The Histopathological Profile Of Non-Neoplastic Dermatological Disorders With Special Reference To Granulomatous Lesions - Study At A Tertiary Care Centre In Pondicherry

R Singh, K Bharathi, R Bhat, C Udayashankar

Abstract

BackgroundDermatologic disorders are common in many countries but the spectrum varies greatly. The objective of this study was to determine the histopathological profile of non-neoplastic dermatological lesions, to study the morphology and attempt to find the etiology of granulomatous lesions on skin biopsies.

MethodsThis is a retrospective study over a period of two years in the department of pathology, IGMC &RI. Out of a total of 248 skin biopsies received, 112 cases with non-neoplastic skin lesions were included in the study. Incisional biopsy, excision biopsy and punch biopsy were done to obtain tissue for histopathological examination. Slides stained with routine stain and special stains like Ziehl - Neelsen stain, Periodic Acid Schiff, Alcian blue and Fite faraco were reviewed. Data entry and analysis were done using statistical software SPSS for Windows Version 16.0 (SPSS Inc., Chicago, IL, USA). Percentages were calculated for categorical variables. Chi-square test was used for comparison of proportions of different groups. Chi-square test for trend was used for studying the linear trend in occurrence of various skin lesions with age. All p values < 0.05 were considered significant, while p values between 0.05 and 0.10 were considered marginally significant.

ResultsA total of 112 patients were included in the study, 61 cases (54.5%) males and 51 cases (45.5%) females. In males, the commonest lesions were nonspecific dermatoses (n=17, 27.9%) followed by granulomatous lesions (n-14, 23%) and in females the commonest lesions were granulomatous lesions (n= 12, 23.5%) followed by nonspecific dermatoses (n= 11, 21.6%)(Table 1). The sex distribution of various non-neoplastic lesions was of no statistical significance except for vasculitis which was commoner in females (p value-0.0175). Miscellaneous lesions included cases of Hidradenitis suppurativa , folliculitis and lichen sclerosus et atrophicus. The prevalence of calcinosis cutis was highest in the age-group 41-60 years (p = 0.0117) (Table 2). All cases of nonspecific ulcers (p = 0.0389) and vasculitis ( 0.0679) were also higher in the same age group. Calcinosis cutis and vasculitis showed a statistically significant increasing linear trend with age (p value 0.0025 and 0.0140, respectively) (Figure 1). Similarly, lichen planus showed a statistically significant decreasing linear trend with age (p value= 0.0378) (Figure 1). 26 out of 112 (23.2%) skin biopsies, were found to have a granulomatous reaction pattern. The commonest etiology of granuloma in our study was leprosy accounting for 12 cases followed by 11 cases of tuberculosis. Less common causes included erythema nodosum and granuloma annulare (Table 3). The typified 5 cases of tuberculosis were lupus vulgaris (3 cases) and tuberculosis verrucosa cutis (2 cases). Special stain for AFB were positive in 11.5% of all cases.

ConclusionsSkin biopsies with non-neoplastic lesions constituted 45% of the total number of skin biopsies at our institute. The age distribution pattern indicated highest percentage in the 41-60 year age group (36.6%). The sex distribution pattern revealed a male preponderance of 54.5% compared to 45.5 % females. Granulomatous dermatoses are still rampant, infections forming an important cause of granulomatous dermatitis with leprosy and tuberculosis as the leading causes. Majority of the cases of leprosy were borderline tuberculoid (BT), followed by tuberculoid (TT) leprosy . Demonstration of acid fast bacilli by ZN stain is specific, however, they are not detected with ease thereby further emphasizing the significance of adequate clinical data and workup which helps in elucidation of specific etiology.

INTRODUCTION
The pattern of skin diseases varies from one country to another and across different parts within the same country. Studies from developing countries conducted over a period
of years in the past have reported high prevalence of skin
disorders, the spectrum of which has been highly variable.
Our study aimed at describing the histopathological profile
of non-neoplastic dermatological disorders. Granulomatous
dermatitis frequently poses a diagnostic challenge to
dermatopathologists, since an identical histologic picture is
produced by several causes, and, conversely, a single cause
may produce varied histologic patterns. Therefore in the
present study an attempt has been made to classify
 granulomatous dermatitis based on histopathology and find
the etiology.

METHODS
STUDY DESIGN AND SETTING
This is a retrospective study over a period of two years.

