

To Compare Clinical and Histopathological Diagnosis, Taking into Account History, Clinical Features, and Differential Diagnosis

Prem Prakash Pravakar

Assistant Professor, Department of Skin and VD, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India.

Received: 06-05-2021 / Revised: 17-06-2021 / Accepted: 19-07-2021

Corresponding author: Dr. Prem Prakash Pravakar

Conflict of interest: Nil

Abstract

Background: The pattern of skin diseases varies from country to country and even region to region within a country. The histological diagnosis is used by clinicians to aid in the management of patients & most appropriate clinical interventions. **Aim:** The study aims to compare clinical diagnosis with histopathological diagnosis and find factors that affect their correlation, taking cognizance of history, clinical details and differential diagnosis. **Materials and Methods:** The study included a total of 500 skin biopsies for 2 years in Department of skin and VD and Department of Pathology, Anugrah Narayan Magadh Medical College, Gaya, Bihar. Data collection was by convenience sampling, and recordings of clinical notes and results of skin biopsies of suitable cases seen at the out-patient clinic were collated. Details of patient's age, gender, folder number, clinical history and diagnosis, histologic report as well as histologic diagnosis were documented. The results were seen as correlating when the provisional clinical diagnosis or any of the differential diagnosis agreed with the histopathological diagnosis and discordant when the provisional clinical diagnosis or differential diagnosis varied with the histopathological diagnosis. **Results:** The majority of the patients were in the age group of 31-40 years. The most common skin disease is non-infectious vesicobullous and vesicopustular disease (28.6%), followed by non-infectious erythematous papular and squamous disease (25.9%). The most common vesicobullous disease is spongiotic dermatitis (84.8%). Erythema dyschromicum perstans (31.8%) is the commonest non-infectious erythematous papular and squamous disease. The most common microbial disease is fungal infection, followed by leprosy. Among the neoplastic diseases of skin, tumors of epidermis are commonest diseases and the most common epidermal tumor is basal cell carcinoma. The commonest tumor of skin is melanocytic nevus. The most frequent site is upper extremities. **Conclusion:** Eczema is predominating non-infectious vesicobullous and vesicopustular disease. A relatively higher, prevalence of fungal infections was observed. Basal cell carcinoma is the commonest epidermal tumor and melanocytic nevus is commonest of all skin tumors.

Keywords: eczema, vesicobullous, skin tumor

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Introduction

The skin is a complex organ with many functions and 3 anatomic components: epidermis with skin adnexa, melanocytic system, and dermis and subcutis [1,2] It is the largest organ in the human body, in which precisely regulated cellular and molecular interactions govern many crucial responses to our environment.

Skin diseases are very much prevalent in the developing countries. There are at least 2000 different skin diseases in the field of dermatology which affect all age groups [3]. These diseases range from simple acne and scabies to various serious disorders such as toxic epidermal necrolysis and fatal neoplastic conditions.^{4,5} The pattern of skin diseases varies from country to country and even region to region within a country due to different ecological factors, genetics, hygienic standards and social customs [4-6] Though the spectrum of histopathology of skin disorders is varied, clinical presentation is restricted to only a few changes such as hyperpigmentation, hypopigmentation, macules, papules, nodules etc. Each clinical presentation is common to have different histopathological pictures and the thus definitely requires histopathology for their confirmation [7]. Clinical details plays a critical role in reaching the histopathological diagnosis. The information written on a pathology request form describing the characteristics, duration, distribution of the skin lesion as well as the site where the biopsy was taken from, with clinical and differential diagnosis aid histopathological diagnosis. A number of biopsy-related factors can impact on the diagnostic yield of a skin biopsy [8,9].

Methodology:

The study was done for 2 years, Department of Skin and VD and Department of

Pathology, Anugrah Narayan Magadh Medical College, Gaya, Bihar. Permission was obtained from ethical committee. This study included a total of 52 skin biopsies, processed in automated histokinette, sectioned and stained with Hematoxylin & eosin and reviewed by Pathologist. Special stains like Ziehl- Neelsen (ZN), Periodic Acid Schiff (PAS) and Fite-Faraco were used whenever required. Relevant demographic data was obtained from requisition from provided with the specimens. The data were entered in Microsoft Excel and statistical analysis was performed.

Results:

Between 2 years, of the 505 patients seen in the Dermatologic Out- Patient Clinic, department of Department of dermatology and VD, Anugrah Narayan Magadh Medical College, Gaya, Bihar. 52 patients had punch skin biopsies. Of the 52 patients, 12 were males (23.08%) and females were 40 (76.92%), with an age range between 7 to 69 years and a mean (SD) of 34.7 years \pm 17.3. Skin biopsies were taken from the lower extremities (44.23%), upper limbs (5.77%) trunk (23.08%) and head (7.69%) and other sites (19.23%). Most patients had a single clinical diagnosis which matched the histopathological diagnosis.

The final histopathological diagnosis was in keeping with the clinical diagnosis in 33 (63.46%) patients and was higher in patients with detailed clinical descriptive information and was discordant in 19 (36.54%) patients and this was noticed with some patients' who had prior interventional treatment and insufficient clinical information.

