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Original Research Article

The Spectrum of Skin Biopsies from a Tertiary Care Hospital in North India

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ABSTRACT

Objective: To determine the spectrum of confirmed histopathological dermatoses and correlate the clinical and histopathological diagnosis over a 2-year period.

Materials and Methods: A total of 326 biopsy forms were analysed retrospectively from January 2013 to December 2014. The demographic details, lists of the clinical differential diagnosis and final diagnosis were studied and analysed. The correlation between the various clinical differential diagnoses and the final histopathological diagnosis was studied.

Results: Three hundred and twenty six biopsies were performed over a two year period. Most frequently biopsied disorders were Hansen's disease (HD) (16.9%), Non-infectious papulosquamous disorders (11.7%), Eczematous disorders (11.3%), Vesiculobullous disorders and Inflammatory disorders (6.7%). The specific histopathological diagnosis encountered were chronic dermatitis (8.6%), Lichen planus (6.1%), Borderline tuberculoid HD (5.5%) and Borderline lepromatous HD (4.3%). A positive correlation with the clinical diagnosis (up to 3 differential diagnoses) was seen in 234 (71.8%) cases. Histopathology report was no contributory in 15.3% of the cases showing only non-specific findings.

Conclusions: Hansen's disease still remains the primary clinical condition to be biopsied followed by papulosquamous disorders and eczemas. A close cooperation between the dermatologist and dermatopathologist is a must for accurate diagnosis and management of the patient.

Key words: Clinicopathological correlation, Chronic dermatitis, Hansen's disease, Spectrum of skin disorders, Skin biopsy.

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INTRODUCTION

Skin biopsy procedure is one of the most important, cost effective and simple test routinely done by the dermatologist for diagnosis and management of many skin conditions.

Though it is the gold standard procedure in dermatology, several factors determine the final diagnosis. The interpretation of the skin biopsy is dependent on the selection of the correct biopsy site and the technique used to harvest the specimen.

This is of utmost importance when dealing with certain dermatological conditions like Vasculitis, Panniculitis, Autoimmune blistering disorders, systemic diseases like Lupus erythematosus, Dermatomyositis, Stevens- Johnson Syndrome, Neoplastic disorders etc.[1]

Therefore, it is important to choose an appropriate site for biopsy and mention the relevant clinical information on the biopsy forms for the pathologists to accurately interpret the biopsy and aid to increase the clinic-pathological correlation which is pertinent to a dermatologist. The combination of clinical expertise and histopathological study is the most reliable diagnostic approach in reaching a definitive diagnosis in dermatology. Present study was conducted to determine the spectrum of confirmed histopathological dermatoses and correlate the clinical and histopathological diagnosis over a 2-year period.

MATERIALS AND METHODS

Study setting: The study was conducted in an 800 bedded premier teaching hospital offering undergraduate and post graduate training in dermatology in addition to other specialities. The hospital is situated in Ludhiana, Punjab, North west India with a population of 20 lakhs. The city is a major industrial hub for the region and the hospital attracts patients from the North western states of India.

A total of 326 biopsy forms were analysed retrospectively from January 2013 to December 2014. The demographic details, lists of the clinical differential diagnosis and final diagnosis were studied and analysed. The correlation between the various clinical differential diagnoses and the final histopathological diagnosis was studied. Data was entered in Microsoft excel and analysed using descriptive statistics using SPSS version 21.

Table 1: Distribution of cases based on Broad classification of the dermatological disorders with histopathological confirmation.

