

A CLINICOPATHOLOGICAL STUDY OF DONOVANOSIS

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Summary

A clinicopathological study of 50 cases of genital ulcers has been undertaken with a view to identify cases of donovanosis. The diagnosis of donovanosis was established either by tissue smear examination or through histopathological study. 26 cases were found to be of donovanosis and biopsy examination was found to be more reliable than smear examination. The pitfalls in the diagnosis of donovanosis in partially treated cases and the epidemiological aspects are being highlighted.

Introduction

Donovanosis is one of the less commonly diagnosed epidemiologically significant sexually transmitted ulcerative conditions. The exact incidence of donovanosis in India is difficult to ascertain. It is stated to be more frequently encountered along the southern and eastern coastal regions^{1,2}. Reports of donovanosis have also been recorded from different parts of India, the least affected parts being the Northern States.

Lack of awareness of the occurrence of donovanosis superimposed with misuse or abuse of broad spectrum antibiotics certainly hampers the identification of the aetiological agent in the

tissue smears. Further, clinically this entity can be confused with chancroid which is presumably polymicrobial in nature. The disease that could have been controlled and even eliminated owing to its limited incidence, is widespread due to lack of early identification and adequate preventive measures. The present communication highlights the clinical presentation and laboratory investigations of the cases of donovanosis.

Patients and Methods

This study was conducted in Sexually Transmitted Diseases Training and Demonstration Centre, Safdarjang Hospital, New Delhi, between April 1981 and September 1982. 50 cases of dark field negative and seronegative genital ulcers were biopsied. Pertinent information regarding the patients was recorded in a pretested proforma. The routine investigations included repeated VDRL test, dark field examinations for *T. Pallida* and examination of tissue smears stained with Leishman stain for Donovan bodies. Smears for herpes inclusion bodies were screened after Papanicolaou staining in suspected cases only.

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Biopsy material was examined using haematoxylin and eosin and/or Giemsa stains. The histopathological features were studied for confirmation of the diagnosis.

Observations

Out of 50 cases, nine cases were proved to be lesions due to other than donovanosis by histopathological examination. In another 15 cases the changes were non-specific in nature whereas 26 cases were proved histologically to be donovanosis (Table 1).

TABLE 1

Showing histopathological diagnosis of the 50 cases of genital ulcers

Histopathological diagnosis	No. of cases
Donovanosis	26
Chancroid	5
Tuberculosis Cutis	2
Lymphogranuloma Venereum	1
Carcinoma	1
*Non-specific histology	15

* These 15 cases had been receiving treatment prior to attending the clinic.

The diagnosis of donovanosis was based on the presence of Donovan bodies in tissue sections (Fig. 1). Organisms were present in tissue sections in 18 cases. However, in the absence of demonstrable Donovan bodies, infiltration of dermis by characteristic

large vacuolated mononuclear cells, plasm cells and polymorphonuclear cells was considered as adequate evidence to support the diagnosis of donovanosis². Of these 26 cases with positive histology, only ten cases (40%) showed organisms on tissue smear examination.

All the twenty six patients included in this study were North Indian males hailing from Delhi and adjoining areas. 80% of the patients were in the third decade of life as shown in Table 2.

TABLE 2

Showing age distribution in donovanosis

Age in yrs	No. of cases	%
16-20	2	8
21-30	21	80
31-40	2	8
>40	1	4

Twenty-two were bachelors, three were married and one was a widower. Majority of the patients belonged to the low socio-economic strata. Twenty patients were illiterate or just literate; while six had received university education.

Previous history of STD was available in eleven cases (27%) of which ten cases had been registered in this clinic with various forms of STD between 1-7 years of the present episode.

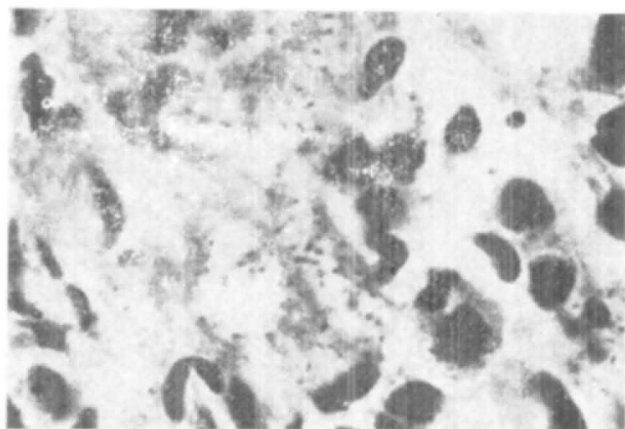


Fig. 1
Photomicrograph showing donovan bodies in mononuclear cells. Giemsa Stain X 750.

Two cases had concomitant gonococcal urethritis.

Sex behaviour, source of infection and interval between exposure and development of the ulcer were studied in twentytwo cases where reliable history could be elicited. Five cases came under the category of promiscuity and had multiple exposures (Table 3).

