Indian Journal of
Dermatology & Venereology

(*Incorporating Indian Journal of Venereal Diseases & Dermatology*)

Vol. 30; No. 3. **May - June 1964**

ORIGINAL ARTICLES

THERAPY RESISTANT PYOGENIC FOLLICULITIS ON LEGS IN THE ADULT MALES WITH HYPERGAMMAGLOBULINEMIA

(A Report on 30 Cases)

By

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Varieties of primary and secondary pycderma account for 25 per cent of the dermatologic morbidity due to infectious dermatoses among poor socio-economic groups of patients attending public hospitals in India.[1] Amongst these cases, from time to time, we came across patients with chronic recalcitrant pyogenic folliculitis localized mostly to the inferior extremities and predominently on legs. We found this disease mainly in the male adults. Curiously, in spite of the chronicity, the hair follicles on beard, forearms, and the glabrous skin were singularly free, with one exception, in whom the disease was generalized. Pyogenic folliculitis of chronic nature which are well recognized in the dermatologic literature[2,3,4] are those of Sycosis of the beard or chronic Folliculities Decalvans and Perifolliculitis Abscendence et Suffodiens on the scalp. Although superficial and deep folliculitis are known as types of pyoderma and described as Bockhart's impetigo, the above clinical picture to be mostly found in the adult males, and resistant to specific treatment is unlike Bockhart's impetigo in its predominant localization, age and sex incidence and therapy resistance. In view of this, we are reporting here a clinical and investigative study on 30 cases of this type seen by us during the course of one year.

INCIDENCE

The incidence of this disease is not high, considering the attendance of more than 5000 cases of all types of pyoderma seen every year in our department. The

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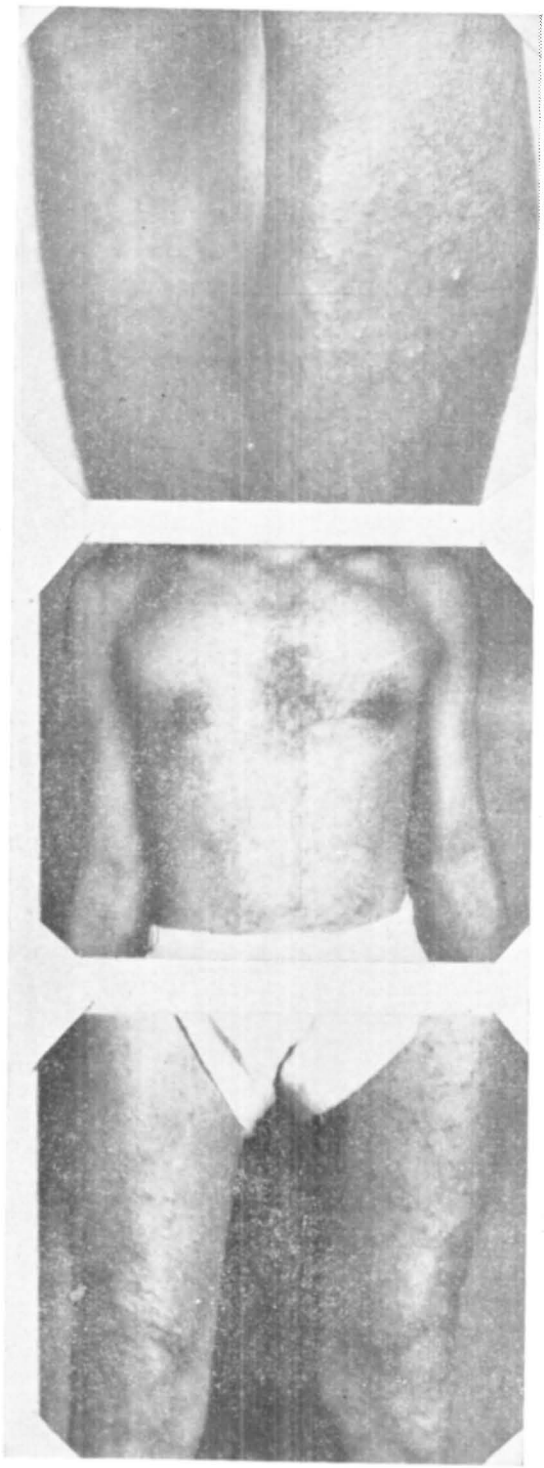


Fig. 1: Typical lesions localized on the legs.

Fig. 2: A rare case of generalized folliculitis showing involvement of well-developed hairs on the chest.

