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Original Article

Clinicopathological consistency in diagnosis of skin disorders: a retrospective study of 371 histopathology reports

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Abstract

Objective To determine the relative indications and clinicopathological consistency of skin biopsy.

Methods 371 of 28466cases undergoing skin biopsy were reviewed and their histopathological reports evaluated for consistency with clinical diagnosis.

Results 371 (1.3%) cases needed skin biopsy for diagnosis. Of these, 67.4% cases were consistent, 19.1% were corroborative and 13.5% were inconsistent with clinical diagnosis.

Conclusion Providing proper history and clinical findings, provisional and differential diagnoses to pathologist increases the diagnostic yield of skin biopsy.

Key words
Skin biopsy, clinicopathological consistency.

Introduction

Unlike other branches of medicine, dermatologists rely upon fewer investigations while making a diagnosis. Skin biopsy is often considered as confirmatory in case of diagnostic dilemma and is the most common investigation sought by a dermatologist. Hence, a high diagnostic accuracy of this investigation is pursued. The yield of skin biopsy as a diagnostic tool in turn, depends upon a number of factors (discussed later) which are often neglected during the procedure. There are meagre studies on clinicopathological consistency in diagnosis of skin disorders. Pubmed search did not reveal a single Indian study in this context.

The aims of this study were to determine the relative indications of skin biopsies in various groups of skin disorders and to evaluate the clinicopathological consistency in diagnosis of various groups of skin disorders.

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Methods

This was a cross-sectional descriptive study conducted over a period of one year in atertiary care centre. Total number of patients attending the dermatology department in the specified periodwere recorded and those undergoing skin biopsies were evaluated. Patient particulars, brief history and clinical findings, provisional diagnosis and differential diagnosis (if any) were clearly mentioned in the biopsy requisition form. Special stain was asked for whenever required. We also took multiple biopsies whenever required. The slides were reviewed by a pathologist and a dermatopathologist.

For convenience of evaluation, we divided all the skin disorders in six groups namely; inflammatory disorders,granulomatous

disorders, vesicobullous disorders, connective tissue disorders, skin tumors and miscellaneous group.

We interpreted the histopathogical reports as follows:

1. *Consistent*- when provisional diagnosis and histopathological diagnosis was the same.
2. *Corroborative*- when histopathological diagnosis was consistent with one of the differential diagnoses.
3. *Inconsistent*- when histopathological diagnosis was not consistent with either provisional or differential diagnoses.

Correlation of clinical diagnosis with histological diagnosis was thoroughly studied. Data were analyzed using standard statistical tools.

Results

In the specified time period, 28466 patients attended the dermatology department. Among them371 (1.3%) patients underwent skin biopsy.The relativeindicationsof skin biopsies among these groups of dermatoses is shown in **Table 1**.Skin biopsy was indicated maximally in inflammatory disorders and minimally in vesiculobullous disorders.

The clinicopathological consistency among various groups of dermatoses is shown in **Figure 1** and **Table 2**.Histopathological diagnosis was consistent with the provisional diagnosis maximally in skin tumors and minimally in miscellaneous group.

Among the 371 cases, 250 (67.4%) were consistent with provisional diagnosis, 71 (19.1%) were corroborative with one of the differential diagnosis and 50 (13.5%) were inconsistent with the clinical diagnosis provided.

Table 1 Relative indications of skin biopsy among various groups of dermatoses (n=371).

Group of dermatoses	*Relative frequency (%)*
Inflammatory diseases	30.2
Granulomatous diseases	26.1
Vesicobullous diseases	3.2
Connective tissue disorders	7.3
Skin tumors	14.6
Miscellaneous	18.6

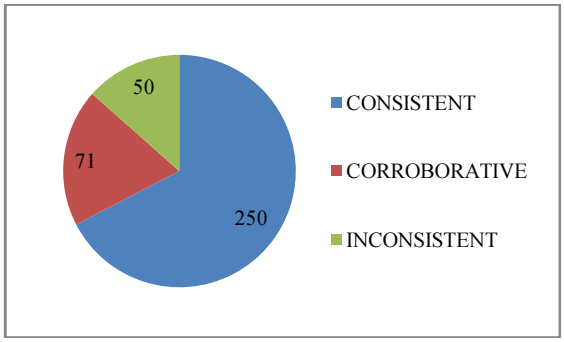

Figure 1 Pie diagram showing overall clinicopathological consisteny.

Discussion

Although there are many types of skin biopsy (viz. incisional, excisional, curettage, shave) punch biopsy is the preferred method by dermatologists. Diagnostic accuracy of punch biopsy depends upon a number of factors such as choice of lesion, choice of site, technique of biopsy, propermention of history and clinical diagnosis in biopsy requisition form, proper tissue fixation and staining and adequate cooperation between dermatologist and pathologist.[1-3]

Canan *et al.*[4] reviewed 3949 pathological reports retrospectively and found 76.8%clinico-pathological consistency. Bin Yap[3] found 92% clinico-pathological consistency, this high success rate being attributed to close cooperation between dermatologist and pathologist. Kortifis *et al.*[5] found the usefulness of skin biopsy as a diagnostic tool in 97.2% cases and clinicopathological consistency in 83.3% cases. However, the diagnostic yield of non-dermatologist while performing skin biopsy was only between 34% to 45% compared to that of dermatologist being 71% to 75% for

Table 2 Clinicopathological consistency among various groups of dermatoses (n=371).

Group of dermatoses	*Consistent*	*Corroborative*	*Inconsistent*	*Total*
Inflammatory diseases	71 (63.4%)	28(25%)	13 (11.6%)	112
Granulomatous diseases	67 (69.1%)	16 (16.5%)	14 (14.4%)	97
Vesicobullous diseases	9(75%)	2 (16.7%)	1 (8.3%)	12
Connective tissue disorders	17 (63%)	7 (25.9%)	3 (11.1%)	27
Skin tumors	43 (79.6%)	8 (14.8%)	3 (5.6%)	54
Miscellaneous	43 (62.3%)	10 (14.5%)	16 (23.2%)	69
Total	250 (67.4%)	71 (19.1%)	50 (13.5%)	371

inflammatory dermatoses and skin tumors respectively.[6] This depicts the importance of proper clinical diagnosis while correlating with pathological report.

As the present study was a cross-sectional study we took care of proper selection of lesion and site, proper technique of biopsy and special staining whenever required. Further, we clearly mentioned a brief history and clinical findings, provisional and differential diagnosis so as to maximise the yield. We found histopathological consistency with provisional diagnosis in 67.4% cases. However, when differential diagnoses were also considered the result increased to 86.5%. In our study, skin biopsy was indicated maximally in inflammatory disorders which may be due to high disease burden of this group of disorder. Small sample size was a limitation of our study.

Conclusion

Providing a good history, provisional and differential diagnosis to the pathologist while sending skin biopsy yields a high accuracy in pathological report. A multicentric cross-sectional study with a larger sample size will yield more accurate information on clinicopathological consistency in diagnosis of various cutaneous conditions.

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