Broad category	Individual cases	Number	Total
Hansen's disease(HD)	Tuberculoid	4	55
	Borderline Tuberculoid	18	
	Borderline lepromatous	14	
	Lepromatous	6	
	Lepromatous disease with ENL	7	
	Polyneuritic	3	
	Histoid	3	
Non- Infectious papulosquamous disorders	Lichen Planus	20	38
	Psoriasis	10	
	Pityriasis lichenoides chronica	3	
	Pityriasis rubra pilaris	5	
Eczematous disorders	Chronic dermatitis	28	37
	Lichen simplex chronicus	1	
	Prurigo nodularis	8	
Vesiculobullous disorders	Pemphigus vulgaris	9	22
	Bullous pemphigoid	3	
	Chronic bullous disease of childhood	2	
	Dermatitis Herpetiformis	6	
	Subcorneal pustular dermatosis	2	
Inflammatory disorders	Graft versus host disease	7	22
	Erythema nodosum	6	
	Erythema induratum	4	
	Urticaria	5	
Vasculitis	Drug induced	2	15
	Urticarial	3	
	Leucocytoclastic vasculitis	5	
	Henoch schonlein purpura	5	
Pigmentation disorders	Ashy dermatosis	9	15
	Melasma	1	
	Post inflammatory hyperpigmentation	1	
	Vitiligo	4	
Tumor/nevi	Basal cell carcinoma	2	13
	Squamous cell carcinoma	2	
	Intradermal nevus	5	
	Pyogenic granuloma	3	
	Mycosis fungoides	1	
Disorders of connective tissue	Discoid lupus erythematosus	4	12
	Lichen sclerosus et atrophicus	3	
	Morphoea	5	
Granulomatous disorders	Lupus vulgaris	7	10
	Granuloma annulare	3	
Disorders of Hair	Cicatricial alopecia	11	11
Miscellaneous			109

RESULTS

Three hundred and twenty six biopsies were performed over a two year period from January 2013 to December 2014. Nearly 54.6% (178) specimens belonged to males.

The mean age at biopsy was 40.73 years (±17.54). The age distribution pattern revealed a wide distribution between 10-70 years. Paediatric skin biopsies constituted 1.8% of all the skin biopsies.

The broad spectrum of dermatological disorders frequently biopsied were Hansen's disease (HD) (16.9%), Non- infectious papulosquamous disorders (11.7%), Eczematous disorders (11.3%), Vesiculobullous disorders and Inflammatory disorders (6.7%). (Table1) Amongst the specific conditions, the common histopathological diagnosis encountered were Chronic dermatitis (8.6%), Lichen planus (6.1%), Borderline tuberculoid HD (5.5%) and Borderline lepromatous HD (4.3%). (Table 2)

The body site most frequently biopsied was trunk (30.1%) followed by leg (19.9%), face (9.2%) and scalp (6.4%).

A positive correlation with the clinical diagnosis (up to 3 differential diagnoses) was seen in 234 (71.8%) cases while in 205(62.9%) cases, positive correlation was seen with the first clinical differential diagnosis. Histopathology report was no contributory in 15.3% of the cases showing only non-specific findings.

Table 2: Demographic details and the most common histopathological diagnosis.

Dermatological diagnosis	Males	Females	Total	Percentage	Mean age at biopsy in years (+/-)
Chronic dermatitis	15	13	28	8.6	46.75 (16.77)
Lichen planus	11	9	20	6.1	39.5 (17.78)
Borderline Tuberculoid HD	14	4	18	5.5	35 (14.49)
Borderline lepromatous HD	10	4	14	4.3	39.79 (18.22)
Cicatricial alopecia	7	4	11	3.4	27.73 (15.79)
Psoriasis	8	2	10	3.1	55.2 (17.78)
Pemphigus vulgaris	5	4	9	2.8	47.56 (13.83)
Ashy dermatosis	2	7	9	2.8	35.89 (15.95)
Prurigo nodularis	3	5	8	2.5	48.25 (10.09)
Lupus vulgaris	3	4	7	2.1	39.5 (17.78)
Lepromatous Hansen's disease with ENL	4	3	7	2.1	40.14 (13.13)
Erythema nodosum	4	2	6	1.8	29.33 (7.17)

DISCUSSION

Skin biopsy is the gold standard diagnostic tool for establishing the diagnosis. In suspicious lesions and to corroborate the clinical diagnosis its need is even greater. It is an important teaching tool for the post graduate doctors as it reinforces knowledge and improves their clinical acumen.

