

Original article:

Assessment of Clinico-Pathologic Consistency in Diagnosing Skin Lesions: An Institutional Based Study

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Abstract

Background: The delivery of dermatologic services is facing several challenges, which in large part consist of the changes and restrictions in health care delivery implemented over the last decades. Present study was planned to assess the clinico-pathologic consistency in diagnosing dermal pathologies.

Materials & Methods: The present investigation included assessment of clinico-pathologic consistency in diagnosing skin lesions. A total of 100 patients were included in the present study for the treatment of different dermal pathologies. Biopsies were sent to the department of general pathology for Histopathological examination and Histopathological diagnosis was obtained. Histopathological diagnosis was matched with clinical diagnosis and clinico-pathologic consistency was assessed. All the results were summarized in Microsoft excel sheet.

Results: The overall consistency of clinical and pathological diagnosis was 79 percent. In 45 patients with benign skin lesions, clinico-pathologic consistency was present in 35 patients while difference in diagnosis was seen in remaining 10 patients.

Conclusion: Both clinico-pathologic correlations are necessary for accurately diagnosing dermal pathologies.

Key words: Clinico-Pathologic, Skin Lesions.

INTRODUCTION

The delivery of dermatologic services is facing several challenges, which in large part consist of the changes and restrictions in health care delivery implemented over the last decades.^{1,2} These restrictions are eased because of increased patient dissatisfaction and mounting evidence of the costefficient delivery of skin health care by dermatologists versus nondermatologists.^{3,4} Most recently, dermatologic surgery encountered activities at the state level to regulate office-based surgery.⁵

The skin biopsy is one of the most important diagnostic tools in dermatology. Quite often, the clinician will submit a specimen to the dermatopathologist with the expectation that a specific diagnosis will be provided in return.^{6,7} Although this may be the case with a straightforward neoplastic lesion, for example, a basal cell carcinoma (BCC), biopsy of an inflammatory dermatosis is more complicated because often several dermatoses appear histologically similar. Subtle changes in the infiltrate or architectural pattern lead to variability in the morphological appearance of a given inflammatory disease, making histopathological diagnosis intrinsically difficult.^{8,9} Hence; present study was planned to assess the clinico-pathologic consistency in diagnosing dermal pathologies.

MATERIALS & METHODS

The present investigation was conducted in Department of Dermatology, Santosh Medical College & Hospital, Ghaziabad, Uttar Pradesh (India) and included assessment of clinic-pathologic consistency in diagnosing skin lesions. For the present study, ethical clearance was obtained from the institutional ethical committee.

Inclusion criteria for the present study included:

- Patients reporting to the department of dermatology for treatment of skin lesions,
- Patients who underwent biopsy for Histopathological examination of the skin lesions,
- Patients with negative history of presence of any systemic illness

After meeting the inclusion criteria, a total of 100 patients were included in the present study for the treatment of different dermal pathologies. Detailed clinical history of all the patients was obtained. Medical and clinical examination of all the patients was carried out. Past medical history was obtained of all the patients. Biopsies were sent to the department of general pathology for Histopathological examination and Histopathological diagnosis was obtained. Histopathological diagnosis was matched with clinical diagnosis and clinico-pathologic consistency was assessed. All the results were summarized in Microsoft excel sheet and were analyzed by SPSS software.

RESULTS

A total of 100 patients were included in the present study. Mean age of the patients of the present study was 45.8 years. Majority of the patients belonged to the age group of 20 to 40 years. There were 64 males and 36 females in the present study. The overall consistency of clinical and pathological diagnosis was 79 percent. In 45 patients with benign skin lesions, clinico-pathologic consistency was present in 35 patients while difference in diagnosis was seen in remaining 10 patients.

