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Original Research Article

A Clinicopathological Study of Patients with Cutaneous Granulomatous Lesions with Reference to Special Stain

Madhusmita Choudhury[1], Monoj Kumar Deka[2], Arindam Das[3], Soumistha Das[4], Salman Ahmed Choudhury[5]

[1]Senior Resident, Department of Pathology, Silchar Medical College &Hospital, Silchar, Assam
[2]Associate Professor, Department of Pathology, Silchar Medical College &Hospital, Silchar, Assam
[3]Assistant Professor, Department of Pathology, Silchar Medical College &Hospital, Silchar, Assam
[4]Post Graduate Trainee, Department of Pathology, Silchar Medical College &Hospital, Silchar, Assam
[5]Post Graduate Trainee, Department of Pathology, Silchar Medical College &Hospital, Silchar, Assam

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Corresponding Author: Dr. Salman Ahmed Choudhury
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Abstract:

Granulation reaction pattern is defined as "Granulomatous inflammation is a form of chronic inflammation characterized by collections of activated macrophages, often with T lymphocytes, and sometimes associated with central necrosis". Granulomatous disease comprises some of the widespread diseases in the world such as leprosy and tuberculosis. Granulomatous inflammation in the skin could be due to infectious or non-infectious causes. Common infectious causes of granulomatous skin lesions include leprosy, TB, leishmaniasis and fungal infections.

Uses of special stains such as ZN stain for TB, Fites stain for leprosy, Giemsa stain for leishmaniasis; Grocott methenamine silver stain and PAS stain for fungal infections may be helpful.

Keywords: Cutaneous, Granulomatous, Special Stain.

Introduction

According to DORLAND, the term "granulomatous" was expressed initially by VIRCHOW to express a tumor like mass or nodule of granulation tissue. Granulation reaction pattern is defined as "Granulomatous inflammation is a form of chronic inflammation characterized by collections of activated macrophages, often with T lymphocytes, and sometimes associated with central necrosis." Granulomatous disease comprises some of the widespread diseases in the world such as leprosy and tuberculosis.

Granulomatous disorder is a large family that has the histological denominator of granuloma formation. A granuloma consists of inflammatory cells, mononuclear cells, usually as a result of the persistence of a non-degradable product and is an active process of cell mediated hypersensitivity. Six histological types of granuloma can be identified based on the consistent cells and other changes within the granulomas.

1. Tuberculoid
2. Sarcoidal
3. Necrobiotic
4. Suppurative
5. Foreign Body
6. Miscelleneous.

Granulomatous inflammation in the skin could be due to infectious or non-infectious causes. In tropical countries infectious etiology predominates accounting up to 90% in some series. Common infectious causes of granulomatous skin lesions include leprosy, TB, leishmaniasis and fungal infections. Uses of special stains such as ZN stain for TB, Fites stain for leprosy, Giemsa stain for leishmaniasis; Grocott methenamine silver stain and PAS stain for fungal infections may be helpful. However special stains are specific but relatively less sensitive methods for demonstrating organisms when the organism density is low. Therefore in such situations, histopathological correlations play a significant role. The aim of the study is to study the clinicopathological correlations of commonly occuring granulomatous lesions (both infectious and non-infectious) and to study the distribution of granulomatous cutaneous lesions, based on age and sex of both infectious and non-infectious.

Materials and Methods

The present study was a case based prospective cross-sectional study conducted in the Department of Pathology in collaboration with Dermatology,

Venereology, and Leprology, Department of Silchar Medical College and Hospital, Silchar for a period extended from June 2019 to May 2020. The clinical material consists of all clinically diagnosed and histologically confirmed cutaneous granulomatous lesions. The study consists of 52 cases of all ages from both the sexes. All types of skin biopsies diagnosed both clinically and histopathologically to have granulomatous lesions are included in the study.

Method of Collection of Data: The patient was selected randomly irrespective of age, sex and socioeconomic status. Cases were taken up for study after appropriate consent. A brief history was taken from the requisition form.

Methodology: All specimens were fixed in 10% formalin solution and paraffin blocks were prepared which was cut at 4-5 microns thickness and was subsequently stained with HnE. Few of the special stains was done in some cases like ZN stain for both leprosy and TB , Fite Feraco stain for leprosy, PAS stain for fungal infections. Granulomatous disorders comprise a large family sharing the histological denominator of granuloma formation. So our study was mostly confined to the infective granulomas and determination of their etiological agents like

1. Bacterial Granuloma
2. Fungal Granuloma
3. Parasitic Granuloma
4. Foreign Body Granuloma

In Hansen's disease, two out of the three cardinal signs were considered for analysis:

- Diminution or loss of sensation in a common skin injury for example hypopigmented macule, or in a zone provided by one of the peripherial nerves regularly influenced in uncleanliness
- Enlargement and additionally delicacy in a peripherial nerve normally influenced in sickness
- The exhibit of corrosive quick bacilli in spreads.

All clinically dubious/analyzed instances of cutaneous granulomatous were liable to histopathological examination, bacteriological staining, fungal culture and serological study, as and when shown.

Results and Observations: A total of 650 cases of biopsies is included in the present study, that was conducted in the Department of Pathology, Silchar Medical College and Hospital, in collaboration with Department of Dermatology, Silchar Medical College and Hospital, Silchar, during the study period of 1 year (June-2019 to May-2020)

Total of 650 skin biopsies was taken, 52 cases were sent clinically as cutaneous granulomatous lesions of different etiologies.

