RELATION OF TRIC AGENT TO "NON-SPECIFIC" GENITAL INFECTION*†

BY

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The results of many studies have indicated the probability that at least some cases of so-called non-specific urethritis are due to a virus (Harkness, 1950; Durel, Siboulet, Roiron, and Sorel, 1954). TRIC agent, which is the cause of trachoma and of inclusion blennorrhoea, has recently been isolated from the urethra in such cases (Dunlop, Jones, and Al-Hussaini, 1964, 1965; Dunlop, Al-Hussaini, Garland, Treharne, Harper, and Jones, 1965).

The history of urethritis is linked with that of conjunctivitis. Many organisms which attack the genital tract also attack the conjunctiva where the changes they produce can be studied more easily.

Neisser (1879) discovered the gonococcus, and found it in conjunctival discharge from babies suffering from ophthalmia neonatorum as well as in genital discharge from adults.

Over 80 years ago, following the work of Neisser, Kroner (1884) reported that there was a non-gonococcal form of ophthalmia neonatorum. He suspected then, following the parallel of gonorrhoea, that the non-gonococcal form also was due to an infection transmitted from the genital tract of the baby's mother.

Guiard (1897) described "aseptic" urethritis, in which no organisms were found, that resulted from sexual intercourse. Morax (1903) described a form of ophthalmia neonatorum which was either amicrobial or unassociated with pathogenic bacteria; these characteristics are essentially those of "non-specific" urethritis.

A major advance was reported when Halberstaedter and von Prowazek (1907) published their findings in trachoma. They were members of Professor Albert Neisser's expedition to Java to study syphilis and they had turned their attention to trachoma also. They succeeded in infecting the conjunctivae of orang-outangs with conjunctival material from patients suffering from trachoma. In epithelial cells from the conjunctivae of these infected animals, and of patients suffering from trachoma, they found the inclusions now called Halberstaedter-Prowazek inclusion bodies. After this, inclusions were found in epithelial cells from the conjunctivae of babies suffering from ophthalmia neonatorum (Stargardt, 1909; Schmeichler, 1909; Heymann, 1909, 1910; Lindner, 1909; Halberstaedter and von Prowazek, 1909) and both from the cervix of a mother of twins who were affected by the disease and from the urethra of their father (Heymann, 1910); Halberstaedter and von Prowazek (1909) reported the finding of inclusions in epithelial cells (presumably originating from the cervix) in tests of the urethral meatus of the mother of an affected baby. As would now be expected, gonococci were present in addition to inclusions in some of these cases (Heymann, 1909, 1910).

Lindner (1910) reported that he had found inclusion bodies in urethral epithelial cells from three of ten cases of non-gonococcal urethritis in men. Inclusions were found only at the onset of disease; in two of the three cases tests for inclusions were repeated and soon became negative. One patient who presented because of fresh trachoma was found to have non-gonococcal urethritis and to have had urethral discharge for at least 6 weeks; inclusions were found in material from the conjunctiva, but not from the urethra. Lindner believed that the findings in this case supported the view that "trachoma" could occur in the genital tract.

Little further progress was made for nearly 50 years and the matter remained controversial. Then in 1957, T'ang and his co-workers in Peking (T'ang, Chang, Huang, and Wang, 1957) succeeded in culturing the causal agent of trachoma by inoculating conjunctival material into the yolk sacs of embryonated eggs. Collier and Sowa (1958) confirmed this work and showed also that the agent contained

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complement-fixing group antigen of the psittacosis-
lymphogranuloma-TRIC group (Bedsonia) and
resembled other members of the Bedsonia on electron
microscopy. The conjunctiva of volunteers were
inoculated with the agent and trachoma resulted
(Collier and Sowa, 1958; Collier, Duke-Elder, and
Jones, 1958, 1960). A similar agent was isolated
from the conjunctiva of a baby suffering from
ophthalmia neonatorum and from the cervix of
the mother of such a baby by Jones, Collier, and
Smith (1959). Isolation of the agent from the eye of a
baby suffering from ophthalmia neonatorum was
confirmed by Hanna, Zichosch, Jawetz, Vaughan,
and Thygeson (1960), and from the cervix by
Collier (1960) in the case of a mother of twins
affected by ophthalmia neonatorum. The mother
was suffering from trachoma and one of her babies
went on to develop that syndrome. Jones and Collier
(Jones and Collier, 1962; Jones, 1964) inoculated the
eye of an adult volunteer with TRIC agent
obtained from the conjunctiva of a baby suffering
from ophthalmia neonatorum: typical trachoma
resulted from the inoculation with this agent, which
was of genital origin in that the baby acquired the
infection from the genital tract of its mother.