Table 1: Demographic distribution of patients

Parameter	Number of subjects	
Age group (years)	Less than 20	25
	20 to 40	40
	41 to 60	20
	More than 60	15
Gender	Male	64
	Female	36

Graph 1: Gender distribution of subjects

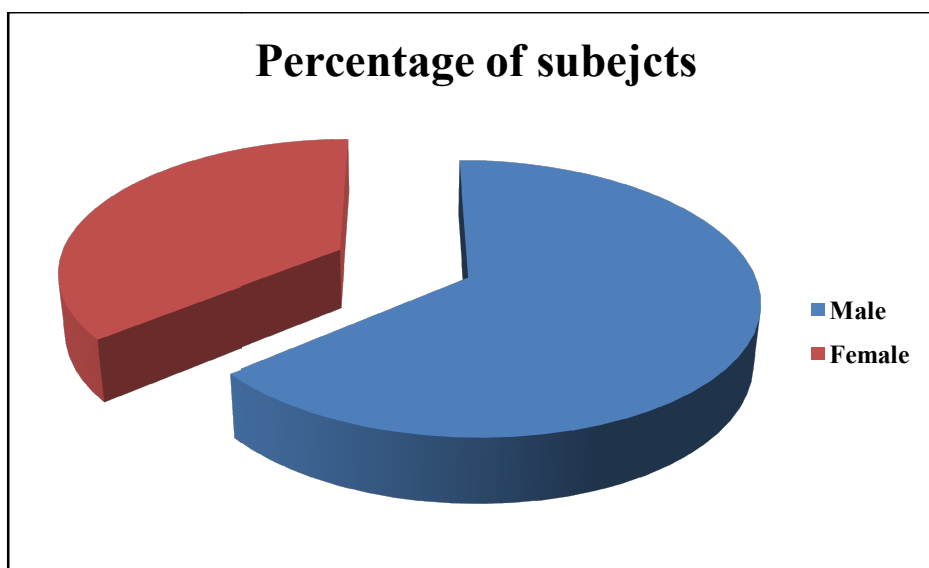
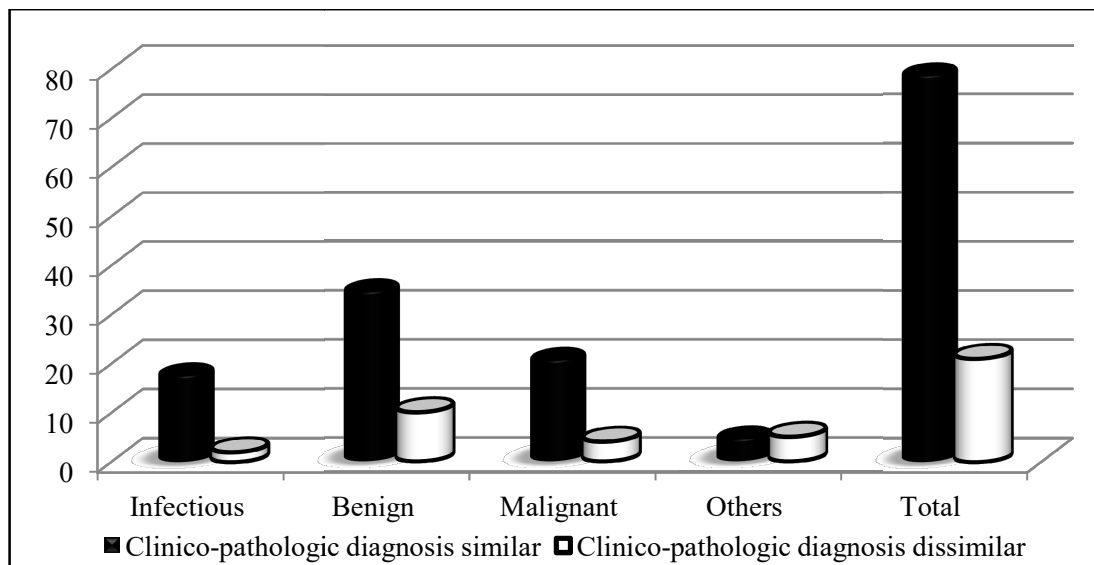


Table 2: Clinico-pathologic consistency

Type of dermatologic pathology	Clinico-pathologic diagnosis similar	Clinico-pathologic diagnosis dissimilar	Total
Infectious	18	2	20
Benign	35	10	45
Malignant	21	4	25
Others	5	5	10
Total	79	21	100