Table 1: Distribution of Cutaneous Granulomatous Lesion

Total skin biopsies	Clinically diagnosed cutaneous granulomatous lesion	Percentage (%)
650	52	8.0%

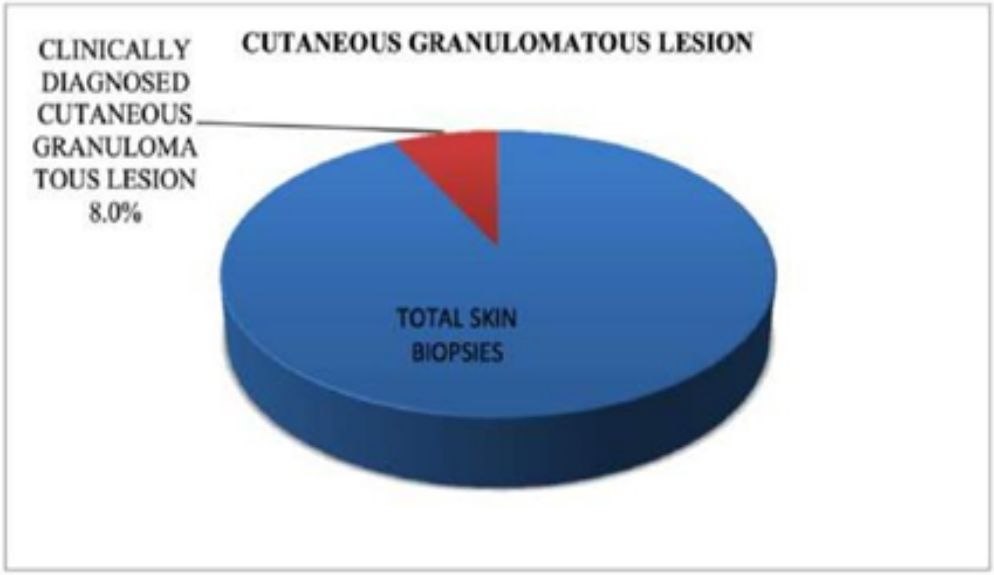

Figure 1: Cutaneous granulomatous lesion

Thus, the overall incidence of cutaneous granulomatous lesion is 8.0% out of the total skin biopsies.

Table 2: Age-Wise Distribution and Its Percentage Pattern

AGE GROUP (in years)	NUMBER	PERCENTAGE (%)
<10	1	1.9
10- 19	4	7.7
20-29	13	25.1
30-39	12	23.1
40-49	10	19.2
50-59	6	11.5]
60-69	4	7.7
70-79	2	3.8
> 80	O	0
TOTAL	52	100

As depicted in the table the highest numbers of cases were seen in the age group of 20 to 29 years, 13 cases, followed by 30-39 years of age with 12 numbers of cases. Minimum number of case was observed in age group less than 10 years of age. Lowest age group in this study is 6 years of age and highest was 75 years of age with a mean age group of 37.6±16.4.

Table 3: Sex-Wise Distribution

Sex	Number	Percentage (%)
MALE	29	55.8
FEMALE	23	44.2
TOTAL	52	100

From the above table, it is seen that, out of the total 52 cases studied, 29 cases were males and 23 cases were females. Thus, males outnumbered females with a percentage of 55.8% in males and 44.2% in females (male: female =1.2:1).

Table 4: Age Sex Correlation in Cutaneous Granulomatous Lesion

Age Group (Years)	Male	Female	Total	Percentage (%)
< 10	1	0	1	1.9
IO - 20	3	1	4	7.7
20-29	7	6	13	25.1
30-39	7	5	12	23.1
40-49	5	5	10	19.2
50-59	4	2	6	11.5
60-69	2	2	4	7.7
70-79	0	2	2	3.8
> 80	O	0	0	0
TOTAL	29	23	52	100

It is observed that maximum numbers of males i.e. 7 cases were found in both the age group of 20- 29 and 30-39 years of age, comprising of 13.4% (7 out of 52) of the total population. In case of female, maximum number of cases was seen in the age group of 20-29 years of age, .i.e. 11.5% (6 out of 52)

Table 5: Distribution According To Educational Status

Educational Status	Number	Percentage (%)
Primary School	18	34.6
High School	14	26.9
Matriculate	9	17.3
Illiterate	73	13.5
Intermediate	3	5.8
Graduate	1	1.9
Postgraduate	0	0
Total	52	100

According to the table majority of the patient falls in the group of primary school (34.6%) followed by high school and then matriculate (26.9% and 17.3% respectively)

Table 6: Distribution of Granulomatous Lesion According To the Occupation

Occupational Status	Numbers	Percentage (%)
Manual Worker	17	32.6
Housewives	9	17.4
Student	8	15.4
Unemployed	8	15.4
Bussinessman	5	9.6
Service Holder	5	9.6
Total	52	100

Occupational status of the patients were studied and maximum cases were found in the manual worker,32.6% and minimum number of cases were found both in the business category and service holder consisting of 9.6%

Table 7: Distribution of Cutaneous Granulomatous Lesion According To the Etiology

Different types of clinical cutaneous granulomatous lesion	
Types BERS	**Percentage Ce)**
LEPROSY 22	42.4
TUBERCULAR GRANULOMA 13	2s.1
FPUNGAL GRANULOMA s	153
FOREIGN BODY REACTION 3	s.8
NECROBIOSIS LIPOIDICUM 1	19
SYPHILIS 1	1.9
LY MPHOGRANULOMA iVENEREUM	i>
GRANULOMA ANNULARE 1	1.9
ACTINOMYCOSIS 1	1.9
SARCOIDOSIS 1	1.9
TOTAL 32	100