Because the agent isolated from cases of trachoma
is indistinguishable as yet from that isolated from
newborn babies suffering from ophthalmia, such
isolates have been named TRIC agent, the TR-
standing for trachoma and the -IC for inclusion
conjunctivitis (Gear, Gordon, Jones, and Bell, 1963).

Present Studies

It was decided to apply cultural methods and
other tests for the detection of TRIC agent as part
of a detailed study of the genital tract, and to
determine what changes were associated with the
presence of the agent.

Material

Three groups of patients were studied.

(1) Parents of babies suffering from neonatal con-
junctivitis due to TRIC agent. The presence of the agent
in the conjunctiva of the baby indicates the strong
probability that the infection was present in the genital
tract of the mother at the time of delivery and the likeli-
hood that the father (or other recent sexual contact of the
mother) was also infected. The results of tests for TRIC
agent in this group then should give an indication of the
sensitivity of the tests.

(2) Adults who had developed various syndromes due
to infection of the eye by TRIC agent. Their sexual
consorts were also examined if this was possible.

(3) Male patients presenting because of "non-specific"
urethritis, and their consorts.

Method

Details have already been reported (Dunlop and others,
1964; Dunlop, Al-Hussaini, and others, 1965). The essen-
tials were: first, to obtain as high a yield of superficial
epithelial cells as possible for tests for TRIC agent from the
urethra in the male, and from the marginal area of the
cervix in the female; secondly, to diagnose other forms of
sexually-transmitted infection if present; thirdly, to study
and to record photographically the appearances in the
genital tract (and the rectum in the female) with a Zeiss
colposcope, using similar magnifications to those used for
inspection of the eye.

Results

(1) Parents of babies suffering from ophthalmia
neonatorum due to TRIC agent as shown by the
finding of inclusions in conjunctival scrapings.—The
parents of twenty such babies have now been studied.
Preliminary results in the cases of the first five of these
families have been reported previously (Jones,
Al-Hussaini, and Dunlop, 1964; Al-Hussaini, Jones,
and Dunlop, 1964; Dunlop and others, 1964). TRIC
agent was isolated from conjunctival scrapings in
the cases of eleven of the twenty babies and cellular
changes in the scrapings were suggestive of infection
by the agent in all.

The findings in the cases of the twenty mothers
are shown in Table I. Fourteen mothers gave a
history of recent vaginal discharge or of excessive or
prolonged lochia. This was accompanied in two
cases by "burning" dysuria and in three others by
lower abdominal pain. Another mother (Mrs D)
without symptoms developed acute abdominal pain,
found at laparotomy to be due to right-sided
salpingitis. There were signs of inflammation in the
marginal area of the cervix in nineteen cases. In
eighteen of these, appearances were seen resembling
the follicles produced in the conjunctiva as a result
of infection by TRIC agent. These "follicles" varied

| Table I |
| FINDINGS IN TWENTY MOTHERS OF BABIES WITH TRIC OPHTHALMIA NEONATORUM |

<table>
<thead>
<tr>
<th>Findings</th>
<th>History of Vaginal Discharge</th>
<th>Cervix</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Signs +</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TRIC agent grown</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>14</td>
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<td>3</td>
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<td>2</td>
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<tr>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 out of 14</td>
</tr>
</tbody>
</table>
from single small lesions to larger nodular aggregations. In one other case, the papillae of columnar epithelium appeared thickened and infiltrated, but without formation of “follicles”. In thirteen cases, there were maximal counts of at least 24 polymorphonuclear leucocytes per high-power field (HPF) in the cervical smears. Until further information is available on the significance of such counts, numbers in excess of 20 per HPF are reported as denoting an excess of pus in the cervical smears. Isolations of TRIC agent were made from cervical scrapings in three cases and inclusions were found in the scrapings from two of these. Cellular changes suggestive of infection by TRIC agent were present in the cervical scrapings in eighteen cases. Three patients developed salpingitis; as already noted, the diagnosis was made at laparotomy in the case of one of them (Mrs D) in which an inclusion was found in cervical scrapings and an isolate obtained from that site (Dunlop and others, 1964); another of these patients (Mrs AA) had received treatment after delivery for what was probably salpingitis, the cervical mucus contained only 3 polymorphs per HPF in her case but an inclusion was found in cervical scrapings and an isolate was obtained from that site.

