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Original Research Article

A study to evaluate the indications for performing skin biopsies

Pradeep Balasubramanian[1]*, Anjali J. Anil[2]

[1]Department of Dermatology, SMIMS, Gangtok, Sikkim, India
[2]Department of Social Work, Hindusthan College of Arts and Science, Coimbatore, Tamil Nadu, India

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***Correspondence:**
Dr. Pradeep Balasubramanian,
E-mail: drprady85@gmail.com

ABSTRACT

Background: The skin biopsy is an invaluable tool done for the confirmation of several skin disorders. Skin biopsy serves as an indispensable tool in the diagnosis of skin disorders especially for the clinical presentation which has several differential diagnoses or diagnostic difficulties. The studies to determine the indications for which skin biopsy is routinely performed are few. Hence, we conducted this study.
Methods: We assessed the biopsy request forms of two consecutive years (from January 2017 to December 2018) to evaluate the indications for which the biopsies were performed. The statistical data were expressed as number and percentage.
Results: In the present study, 320 consecutive skin biopsy request forms were evaluated for the indications for performing skin biopsy. In the present study, the skin biopsy was done predominantly for the spongiotic disorders followed by granulomatous and psoriasiform disorders. Among the granulomatous disorders, skin biopsy was done commonly in case of Hansen's disease. In our study incisional biopsy was the technique often used followed by excisional and punch biopsy.
Conclusions: The common indications for which the skin biopsies were performed was determined in this study. This study bridges the gap since the studies performed in this aspect are lacking.

Keywords: Evaluation, Factual information, Biopsy request form

INTRODUCTION

Skin disorders account to the main component of the general practice workload.[1-3] The skin biopsy is an invaluable tool done for the confirmation of several skin disorders. Skin biopsy serves as an indispensable tool in the diagnosis of skin disorders especially for the clinical presentation which has several differential diagnoses or diagnostic difficulties. There are several types of skin biopsy techniques namely incisional biopsy, excisional biopsy and punch biopsy. Hematoxylin and eosin staining is performed routinely on the skin biopsy specimens prior to histopathologic examination. In necessary cases special stains, direct immunofluorescence and immunohistochemistry needs to be performed. We performed a study to assess the dermatologic disorders in which the skin biopsies were performed.

METHODS

We assessed the skin biopsy request forms of two consecutive years (from January 2017 to December 2018) to evaluate the indications for which the biopsies were performed. The study was performed in ANIIMS, Port Blair. All the biopsies performed during the study period were included in this study. The biopsy forms in which the diagnosis or differential diagnoses were not mentioned were excluded from this study. The study was

conducted after the ethical committee clearance. The Statistical data were expressed as number and percentage.

RESULTS

In the present study, 320 consecutive biopsy request forms were evaluated for the above mentioned details. All the forms were included in this study and none were excluded since the diagnosis or differential diagnoses were mentioned in all the biopsy request forms. (Table 1) illustrates the indications for which the biopsies were performed.

The Table 1 shows that the biopsies were commonly performed for the following disorders in the descending order: spongiotic disorders, granulomatous disorders, psoriasiform disorders, benign tumors, nevus and nevoid disorders, vasculitis disorders, lichenoid disorders and vesiculobullous disorders.

Table 1: Indications for which the skin biopsies were performed.

Dermatologic disorder	Number of biopsies (%)
Psoriasiform disorders	42 (13.13)
Lichenoid disorders	24 (7.5)
Granulomatous disorders	48 (15)
Vasculitic disorders	24 (7.5)
Spongiotic disorders	64 (20)
Vesiculobullous disorders	9 (2.8)
Deposition disorders	4 (1.25)
Nevus and nevoid disorders	25 (7.8)
Benign tumors	36 (11.25)
Cutaneous malignancies	4 (1.25)
Others	40 (12.5)
Total	320

Among the spongiotic dermatitis, the biopsy was commonly performed in the following cases: Atopic dermatitis, seborrheic dermatitis, allergic contact dermatitis, photo allergic dermatitis, erythroderma, airborne contact dermatitis, eczematous PMLE. Atopic dermatitis constituted to the maximum number of cases among the spongiotic dermatitis (n=22) for which biopsy was performed.