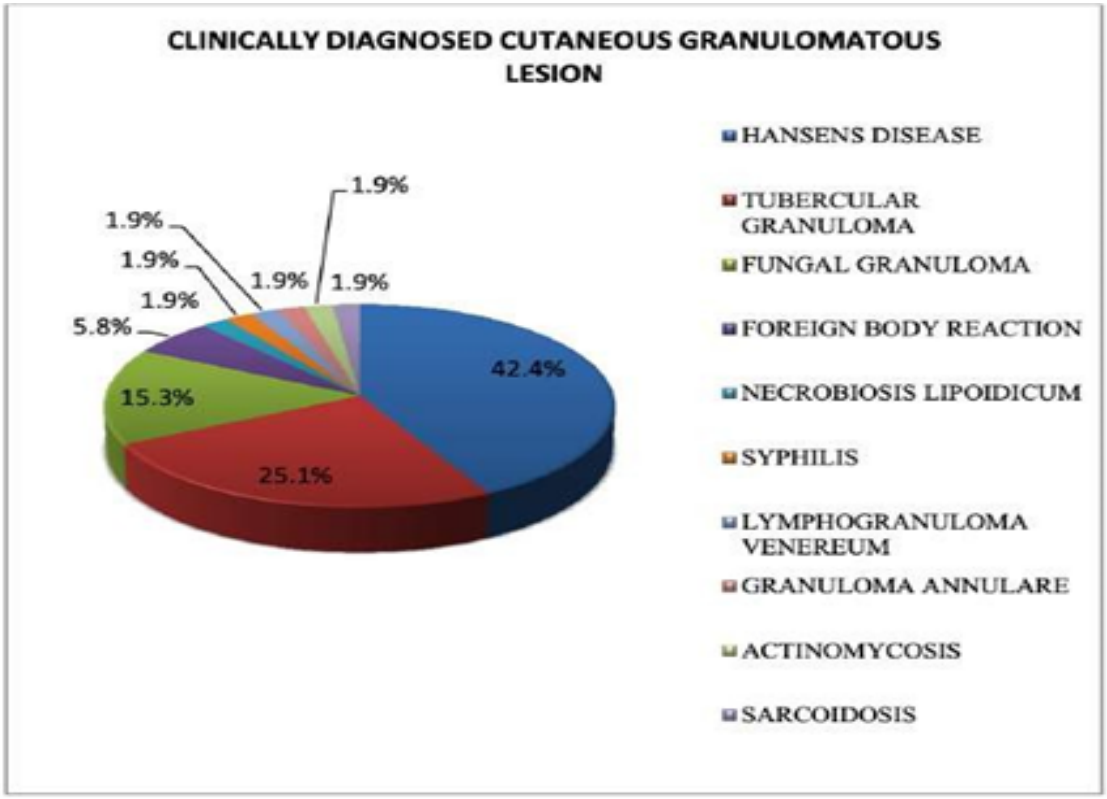

Figure 2:

In the present study, maximum number of cases are of Leprosy comprising of 22 out of 52 cases i.e. 42.4%. Cutaneous tuberculosis comprises the second most granulomatous lesion in the present study with 25.1% followed by fungal granuloma and foreign body granuloma comprising of 15.3% and 5.8% respectively

Table 8: Distribution of Etiological Classification in Accordance to the Age Group

S.No	Types	<10	10 - 19	20-29	30-39	40-49	50-59	60-69	70 - 79	>80	Tot Al	Percent-age (%)	Mean± Sd
1	Leprosy	0	0	2	8	6	3	3	0	0	22	42.4	2.4±2.75
2	Tuberculo-sis	1	3	8	0	1	0	0	0	0	13	25.1	1.4±2.49
3	Fungal	0	1	3	2	2	0	0	0	0	8	15.3	0.88±1.09
4	Syphilis	0	0	0	1	0	0	0	0	0	1	1.9	0.11±0.31
S	Lympho-gran Uloma Venereum	0	0	0	0	0	1	0	0	0	1	1.9	0.11±0.31
6	Actinomy-cosis	0	0	0	0	0	1	0	0	0	1	1.9	0.11±0.31
7	Sarcoidosis	0	0	0	1	0	0	0	0	0	1	1.9	0.11±0.31
8	Foreign Body	0	0	0	O	1	1	0	1	0	3	5.8	0.33±0.47
9	Necrobiosis Lipodicum	0	0	0	0	0	0	1	0	0	1	19	0.11±0.31
1 O	Granuloma Annulare	0	0	0	0	0	0	0	L	0	1	1.9	0.11±0.31
	Total	1	4	13	0	0	6	4	2	0			
	Percentage (%)	19	7.7	25.1	12	10	11.5	7.7	3.8	0	52	100	

In the above table we can see that the age group of 20-29 years comprising of 25.1% of the total study population. Leprosy is the most diagnosed case consisting of 22 numbers of cases, consisting of 42.4% with a mean and standard deviation of 2.4±2.75.

Table 9: Distribution of Etiological Classification in Accordance to the Gender

Types	Male	Female	Ratio
Leprosy	12	10	1.2:1
Tuberculosis Granuloma	7	6	1.1:1
Fungal	4	4	1:1
Syphilis	1	0	-
Lymphogranuloma Venerum	1	0	-
Actinomycoses	1	0	-
Sarcoidosis	1	0	-
Foreign Body	1	2	1:2
Necrobiosis Lipoidicum	1	0	-
Granuloma Annulare	0	1	-
Total	29	29	1.2:1

In the study out of all the clinically diagnosed granulomas cutaneous lesion, leprosy is the most prevalent where male out numbers female i.e. 12 males and 10 females, out of 52 cases with a ratio of 1.2:1,shown in the table 9.

Cutaneous tuberculosis is the second most common cause where again it is more prevalent in males with a ratio of 1.1:1. In fungal granuloma male and female have equal numbers with a ratio of 1:1. Foreign body granuloma is also found in the study with a male-female ratio of 1:2, where there are 2 females and 1 male.

Distribution of Cutaneous Granulomatous Lesion According To the Site

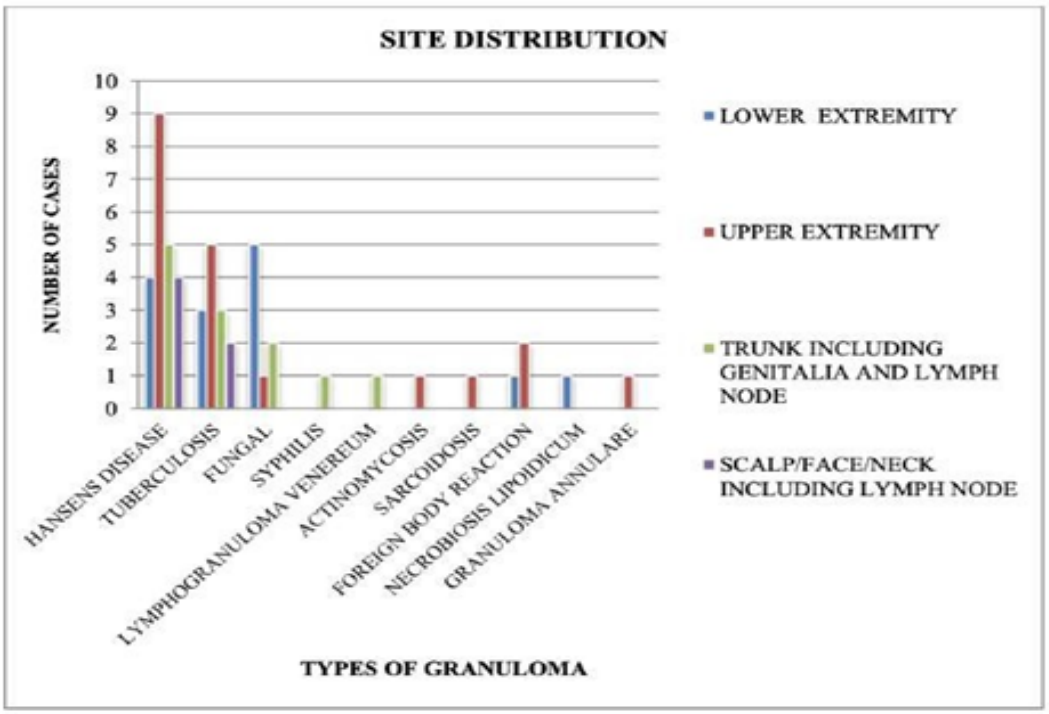

Figure 3:

Most common site of cutaneous granulomatous lesion is shown in the above table and figure (10).The upper extremity is most commonly affected site 38.4% followed by lower extremity 26.9%. Trunk including genitalia and lymph node is the third most common with a percentage of 23.1%. The least involved site is scalp, face, neck including lymph node with a percentage of 11.6 %.