Fig. 3: Same as above showing folliculitis on the thighs.

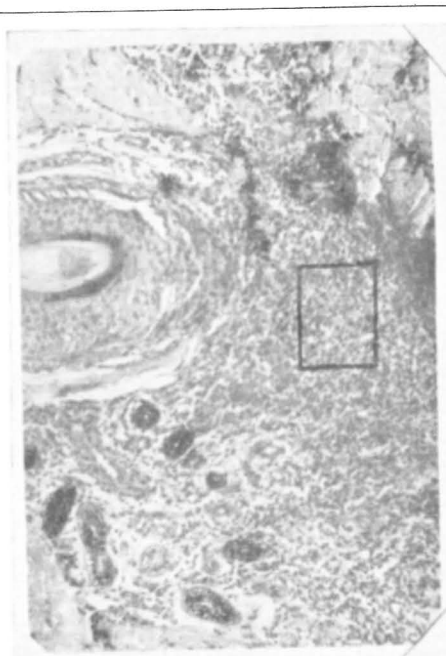
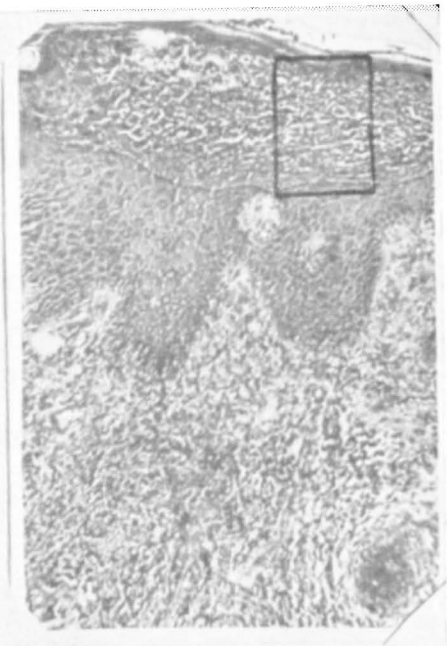


FIG. 4



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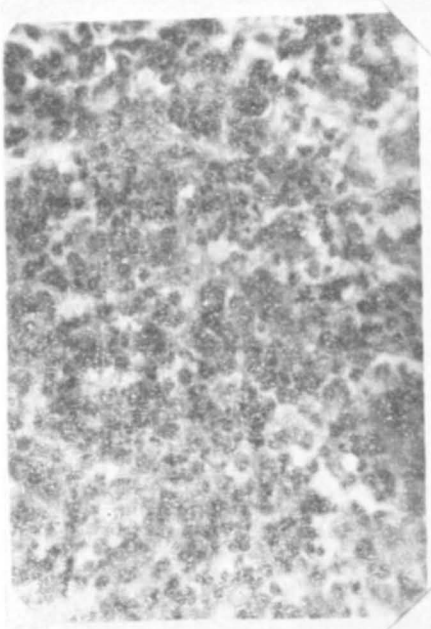

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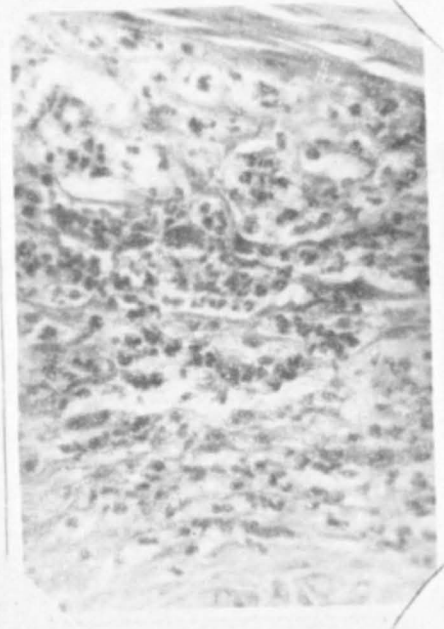