Table 1: Frequency of clinical disease

	Frequency	Percent
Allergic contact dermatitis	3	5.8
Buruli ulcer	1	1.9
Fibroma	1	1.9
Granuloma annulare	1	1.9
Granulomatous rosace	1	1.9
Hansen's disease	1	1.9
Kaposi sarcoma	4	7.7
Keratoderma	1	1.9
Lichen nitidus	1	1.9
Lichen planus	11	21.15
Non scaring alopecia	1	1.9
Onchodermatitis	1	1.9
Pemphigus vulgaris	5	9.61
Pityriasis rubra pilaris	2	3.8
Prurigo nodular is	1	1.9
Psoriasis	9	17.31
Pyoderma gangrenosum	1	1.9
Pyogenic granuloma	2	3.8
Seborrheic keratosis	1	1.9
Wart	4	7.7
Total	52	100.0

Table 2: Frequency of clinico pathologic diagnosis

	Frequency	Percent
Allergic contact dermatitis	3	5.77
Chronic non-specific	2	3.85
Dermatofibroma	1	1.92
Epidermal cyst	1	1.92
Fibroma	1	1.92
Hansen's disease	1	1.92
Kaposi sarcoma	4	7.69
Keratoderma	1	1.9
Lichen nitidus	1	1.9
Lichen planus	9	17.30
Lichen simplex chron	1	1.9
Lupus militaris	1	1.9
Neurofibromatosis	1	1.9
Non scaring alopecia	3	5.77
Pemphigus foliaceus	2	3.8
Pemphigus vulgaris	3	5.8
Pityriasis rubra pilaris	2	3.8
Psoriasis	7	13.46
Pyoderma gangrenosum	1	1.9
Pyogenic granuloma	2	3.8
Scleroderma	1	1.9
Seborrheic keratosis	1	1.9
Spongiotic dermatitis	1	1.9
Wart	2	3.8
Total	52	100.0

Table 3: Clinico-pathologic discordant cases in the study[17]

Clinical Diagnosis	Histopathological Diagnosis
Wart	Neurofibromatosis
Psoriasis	Lichen planus
Prurigo nodularis	Dermatofibroma
Buruli ulcer	Kaposi sarcoma
Allergic contact dermatitis	Chronic non-specific dermatitis
Lichen planus	Epidermal cyst
Pompholyx	Chronic non-specific dermatitis
Wart	Keloid
Granulomatous rosacea	Lupus miliaris
Psoriasis	Lichen simplex chronic us
Kaposi sarcoma	Non-specific dermatitis
Granuloma annulare	Keloid
Lichen planus	Spongiotic dermatitis
Onchodermatitis	Keloid
Lichen planus	Chronic non-specific dermatitis
Lichen planus	Scleroderma
Psoriasis	Pemphigus foliaceus

Discussion:

Skin conditions could be mild while others can be life threatening. Several skin conditions present in a similar fashion, while others differ in presentation, bearing in mind that skin lesions could be atypical, with histologic variations. Change in architecture due to modification from rubbing and scratching, and prior intervention with topical agent before presentation can affect histologic diagnosis [10]. Failure to give or recollect predisposing or risk factors associated with these skin lesions increase their complexity. In this light, emphasis should be on an improved communication between the dermatologist and histopathologist [11] on detailed history and physical examination of the morphology, distribution, duration of skin lesions. This is important in reaching a diagnosis, as well as a list of differential diagnosis. Several investigations are helpful in reaching a definitive diagnosis of skin diseases, of which a skin biopsy looking at the histological patterns is of essence [12].

The pattern of skin diseases is influenced by the developing economy, level of literacy, social backwardness, varied climate, industrialization, access to primary health care, and different religions, rituals and cultural factors. Neoplastic lesion constituted 19.7% of all skin lesions in this study, which is much lower than papulosquamous and vesicobullous diseases. However, neoplastic lesions were the major entity in a study of Bezbaruah R et al [13] and Abubaker SD et al [14]. Among epidermal tumors, basal cell carcinoma is the commonest tumor in our study. Other studies reported [13, 15] epidermal cyst being the commonest epidermal tumor. Melanoma is infrequent tumor (1.5%) in this study, and it is similar in south Asian region in contrast to Europe, USA and Australia.

Cerroni et al. suggested that diagnostic accuracy could be improved with the addition of photographs of skin lesions with advancement in technology, and good clinical description of the lesion aided the histopathology diagnosis in cases where

differential diagnosis was not provided [16]. A recent study in (2018) on 455 individuals, pathology reports of skin biopsy specimens of patients with inflammatory skin disease by Seema Umarji et al, reported a correlation of 98%. It was noted that a longer list of differential diagnosis was not helpful to the pathologist and an accurate description of the lesions aids the pathologist [17].

Conclusion:

A correlation of clinicopathologic diagnosis with, respect to skin biopsies reported, with initial diagnosis made in clinic prebiopsy compared to the final histopathological diagnosis. The study supports the previous observations, and demonstrates that providing a few differential diagnosis, detailed history, physical examination in terms of description, distribution, duration of skin lesions and physician-pathologist alliance as well as individual training, with advanced diagnostic techniques enhances the accuracy of the histopathological diagnosis.

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