Two patients had proctitis; one of them was one of the patients with no excess of pus in the cervical mucus.

Eight patients had associated genital infection; gonorrhoea in one case, trichomoniasis in three, trichomoniasis with candidiasis in one, and candidiasis alone in three.

In fifteen cases there was some fixation in a complement-fixation test for lymphogranuloma venereum (LGVCFT) which detects group antibody to Bedsoniae. Titres varied from partial fixation at 1:4, to complete fixation at 1:128 and partial at 1:512. The Frei intradermal test was positive in two of fourteen cases in both of which the LGVCFT showed partial fixation only.

Fig. 1 shows marked conjunctival changes due to TRIC agent in a case of trachoma (Miss F). Follicles are clearly seen.

Fig. 2 (overleaf) shows intense inflammatory changes in ophthalmia neonatorum due to TRIC agent (Bagy DC).

Fig. 3 (overleaf) shows so-called follicles on the cervix of one of the mothers (Mrs CH). “Follicles” on the cervices of three of the other mothers (Mrs E, Mrs I, Mrs H) have been shown previously in this journal (Dunlop and others, 1964).

FIG. 1.— Conjunctiva (Miss F), showing changes due to trachoma. × 6 approx. f = follicles.
Fig. 2.—Conjunctiva (Baby DC), showing inflammatory changes of ophthalmia neonatorum due to TRIC agent. ×11 approx.

Fig. 3.—Cervix (Mrs CH), showing “follicles” (f). ×10 approx.
Histories were taken from sixteen of the fathers in the twenty families concerned (Table II). Six gave the history of urethral discharge or of urethral discomfort on micturition. Eight had inflammation of the urethral meatus referred to here as meatitis. Fourteen were examined fully and thirteen had so-called non-specific urethritis (NSU); the remaining patient had an excess of pus (Oates, 1958) in the fluid expressed by massage of prostate and seminal vesicles. Test for TRIC agent were positive in seven cases: that is, TRIC agent was grown, but no inclusion was found in three; TRIC agent was grown and an inclusion was found in one; inclusions were found but no isolation was made in three. Cellular changes were suggestive of infection by TRIC agent in eight cases; these changes were absent in two of the cases of urethritis in each of which an isolate had been obtained but no inclusion found. They were present in the five other cases in which tests for TRIC agent had given positive results and in three more cases in which no inclusion had been found and no isolate had been obtained.

Associated infection was not detected in any case. There was weak fixation in the LGVCFT in nine of fifteen cases, the highest titre being 1:4 with partial fixation at 1:32; the Frei test was performed in eleven cases with negative results.

Fig. 4 (a) shows meatitis with papillary congestion in the case of one of the fathers (Mr CI), Fig. 4 (b) shows the reversion to normal that followed treatment with tetracycline by mouth.

Marked urethral "follicles" were seen in one case (Mr CZ); these are shown in Fig. 5 (overleaf). (2) Adults with ocular infection due to TRIC agent.—
The findings in the cases of twelve patients (six men and six women) suffering from trachoma have been reported (Dunlop and others, 1965) and only this group will be considered now.

Table III (overleaf) shows the findings in the six women. There was a history of vaginal discharge in four and of burning discomfort on micturition in one other. The cervical signs resembled those of ocular infection by TRIC agent in all six, in that there were "follicles" with or without nodules in five cases and scarring in one. There was an excess of pus in the