Graph 2: Graphical presentation of clinico-pathologic consistency



DISCUSSION

The present study was carried out in the department of dermatology and it included assessment of clinico-pathologic consistency in diagnosing skin lesions. A total of 100 patients were included in the present study. Mean age of the patients of the present study was 45.8 years. Majority of the patients belonged to the age group of 20 to 40 years. There were 64 males and 36 females in the present study. Sellheyer K et al assessed the diagnostic abilities of nondermatologist physicians who performed various types of skin biopsies and compared them with those of dermatologists. The clinical diagnoses of family physicians, plastic, general, and orthopedic surgeons, and internists and pediatricians versus dermatologists were correlated with the histopathologic diagnoses. In total, 4451 cases were analyzed. Dermatologists diagnosed twice the number of neoplastic and cystic skin lesions correctly (75%) than nondermatologists (40%). The clinical diagnosis rendered by family practitioners matched the histopathologic diagnosis in only 26% of neoplastic and cystic skin lesions. Plastic surgeons, who performed the largest number of cutaneous surgical procedures among the nondermatologists, did better in the recognition of skin tumors than family physicians, but still had a diagnostic accuracy rate of only 45%. Inflammatory skin diseases were correctly diagnosed in 71% of the cases by dermatologists but in only 34% of the cases by nondermatologists. The overall accuracy of the clinical diagnosis depends heavily on the clinicopathologic correlation.¹⁰ Rajaratnam R et al assessed the value of the skin biopsy as a diagnostic test for inflammatory dermatoses. One hundred consecutive skin biopsy specimens where an inflammatory dermatosis was queried were reviewed. To assess the diagnostic ability of the skin biopsy, the frequency with which a correct diagnosis was made based on histopathological analysis alone was recorded, that is, an initial "blind" diagnosis made without clinical data. Once this was recorded, the clinical history was provided and a posthistory diagnosis reached. The posthistory diagnosis was then compared with the final working diagnosis in the patient case notes. In 55% of cases, histology was able to provide a prehistory specific diagnosis. In 31% of cases, histology was not able to provide a specific diagnosis but could provide a differential

diagnosis. In two thirds of these (20 of the 31 cases), the diagnosis was reached posthistory with clinicopathologic correlation. In 12% of cases, histology could only provide a pattern analysis, and in 2% of cases, only a descriptive report could be issued. In 13% of cases, the biopsy provided the final working diagnosis, which had not been considered clinically. The skin biopsy for inflammatory dermatoses is clearly a worthwhile investigative procedure. Prehistory blind histology based on microscopic data provided an accurate diagnosis correlating to the working diagnosis in 53% of cases. The diagnostic boundaries of dermatopathology are such that in an additional 25 cases (25%) a diagnosis was reached with aid of clinical data proving the importance of providing a well-thought-out differential diagnosis. Overall, in 78% of cases, histology with the aid of clinical information was able to provide an accurate diagnosis correlating to the working diagnosis.¹¹

The overall consistency of clinical and pathological diagnosis was 79 percent. In 45 patients with benign skin lesions, clinico-pathologic consistency was present in 35 patients while difference in diagnosis was seen in remaining 10 patients. García-Solano J et al compared the effectiveness of the histopathological diagnosis in inflammatory skin lesions according to the department performing the biopsy. They carried out a retrospective study on the reports for pathological study requests and the histopathological reports from the year 2003 from the Pathology Department of Hospital Santa María del Rosell. The total number of inflammatory skin lesions studied was 97. The Dermatology Department performed 48 biopsies, and the non-dermatology departments performed 49. There was less clinical data in the reports sent by the non-dermatological departments than in those from the Dermatology Department. The pathologist made a specific diagnosis in 77 % of the biopsies performed by the Dermatology Department, compared to 41 % of the biopsies sent by the non-dermatology departments ($p < 0.001$). There are no statistically significant differences among the specific diagnoses made by the departments that make up the non-dermatology group. The histopathological diagnoses made in the biopsies sent from the Dermatology Department are more specific (77 %) than those made in the biopsies performed by the non-dermatology departments (41 %).¹²

CONCLUSION

From the above obtained results, it can be concluded that both clinico-pathologic correlations are necessary for accurately diagnosing dermal pathologies. However; further research is recommended.

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