

To Evaluate the Frequency and Patterns of Different Cutaneous Granulomatous Lesions: Histopathological Analysis in Darbhanga Medical College, Laheriasarai

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Abstract

Aim: To evaluate the frequency and patterns of different cutaneous granulomatous lesions.

Material & Method: A total of 100 cutaneous lesion biopsies showing granuloma formation studied retrospectively in the Department of Pathology, Darbhanga Medical College, Laheriasarai, Darbhanga, Bihar, India over a period of 2 years. Clinical findings and other related information were obtained from requisition forms of biopsies received.

Results: Infectious granulomatous dermatoses were very common, only one case of sarcoidosis was found. Most cases of infectious dermatoses were noted in 21 to 30 years comprising 38% cases.

Conclusion: Leprosy contribute the major cause of granulomatous dermatoses in this study. Histopathology is gold standard for diagnosis and sub classification of cutaneous granulomatous lesion with a proper history and clinical details.

Keywords: Granuloma, Leprosy, Skin biopsy

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Introduction

Granulomatous skin lesions are distinctive pattern of chronic inflammatory response of skin due to reaction against various organic and inorganic antigens [1-2]. Granulomas are characterized by focal collection of epithelioid cells or histiocytes, admixed with variable number of leucocytes (especially mononuclear cells) and multinucleated giant cells. Granulomatous reaction is a type IV hypersensitivity reaction evoked by poorly soluble reactive substances. Six types of

granulomatous skin lesions are identified according to cellular constituents and associated changes: 1) tuberculoid, 2) sarcoidal, 3) necrobiotic, 4) suppurative 5) foreign body and 6) histoid type granuloma [3-4].

The histological appearances will also depend on the stage of the disease process and treatment status. Fully developed granulomas with sheets of epithelioid histiocytes and giant cells are easily

recognized, but more subtle lesions containing a few epithelioid histiocytes still qualify as granulomatous lesions. The occurrence of different types of granulomatous lesions of the skin varies according to the geographical location. It is necessary in any granulomatous dermatitis to exclude an infectious cause. [5]

So cutaneous granulomatous lesion often present as a diagnostic challenge to pathologists and dermatologists. Granulomatous dermatoses due to infectious causes are very common and leprosy and tuberculosis are the leading etiologies. [5-6] Histopathology with routine and special stains play important role in identifying the specific infectious agent and in classification of Hansen disease. [7-8]

This study was conducted with the aim to evaluate the frequency and patterns of different cutaneous granulomatous lesions with its clinico-histopathological correlation to reach etiological diagnosis.

Material & Method:

A total of 100 cutaneous lesion biopsies showing granuloma formation studied retrospectively in the Department of Pathology, Darbhanga Medical College, Laheriasarai, Darbhanga, Bihar, India over a period of 2 years. Clinical findings and other related information were obtained from requisition forms of biopsies received.

Methodology

Cutaneous biopsies were routinely processed and stained with H&E and special histochemical stains like Ziehl Neelsen (ZN) wherever necessary. Skin lesions having granuloma formation histopathologically were involved in the study. Cases without any granuloma formation and inadequate biopsies were excluded. Cases of cutaneous granulomatous lesion were studied on the basis of their histopathological and clinical findings.

Results:

Among 100 cases were studied in which male predominance was noted with 61% cases and females constituted 39% case providing M: F ratio of 1.5:1. [Figure 1]

Most of the patients were noted in age group of 21 to 30 years (32%) cases followed by 23% cases in 31 to 40 years. [Table 1]

Infectious granulomatous dermatoses were very common, only one case of sarcoidosis was found. Most cases of infectious dermatoses were noted in 21 to 30 years comprising 38% cases. Leprosy remained the significant causative reason for infectious granulomatous dermatoses succeeded by tuberculosis of skin. Borderline tuberculoid leprosy was found to be predominant, constituting 25% cases followed by indeterminate and lepromatous leprosy both had 23% cases, tuberculoid leprosy (20%) case and 11% of Borderline lepromatous. [Table 2]