Table 10: Clinico Histopathological Correlation

Clinico-histopathological correlation	Number of cases	Percentage (%)
correlated	40	76.9
nob correlated	12	23.1

Total 52 cases were sent as clinically diagnosed cutaneous granulomatous lesion out of which 40 cases were confirmed by histological examination i.e. 76.9%

Table 11: Individual Cases Showing Clinico- Histological Correlation

Types Of Lesions	Clinical Diagnosis	Non- Histopathological Diagnosis	Non Specific Type
Leprosy	22	17	5
Tuberculosis	13	8	5
Fungal	8	7	1
Foreign Body	3	2	1
Necrobiosis Lipoidicum	1	1	0
Syphilis	1	1	0
Lymphogranuloma Venereum	1	1	0
Granuloma Annulare	1	1	0
Actinomycosis	1	1	0
Sarcoidosis	1	1	0

From the above table we can see that out of 22 cases of leprosy 17 cases were confirmed histologically, similarly out of 13 cases of tuberculosis 8 cases were confirmed histologically, followed by the rest were out of 8 cases of fungal cases 7 cases were confirmed histologically, 3 cases of foreign body granulomatous lesion 2 cases were confirmed.

Table 12: Showing Different Granulomatous Pattern

Types Of Lesions	Histopathological Diagnosis	Granulomatous Types	Percentage (%)
Leprosy	I7	16(1 Uberculoid)	76.7
Tuberculosis	S	7tuberculoid)	10.1
Fungal	7	2(Suppuration)	
Actinomycosi -	1	1(Suppurative)	10.1%
Syphilis	1	Oc(Miscellaneous)	
Lymphogranu Loma Venereum	1	Ic(Miscellaneous)	3.3%
Sarcoidosis	1	1(<Sarcoidal)	3.3%
Foreign Body	2	1(Poreign Body)	3.3%
Granuloma Annulare	1	Ocnecrobiotic)	3.3%
Necrobiosis Lipoidicum	1	I1cnecrobiotic)	
Total	40	30	100% —

We obtained 23 cases of tuberculoid pattern,3 cases of suppurative,1 foreign body pattern,1 necrobiotic ,1 sarcoidal and 1 in miscellaneous, out of the histologically confirmed granulomatous lesion. The rest showed non-specific forms.

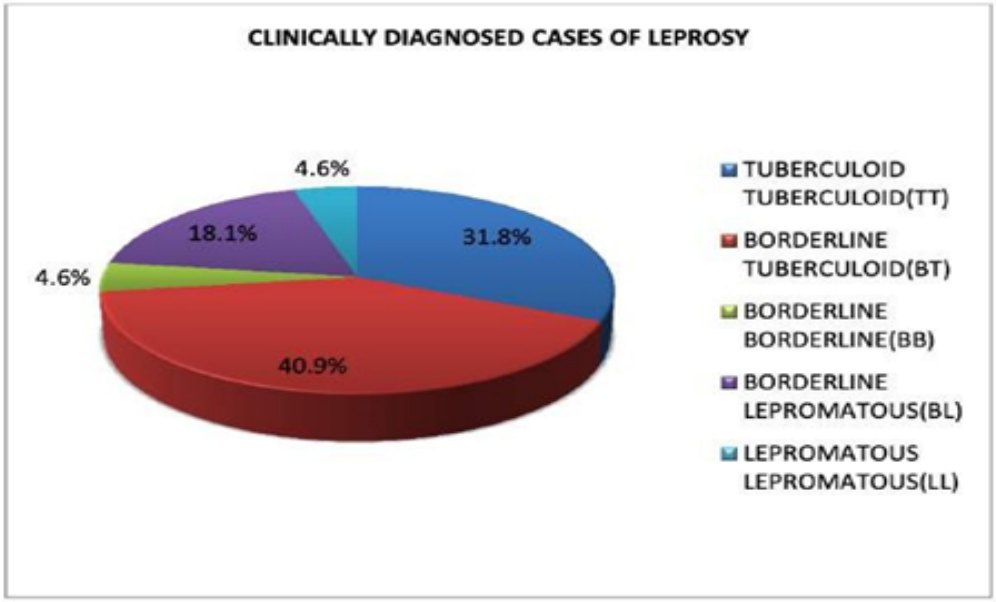

Figure 4: Distribution of Clinically Diagnosed Cases of Leprosy

In the present study out of 52 cases 22 cases were sent as clinically diagnosed cutaneous leprosy, where most of the cases fall in the borderline tuberculoid lesion consisting of 40.9% of the total leprosy lesion, i.e. 9 out of 22 cases.

Table 13: Slit Skin Smear for Leprosy

Slit Skin Smear	Number Percentage	Percentage (%)
Negative Positive	15 7	68.2 31.8
TYPES		
BT	1	4.5
BB	1	4.5
BL	4	18.1
LL	1 4.5	4.5

Results of slit skin smear for leprosy is shown in the table15 and figure 16. Majority cases were negative for slit smear i.e. 68.2% and 31.8% of cases were positive for slit smear.

Table 14: Histopathological Confirmed Cases Of Different Types Of Leprosy

Types			HISTOPATHOLOGICAL			TYPES	
	TT	BT	BB	BL	LL	IL	NS
TT	6	0	0	0	0	0	1
BT	0	6	0	0	0	1	2
BB	0	0	1	0	0	0	0
BL	0	0	0	2	0	0	2
LL	0	0	0	0	1	0	0
Total	6	6	1	2	1	1	5
Percentage (%)	27.2	27.2	4.6	9.1	4.6	4.6	22.7

Out of 22 cases of clinically diagnosed leprosy 17 cases were confirmed histologically, shown in the above table and figure.