Among the granulomatous disorders, Hansen's disease was the common indication for which the biopsy was performed. The biopsy in the case of patients with Hansen's disease was performed in doubtful cases, prior to initiation of MDT and post MDT to assess the efficacy of the therapy. Table 2 depicts the clinical spectrum of Hansen's disease for which biopsy was commonly requested for. Table 3 mentions the types of the biopsy procedure performed in the patients

The excision biopsies were performed in the smaller lesions if the diagnosis was in doubt or the excised specimen in case of disorders like epidermoid cyst, lipoma, etc were sent for histopathologic confirmation routinely.

The special stains, immunohistochemistry and DIF was also requested for the relevant cases in this study. The special stains were mostly requested for cases of Hansen's disease where *Fite's* stain was used. Direct immune fluorescence was requested for in the case of autoimmune vesiculobullous disorders and vasculitic disorders. Immunohistochemistry was requested for in the cases where cutaneous lymphomas were suspected.

Table 2: Spectrum of Hansen's disease for which skin biopsy was performed.

Spectrum of Hansen's disease	Number (%)
Tuberculoid Hansen	24 (50)
Borderline tuberculoid Hansen	6 (12.5)
Mid-borderline Hansen	2 (4.17)
Borderline lepromatous Hansen	4 (8.33)
Lepromatous Hansen	6 (12.5)
Histoid Hansen	2 (4.17)
Type 1 reaction	2 (4.17)
Type 2 reaction	2 (4.17)

Table 3: Types of biopsy procedures performed.

Type of biopsy procedure	Number of biopsies (%)
Incisional biopsy	246 (76.88)
Excisional biopsy	54 (16.88)
Punch biopsy	20 (6.25)

DISCUSSION

Skin biopsy is a simple and inexpensive tool in the diagnostic armamentarium of dermatologist. It not only solves the diagnostic dilemma but also helps in diagnosing unusual disease in cases in which the given disease was not diagnosed. Several studies emphasize on the fact that histopathologic evaluation is the gold standard for confirmation of dermatologic disease.[1,2] The success of histopathologic reporting depends on several factors such as choosing the right biopsy technique, choosing the ideal biopsy site, mentioning the necessary clinical information in the biopsy request form, proper processing of the sample, comprehensive reporting and performing the special stains, immunohistochemistry or DIF in the needful circumstances.[4-6]

In the present study, the skin biopsy was done predominantly for the spongiotic disorders followed by granulomatous and psoriasiform disorders. Among the granulomatous disorders, skin biopsy was done commonly in case of Hansen's disease. The incidence of Hansen's disease is higher in Andaman and Nicobar because of the migrant population who come for the labor and construction works. In the study performed by

Korfitis et al the biopsy was performed commonly to rule out cutaneous malignancies since the incidence of the cutaneous malignancies are higher in western population.[7]

Skin biopsy technique plays an important role in the success of the dermatopathologic reporting. The site of the biopsy and adequacy of the sample are the essential constituents. In our study incisional biopsy was the technique often used followed by excisional and punch biopsy. This is in contrast to the other studies where punch biopsy is the commonly used biopsy technique.[8] The diagnostic accuracy can be increased by performing additional investigations such as immunohistochemistry and direct immunofluorescence.[9,10] It was also observed that the mention of the essential details in the biopsy request forms plays a crucial role in improving the diagnosing accuracy of skin biopsy.[6]

CONCLUSION

We performed this study with the emphasis on the indications for performing the skin biopsy. It was witnessed that spongiotic, granulomatous and psoriasiform disorders are the common indications for which skin biopsy was performed in our center. We performed this study since the study conducted in this aspect are few.

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