**TABLE II**

FINDINGS IN SIXTEEN FATHERS OF BABIES WITH TRIC OPHTHALMIA NEONATORUM

<table>
<thead>
<tr>
<th>Findings</th>
<th>No. of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of Urethritis</td>
<td>6 out of 16</td>
</tr>
<tr>
<td>Meatitis &quot;NSU&quot;</td>
<td>8 out of 15</td>
</tr>
<tr>
<td></td>
<td>13 out of 14</td>
</tr>
<tr>
<td>Urethra</td>
<td></td>
</tr>
<tr>
<td>TRIC agent grown</td>
<td>3</td>
</tr>
<tr>
<td>TRIC agent grown</td>
<td>1</td>
</tr>
<tr>
<td>Inclusion found</td>
<td>3</td>
</tr>
<tr>
<td>Cellular changes</td>
<td>8 out of 14</td>
</tr>
<tr>
<td>Associated infection</td>
<td>0</td>
</tr>
<tr>
<td>Fixation in LGVCFT</td>
<td>9 out of 15</td>
</tr>
<tr>
<td>Frei test positive</td>
<td>0</td>
</tr>
</tbody>
</table>

Fig. 4 (b).—Urethral meatus (Mr CI), after treatment with tetracycline, showing restoration to normal. × 11 approx.
Fig. 5.—Urethral meatus (Mr CZ), showing "follicles" (f). x 9 approx.

Table III
FINDINGS IN SIX WOMEN SUFFERING FROM TRACHOMA

<table>
<thead>
<tr>
<th>Findings</th>
<th>No. of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>History or Vaginal Discharge or Dysuria</td>
<td>5</td>
</tr>
<tr>
<td>Cervix</td>
<td></td>
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<tr>
<td>Signs +</td>
<td>6</td>
</tr>
<tr>
<td>Pus</td>
<td>5</td>
</tr>
<tr>
<td>TRIC agent grown</td>
<td>1</td>
</tr>
<tr>
<td>Cellular changes</td>
<td>6</td>
</tr>
<tr>
<td>Proctitis</td>
<td>5</td>
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<tr>
<td>Associated infection</td>
<td></td>
</tr>
<tr>
<td>Fixation in LGVCFT</td>
<td>6</td>
</tr>
<tr>
<td>Frei test positive</td>
<td>0</td>
</tr>
<tr>
<td>Consort with &quot;non-specific&quot; genital infection</td>
<td>6</td>
</tr>
</tbody>
</table>

cervix in five. TRIC agent was grown in one case. Cellular changes were suggestive of infection by TRIC agent in all six; there was proctitis in five of the six, including the case of the one patient with no excess of pus in the cervical mucus. There was associated genital infection in five cases (trichomoniasis in three and candidiasis in two). There was fixation in the LGVCFT in all six, two patients having titres as high as 1:16 with partial fixation at 1:32. The Frei test was negative in all. There was evidence of past or present urethritis in the cases of five of the six consorts who were examined; the sixth had prostatitis. The Figures show the appearances in the cases of some of these women suffering from trachoma.

Fig. 6 (opposite) shows "follicles" within the cervical canal (Mrs AD).
There was proctitis in five cases: Fig. 7 (opposite) shows the appearance of the ano-rectal canal in one (Mrs AC). The gross pus is clearly visible.

Table IV shows the findings in the cases of six men suffering from trachoma. There was a history suggestive of urethritis in three cases (urethral discharge in two and urethral "burning" on micturition in one other). There was meatitis with urethritis in five cases: in four the inflammation was "non-specific", and in one case trichomonads were cultured. There was prostato-vesiculitis in the one case of the six in which there was no urethritis, so there was evidence of genital infection in all. There

