GRANULOMA INGUINALE OF THE EPIDIDYMISS*

BY

J. R. JANNACH

Department of Pathology, 406th Medical General Laboratory, A.P.O. 343, San Francisco, Cal.

A search of the available literature has revealed only one previously reported case of granuloma inguinale of the epididymis. In that case, a biopsy of the epididymis showed granuloma inguinale in conjunction with tuberculosis in a Negro male (Marmell, Ultman, and Weintraub, 1953; Ultman, 1957). Granuloma inguinale involving the epididymis of a white Caucasian has not before been reported.

Granuloma inguinale is a chronic granulomatous venereal disease usually involving the skin and subcutaneous tissue of the inguinal region. The disease is auto-inoculable and only feebly transmissible. In contrast to lymphopathia venereum, with which it is often confused, lymph node involvement is not a prominent feature. The process usually begins as an ulcerating nodule on the penis and then progresses to a chronic ulceration of the skin and subcutaneous tissue in the inguinal region. Lymph node involvement is, as stated, not marked and only transitory. Systemic involvement is usually mild, but deaths have been reported from extensive ulceration (Hanna and Pratt-Thomas, 1948). Extra-genital lesions occur in a small percentage of cases. These are usually on the mouth, but bone, lung, colon, ovary, joint, and other areas have been involved, indicating that the disease is capable of becoming a widespread systemic infection (Eisenberg, 1948). The only reliable criterion for diagnosis is the demonstration of typical Donovan bodies in large mononuclear cells (Dienst, Greenblatt, and Chen, 1948). A skin test and complement-fixation test have been described, but non-specific cross-reactions are common (Dunham and Rake, 1948). Treatment with the broad-spectrum antibiotics is now so successful that it is threatening the existence of the disease in areas where it was once widespread.

McLeod (1882) is given credit for first describing the disease. Since the Donovan body was first

demonstrated (Donovan, 1905), cases have been reported from all continents, but the disease is more prevalent in the tropic and subtropic areas. During its history, much confusion has existed between it and lymphopathia venereum, mostly because of a similarity of names (Marmell and Santora, 1950). Many names have been used and, of course, unanimity of opinion is impossible. We suggest acceptance of the name "lymphopathia venereum" for the virus disease involving chiefly lymph nodes, and "granuloma inguinale" for the disease involving the skin and subcutaneous tissue. Neither term incorporates a part of the other. This will lessen confusion. At the present time, the true nature of the aetiology of granuloma inguinale is unknown. Although the inoculum has been cultured on several occasions, it is still not known whether the organism is a virus, bacterium, protozoön, or some intermediate form.

Case Report

A 39-year-old Caucasian male had a bilateral herniorrhaphy in 1940. In 1943, the inguinal hernia on the left recurred and it was repaired again that year, and 3 months later the left testicle became enlarged and slowly subsided leaving only an atrophic mass. Since 1943, the patient complained of periods of pain in the left testicle. During the past year, the pain had become very severe. He denied having had a penile sore or venereal disease of any type.

Examination.—Physical examination was completely negative except for bilateral healed herniorrhaphy scars and a firm, nodular, shrunken left testicle with a tender epididymis.

Laboratory Findings.—A white blood cell count of 19,500 was present with 73 per cent. neutrophils, 22 per cent. lymphocytes, 4 per cent. monocytes, and 4 per cent. eosinophils. The haemoglobin was 16.8 g/100ml. Urine analysis revealed a specific gravity of 1.017, with no albumin, sugar, or casts.

A cardiolipin microflocculation test was negative.

*Received for publication October 30, 1957.

FIG. 1—Fibrous tissue surrounds the abscess containing large mononuclear cells filled with Donovan bodies. Haematoxylin and eosin. $\times 200$.

FIG. 2—Donovan bodies in a large mononuclear cell. Haematoxylin and eosin. $\times 975$.