SAMPLING TECHNIQUE
The study was carried out in the Department of Pathology,
Indira Gandhi Medical College and research Institute
(IGMC&RI), Pondicherry. All the skin biopsies received
from May 2010 to April 2012 were reviewed and cases of
non-neoplastic skin lesions selected for study in detail.
Clinical history and relevant data were recorded from
request forms of biopsies received.

CLINICAL AND LABORATORY WORK-UP
Dermatological diagnosis was made mainly clinically. Skin
biopsies were taken as appropriate for routine histological
examination. Slides stained with routine stain and special
stains like Ziehl - Neelsen stain, Periodic Acid Schiff, Alcian
blue and Fite faraco were reviewed.

DATA ANALYSIS
Data entry and analysis were done using statistical software
SPSS for Windows Version 16.0 (SPSS Inc., Chicago, IL,
USA). Percentages were calculated for categorical variables.
The Chi-square test was used for comparison of proportions
different groups. Chi-square test for trend was used for
studying the linear trend in occurrence of various skin
lesions with age. All p values < 0.05 were considered
significant, while p values between 0.05 and 0.10 were
considered marginally significant.

ETHICAL ISSUES
Ethical clearance was obtained from the Ethics Board.

RESULTS
A total of 112 patients were included in the study, 61 cases
(54.5%) males and 51 cases (45.5%) females. In males, the
commonest lesions were nonspecific dermatoses (n=17,
27.9%) followed by granulomatous lesions (n=14, 23%) and
in females the commonest lesions were granulomatous
lesions (n= 12, 23.5%) followed by nonspecific dermatoses
(n= 11, 21.6%) (Table 1). The sex distribution of various
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except for vasculitis which was commoner in females (p
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Hidradenitis suppurativa, folliculitis and lichen sclerosus et
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vasculitis showed a statistically significant increasing linear
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significant decreasing linear trend with age (p value 0.0378)
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26 out of 112 (23.2%) skin biopsies, were found to have a
granulomatous reaction pattern. The commonest etiology of
granuloma in our study was leprosy accounting for 12 cases
followed by 11 cases of tuberculosis. Leprosy cases were
further classified into sub-groups according to Ridley and
Jopling. Majority of the cases were borderline tuberculoid
(BT), followed by tuberculoid (TT) leprosy. Less commonly
seen were (LL) leprosy and borderline lepromatous leprosy
(BL). The typified 5 cases of tuberculosis were lupus
vulgaris (3 cases) nd tuberculosis verrucosa cutis (2 cases).
Special stain for AFB were positive in 11.5% of all cases.
Less common causes of granulomatous reaction included
erythema nodosum and granuloma annulare (Table 3).
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DISCUSSION

This study has documented the histopathological profile of non-neoplastic skin lesions at a tertiary care centre in Pondicherry. The sex distribution pattern revealed that most of the patients were males (61%) (Table 1). The age distribution pattern revealed that the maximum biopsies received (36.6%) were in the age range of 41-60 years and the least number were in the age range of 61-80 years (11.6%) (Table 2). An analysis of the broad categories revealed that the most frequently encountered lesions were nonspecific dermatoses (25%) and granulomatous lesions (23.2%) (Table 1). In our study 26 out of 112 cases showed a granulomatous reaction pattern. This included 14 males and 12 females. This finding is in accordance with Dhar et al. in India who found males to be involved more frequently. However a study done in Pakistan by M Naved Uz Zafar et al showed that females are more susceptible to develop granulomatous lesions of skin. Infectious granulomatous lesions were predominant in the present study in accordance with the study done by Bal et al. The commonest etiology of granuloma in our study was leprosy accounting for 12 cases. Borderline tuberculoid leprosy was the most common...
CONCLUSIONS

Non-neoplastic lesions biopsies constituted 45% of the total number of skin biopsies at our institute. The age distribution pattern indicated highest percentage in the 41-46 year age group (36.6%). The sex distribution pattern revealed a male preponderance of 54.5% compared to 45.5% females. Granulomatous dermatoses are still rampant, infections forming an important cause of granulomatous dermatitis with leprosy and tuberculosis as the leading causes. Demonstration of acid fast bacilli by ZN stain are specific; however, they are not detected with ease, thereby further emphasizing the significance of adequate clinical data and workup which helps in elucidation of specific etiology.

References

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