Table 15: N Stain for Leprosy

Histopathological Diagnosis	Total Number Of Patients	Number Of Positive Cases	Percentage (Out Of Individual Type) (%)
TT	6	0	0
BT	6	1	16.6
BB	1	0	0
BL	2	1	50
LL	1	1	100
IL	1	1	100
TOTAL	17	4	23.5

ZN stain was done for all the histologically diagnosed 17 cases of leprosy. Out of 17 cases 4 cases came out to be positive i.e. 23.5% of the cases, where there is 1 case of BT,1 case of BL,1 case of LL,1 case of IL, shown in table and figure.

Table 16: TE Faraco Stain for Leprosy

Histopathological Diagnosis	Total Number Of Patients	Number Of Positive Cases	Percentage (out of the individual type) os
TT	6	0	o
BT	6	1	16.6
BB	1	1	100
BL	2	2	100
LL	1	1	100
IL	1	1	100
TOTAL	17	6	35.2

6 cases out of 17 cases came out to be positive for Fite faraco stain for leprosy .i.e. 35.2%, which included 1 case of BT, 1 case of BB, 2 cases of BL, 1 case of LL, 1 cases of IL, shown in the above table and figure.

Table 17: Clinically Diagnosed Cutaneous Tuberculosis

Diagnosed Case	Number	(%)
Tuberculoid Chancre	0	0
Tuberculosis Verrucosa Cutis	3	23.1
Lupus Vulgaris	7	53.8
Scrofuloderma	3	23.1
Orificial Tuberculosis	0	0
Acute Miliary Tuberculosis	0	0
Tuberculous Gumma	0	0
Papulonecrotic Tuberculosis	0	0
Lichen Scrofulorum	0	0
Post Vaccination Cutaneous Tb	0	0
Total	13	100

Out of 52 cases of clinically diagnosed granulomatous lesion, 13 cases were diagnosed as cutaneous tuberculosis.

Table 18: Histologically Confirmed Cutaneous Tuberculosis

Clinical Types			Histologically Diagnosed	Cases
	LV	TVC	Scrofuloderma	Nonspecific
LV	5	0	0	2
TVC	0	1	0	2
SCROFULODERMA	0	0	2	1
TOTAL	5	1	2	5
PERCENTAGE (%)	38.5	7.6	15.4	38.5

Clinically 13 cases were sent as tubercular granulomatous lesion out of which 8 cases were found out to be histologically confirmed cases. Out of all lupus vulgaris was highest in number with 5 number of cases, consisting of 38.5% of all the clinically diagnosed tuberculous granulomatous lesion, followed by tubercular verruca cutis consisting of 1 cases i.e. 7.6% and 2 cases of scrofuloderma with a percentage of 15.4%, remaining 5 cases were not specific.

Table 19: Mantoux test For Cutaneous Tuberculosis

Mantoux Test	Number	Percentage (%)
Positive	**5**	**38.5**
Negative	**8**	**61.5**
Total	**13**	**100**

Mantoux test was done for all the clinically diagnosed cutaneous tuberculosis and 5 out of 13 cases were positive i.e. 38.5%, as a result most of the cases diagnosed clinically must be confirmed by histo-pathological examination.

Table 20: ZN Satin for Cutaneous Tuberculosis

Histopathological Diagnosis	Total Number Of Patients	Number Of Positive Cases	Percentage (out of the individual type)
Lupus Vulgaris	5	1	20.0
Scrofuloderma	2	1	50.0
TVC	1	0	0
Total	8	2	25.0

ZN stain was done for all the cases of cutaneous tuberculosis showed 25.0% of cases to be positively stained out of 8 cases. Lupus vulgaris showed 20.0% i.e. 1 out of 5 cases, 50% of scrofuloderma i.e. out of 2 cases, and negative staining for tubercular verruca cutis.

Table 21: Fungal Granuloma Distribution

Types	Number	Percentage (%)
Sporotrichosis	4	50.0
Chromoblastomycosis	2	25.0
Mycetoma	1	12.5
Disseminated Candidiasis	1	12.5
Total	8	100

Out of 52 cases 8 cases were clinically diagnosed as fungal granuloma, out of which sporotrichosis consists of 50.0% followed by chromoblastomycosis consisting of 25.0%. 1 case of mycetoma i.e. 12.5% and 1 case of disseminated candidiasis i.e. 12.5% has been obtained in the present study.

Table 22: Site Involvement by Fungal Granuloma

Site Of Involvement	Clinical Trial				Total	Percentage (%)
	Sporotrichosis	Chromoblastomycosis	Mycetoma	Disseminated Candidiasis		
Lower Extremity	**2**	**2**	**1**	**0**	**5**	**62.5**
Upper Extremity	**1**	**0**	**0**	**0**	**1**	**12.5**
Trunk Including Gentilia	**1**	**0**	**0**	**1**	**2**	**25.0**
Face Including Head And Neck	**0**	**0**	**0**	**0**	**0**	**0**
Total	**4**	**2**	**1**	**1**	**8**	**100**

It is seen that most of the cases involve the lower extremity in the study consisting of 62.5% of the total cases of fungal granuloma, followed by 25.0% involvement of the trunk. Rest 12.5% cases were found in the upper extremity.

Table 23: Histopathologically Diagnosed Fungal Granuloma

Clinical Types	Histopathological Types					Total
	Sporotrichosis	Chromoblastomycosis	Mycetoma	Candid Granuloma	Nonspecific	
Sporotrichosis	3	0	0	0	1	50.0
Chromoblastomycosis	0	2	0	0	0	25.0
Mycetoma	0	0	1	0	0	12.5
Candid Granuloma	0	0	0	1	0	12.5
Total	3	2	1	1	1	100
Percentage (%)	37.5	25.0	12.5	12.5	12.5	