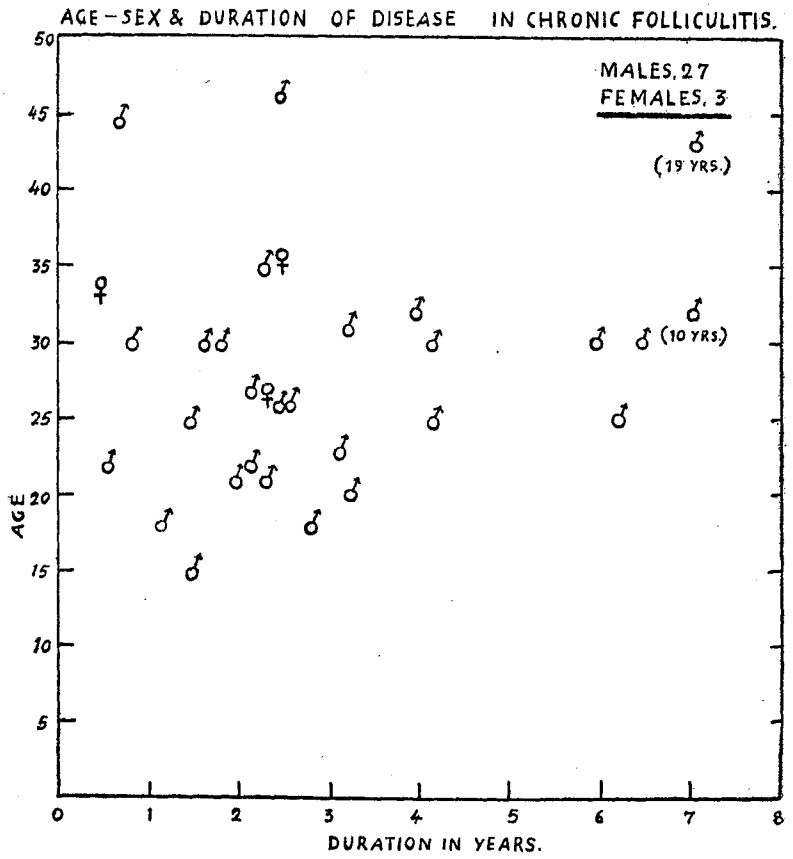
FIG. 7

Fig. 4: Showing perifollicular inflammatory exudate composed mostly of polymorphonuclear leucocytes.
Fig. 5: Showing subcorneal lesion consisting of polymorphonuclear exudate.
Fig. 6: High power view (400 X) of Fig. 4.
Fig. 7: " " " " of Fig. 5.

following graph shows the age and sex distribution correlated with the duration of the diseases of 30 cases.

GRAPH—I

The above graph shows that this type of chronic folliculitis was found only in the early adult age of 15 to 35 years, and mainly in the male patients. We have so far encountered this condition in only three adult female patients, who had well developed terminal hairs, but unlike the male subjects, they responded to specific local and systemic antibiotic therapy. Duration of the disease varied from a minimum of 6 months up to a maximum of 19 years. However, majority of



patients were suffering from this disease for 1-2 years. The esions were localized to the lower extremities in 29 cases. (Fig. 1). In only one patient (male aged 32 years) were the lesions generalized. (Fig. 2). Localization indicates that possibly some regional factor may be operative in this condition. It was curious that face or arms which may also be expected to be involved escaped this infection completely.

DESCRIPTION OF LESIONS

The lesions were: (a) superficial and deep folliculo-pustules, (b) miliaria sized intraepidermal pustules with no relation to hair follicles, and (c) minute grain sized inflammatory follicular papules. The affected skin showed loss of hairs from several follicles and a peculiar glossy and superficially cracked, dirty grey appearance.

INVESTIGATIVE STUDIES

Patients came from diverse walks of life and hence occupational exposure to oils or water were not factors responsible for this condition.

Septic Foci: A search for septic foci was made with the co-operation of the Ear, Nose and Throat Department and the Dental Department. Twenty three cases did not show clinically detectable septic foci which could be considered contributory. Four cases had pyorrhoea, no patient had active tonsillitis,, two had pockets of pus as root abscesses of teeth, and onc had purulent rhinitis.

Conditions known to be associated with resistant pyogenic infections such as diabetes, severe malnutrition, nephrosis, pulmonary tuberculosis and malignancy were not found on thorough investigations. Routine investigations of urine and stool did not reveal any abnormality. Erythrocyte sedimentation rate varied between 6 to 50 mm. at the end of first hour in the different patients and did not give consistent findings. The following table summarizes the leucocyte counts.

TABLE I—LEUCOCYTE COUNTS IN CHRONIC FOLLICULITIS

Leucocytes per c. mm.		
Less than 4,000	4,000-10,000	More than 10,000
Nil	18	12

Non of the patients showed leucopenia, 18 patients showed normal leucocyte counts, whereas 12 others had mild leucocytosis. The highest leucocyte count was 17,000 per c.mm. Only 2 cases had less than 10 g. per cent haemoglobin and could be considered as anaemic, while the rest showed more than 10 g. per cent haemoglobin. Hence anaemia was not a feature of these cases.