Hospital Course.—On March 25, 1957, the left testicle with epididymis was removed through a high scrotal incision under pentothal anesthesia at the U.S. Army Hospital, Camp Zama, Japan. The specimen was submitted to the Pathology Department, 406th Medical General Laboratory, Camp Zama, Japan. A diagnosis of granuloma inguinale of the epididymis was made. When questioned again, the patient still denied penile ulceration. A Frei test was negative. The wound healed without difficulty and the patient returned to full duty on April 19, 1957.

Gross Examination.—The specimen consisted of an atrophied testis ($1.5 \times 7.0 \times 0.7$ cm.) with epididymis and portion of vas deferens. Cut surface revealed strands of white, homogeneous, firm tissue composing the entire testis. An irregular, yellow, homogeneous area 0.3 cm. in diameter was present in the head of the epididymis. This lesion was not encapsulated and was very soft. The remainder of the epididymis appeared normal.

Microscopic Examination.—Haematoxylin and eosin stain revealed that the yellow area noted, grossly, consisted of an abscess composed of degenerating leucocytes, macrophages, and necrotic debris. Surrounding the abscess was a zone composed of well-vascularized fibrous tissue. There was in this zone a mild inflammatory response consisting of macrophages, scattered eosinophils, and an occasional lymphocyte and plasma

cell. Numerous large mononuclear cells were present both in the abscess and in the surrounding fibrous tissue (Fig. 1).

These cells measured up to 60 microns in diameter and were filled with purple, granular, rod- and round-shaped bodies measuring 1 to 2 microns in diameter (Fig. 2).

In several areas, the bodies were arranged in a marginal pattern giving the cross-section of the mononuclear cells a cystic appearance (Fig. 3, opposite).

The nuclei of these cells, although not seen in every cell, resembled those of histiocytes. Lillie's silver oxide stain revealed that the granules were argyrophilic (Fig 4, opposite).

The granules were Gram-negative and were well visualized with the Giemsa stain. Appropriate stains failed to reveal mycotic elements. The uninvolved part of the epididymis was histologically normal. The testis itself was atrophic showing tubular atrophy and fibrosis with a complete absence of germinal epithelium and recognizable sperm.

Discussion

A review of the literature focuses attention on the widespread lesions that may occur in granuloma inguinale despite the common conception that the disease is restricted to the skin and subcutaneous tissue of the inguinal region. This case records

FIG. 3.—Cross-sections of mononuclear cells containing Donovan bodies. Cystic appearance is the result of margination of the bodies. Haematoxylin and eosin. $\times 975$.

an interesting, rare manifestation of the disease and represents the first involvement of the epididymis in a Caucasian. It is the first case in which the entire testicle and epididymis were available for study. The diagnosis was based on the presence of argyrophilic Donovan bodies in large mononuclear cells. It is well known that histories obtained with regard to venereal disease often are not reliable. In this case, the presence of an abscess in a stage of resolution indicates that the process was probably more acute than the history indicated. It is also possible that a primary lesion could have been overlooked by the patient.

FIG. 4.—Argyrophilic Donovan bodies present in a mononuclear cell. Lillie's silver oxide stain. $\times 975$.

Summary

The first case of granuloma inguinale involving the epididymis of a Caucasian is recorded.

REFERENCES

- Dienst, R. B., Greenblatt, R. B., and Chen, C. H., (1948). *Amer. J. Syph.*, **32**, 301.
 Donovan, C. (1905). *Indian med. Gaz.*, **40**, 411.
 Dunham, W., and Rake, G. (1948). *Amer. J. Syph.*, **32**, 145.
 Eisenberg, A. A. (1948). *Ibid.*, **32**, 458.
 Hanna, C. B., and Pratt-Thomas, H. R. (1948). *Sth. med. J.*, **41**, 776.
 McLeod, K. (1882). *Indian med. Gaz.*, **17**, 121. (Cited by Pariser and Beerman, 1944).
 Marmell, M., and Santora, E. (1950). *Amer. J. Syph.*, **34**, 83.
 —, Ulmann, R., and Weintraub, S. (1953). *J. Urol.*, **70**, 776.
 Pariser, H., and Beerman, H. (1944). *Amer. J. med. Sci.*, **208**, 547.
 Ulmann, R. (1957). Personal communication.