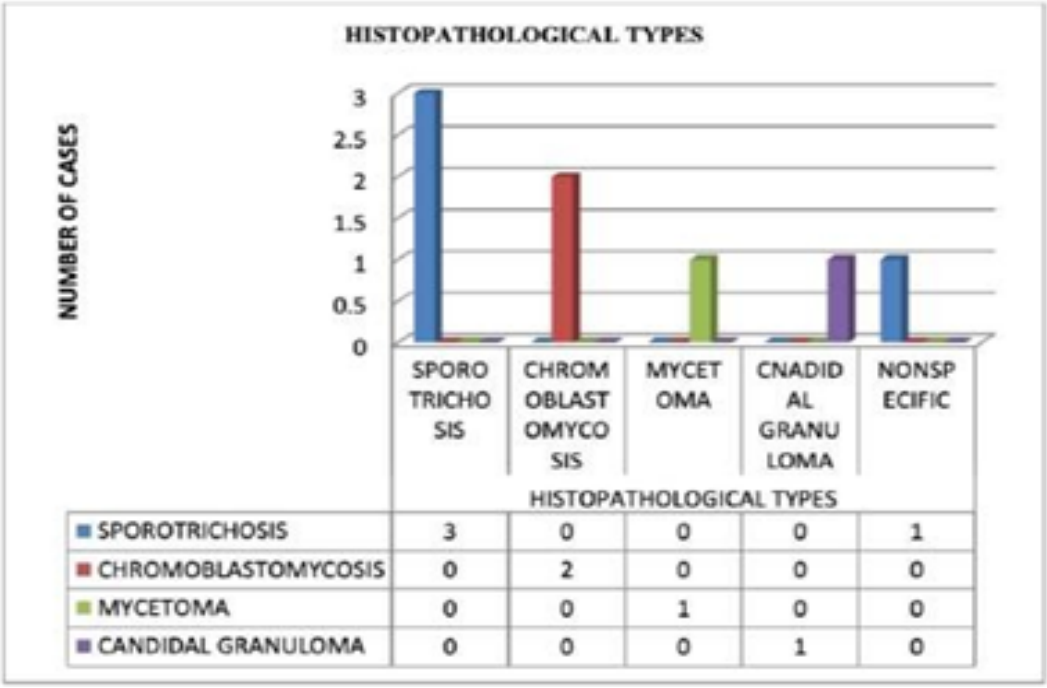

Figure 5:

In the present study out of 8 cases of clinically diagnosed fungal granuloma 7 cases were histologically confirmed cases and the remaining one was included in nonspecific cutaneous lesion. Out of 7 cases, sporotrichosis consists of 37.5% of the histologically confirmed cases i.e. 3 cases, followed by 2 cases of chromoblastomycosis -25.0%, 1 case each of mycetoma and candida granuloma i.e. 12.5% each of the total cases;

Table 24: PAS Stain in Fungal Granuloma

Histopathological Diagnosis	Total Number Of Patients	Number Of Positive Cases	Percentage (out of the individual type)
Sporotrichosis	3	1	53.3
Chromoblastomycosis	2	1	50.0
Mycetoma	1	0	0
Candid Granuloma	1	0	0
Total	7	2	28.5

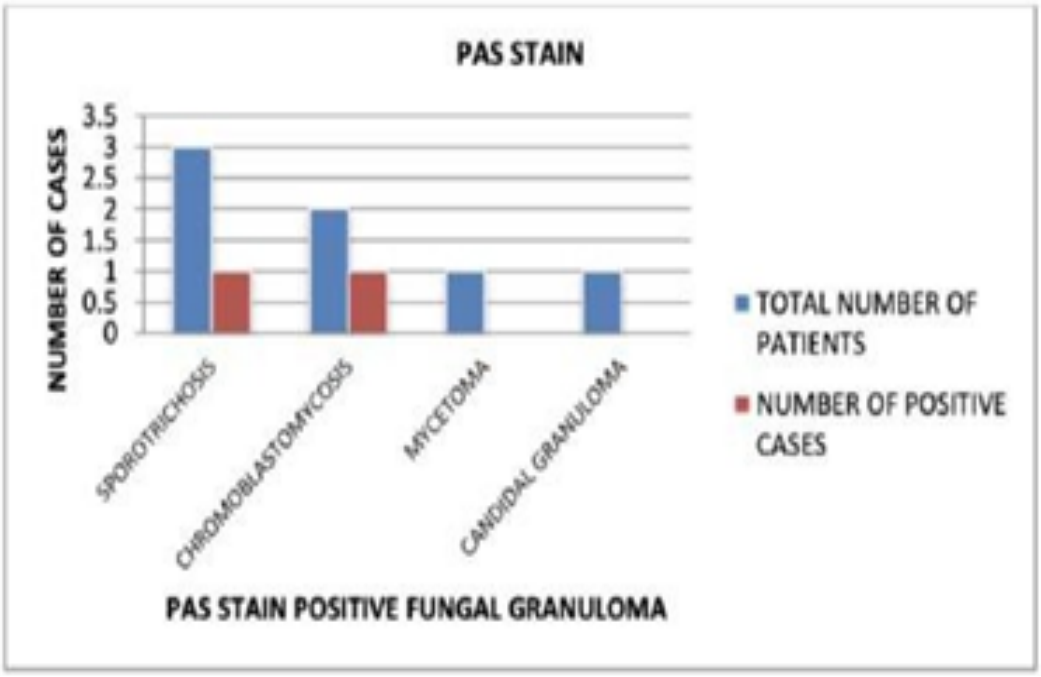

Figure 6:

PAS staining was done where it was found that 28.5% of the histologically confirmed fungal granuloma showed PAS stain positivity. Of the cases of sporotrichosis 1 out of 3 cases; and chromoblastomycosis showing 1 case to be positive out of 2 cases of histologically diagnosed cases.

Table 25: Histological and Serological Correlation of Syphilis

Standard Test for Syphilis	Number	Percentage (%)
Positive	1	100
Negative	0	0
Total	1	100