Glucose tolerance curve was investigated in the first 18 patients.

GRAPH 2: GLUCOSE TOLERANCE CURVES OF 18 CASES OF CHRONIC FOLLICULITIS

None of the subjects showed hyperglycemia or a flat glucose tolerance curve which are traditionally considered as predisposing to chronic pyoderma.

Electrophoretic patterns of serum proteins were investigated to find out if these subjects had a or hypogammaglobulinemia to explain the therapy resistance. The following table shows the results of serum proteins.

GRAPH – II

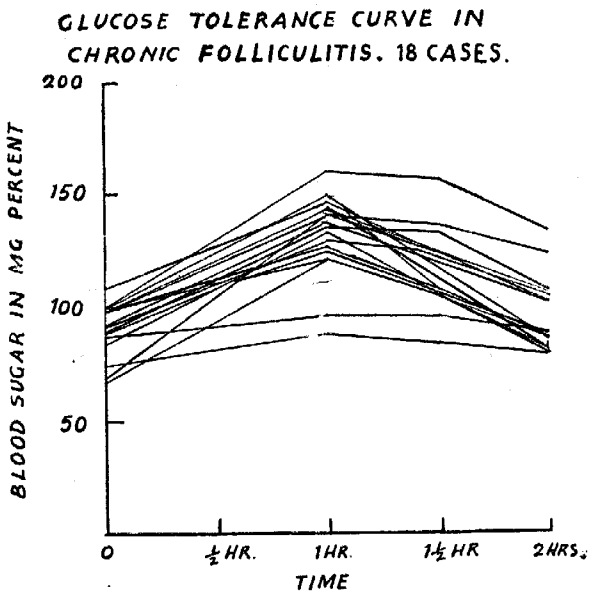


TABLE 2 SERUM PROTEINS IN CHRONIC FOLLICULITIS

It will be seen that while none of the patients had hypogamma globulinemia, 25 out of 30 revealed higher values of gammaglobulins. Many subjects also showed abnormally high alpha 2 and beta globulins, but again this was not a consistant finding in all. Hence no consistent correlation of abnormality of the electrophoretic patterns may be associated with this condition, except hypergammaglobulinemia found in a large majority.

CULTURE STUDIES

Bacteriological cultures on nutrient and blood agar media showed coagulase positives staphylococcus aureus. Gram stained smears of follicular pus revea'ed pus cells some of which showed intracytoplasmic staphylococci. Cultures were also made on the Sabouraud agar medium and they did not reveal candida albicans which has been mentioned by Castelleni as one of the organisms recovered from chronic folliculitis localized on the legs.

HISTOPATHOLOGY

Histopathologic studies were performed which showed localized areas of intraepidermal and subcorneal pustule formation containing leucocytes (Figs 3 and 4). Some sections showed perifollicular and periglandular (around sweat ducts) inflammatory exudate consisting of leucocytes and lymphocyts. The exudate was patchy in character. It was difficult to find an involved hair follicle in serial sections, so as to reconstruct the full anatomic pathology, while some specimens got distorted in processing.

TABLE 2—SERUM PROTEINS IN CHRONIC FOLLICULITIS

No.	Total Protein in gramme per cent	Albumin in gramme per cent	Globulins in gramme per cent			
			Alpha-1	Alpha-2	Beta	Gamma
1	8.6	5.14	0.40	0.80	0.92	1.25
2	7.2	2.6	0.40	0.68	0.98	2.53
3	7.2	2.34	0.51	0.88	0.84	2.63
4	9.45	1.79	0.62	1.17	1.79	4.15
5	7.0	2.81	0.49	0.77	0.98	1.96
6	7.2	2.81	0.32	0.69	0.86	2.52
7	9.0	3.5	0.60	0.95	1.50	2.50
8	5.9	3.08	0.28	0.39	0.83	1.32
9	7.0	2.83	0.19	0.50	0.88	2.60
10	6.5	2.26	0.44	0.75	0.65	2.40
11	5.9	2.8	0.22	0.39	1.10	1.43
12	7.2	3.1	0.41	0.69	0.91	1.99
13	5.9	2.98	0.27	0.38	0.81	1.28
14	5.6	2.69	0.25	0.55	0.78	1.33
15	6.5	2.46	0.38	0.77	1.00	1.90
16	6.30	2.89	0.30	0.70	0.87	1.56
17	6.78	2.28	0.35	0.81	1.06	2.28
18	7.0	2.98	0.41	0.81	0.90	1.90
19	7.3	3.24	3.35	0.71	0.76	2.30
20	7.8	3.48	0.51	0.63	1.08	2.00
21	8.0	3.65	0.70	0 75	0.82	2.08
22	8.0	2.93	0.31	0.46	1.08	3.42
23	7.1	3.39	0.39	0.56	0.81	1.89
24	7.0	2.75	0.33	0.46	1.04	2.44
25	6.2	2.82	0.34	0.20	1.11	2.27
26	7.4	3.14	0.32	0.52	1.11	2.27
27	7.1	3.21	0.33	0.48	0.98	2.00
28	7.50	3.32	0.36	0.51	1.06	2.25
29	7.6	3.32	0.42	0.62	1.21	2.03
30	6 3	2.2	0.46	0.51	0.78	2.35
Normal levels in the poor socio-economic groups	6.41	3,16	0.38	0.56	0.79	1.46