Table IV
FINDINGS IN SIX MEN SUFFERING FROM TRACHOMA

<table>
<thead>
<tr>
<th>Findings</th>
<th>No. of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of Urethritis</td>
<td>3</td>
</tr>
<tr>
<td>Meatitis</td>
<td>5</td>
</tr>
<tr>
<td>Urethritis</td>
<td>5</td>
</tr>
<tr>
<td>Prostatitis</td>
<td>4 out of 5</td>
</tr>
<tr>
<td>Urethra</td>
<td></td>
</tr>
<tr>
<td>TRIC agent grown</td>
<td>3</td>
</tr>
<tr>
<td>Inclusion found</td>
<td>5</td>
</tr>
<tr>
<td>Cellular changes</td>
<td></td>
</tr>
<tr>
<td>Associated infection</td>
<td>1</td>
</tr>
<tr>
<td>Fixation in LGVCFT</td>
<td>5 out of 5</td>
</tr>
<tr>
<td>Frei test +</td>
<td>0 out of 3</td>
</tr>
<tr>
<td>Consort with genital infection</td>
<td>0 out of 1</td>
</tr>
</tbody>
</table>
was an excess of pus in the prostato-vesicular fluid in four of five cases. Tests of urethral scrapings for TRIC agent were positive in three cases, in each of which the agent was grown and an inclusion was found. Cellular changes suggestive of infection by TRIC agent were present in all the five cases of urethritis. There was associated trichomoniasis of the genitourinary tract in one (Mr S) of the cases in which TRIC agent was present; otherwise, but for the finding of TRIC agent in urethral scrapings, the urethritis in the males concerned in the studies of trachoma and of ophthalmia neonatorum would
have been diagnosed as "non-specific". Fixation in the LGVCFT was present in the five cases in which the test was performed, the highest titre being 1:32 with partial fixation at 1:64 in two cases: the Frei test was performed in one of these cases, and in two others, with negative results in all. One female consort was examined and no evidence of genital infection was found.

Fig. 8 shows the findings in the case of Mr BL, who was suffering from trachoma; it shows meatitis with papillary congestion and urethral "follicles".

In all, TRIC agent was isolated from the genital tracts in four of twelve cases of trachoma. In each of these four cases an isolate was also obtained from the eye. So far, preliminary studies have shown no difference between the isolate from the eye and that from the genital tract in each case. In one case (Mr AI), the isolate from the eye and that from the urethra both differ in the same way from other isolates in that they cause early death of the chick embryo. It seems that, in this group, the causative agent of trachoma was more likely to be spread by genital means than by eye-to-eye transmission. In this group the trachoma syndrome probably arose, in some cases at least, as a complication of genital infection due to TRIC agent.

Proctitis was a common finding in women in this group and in the family study. Recently an isolate of what is probably TRIC agent has been obtained from the rectum of a woman with ocular infection due to the agent. This will be reported fully in due course. The difficulty of differentiating such cases from lymphogranuloma venereum (LGV) and TRIC agent from the agent of LGV is apparent.

(3) Males presenting because of "non-specific" urethritis.—Ten cases occurring in nine patients have been studied (Dunlop, Al-Hussaini, and others, 1965), but isolation could not be attempted in one. With regard to clinical findings, there was meatitis in all cases and epididymitis in one. Table V shows that, in two of nine cases, TRIC agent was grown; in one of these and in two more of the ten, making three in all, inclusions were found. Thus, in a total of four of the ten cases, evidence was found of urethral infection by TRIC agent. There were cellular changes in

![Image](http://sti.bmj.com/)

**Fig. 8.—Urethral meatus (Mr BL) showing meatitis with papillary congestion (m) and urethral "follicles" (f) ×11 approx.**

(Published previously in Rev. int. Trachome (1965). 42, 14)

<table>
<thead>
<tr>
<th>Table V</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESULTS IN TEN CASES OF &quot;NON-SPECIFIC&quot; URETHRITIS</td>
</tr>
<tr>
<td>Sex</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female (Contacts)</td>
</tr>
</tbody>
</table>
urethral scrapings suggestive of the presence of TRIC agent in these and in four more. The Frei test was positive in one case but negative in eight, including the four in which tests had shown the presence of TRIC agent. In these four the LGVCFT had shown partial fixation to 1:8 in three and had been negative in one. In all there was some fixation in the LGVCFT in six cases.

Four female sexual partners of the nine patients were tested. An inclusion was found in cervical scrapings in one case. Cellular changes were suggestive of the presence of TRIC agent in this case and in one more. The Frei test was positive in one case, but was negative in the case in which an inclusion had been found, and in one other. The LGVCFT showed some weak fixation in three cases, including the one in which an inclusion had been found. It was negative in the fourth case in which the Frei test was positive.

Growth in yolk sac, the results of electron microscopy, complement-fixation and fluorescent-antibody tests have shown that these two isolates, and a third obtained from a similar case, were members of the Bedsonia group.

Owing to difficulties in reviving the first two isolates, the inoculation of animals was carried out only with the third.

The pattern of growth in the yolk sac, the results of inoculation of baboons and of mice, and the absence of any clinical evidence of past or present lymphogranuloma venereum in these cases of urethritis suggested that the isolates of Bedsonia obtained in this series were isolates of TRIC agent.

