lesions                    |                 |                  |                             |
| Single                                    | 01 (8.3%)       | 0 (0%)           | 0.001                       |
| Multiple                                  | 11 (91.7%)      | 04 (30.8%)       |                             |
| Generalized                               | 0 (0%)          | 09 (69.2%)       |                             |
| Variation in size and shape of the lesion |                 |                  |                             |
| Absent                                    | 0 (0%)          | 08 (61.5%)       | 0.002                       |
| Present                                   | 12 (100%)       | 05 (38.5%)       |                             |
| Color                                     |                 |                  |                             |
| No color change                           | 04 (33.3%)      | 11 (84.6%)       | 0.030                       |
| Hypopigmentation                          | 07 (58.3%)      | 02 (15.4%)       |                             |
| Hyperpigmentation                         | 02 (16.7%)      | 0 (0%)           |                             |
| Scaling                                   |                 |                  |                             |
| Absent                                    | 03 (25.0%)      | 04 (30.8%)       | 1.0                         |
| Present                                   | 09 (75.0%)      | 09 (69.2%)       |                             |
| Pruritus                                  |                 |                  |                             |
| Absent                                    | 06 (50.0%)      | 04 (30.8%)       | 0.428                       |
| Present                                   | 06 (50.0%)      | 09 (69.2%)       |                             |
| Contact history to allergens              |                 |                  |                             |
| Absent                                    | 12 (100%)       | 08 (61.5%)       | 0.027                       |
| Present                                   | 0 (0%)          | 04 (30.8%)       |                             |
| Not known                                 | 0 (0%)          | 01 (7.7%)        |                             |
| **Histological parameters**               |                 |                  |                             |
| Epidermotropism                           |                 |                  |                             |
| Absent                                    | 01 (8.3%)       | 13 (100%)        | 0.000                       |
| Present                                   | 11 (91.7%)      | 0 (0%)           |                             |
| Pautrier micro-abscess                    |                 |                  |                             |
| Absent                                    | 08 (66.7%)      | 13 (100%)        | 0.039                       |
| Present                                   | 04 (33.3%)      | 0 (0%)           |                             |
| Clear haloed cells                        |                 |                  |                             |
| Absent                                    | 01 (8.3%)       | 13 (100%)        | 0.000                       |
| Present                                   | 11 (91.7%)      | 0 (0%)           |                             |
| Grandiosity sign                          |                 |                  |                             |
| Absent                                    | 06 (50.0%)      | 13 (100%)        | 0.005                       |
| Present                                   | 06 (50.0%)      | 0 (0%)           |                             |
| Basal alignment of lymphocytes            |                 |                  |                             |
| Absent                                    | 01 (8.3%)       | 11 (84.6%)       | 0.000                       |
| Present                                   | 11 (91.7%)      | 02 (15.4%)       |                             |
| Exocytosis                                |                 |                  |                             |
| Absent                                    | 12 (100%)       | 03 (23.1%)       | 0.000                       |
| Present                                   | 0 (0%)          | 10 (76.9%)       |                             |
| Spongiosis                                |                 |                  |                             |
| Absent                                    | 08 (66.7%)      | 02 (15.4%)       | 0.015                       |
| Present                                   | 04 (33.3%)      | 11 (84.6%)       |                             |
| Parakeratosis                             |                 |                  |                             |
| Absent                                    | 08 (66.7%)      | 03 (23.1%)       | 0.047                       |
| Present                                   | 04 (33.3%)      | 10 (76.9%)       |                             |
| Orthokeratosis                            |                 |                  |                             |
| Absent                                    | 06 (50.0%)      | 09 (69.2%)       | 0.428                       |
| Present                                   | 06 (50.0%)      | 04 (30.8%)       |                             |
| Acanthosis                                |                 |                  |                             |
| Absent                                    | 07 (58.3%)      | 04 (30.8%)       | 0.238                       |
| Present                                   | 05 (41.7%)      | 09 (69.2%)       |                             |

Contd...
None of these requisitions had mentioned any progression of the disease. In a study done by Santucci et al.\(^\text{[25]}\) on 32 specimens with MF and 13 specimens of simulators, the overall concordance among 3 independent ratings was fair to moderate.

To summarize, PCL is more common than secondary CL. Among PCL, the most frequent spectrum is of CTCL and the most common CL is MF. Analysis of histological parameters has shown a significant difference between early MF and its mimics. Analysis of IHC findings has not shown any significant difference. Although the numbers were less, we were able to study the detailed histological characteristics of a spectrum of cases. This study was limited by its small sample size and subjectivity in the nature of histological parameters. Ancillary
studies (clonality assessment) were not performed. In future, there is a need for large-scale studies. Long-term follow-up and repeat biopsies in suspicious cases will help in clinching the proper diagnosis.

In conclusion, MF was the most common PCL, and careful scrutiny of histological parameters can help to distinguish between early MF and its mimics.

**Ethics approval number**

(JIP/IEC/2016/1069).

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**Conflicts of interest**

There are no conflicts of interest.

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