Non-gonococcal urethritis due to T-mycoplasma (Ureaplasma urealyticum) serotype 2 in a conjugal sexual partnership

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Introduction

The importance of T-mycoplasma (Ureaplasma urealyticum) in the aetiology of non-gonococcal urethritis is under continued investigation and discussion. The following clinical study suggests a causative role in the recurrent urethritis suffered by the husband of one conjugal sexual partnership, and it supports a recent case report (Ford and Smith, 1974) that T-mycoplasmas can, in at least specific circumstances, cause urethritis.

Case report

A man aged 50 years was referred to one of us (DKF) in October, 1974, for recurrent non-gonococcal urethritis. He stated that he had suffered from many attacks of urethritis during his 25 years of marriage and had contracted an episode after virtually every sexual intercourse with his wife. He had never complained of definite arthritis in association with his urethritis, though he had noted some arthralgia on occasions and thought that his eyes were sometimes reddened during the bouts of urethritis. He had been treated with both tetracycline and erythromycin at different times and both antibiotics seemed to stop the urethritis. On the occasion of this first visit he had a slight urethral discharge and he was given tetracycline 500 mg four times a day for 10 days; 2 weeks later his urethritis had cleared.

His wife a woman aged 46, had noted slight intermittent vaginal discharge during her 25 years of married life; this minimal symptom had never been associated with dysuria or vulval soreness and she described herself as being in good health. She had been given both tetracycline and erythromycin in the past, on account of her husband’s recurrent urethritis, but each of these drugs had caused side-effects, so that she had stopped each of them after only a few days.

In the summer of 1975 arrangements were made to study these conjugal partners in detail, the mycoplasmal investigations being performed in Vancouver and the chlamydial investigations in Seattle through co-operation with Drs K. K. Holmes, W. Bowie, E. R. Alexander, and S. P. Wang of the Department of Medicine and School of Public Health at the University of Washington.

When he was seen again early in September, 1975, the husband was once more on tetracycline therapy for his third episode of urethritis in the preceding 3 months. His wife had had a total hysterectomy in May after abnormal cytology findings and she had subsequently been in good health. Examination confirmed the total hysterectomy. The 3-month-old suture line in the vaginal vault was healthy and there was no evidence of vaginitis or urethritis on careful clinical examination.

Cultures for T-mycoplasmas and chlamydiae were obtained from both patients over the following 2 months. The findings are shown in the Table.

<table>
<thead>
<tr>
<th>Date</th>
<th>Husband</th>
<th>Wife</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept. 2</td>
<td>On tetracycline for urethritis</td>
<td>No symptoms, vagina normal, T-mycoplasma + serotype 2</td>
</tr>
<tr>
<td>Sept. 7</td>
<td>Tetracycline course completed</td>
<td>Examined and cultured in Seattle, chlamydia negative</td>
</tr>
<tr>
<td>Sept. 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sept. 17</td>
<td>No urethritis, T-mycoplasma negative</td>
<td></td>
</tr>
<tr>
<td>Oct. 18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oct. 24</td>
<td>Return of urethritis</td>
<td>Sexual intercourse</td>
</tr>
<tr>
<td>Oct. 25</td>
<td>T-mycoplasma + serotype 2</td>
<td></td>
</tr>
<tr>
<td>Oct. 25-Nov. 5</td>
<td>Tetracycline 500 mg three times a day</td>
<td>10-day course doxycycline 100 mg twice daily</td>
</tr>
<tr>
<td>Nov. 17</td>
<td>T-mycoplasma negative</td>
<td>T-mycoplasma negative</td>
</tr>
<tr>
<td>Nov. 25</td>
<td></td>
<td>T-mycoplasma negative</td>
</tr>
</tbody>
</table>

The initial cultures of the wife in September showed that she carried T-mycoplasma serotype 2 in the vagina, but that she did not have any latent chlamydial infection. In mid-October they had sexual intercourse at a time...
when the husband was asymptomatic and free of T- 
mypcoplasmas, but 5 days later he again comained of 
symptoms of urethritis and had an obvious mucopurulent 
discharge, his fourth episode since May. A urethral 
culture in Vancouver grew T-mycoplasma serotype 2, 
but a culture in Seattle on the same day revealed no 
chlamydiae. Both were then treated with anti-T-mycop-
plasmal antibiotics, the man with tetracycline 500 mg 
three times a day for 10 days and the woman with 
doxycycline 100 mg twice daily for 10 days, which she 
could tolerate without side-effects. The urethritis in the 
man promptly disappeared and his urethral culture after 
completing the tetracycline course was negative for 
T-mycoplasma; the vagina of the woman was cultured 
twice and on both occasions was negative for T-mycop-
plasmas. At this point they were encouraged to have 
repeated sexual intercourse, which they did, but this was 
not associated with any recurrence of urethritis in the 
husband.

Blood samples were obtained for serum antibody 
study on September 17 from the husband and again on 
November 17, 3 weeks after his October episode of 
urethritis. The Metabolic Inhibition Test (MIT) of 
Purcell (Purcell, Taylor-Robinson, Wong and Chanock, 
1966) was used and negligible antibody (titre <1:4) was 
found in both of these serum samples, even though the 
organism used for the test was that derived from the 
couple. This finding contrasts with titres of 1:4 or more 
in 30 per cent. of male patients attending the Vancouver 
Venereal Disease Control Clinic with a variety of different 
diagnoses.

Since both partners were treated in October, 1975, they 
have had repeated sexual intercourse and the husband 
has had no further episode of urethritis.

Comment

There would seem to be no reasonable doubt that 
T-mycoplasma serotype 2 was the cause of the re-
current urethritis. The Seattle group is extremely 
experienced in handling chlamydia and the cultures 
from the wife at the onset of the study, and of the 
husband when he developed urethritis during the study, were taken in Seattle by members of their team, 
but both were negative for chlamydia. The presence 
and absence of T-mycoplasma serotype 2 in the 
husband correlated precisely with the presence and 
absence of urethritis. The response of the urethritis 
to tetracycline indicated a tetracycline sensitive organ-
ism. He had four episodes of urethritis between May 
and October and each arose within a week of every 
terence with his wife. After the eradication of the T-mycoplasma from the wife, repeated inter-
course was not associated with urethritis. The sero-
logical data is interesting and it would seem clear that 
this man did not develop metabolic inhibiting anti-
body to T-mycoplasma serotype 2 in spite of multiple 
urethral infections. The failure to develop humoral 
immunity might have been associated with his sus-
cceptibility to such infections; alternatively serum 
antibody might not normally develop in response to 
such infections. Currently no data is available to 
support any hypothesis and T-mycoplasma antibody 
responses to genital infections are not yet defined. 
It is noteworthy that, once the wife was treated with 
an antibiotic which she could tolerate for 10 days, 
the organism was eradicated.

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Bowie, K. K. Holmes, and S. P. Wang of the University 
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References

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Purcell, R. H., Taylor-Robinson, D., Wong, D., and 
Chanock, R. M. (1966) J. Bact., 92, 6
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