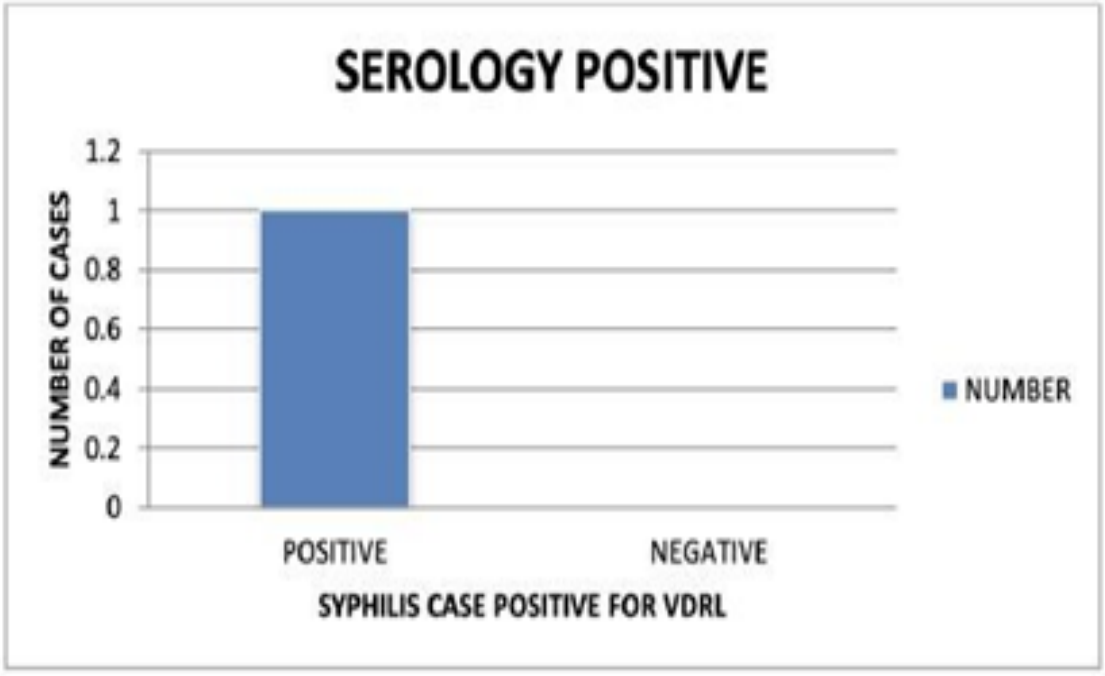

Figure 7:

The case of syphilis sent clinically which was confirmed histologically, was positive for VDRL serologically, showing 100%

Discussion:

A granulomatous inflammatory reaction pattern is a common skin condition.

There can be diverse morphological appearances both histologically with numerous etiologies. The principal reaction patterns are those of epithelioid granulomas, palisaded granulomas, suppurative granulomas, xanthogranulomas, foreign body granulomas and miscellaneous granulomatous conditions. The granulomatous reaction pattern is basically a benign/reactive phenomenon. A vast number of malignancies can also mimic benign granulomatous inflammation.

However histopathological study remains the gold standard for diagnosis of cutaneous granulomatous lesion. Additionally, special techniques like special stain and molecular pathology may be required. The study was performed at the Department of Pathology, Silchar Medical College and Hospital, Silchar, during a period of 12 months (June '2019 – May'2020). A total number of 650 biopsy samples were received from the Department of Dermatology, Silchar Medical College and Hospital, Silchar, which clinically presented with cutaneous granulomatous skin lesions and thought to be of infectious and non-infectious etiology, and subjected for histopathological evaluation. Out of 650 cases 52 cases were diagnosed clinically to be having cutaneous granulomatous lesion. Thus over all incidences is 8.0% in this study.

1. Incidente Of Cutaneous Granulomatous Lesion

A total of 650 skin biopsies, 52 cases were sent clinically as cutaneous granulomatous lesions of different etiologies, with a frequency of 8.0%.

2. Age Wise Distribution of the Cases

In present study, maximum number of cases is detected in the age group of 20-29 years comprising of 13 cases out of the total 52 cases, which is 25.1% of the total study population.

3. Sex Pattern Distribution

Regarding sex distribution of the patients, authors like Kondani et al., Permi et al., and Rathod et al. found in their different studies that the incidence of cutaneous granulomatous lesion is higher in males, which is in concordance with the present study.

4. Most Common Cutaneous Granulomatous Lesion

In the current study, Leprosy which is an infectious cause of cutaneous granulomatous lesion is the most common cause of the lesion with an incidence of 42.4% i.e. 22 cases out of 52 cases.

5. Histological Pattern of Cutaneous Granulomatous Lesion

In the present study the most common pattern is tuberculoid form which consists of 76.7%

6. Cases of Leprosy According To Gender Distribution

In the present study it has been seen that in leprosy there is 12 males and 10 females, with a ratio of 1.2:1.

7. Leprosy Most Common Subcategorization

According to the Ridley Jopling classification the most common in leprosy in our study is borderline tuberculoid, with and incidence of 40.9% i.e. 9 cases out of 22 clinically diagnosed leprosy.

8. Leprosy Distribution According To the Site

The most common site of involvement of leprosy as cutaneous granulomatous lesion in this study is the upper extremity with 17.3% of the total i.e. 9 cases of leprosy in the upper extremity out of 52 total cases of granulomatous lesion.

9. Slit Skin Frequency

Slit skin study was done for all the leprosy cases showing granulomatous changes.

In the present study out of 22 cases,7 cases came out to be positive for slit skin smear with an incidence of 31.8%, rest 15 cases came out to be negative where most of the cases include the cases from Tuberculoid leprosy and few cases of Borderline leprosy.

10. Zn Stain for Leprosy

In the present study 4 cases showed ZN stain positivity out of 17 cases of histologically diagnosed cases, which showed and incidence of 23.5%.

11. Fite Faraco Stain

The current study showed positivity for 6 cases out of all the 17 cases with an incidence of 35.2% of all the cases.

12. Frequency Of Tuberculosis Granuloma

Incidence of cutaneous tuberculosis were seen in different studies and compared with the present study.

In the present study we got an incidence of 25.1% i.e. 13 cases of clinically diagnosed cutaneous lesion out of 52 cases.

13. Most Common Subcategorization Of Tb

In the present study lupus vulgaris being the most common of cutaneous granulomatous lesion showed an incidence of 53.8%.

14. Mantoux Test

Mantoux test was done in 13 cases of clinically diagnosed case and 5 cases came out to be positive, with an incidence of 38.5% and the rest 8 cases came out to be negative.

15. ZN Stain in TB Granuloma

Our study had 2 cases positive for ZN satin i.e. 25.0% of all the diagnosed TB cases.

16. Frequency Of Fungal Granuloma

In the present study 8 cases of clinically diagnosed cutaneous granulomatous lesion were obtained and the incidence of the fungal granuloma is 15.3% in the present study.

17. Sites of Fungal Granuloma Involvement

In the present study the fungal granuloma were seen mainly in the lower extremity i.e. a total of 5 out of 8 cases i.e. 62.5%.

18. Syphilis Occurrence

All the cases which were histologically diagnosed as syphilis and were reactive with VDRL test; with a percentage of 1.9% of the total cases.