Preliminary results in the first fifty cases of "non-specific" urethritis that have been tested have indicated that, in approximately one-sixth of cases, inclusions can be demonstrated in urethral scrapings, or isolates obtained from that site, or both.

Isolates have now been obtained both from the urethra of a patient who presented because of so-called "non-specific" urethritis and from the cervix of his contact, also from the urethra of a young man suffering from acute abacterial pyuria, and, as already noted, from the rectum of a woman with proctitis. These findings will be reported fully in due course when the isolates have been studied further in the laboratory.

Sensitivity of Tests for TRIC Agent

The sensitivity of these tests in urethritis in the male may be assessed in the cases of the fathers of babies suffering from ophthalmia neonatorum due to that agent. As shown above, thirteen of these patients had so-called non-specific urethritis at the time of examination, and it would seem likely that this was associated with TRIC agent. In seven of these thirteen cases, TRIC agent was found as compared with four of ten cases of "non-specific" urethritis.

Tests of the genitalia appear less sensitive in the cases of women than of men. They were positive in the cases of three of the twenty mothers compared with seven of the thirteen fathers with "non-specific" urethritis, one of six women suffering from trachoma compared with three of six men, and one of four female contacts of patients suffering from "non-specific" urethritis compared with four of ten cases of that disease in men.

Nomenclature

The names "inclusion urethritis" and "inclusion cervicitis" are unsuitable because they imply that urethritis and cervicitis associated with infection by TRIC agent are the genital counterparts of the inclusion conjunctivitis syndrome of adults whereas it is known that some isolates of genital origin can cause trachoma (Jones and Collier, 1962; Jones, 1964). They are unsuitable names also because TRIC agent may be isolated from urethra or cervix in cases in which no inclusion has been found. It has been suggested that the terms "urethritis (or cervicitis) associated with TRIC agent" or, briefly, "TRIC agent urethritis" and "TRIC agent cervicitis" should be used for urethritis and cervicitis associated with infection by the agent (Dunlop, Al-Hussaini, and others, 1965).

Summary

The families have been studied in the cases of twenty babies shown to be suffering from ophthalmia neonatorum due to TRIC agent by the finding of Halberstaedter-Prowazek inclusion bodies in conjunctival scrapings. TRIC agent was isolated from the conjunctivae of eleven babies. All twenty mothers were examined: in eighteen cases there were signs of inflammation of the marginal area of the cervix resembling those produced in the conjunctiva by TRIC agent. Isolates were obtained from cervical scrapings in three cases and inclusions were found in the scrapings in two of these. Cellular changes in cervical scrapings were suggestive of the presence of TRIC agent in the cases of eighteen of the mothers. Salpingitis occurred in three and was diagnosed at laparotomy in one; proctitis occurred in two cases. Fourteen of the fathers were examined fully and thirteen of them had so-called non-specific urethritis. Inclusions were found in urethral scrapings in four cases, TRIC agent was grown in one of these and in three more, so that there was evidence of infection of the urethra by the agent in seven of fourteen cases.
or seven of the thirteen of these in which there was urethritis. Cellular changes suggestive of infection by TRIC agent were present in the cases of eight of the fourteen fathers or eight of the thirteen in which there was urethritis.

As already reported, TRIC agent has also been grown from the genital tract and from the eye in each of four cases of trachoma (three men and one woman). Preliminary studies have as yet shown no difference between the isolate from the eye and that from the genital tract in each case.

One of the men suffering from trachoma, from whom a urethral isolate was obtained, also had trichomoniasis of the genito-urinary tract; but, for the finding of the agent in urethral scrapings, the urethritis in the males concerned in the studies of ophthalmia neonatorum and of trachoma would have been deemed to have been “non-specific”.

As previously reported, ten cases of “non-specific” urethritis in nine men who presented because of that disease have been studied. Evidence of infection by TRIC agent was found in four: TRIC agent was isolated in two of nine cases and inclusion bodies were found in urethral scrapings in one of these and in two more of the ten. Cellular changes were suggestive of the presence of TRIC agent in these four cases and in four more. Four female sexual partners were examined: an inclusion was found in cervical scrapings in one case, and cellular changes suggestive of the presence of TRIC agent were present in this case and one more. Evidence to suggest that the isolates from the urethra were TRIC agent has been presented.