THERAPEUTIC EXPERIENCES

All the patients were admitted in the wards as it was felt that lack of proper hygienic habits and facilities in their homes may be the reason for failure of treatment. Following strict regime of treatment was carried out.

Thorough cleansing with ½ per cent cetrimide solution for 20 minutes, every morning after bath was advised in an effort to sterilize the skin. This was followed by applications of 2 per cent iodochlor hydroxyquinoline in a liniment or a cream base. On failure of the latter 2 per cent tetracycline and chloramphenicol ointments were used. The affected areas were bandaged with sterilized dressings to avoid autoinoculations. The dressings were changed daily.

Systemic therapy consisted first of sulfadiazine in doses of 4 g. a day for a period of 12–15 days. On failure of this therapy, chloramphenicol or tetracycline was given in doses of 1 g. a day, for 15 days.

Possible role of subclinical malnutrition due to the poor diet as a cause of resistant infection was considered. Hence the patients were given a balanced diet containing 2500 calories with adequate quantities of animal proteins, vitamins and mineral supplements.

Although above regime helped in partial amelioration of the disease in many, none of the patients were cured completely. Even after one month of strict therapy, few new pustules could always be found, althogh majority of lesions subside

DISCUSSIONS AND CONCLUSIONS

In our experience of treating thousands of cases of varieties of pyoderma, therapy resistance is not common, and a majority of our cases are of acute or subaucte nature, primary and secondary pyoderma respond to one or the other antibacterial therapy. Resistant pyoderma are generally attributed to recurrences occurring from active septic foci, or severe underlying systemic abnormalities such as diabetes, anaemia, malnutrition, malignancy and or hypogammaglobulinemia. In none of our cases, any active cause could be ascertained. These cases are also unusual as all of them had resistant pyoderma of one type only viz., chronic recalcitrant purulent folliculitis localized to the inferior extremities but without involvement of the hair apparatus on the rest of the body surface.

Although antibiogramms were not carried out in view of many reports on the divergences between in vitro and in vivo findings, drug resistant organisms were not possibly the cause of therapy resistance since these cases came from diverse courses, at different times, and they had no other resistant pyogenic manifestations. Localization of lesions to the inferior extremities, and in the follicles of the terminal hairs to be found mostly in the male adults and in rare female adults with well developed terminal hairs suggest as yet unidentified hormonal and or local factors which may be possibly responsible for this syndrome.

Electrophoretic analysis of serum proteins were earried out in view of our prior reports of dysproteinemia in chronic T. rubrum infections and our investigations on this subject in other chronic cutaneous infective states (to be published). Our finding of similar dysproteinemic patterns with hypergammaglobulinemia are in contrast to those of a and hypogammaglobulinemia reported to

be associated with some cases of chronic resistant pyoderma[6,7,8,9]. In view of the absence of finding of other disease states such as chronic systemic infective states, liver disease or myeloma, which are known to be associated with hypergammaglobulinemia, the latter may be a result of chronic folliculitis even though the disease was localized to the terminal hair follicles of the legs or may be due to as yet unknown reasons. The possible relations of hypergammalgobulinemia to therapy resistance is also open to speculations.

SUMMARY

(1) A clinical account and investigations on 30 cases of chronic, therapy resistant, folliculitis of the inferior extremities in the adult males is presented.

(2) Hypergammaglobulinemia was the only abnormality detected in majority of the subjects and its possible implications are discussed.

ACKNOWLEDGEMENT

It is a pleasant duty to acknowledge the help and permission of Dr. S. V Joglekar, Dean, K. E. M. Hospital, in undertaking of this work.

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