19. Less Common Form of Granuloma

In the present study one case of sarcoidosis and actinomycosis has been obtained. The case is a male gender with sarcoidosis as cutaneous granulomatous lesion, so the incidence of sarcoidosis in this study is 1.9% and for actinomycosis too, it is 1.9%. In the present study 3 cases was sent as foreign body granuloma lesion making an incidence of 5.8%.

Summary:

In the present study we made an attempt to study the types and prevalence of cutaneous granulomatous lesions in Silchar Medical College and Hospital. The study was conducted over a period of 1 year extending from June 2019 to May 2020.

A total of 52 cases of biopsies were included in the present study, out of which granulomatous cutaneous lesion consists of 8.0% of the total skin lesions. The age of the cases varied from 6 years of age to 75 years of age, with highest number of cases of granulomatous lesions observed in 20-29 years of age group, with a mean of 37.6±16.4. In the present study there was definite male preponderance, where male were 29 cases and 23 were females with a male to female ratio of 1.2:1. In the present study out of 52 cases 22 cases were sent clinically as Leprosy which consists of 42.4% of the total cases, followed by cutaneous tuberculosis which consists of 13 cases i.e. 25.1% of the total cases, fungal granuloma consisting of 8 cases with a percentage of 15.3% followed by foreign body granuloma consisting of 3 cases consisting of 5.8% of the total.

Site distribution of the lesions were seen where the lower extremity consists of 14 cases out of 52 cases i.e. 26.9%, upper extremity was the highest involved site with 20 number of cases with 38.4%, trunk including genital area and lymph node consists of 12 cases i.e. 23.1% and the last to be involved was scalp, face and neck including lymph-node consists of 6 cases i.e. 11.6%. Out of 52 cases that were sent clinically 40 cases were confirmed histologically as cutaneous granulomatous lesion and the rest i.e. 12 cases were included in the study as non-specific lesions. Thus the clinicohistopathological correlation was found out where 76.9% of cases were correlated.

Out of the total number of cases of leprosy i.e. 22 cases 7 (31.8%) cases were in TT, 9 (40.9%) in BT, 1 (4.6%) cases in BB, 4 (18.1%) cases in BL, and 1 (4.6%) case were seen in LL found. Slit skin smear positivity was found in 31.8% and majority were negative with 68.2% of cases. Out of total of 22 cases of clinically diagnosed cases 17 cases were confirmed histologically as Hansen's disease, where ZN stain and Fite Faraco stain was done. ZN stain showed 23.5% of positive staining cases of the bacilli whereas Fite Faraco showed 35.2% of positive staining cases. Cutaneous tuberculosis consists of 13 cases of clinically diagnosed lesion where lupus vulgaris consists of 53.8% of the total cutaneous tuberculosis followed by 23.1% of TVC, 23.1% of scrofuloderma. Out of the 13 cases 8 cases were confirmed by histopathological examination. Mantoux test was done for all the cases of cutaneous tuberculosis where positive results were found in 5 cases with 38.5% followed by 8 cases of negative results with 61.5% of the total cutaneous tuberculosis. ZN stain was done for 8 cases of histopathologically confirmed cases where 2 out of 8 cases were found to be positive with 25.0% of the total cases.

The next common granulomatous lesion was fungal granuloma where there were 8 cases out of 52 cases where 4 cases were of sporotrichosis with 50.0% of the total fungal granuloma, 2 cases of chromoblastomycosis with 25.0% followed by 1 case of mycetoma consisting of 12.5% and lastly 1 case of disseminated candidiasis with 12.5% of the total cases. Sites wise distribution of the fungal granuloma lesions were seen where most of the cases were in the lower extremity i.e. 62.5%, followed by 2 cases in the trunk with 25.0% , and lastly 1 case in the upper extremity making it a 12.5% of the total fungal granuloma.

Out of 3 cases of foreign body granuloma 2 cases were confirmed histologically where maximum cases were seen in females. Lastly few less common variants of granuloma like syphilis, necrobiosis lipoidicum, LGV, actinomycosis, sarcoidosis consists of 1 case of male each and lastly one female case of granuloma annulare.

Conclusion

In the present study we found that infectious granulomatous lesion form an important cause of granulomatous dermatoses with majority of cases being leprosy followed by tuberculosis. Granulomatous dermatoses are more prevalent in males and the occurrence of peak age is in the third decade. The presence of pulmonary tuberculosis is often expressed by cutaneous TB and its occurrence is not to be overlooked. There is a substantial overlap of distinct granulomatous reactions in the histopathological picture. Therefore, morphology alone is seldom precise and cannot be used for the identification of specific diseases as a diagnostic tool. In conjunction with pathological tools, sufficient clinical data and function. Bacteriological index appears more useful for accurate typing of leprosy along with clinicpathological correlation. In the field of dermatopathology, collaboration between the clinician and the pathologist is more important than in any other field if the patient is to obtain the greatest benefit from the biopsy. From the present study done within a short study period of 12 months, with the evaluation of 52 skin biopsy specimens only, the following conclusions could be drawn.

- Cutaneous granulomatous lesion can be of various etiology accounting infectious and non- infectious causes.
- Maximum numbers of cases were diagnosed in the age group of 20-29 years and minimum number in the youngest age range of 0-10 years.
- There was a male preponderance with a percentage of 55.8% of cases occurring in males and 44.2% of cases occurring in females (male: female=1.2:1).
- Leprosy is one of the most common granulomatous lesions accounting for 42.4% of the total granulomatous lesion.
- Cutaneous tuberculosis is the second most common cause with a percentage of 25.1% of the total lesions followed by fungal granuloma.
- Leprosy had a male preponderance with male to female ration of 1.2:1(12 males and 10 females).
- Upper extremity is the most common site involved by leprosy with a percentage of 17.3% of the total granulomatous lesion.
- Clinico-histopathological correlation was found to be positive in 76.9% of cases, with 23.1% of cases showing negative correlation.

Thus in a nutshell it can be said that cutaneous granulomas have various morphologies, leading to several attempts to identify granulomatous dermatosis caused by a wide range of irritants. Morphology alone, therefore, is not precise and should not be used as a diagnostic instrument. Based on appropriate clinical evidence, laboratory work and morphology of granuloma and special stains, granulomatous dermatosis is best understood to help arrive at an etiology-specific diagnosis for proper clinical management.

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