Annual Scientific Meeting of Dermatopathology 2007

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Venue:	Postgraduate Education Centre, The Chinese University of Hong Kong
Speaker:	Dr. Bruce R. Smoller Chairman, Department of Pathology, University of Arkansas for Medical Sciences, Little Rock, USA
Organiser:	International Academy of Pathology

Mycosis fungoides is the most common type of cutaneous lymphoma and it accounts for more than 50% of all cases. There are distinct sets of clinical, histopathological, immunologic and genotypic features for the diagnosis of mycosis fungoides.

Several histopathological issues concerning mycosis fungoides were discussed in the meeting:

1. Histological criteria for differentiating mycosis fungoides from other inflammatory dermatoses

a. Specific parameters

- Pautrier's microabsesses
- Disproportionate exocytosis
- Single lymphocyte along dermal-epidermal junction
- Papillary dermal fibrosis
- Epidermal and dermal lymphocyte size
- Epidermal and dermal lymphocyte convolution
- Perinuclear lymphocytic halos

b. Non-specific parameters

- Parakeratosis, spongiosis
- Epidermal atrophy or acanthosis
- Exocytosis
- Pattern and degree of dermal infiltrate
- Follicular exocytosis and mucinosis
- Papillary dermal oedema and telangiectasia
- Granuloma, plasma cells, eosinophils
- Lymphocyte mitosis

2. Can histologic criteria be used to offer prognostic information?

Some histological features are more often seen in progressive disease, including epidermal acanthosis, spongiosis, hyperconvolution of dermal lymphocyte, density of dermal infiltrate and number of eosinophils. However, none of these histological features was shown to be of prognostic value in retrospective studies.

3. The role of lymphocyte immuno-phenotyping in the diagnosis in early mycosis fungoides

Lymphocyte immunophenotyping has a confirmatory role in the diagnosis of patch and plaque stage of mycosis fungoides. It should be best reserved for cases in which the diagnosis is uncertain on routine histology. Lack of immunological abnormalities should not exclude the diagnosis, nor should the presence of such directly assume the diagnosis of mycosis fungoides without other contributory findings.

4. How sensitive are the T cell receptor gene rearrangement studies?

Polymerase chain reaction (PCR) is more sensitive than Southern blot analysis. Seventy-one percent of patch stage disease and 100% plaque and tumour disease have been shown to be clonal. Anecdotal reports show up to 80% sensitivity of gene rearrangement studies for patch stage disease.

5. How specific are the T cell receptor gene rearrangement studies?

Clonal rearrangements have also been reported in some cases of lymphomatoid papulosis, pityriasis lichenoides et varioliformis acute (PLEVA), small plaque parapsoriasis, pigmented purpuric eruptions and lichen planus.

6. When should genotyping studies be performed?

Genotyping should be considered in cases where the clinical lesions are highly suggestive of mycosis fungoides but the histological features are non-diagnostic and without supporting immunological evidence of disease. There are observations that patients with the same clone in multiple sites are more likely to develop progressive disease than those with different clones in different sites. If more studies can further support this observation, then monitoring for clonality may become a routine test in the future with prognostic significance.

Learning points:

The diagnosis of patch stage mycosis fungoides can usually be made on routine histology in most cases. However, histology cannot provide useful prognostic information for patients with patch stage mycosis fungoides. Lymphocyte immunophenotyping should play a confirmatory role in uncertain cases. Genotyping may be helpful in cases where an urgent diagnosis is necessary, but false negatives are not uncommon.