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Prompt Pointers to the aetiology of male urethritis

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Introduction

GENERAL PRACTICE is perhaps the only discipline in the practice of modern medicine that expects its Practitioner to make a prompt and reasonably accurate diagnosis after each Clinical Examination. Oddly enough this expectation is not only from the unenlightened general public but also from his colleagues in Institutional Practice. When a patient enters Hospital he does not expect an immediate diagnosis, but when he alights from a General Practitioner's couch, however, he expects one. How these double standards (indeed rightly a reversal of standards) of expectation evolved and have come to stay, are as much an enigma as are the constellation of questions that a General Practitioner has to answer after a consultation, especially as he is already considered "only a General Practitioner" and to compound it, he normally does not have any microbiological services in his Clinic in most instances. Short of being a "Bionic Doctor" with x-ray eyes and oil immersion lenses, he has to, in honesty, say most of the time, "I really don't know but I think ....." It is in this unfortunate milieu that the General Practitioner works in developing Countries, and this study was launched with the twin objectives of evaluating prompt pointers to an early and reasonably accurate diagnosis of the aetiology of male urethritis as well as to examine the age old concept of the General Practitioner, that all urethral discharges are gonococcal unless treatment fails or they recur.

Urethritis, characterised by symptoms of dysuria and or urethral discharge is a condition seen not uncommonly in General Practice. The differential diagnosis of this condition would include gonococcal urethritis, Non Specific Urethritis, candidiasis, trichomoniasis, traumatic urethritis, chemical urethritis, urethral syphilis and chancroid. Whilst culture of suitable specimens is the unequivocal answer to a proper diagnosis, this is often impossible if not impracticable. Furthermore, as treatment for each of the above conditions is different it is important that a diagnosis, as accurate as possible, be made on clinical grounds alone, so that prompt treatment can be given in a rational, effective and safe manner.

It was also the purpose of this study to see if some correlation could be obtained between the clinical features and proper laboratory diagnosis and whether a fairly reasonable prediction of the definitive diagnosis of urethritis could be based on clinical features alone.

Materials and Methods

Study Population

Forty eight male patients with urethritis were studied in the clinic by the senior author. A careful history was taken with regard to symptoms, the discharge was examined and classified according to whether it was frankly purulent, or merely mucoid, scanty and whether there was only staining of underpants. All patients who had had previous antibiotic therapy were excluded from the study.

Laboratory Studies

A sterile bacteriological loop was used to collect urethral discharge. In instances where this was scanty or not readily visible the loop was introduced about $\frac{1}{2} - 1$ cm into the urethral meatus and the

urethra scraped. The loop was immediately rolled on to a Thayer-Martin plate (Thayer and Martin, 1966), a plain chocolate agar plate and smeared onto two glass slides. One slide was Gram stained by the clinician and examined for pus cells and intra and extra cellular gram negative diplococci morphologically resembling gonococci. The culture plates were placed in a biscuit tin, a candle lighted and the lid closed. Consumption of oxygen by the lighted candle provides an atmosphere of about 3% CO_2 which is suitable for growth of gonococci. The tin and the slide were then despatched to the IMR., Bacteriology Division. On arrival the tin was opened, the plates cross-streaked and reincubated in a CO_2 atmosphere at 36.5°C overnight. The slide was gram stained and examined for gram negative diplococci. Following incubation, the T-M plates were examined for colonies resembling those of *N. gonorrhoeae*. These were then tested for the oxidase reaction. Oxidase positive colonies were gram stained and subjected to carbohydrate fermentation tests. Colonies which were oxidase positive, consisted of gram negative diplococci and fermented glucose but not maltose and sucrose, were confirmed to be *Neisseria gonorrhoeae*. The chocolate agar plates were processed similarly and were also examined for the presence of other colonies notably *Candida albicans*. Negative plates were reincubated for another 24 hours.

A sample of the discharge was collected on a swab and placed in a tube containing a slant of Locke's media. This was dispatched to the Department of Parasitology, University of Malaya, for examining and culturing. A smear of the discharge was examined immediately for trophozoites of *Trichomonas vaginalis*. Free oxygen was removed and the culture tubes placed in an incubator at 37°C. The culture was examined microscopically daily, for three consecutive days.