This study describes the spectrum of common dermatological disorders as seen on histopathology and its correlation to the clinical diagnosis. There were 326 biopsies which were included in the study.

Hansen's disease (HD) was the most frequently biopsied condition. Of the 55 cases of HD biopsied, there were 41(74.5%) males. Borderline tuberculoid HD was the most frequent histopathological diagnosis (32.7%) followed by Borderline lepromatous HD (25.5%). Positive clinic-histopathological correlation was seen in 92.7 % of the cases. Shivaswamy et al.[2] reported a positive correlation of 74.7% whereas Moorthy BN et al.[3] showed a clinic-histopathological concordance of 62.6%. In this study 57.1% of the patients with lepromatous HD were in the age group of 41-50 years where as in the tuberculoid spectrum of the disease the prevalence was seen to be higher in the age group of 21-40 years (61.1%). In a study done by Grace DF et al[4], the total burden of the non-infectious papulosquamous disorders was 30.99%. In our study it constituted 11.7%. Of these, Lichen planus was seen in 52.6% of the cases while Psoriasis was diagnosed in 26.3% of the biopsy specimens. Lichen planus is commonly seen in the age group of 20-50 years.[5] In our study 65% of the biopsies were from this age group. Psoriasis was observed in 50% of the cases from the age group >60 years.

The vesiculobullos dermatoses constituted 6.7% of all the skin biopsies. Pemphigus vulgaris (40.9%) was the most common form of vesiculobullous disorder to be observed in this study, as also reported elsewhere in literature.[6] Skin biopsy correlated with the clinical diagnosis in 86.4% of all the cases in this group. The majority of the cases (55.6%) were reported in the age group of 30-50 years. The body site most frequently biopsied was trunk (30.1%) followed by leg (19.9%), face (9.2%) and scalp (6.4%) where as in the study conducted by Korfitis et al, the most common site for biopsy was head and neck (38.3%).[7]

Paediatric skin biopsies constituted 1.8% of all the skin biopsies done from our department while Grace DF et al reported a burden of 10.82% in their study.[8]

A positive correlation with the clinical diagnosis (up to 3 differential diagnoses) was seen in 234 (71.8%) cases while in 205 (62.9%) cases, positive correlation was seen with the first clinical differential diagnosis. This is similar to the results of Korfitis et al who found positive correlation in 68% instances.[7] Aslan C et al reported a positive correlation in 76.8% of the cases. They did not coincide in 23.2% instances.[9] However, another study reported a clinico-pathological correlation of 92%.[10] In this study no definitive diagnosis was reached on histopathology in 15.3% of the cases.

The cases which were labelled as non-specific dermatitis (28) were clinically Psoriasis (14.2%) Lichen planus and Eczemas (10.71%), Leucocytoclastic vasculitis and Cicatricial alopecia (7.14%).

CONCLUSIONS

Skin biopsy procedure is important for the dermatologist to confirm a suspected clinical diagnosis. Although it is done in a variety of dermatological conditions, Hansen's disease still remains the primary clinical condition to be biopsied followed by papulo-squamous disorders and eczemas. Skin biopsy should not only be done in suspicious skin lesions to establish the clinical diagnosis but also to document the clinical diagnosis in the common dermatological disorders. A close cooperation between the dermatologist and dermatopathologist is a must for accurate diagnosis and management of the patient.

Skin biopsy is an important learning tool in a teaching care hospital. A histopathology report which corroborates the clinical diagnosis improves the clinical acumen of the dermatologists, boosts their confidence and establishes clinical efficiency. It helps the dermatologists to manage the patients better, even in a resource poor setting where the facility for doing this simple yet important procedure is often available.

LIMITATIONS

This study is a retrospective analysis with a small sample size.

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