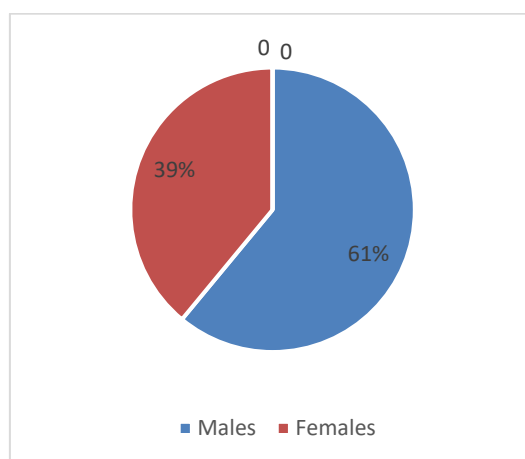
Table 1: Shows distribution according to age group

Age distribution	Number of cases (N)
1-10	2
11-20	11
21 -30	32
31-40	23
41-50	16
51-60	8
61-70	6
71-80	1
81-90	1

Total	100
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Table 2: Shows distribution according to etiology of granulomatous skin lesion

Disease	Number of cases(N)
Indeterminate	23
Tuberculoid Leprosy	20
Borderline Tuberculoid	25
Borderline Lepromatous	11
Lepromatous Leprosy	19
ENL	1
Lupus Vulgaris	1

**Fig. 1: Sex distribution (n=100)****Discussion:**

Granulomatous inflammation is a type-IV hypersensitivity reaction to an antigen. Various infectious and non-infectious granulomatous dermatoses are frequent among the population of eastern part of India. Definitive etiological diagnosis is important for their management. Histopathology is a gold standard tool for correct diagnosis of various granulomatous skin lesions. Microscopically, wide spectrum of histopathological features of different granulomatous lesions was observed in the present study. We classified the lesions based on histomorphology and etiology of the granulomatous diseases. [9]

Granuloma formation is due to type IV hypersensitivity reaction elicited by infectious and noninfectious antigen. Granulomatous dermatoses are common in North India with overlapping clinical presentations. So, it becomes important to

catch the definitive etiological diagnosis for their treatment. [10] Histopathology plays a pivotal role for confirmatory diagnosis like in several diseases of other system of the body. [6]

In the study by Dutta et al. [11] leprosy was the commonest followed by fungal infections and then by tuberculosis. Majority of the lesion were affecting upper extremity in our study which was similar to Dutta's study [7] and contrary to Zafar's study [4] where head and neck were commonly affected.

Extra-nasal rhinosporidiosis is common at ocular and head neck region and present as nodular skin lesions with granular reddish surface [12]. Granuloma formation and giant cells are very common inflammatory reaction against the chitinous wall of sporangium and spores [13].

Bal et al [14] found 5% positivity Z-N staining in cases of Lupus vulgaris. Z-N

staining is specific for acid fast bacilli, still its positivity is low and varies with different studies. The present study did not revealed any case of cutaneous leishmaniasis. Rubina et al [15] found 56.7% cases in Pakistan. [16,17]

Both the cases of cutaneous leishmaniasis were male and presented with itchy nodulo-ulcerated skin lesions at upper extremities and face. Microscopy of cutaneous leishmaniasis revealed heavy plasma cell infiltration at sub epithelial tissue and macrophages containing amastigote forms in case of early lesions [15]. Leishman Donovan (LD) bodies were demonstrable in both the cases in our study. Bal et al. found LD bodies in 50% of the leishmaniasis cases in their series [14]. Leishmania skin test and staining of the exudates by Giemsa & Wrights stain are the ancillary tests for diagnosis [5].

Conclusion:

Leprosy contributes the major cause of granulomatous dermatoses in this study. Histopathology is gold standard for diagnosis and sub classification of cutaneous granulomatous lesion with a proper history and clinical details.

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