TABLE 3

Showing number of exposures in the last three months

No. of exposures	No. of Cases	%
Single	13	59.0
2 to 4	3	16.6
5 or more	5	24.4

All the cases acquired the infection from neighbouring areas except one who acquired it from a source coming from an endemic area in South India. Almost 50% of the cases acquired infection from sources other than prostitutes (Table 4). A single individual who attributed the infection to marital relationship did not bring his wife for check up even after persuasion and therefore it could not be confirmed that the wife was indeed the source of infection.

TABLE 4

Showing source of infection in Donovanosis

Source of infection	No. of Cases	%
Prostitutes	12	54.5
Girl Friends	5	27.2
Casual meters	3	13.6
Marital	1	4.7

The interval between exposure and development of the ulcers varied from one week to three months. The lesions were ulcerative in nature and presented as of a single entity in fourteen cases or as a component of mixed ulcers in twelve cases.

The most commonly associated ulcers were chancroid ulcers (Table 5). The number of ulcers varied from one to six. In all the patients except in two ulcers were seen on moist surface of prepuce and glans and the remaining two cases had lesions over the shaft of penis. No extragenital lesion was noted in the present study.

TABLE 5

Showing associated diseases in mixed ulcers

Associated disease	No. of Cases
Chancroid	8
Early syphilis	2
Herpes Progenitalis	2

Therapy prior to investigations was documented with tetracycline in ten cases, with co-trimoxazole in four cases and ampicillin in one case in varying doses for many days. Histopathological interpretation was difficult and possibly marred by previous antibiotic therapy in some of these cases studied.

Two cases showed presence of *T. pallida* on D. F examination and were VDRL test reactive. These cases showed presence of Donovan bodies on smear examination.

Discussion

The term 'Donovanosis' has been preferred to other names given to this condition. This term has been coined by Rajam and Rangiah² along with two synonyms. WHO⁴ International classification for diseases, 1981 has also coined this term along with three other synonyms. Granuloma is a histopathological term and should not preferably be used clinically. As it is less frequently seen in inguinal region, the term 'inguinal' appears inappropriate. It is difficult to agree that the term donovanosis gives the impression of a systemic disease⁵.

Age distribution, sex ratio, socio-economic status and educational background of the study group corroborates the findings of previous workers from this country^{6,7,8}.

Source of acquisition from professionals has been reported by Rajam and Rangiah². No longer are professionals the only source of infection as reported⁶ and as shown in our study also. Considerable number of cases are reporting the source to be girl friends or casual acquaintances.

Southern and Eastern coastal regions have been labelled endemic for donovanosis. It was considered that this disease was not prevalent in Northern India. Lately there have been reports indicating prevalence of disease in this part of the country also^{6,7}. We also find that all the cases in our series acquired infection from local sources. Only one case in our series had exposure to a source from South India.

Although promiscuity is an important factor in the spread of the disease², only 23% cases gave history of multiple exposures in our series.

Concomitant infections are a common finding in most of STDs. Gonococcal urethritis was seen in two cases in this study.

Donovanosis is a genito-inguinal disease but extragenital lesions have been described⁸. In the present study all cases had genital lesions only. Inner surface of prepuce was the commonest site of ulcer. Since sex hygiene is poor in people of lower socio-economic status, lack of hygiene may be one of the predisposing factors in the acquisition of the disease.

Treatment prior to registration of cases in any STD clinic is common.

The dosages taken are usually suboptimal to cure the condition and pose a problem in the diagnosis and prevention of spread of the disease. In the present study fifteen cases had received drugs prior to their hospital visit and histopathological examination showed nonspecific histology. In these cases the smears were also negative and therefore the clinical diagnosis of donovanosis could not be confirmed by laboratory data.

Hart⁹ could not establish aetiological diagnosis in 41% of cases of penile ulcers in spite of all advanced viral, rickettsial and bacteriological investigation. Chapel et al¹⁰ claimed that despite sophisticated laboratory facilities diagnosis could be arrived at only in 59% cases of genital ulcers. In our study diagnosis of donovanosis could be confirmed in 26 (52%) out of 50 patients with genital ulcers by means of histopathological examination. In nine cases diagnosis other than donovanosis was established based on histological examination. Thus an overall 70% cases could be given definitive diagnosis.

Out of twenty six histologically proved cases, smears were positive only in ten cases (40%). Therefore if one depends only on smear examination for diagnosis, possibility of missing the diagnosis may be as high as 60%. Repeated smear examination suggested by Rajam et al¹ is not always practical as it is painful and patients tend to run away during the course of investigation.

On the contrary if both, tissue smear and biopsy can be obtained in one session, there is a better chance of arriving at a definite diagnosis than if only one of these tests is done. Hence we recommend that smear examination should be supplemented with histopathological study to have

greater success at arriving at an etiological diagnosis of genital ulcerative lesions.

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