The sensitivity of tests for TRIC agent are discussed briefly.

We are grateful to our colleagues who have referred some of these patients to us: to Professor C. F. Barwell of The London Hospital for kindly supplying the materials for the intradermal tests and for carrying out the LGVCFT; to Dr A. E. Wilkinson, Director of the VD Reference Laboratory of The London Hospital for carrying out serological tests for syphilis and for gonorrhoea and cultures for bacteria, Candida, and Trichomonas vaginalis; to Mr H. de C. Clarke, Mr J. R. Kinnison, and Mr D. A. Knight for their valuable technical help; and to the Editor of the Revue Internationale du Trachome for permission to use figures 6, 7, and 8 which were first published in that journal.

REFERENCES


La relation de l’agent TRIC et l’infection génitale non-spécifique

RÉSUMÉ

Les familles de 20 bébés connus comme souffrant de l’ophthalmie des nouveau-nés causée par l’agent TRIC et la présence des “inclusion bodies” Halberstaedter-Prowazek dans les cellules après graffage de la conjonctive ont été étudiées. L’agent TRIC a été isolé de la conjonctive de 11 bébés. Les 20 mamans ont été examinées: dans 18 cas il y avait des signes d’inflammation de la partie marginale du col de l’utérus semblant a ceux produits par l’agent TRIC dans la conjonctive. Des “isolates” ont été obtenus après curetage du col dans trois cas et des “inclusion bodies” ont été trouvés après le graffage du col dans 2 de ces 3 cas. Les changements cellulaires trouvés dans le tissu du col après curetage suggèrent la présence de l’agent TRIC dans le cas de 18 mères. Une salpingite s’est développée chez 3 mères et dans un cas le diagnostic a été fait à la suite d’une laparotomie, une rectite s’est montrée dans 2 cas. 14 des pères ont subi un examen complet et 13 d’entre eux souffraient d’une urétrite non-spécifique ainsi appelée.
Des “inclusion bodies” ont été trouvés après grattage de l’urètre dans 4 cas, l’agent TRIC a été cultivé dans un d’eux et dans 3 autres cas, ainsi la preuve de l’infection de l’urètre par l’agent a été faite dans 7 des 14 cas, ou 7 des 13 de ces derniers cas chez lesquels une urétrite était présente. Des changements cellulaires suggérant une infection par l’agent TRIC étaient présents dans le cas de 8 des 14 pères ou 8 des 13 pères qui souffraient d’une urétrite.

Comme déjà rapporté, l’agent TRIC a aussi été cultivé des voies génitales et de l’œil de chacun des 4 cas de trachome (3 hommes et 1 femme). Des études préliminaires n’ont, jusqu’alors, aucune différence entre le “isolate” de l’œil et celui des voies génitales dans chaque cas.

Un des hommes souffrant de trachome chez qui un “isolate” urétral a été obtenu souffrait aussi de trichomoniasis des voies génito-urinaires; l’urétrite chez les hommes examinés pendant l’étude de l’ophthalmie des nouveau-nés et le trachome aurait été classée comme “non-sélective” si l’agent n’avait pas été trouvé après grattage de l’urètre.

Comme il a été rapporté auparavant dix cas d’urétrite “non-sélective” chez neuf hommes qui se sont présentés à cause de cette maladie ont été étudiés. La présence de l’infection par l’agent TRIC a été trouvée chez quatre: l’agent TRIC a été isolé dans deux des neuf cas et des “inclusion bodies” ont été trouvés après grattage de l’urètre dans un de ces cas et dans deux autres des dix cas. Les changements cellulaires ont suggéré la présence de l’agent TRIC chez ces quatre cas et chez quatre autres cas. Quatre femmes partenaires dans l’acte sexuel ont été examinées et des “inclusion bodies” ont été trouvés après grattage du col dans un cas et des changements cellulaires indicatifs de la présence de l’agent TRIC étaient évidents dans ce cas et dans un autre cas. La documentation permettant de suggérer que les “isolates” de l’urètre étaient l’agent TRIC a été présentée.

La sensibilité des tests pour l’agent TRIC a été discutée brièvement.
Relation of TRIC agent to "non-specific genital infection".


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