

Significance of leucocytes in smears taken from the female urethral meatus

JOHN V. EARLE

From the Department of Venereology and Genito-urinary Medicine at the Middlesex Hospital, formerly working at St Bartholomew's Hospital

SUMMARY A prospective study of 86 women attending the clinic for the first time showed that nine patients had more than 10 leucocytes per highpower microscope field (HPF) in smears taken from the urethral meatus, even though six of them had micturated less than two hours before examination. Six of these patients had urethral gonorrhoea, one had trichomoniasis, and two were contacts of men with non-specific urethritis. It is concluded that women with more than 10 leucocytes per HPF of urethral secretion at their first visit and in whom a diagnosis has not been made, should strongly be urged to return for further assessment.

Introduction

The diagnosis of non-specific urethritis in men is based on the presence of urethral discharge containing leucocytes and the absence of an identifiable causative agent. In the absence of a recognisable corresponding clinical condition in women, King and Nicol (1975) stated that the diagnosis is based mainly on knowledge of infection in a male sexual partner and that evidence of urethritis may be obtained only if the urine has been held for some hours. Cervicitis, often with an inflammatory erosion is said to be another sign.

There is no relationship between the number of leucocytes in the endocervical secretion and the presence of these cells in secretion at the urethral meatus (Earle 1975, unpublished observation).

As part of efforts to find a simple means of identifying non-specific genital infection in women, a prospective study of 86 patients attending a clinic for the first time was undertaken to assess the significance of leucocytes in meatal smears.

Method

The patients comprised all those attending a clinic for the first time during the period of study; they had held their urine for at least two hours before

examination except for a group of seven women who had leucocytes in their meatal smears although they had micturated less than two hours before examination (Table 1).

Table 1 *The number of leucocytes found on urethral smears related to the time since previous micturition*

Duration urine held (hours)	No. of leucocytes per microscope field		
	>10 leucocytes	1-10 leucocytes	<1 leucocyte
>2	3	7	69
<2	6	1	
Total leucocytes	9	8	69

They were examined by the method described by Burns *et al.* (1975). The interval between examination and previous micturition was recorded in the notes. The microscope gave a final magnification of $\times 800$. One technician stained and read all the films.

Results

The number of leucocytes found on urethral smears related to the time since previous micturition is shown in Table 1. Of the nine patients with more than 10 leucocytes per HPF in their meatal smears, six had urethral gonorrhoea, one had trichomoniasis, and two were contacts of men with non-specific urethritis.

The diagnosis of patients with 1-10 leucocytes per HPF is shown in Table 2 and those showing fewer than 1 leucocyte per HPF is shown in Table 3.

Table 2 Diagnoses of patients showing 1-10 leucocytes per HPF on the urethral smear

Diagnosis	No. of patients
Candidiasis	2
Trichomoniasis	2
Candidiasis and trichomoniasis	1
Coliform urinary infection	1
No apparent abnormality	1
Dysuria. No cause found	1

Table 3 Diagnoses of patients showing < 1 leucocyte per HPF on the urethral smear

Diagnosis	No. of patients
Contact with non-specific urethritis	34
Candidiasis	10
Trichomoniasis	6
Genital herpes	1
Genital warts	1
Gonorrhoea contact*	4
Cervical gonorrhoea	3
Urethral gonorrhoea†	1
No sexually-transmitted disease	9

*Gonorrhoea not found after three sets of urethral, cervical, and rectal smears and cultures.

†Culture plates showed only very few colonies.

Discussion

The series is small and the results may not apply in other departments where different methods are in use.

The finding of more than 10 leucocytes per HPF was useful knowledge in the management of patients when a presumptive diagnosis could not be reached at the first attendance. In these patients the interval since previous micturition appeared less important than was expected as five of six patients had held their urine for under two hours. However this is only a small sample and before abandoning the usual advice to patients to hold their urine before examination a larger group should probably be studied.

In the patients with 1-10 leucocytes per HPF seven out of eight had held their urine for over two hours. Trichomoniasis is primarily a vaginal condition and candidiasis is a vulvo-vaginal condition. In these cases, the few leucocytes found in smears taken from the urethral meatus may have been caused by contamination by cells that were vaginal in origin.

I thank Dr R. N. Thin and Dr M. A. E. Symonds for permission to study patients under their care, and I thank Dr R. N. Thin for his help in the preparation of this paper.

References

- Burns, D. C. MacD., Darougar, S., Thin, R. N., Lothian, L., and Nicol, C. S. (1975). Isolation of *Chlamydia* from women attending a clinic for sexually transmitted disease. *British Journal of Venereal Diseases*, 51, 314-318.
- King, A., and Nicol, C. S. (1975). *Venereal Diseases*, 3rd edition, p. 265. Baillière Tindall: London.