Results

The results are summarised in Table I. Of the 48 cases examined 37 had frank purulent discharge, and 11 had either mucoid or scanty discharge, or had merely staining of underwear.

Using the criteria that typical gram negative intracellular diplococci were sufficient evidence for gonococcal infection in males, 39 cases were found to have gonococcal urethritis. Of these 36 had frank purulent discharge and 3 had minimal discharge which was mucoid or merely stained underpants. Of the 8 cases which were diagnosed as non specific urethritis 7 had clinical findings of only mucoid, minimal discharge or staining only. One case had frank pus. In one instance of a case with slight discharge, *Candida albicans* was isolated.

Table I

Clinico-pathological correllation of urethritis cases

Diagnosis	Table	Number of cases	
		Frank purulent discharge	Mucoid minimal or staining only
Cases diagnosed as G C. by smear examination	39	36	3
Cases positive for G.C. on culture	21	21	–
Cases diagnosed as NSU	8	1	7
Candida albicans	1	–	1
Trichomonas vaginalis	0	–	–
Total number of cases studied	48	37	11

Cultures for *Trichomonas vaginalis* were consistently negative.

Of the 39 cases which showed characteristic intracellular gram negative diplococci on smear examinations, 21 produced positive cultures. The remaining 18 gave negative culture results and they were mainly attributed to poor specimens resulting from usage of old media which had dried up or due to delay in sending the plates to the laboratory.

Discussion

From the 48 cases of urethritis studied it is seen that 39 or 81.3% were due to gonorrhoea on the basis of smear examination, 54% of these were also positive on culture. A higher culture positivity rate could certainly have been obtained if all the specimens had been suitably inoculated and transported. In a study done elsewhere (Jacobs & Kraus, 1975) it was found that smear examination was 98% reliable when compared with culture results. In the same study gonorrhoea accounted for only 46% of the 400 cases studied and 54% were deemed to have non specific urethritis. Similarly statistics from Great Britain indicate that almost two thirds of cases of urethritis among men in that country are due to non specific urethritis. (Dept. of Hlth and Social Security, 1974). In Australia more than 50% of urethritis in men is attributed to non specific urethritis (Davis et al., 1973). In our study Non Specific Urethritis was diagnosed only in 16.7% of the cases, the single case of candidiasis accounting for 2.1%.

What appears striking in our study is that all cases except one showing frank purulent discharge turned out on smear/culture examination to be gonococcal in origin (21 of them by culture and an additional 15 by smear examination) and there was only one with purulent discharge which did not show gonococci either on smear or culture. On the other hand of the 11 cases with minimal or mucoid staining, 3 were found to be gonococcal, while 7 were Non Specific Urethritis, and one due to *Candida albicans*.

The above findings would suggest that in urethritis, gonorrhoea can never be ruled out purely on the nature and quantity of the discharge. This was also commented on by Jelinek (1972). However, from the above study it appears that if the discharge is frankly purulent, then one is almost always (81.3% of the time) dealing with a gonococcal infection and is highly unlikely to be Non Specific Urethritis. This finding is of "Bionic" Value to the General Practitioner, who without the back up of a Laboratory, can fairly safely assume that a patient with frank discharge is having gonorrhoea and treat him accordingly. (This, of course, is in the context of the Malaysian scenario of 1975/76). He should, however, at least try to confirm this by doing a gram stain of the discharge. On the other hand, if the patient has only minimal or mucoid discharge he can, with reasonable assurance presume, that he is dealing with Non Specific Urethritis and put the patient on a regime of Tetracycline (Holmes et al., 1967).

The other striking feature in this study was that *Trichomonas* was not isolated in any of the cases, either alone or in addition to gonococci or *Candida*. This implies that the incidence of *Trichomonas* infection in males represented by this study group is low. The one case of candidiasis seen was clinically suspected on the basis of balanopostitis, and the wife of the patient was also found to have vaginal candidiasis. The point is emphasised that in cases with scanty urethral discharge, candidiasis should be excluded by culture.

Jacob & Kraus (1975) came to a similar conclusion and these recommendations are being put forward as an aid to general practitioners. It is not the intention of the authors, however, to detract from the value of proper laboratory backup with culture in the management of such cases. In females culture is the only method of diagnosing gonococcal urethritis and in males culture is indispensable as a test of cure.

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