Primary cutaneous B-cell lymphoblastic lymphoma

Sir,
We recently came across a 14-year-old boy presenting with a 2-month history of multiple skin lesions, chiefly involving the trunk and both upper limbs. The first lesions appeared on the upper chest and grew progressively with spread to both arms and forearms.

On examination, he had multiple cutaneous erythematous plaques and nodules, some showing superficial ulcerations. The nodules involved bilateral arms, forearms, and upper chest [Figure 1]. There was no pallor, icterus, palpable lymphadenopathy, or hepatosplenomegaly. Chest radiography, abdominal ultrasound, computed tomography of chest and abdomen, and biochemical parameters were unremarkable.

Fine needle aspiration cytology was performed from the cutaneous nodules on bilateral arms and chest. Giemsa-stained smears from all the 3 sites showed similar features. The smears were highly cellular, displaying a population of monomorphic cells dispersed singly. The cells showed scant basophilic cytoplasm, thin nuclear membrane, and finely dispersed chromatin with indistinct nucleoli. Occasional cells showed slight nuclear folding. Few mitotic figures were also identified [Figure 2]. Background showed lymphoglandular bodies and a few histiocytes. With a presumptive diagnosis of lymphoma, immunocytochemistry was performed, which revealed weak positivity for CD20 (B-cell antigen) and negativity for CD3 (T-cell marker). Nuclear positivity for terminal deoxy-transferase (Tdt) was also seen. The cells were negative for CD99, synaptophysin,
and desmin. Findings from hematological investigations, including peripheral smear, were within normal limits, and no immature cells were noted. Bone marrow aspiration and biopsy were also negative for immature cells in the marrow.

In view of the clinical features and cytological findings, a diagnosis of primary cutaneous B-cell lymphoblastic lymphoma was rendered. The patient was treated with aggressive chemotherapy regimen. He attained complete remission and is currently disease free, 20 months after diagnosis.

Lymphoblastic lymphoma (LBL), a neoplasm of precursor lymphoid cells, usually presents with a leukemic involvement (B-LBL) or as a mediastinal mass and/or lymphadenopathy (T-LBL).[1] Extranodal sites, including skin, breast, bone, central nervous system, gonads, liver, spleen, and bone marrow, have been reported to be involved. Cutaneous lesions in LBL have been reported in less than 20% of cases. In most of the cases, skin lesions are secondary to, or concomitant with, marrow or lymph node involvement. However, rarely, patients have cutaneous lesions as the presenting feature of LBL in the absence of nodal or marrow involvement, majority of these being T-cell type.[2] Primary cutaneous B-cell LBL has been reported in very few cases.[2-4] In some of the reports in the literature, the primary nature of the cutaneous lesions has not been definitely demonstrated.[2] In this report, the child presented with multiple skin lesions in the absence of marrow or lymph node involvement, thus validating the primary nature of cutaneous lesions.

On pathological examination (biopsy or aspiration cytology), LBL shows a neoplastic population of small or medium cells with scant cytoplasm, round-to-oval nuclei with a thin nuclear membrane. Nuclear chromatin is fine, and numerous mitotic figures may be seen. Large pale macrophages containing nuclear debris may be present and may impart a starry-sky appearance to the lesion.[3] Histologic features do not allow distinction between T-cell and B-cell immunophenotypes, though presence of nuclear convolutions suggests T-cell type. For exact characterization, immunophenotyping is essential.[3] In our case, weak staining for CD20 suggested a B-cell immunophenotype, while cytomorphology was in favor of LBL.

The differential diagnoses of LBL include the entire spectrum of 'small round blue cell' tumors. Thus, LBL needs to be differentiated from Ewing’s sarcoma, Merkel cell carcinoma, neuroblastoma, rhabdomyosarcoma, Wilms’ tumor, neuroendocrine carcinoma, and metastatic small cell carcinoma. Lymphoid markers (LCA, CD20, and CD3) readily identify the lymphoid nature of the cells. Other immunohistochemical stains (cytokeratin, desmin, myogenin, chromogranin, synaptophysin, CD99) help in the distinction of LBL from other morphological mimics. At the same time, Burkitt’s lymphoma also needs to be excluded. Burkitt’s lymphoma tends to involve abdominal organs, and its cells possess coarse reticulated chromatia with several basophilic nucleoli and a thin rim of intensely pyroninophilic cytoplasm and distinct cell borders.[3]

The prognosis of cutaneous LBL does not seem to differ from that of LBLs without cutaneous involvement, especially if aggressive chemotherapy is used.[5] In our case, a diagnosis of LBL was suggested on aspiration cytology, allowing for
early institution of multi-agent chemotherapy, to which the patient responded very well and is in clinical remission after a follow-up of 20 months.

In summary, we may state that we have herein presented a case of primary cutaneous lymphoblastic lymphoma of B-cell phenotype, which is a rare lesion. Fine needle aspiration cytology, assisted by immunocytochemistry, aids in an early diagnosis and institution of appropriate therapy and consequent rapid response.

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REFERENCES


Letters to Editor

Pemphigus is an uncommon mucocutaneous disease caused by autoantibodies against desmosomal antigens. Juvenile cases are rare. The diagnosis is often delayed due to confusion with other entities.

An 11-year-old girl without any previous medical problems had one month history of flaccid bullous lesions and large crusted hyperkeratotic erosions on the trunk, limbs, and face without mucosal localization. There was no family history of autoimmune processes. No improvement was noted with a well-conducted antibiotic treatment.

A lesional biopsy showed suprabasal acantholysis and direct immunofluorescence (DIF) studies of frozen skin tissue showed positive intercellular staining for IgG within the epidermis. Blood samples for indirect immunofluorescence (IIF) on rabbit’s lips demonstrated circulating IgG autoantibodies at a titer of 1:100.

A diagnosis of juvenile pemphigus vulgaris (PV) was made. Treatment was started with 1 mg/kg/d (50 mg/d) methylprednisolone. A gradual remission was observed. Complete regression of lesion was obtained after 30 days, and the dose of methylprednisolone was gradually reduced after 45 days without any recurrence. No side effect was observed.

After 3 years the maintenance therapy was discontinued, and the girl has had no relapses over the last 7 years. Unfortunately, this remission could not be confirmed by DIF and IIF.

Pemphigus is a group of autoimmune blistering skin disease characterized by blister formation. Blisters are due to loss of keratinocyte cell–cell adhesion in the superficial and deep epidermis respectively.[1] The incidence rate of pemphigus in Tunisia is 6.7 cases per million per year. High rates of pemphigus foliaceus (PF) among young people living in rural areas are reminiscent of Brazilian pemphigus. However, the absence of cases among genetically related household members and during childhood, as well as the large predominance among women, contrasts with Brazilian pemphigus.[2]

Juvenile pemphigus, except the endemic form, is rare. [3] Only 69 cases of PV and 19 cases of PF have been reported. Stomatitis is the presenting sign in more than 50% of the children with PV. In our case, lack of mucosal changes may suggest cutaneous pemphigus foliaceus. But in some children, skin blisters may be the single symptom of PV, and no mucous membrane lesions are present.[4] Early diagnoses in our patient (after 1 month) have probably prevented mucosal localization.

In children, pemphigus may be misdiagnosed as bullous impetigo; other blistering diseases more common in