These being:

The last congenital syphilis cases are to be subjected to clinical examination rather than tests. The last section of this paper divided into the following sections:

**SYPHILIS (Clinical)**


The incidence of syphilis is rapidly increasing, and in the last year at the authors' hospital over 100 cases of late syphilis have been found, many of which were seronegative. It is emphasized that the diagnosis of syphilis should be based on a detailed history and clinical examination rather than routine serology, as too often these tests are falsely negative. Selected cases were subjected to a battery of serological tests for syphilis, these being:

1. Venerable Disease Research Laboratory (VDRL) slide test;
2. Kolmer-Reiter protein (KRP) test;
3. Fluorescent treponemal antibody test;
4. *Treponema pallidum* immobilization (TPI) test;
5. Fluorescent treponemal antibody absorption technique (FTA-ABS test).

None of the tests was positive in all cases of syphilis. The last two tests are the most reliable, but in a case of congenital syphilis both were negative. At present these two tests are not routinely available, but they should be used to confirm a negative when a standard test has been used in the following circumstances:

1. Any pupillary abnormality not otherwise readily explained;
2. Optic atrophy;
3. Dislocated lenses (except Marfan's syndrome);
4. Fundi suggestive of retinitis pigmentosa;
5. Chronic uveitis.

When the FTA-ABS becomes readily available it should be used first.


Two cases are reported in which alopecia of the eyebrows was not associated with skin or mucous membrane lesions. Each patient had a history of a penile lesion which was not diagnosed as primary syphilis. The serological syphilitic tests proved positive and hair growth became normal some months after treatment. *M. H. T. Yuille*

**SYPHILIS (Serology)**


In the *Treponema pallidum* immobilization (TPI) test as usually performed, incubation of a mixture of the patient's serum, complement and a suspension of treponemes for 18 hours is necessary for immobilization of the organisms; even after this interval, the reaction with weakly-reactive sera may not be complete. The present author has previously shown that the incorporation of lysozyme in the reaction mixture at a concentration of 200 µg. per ml. speeds up the time required for incubation, so that the results can be read after only 6 hours. Qualitative tests were carried out on 612 specimens of serum in parallel with the standard method requiring 18 hours' incubation. There was close agreement between the sensitivity of the two methods, the number of specimens giving positive, doubtful, or negative reactions with the standard test being 409, 66, and 137 respectively and with the test incorporating lysozyme 405, 69, and 138 respectively.

In the standard method strict anaerobic conditions are required for incubating the test mixture in an atmosphere of 95 per cent. nitrogen and 5 per cent. carbon dioxide. The author has found that adequate anaerobiosis can be obtained in the shorter lysozyme test by covering the reaction mixtures in the tubes with a layer of sterile liquid paraffin 1.5 cm. high. The results with this modification on the 612 specimens of serum were in good agreement with those obtained when the lysozyme test mixture was incubated in a nitrogen and carbon dioxide environment.

[These modifications simplify the performance of the TPI test and lysozyme can increase its sensitivity. It would, however, be difficult to carry out the test in the ordinary working day of a laboratory.]

A. E. Wilkinson


GONORRHOEA

Demonstration of *N. gonorhoeae* with the Aid of Fluorescent Antibodies.


The application of the fluorescent antibody method to the identification of bacteria depends on the specificity of the labelled antiserum. Experiments performed at the University of Uppsala showed that fluorescein-labelled anti-gonococcal sera gave cross-reactions with meningococci and to a lesser degree with other neisseriae. Staining at high dilutions of conjugate was seen with some strains of *Staphylococcus aureus* and at lower titres with one strain of *Staph. albus* and some streptococci. Absorption of the conjugate with a strain of staphylococcus which gave a strong cross-reaction lowered the staining titres against gonococci and other neisseriae, but eliminated the staining of staphylococci and streptococci. Addition of normal human or rabbit serum to the antigonococcal conjugate inhibited the staining of staphylococci to some extent. Considerably better results were obtained by using a potent antistaphylococcal serum as diluent, either alone or after conjugation of the globulin fraction with rhodamine. The latter method has the advantage of providing a contrasting counterstain.

Delayed fluorescence tests were performed in parallel with routine cultures on 732 specimens from 68 males and 119 females who were either suspected of having gonorrhoea or who had received treatment for the disease. In 84 tests on material from male patients, 26 positive cultures were obtained. Fluorescence tests were positive in 35 instances when untreated antigonococcal conjugate was used, but in only 26 when the conjugate had been absorbed by staphylococci or mixed with the rhodamine-conjugated antistaphylococcal serum. The cultures from the nine specimens found negative with the latter reagents showed cross-reacting *Staph. aureus*. Cultures were positive in 69 instances in tests on 648 specimens from female patients compared with 100 positive results when the treated conjugates were used. The untreated conjugate gave 113 positive results, but thirteen of these were considered to be falsely positive. The delayed fluorescence technique is thought to be a sensitive method for the detection of gonococci. A. E. Wilkinson


The authors conclude that FA techniques are sensitive methods for the identification of gonococci and suggest that the rapid direct method may be of value in outpatient clinics if facilities for fluorescence microscopy are available. In their own hands the direct methods were more sensitive than those reported by earlier workers, and this is attributed to the use of the combination of conjugates, which both blocks cross-reactions and provides a contrasting background against which fluorescing gonococci are clearly seen.

[These well-documented papers emphasize many of the pitfalls attending the fluorescence technique and merit careful study by anyone wishing to use this potentially useful method.] A. E. Wilkinson

NON-GONOCOCCAL URETHRITIS AND ALLIED CONDITIONS


Over a recent 2-year period five cases of inclusion conjunctivitis in newborn infants have been observed. The causative organism of trachoma-inclusion conjunctivitis (TRIC) was isolated from three of the children and from the cervix of one of the mothers, indicating the probable route of transmission of infection. The clinical features of inclusion conjunctivitis in the children, aged 6 to 9 days, included profuse purulent discharge, pronounced palpebral oedema, heavy hyperaemia and infiltration of the conjunctival epithelium, and pseudo-membrane formation over the conjunctival surface. There was no corneal involvement in any of the cases.

The results are tabulated below:

<table>
<thead>
<tr>
<th>Method of Examination</th>
<th>No. of Positive Results among 101 Patients (Series 1)</th>
<th>No. of Positive Results among 51 Patients (Series 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct microscopy</td>
<td>55</td>
<td>18</td>
</tr>
<tr>
<td>Culture</td>
<td>59</td>
<td>29</td>
</tr>
<tr>
<td>Rapid direct FA</td>
<td>74</td>
<td>Not tested</td>
</tr>
<tr>
<td>Direct FA</td>
<td>74</td>
<td>31</td>
</tr>
<tr>
<td>Delayed FA</td>
<td>69</td>
<td>30</td>
</tr>
</tbody>
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Culture of specimens from the affected conjunctiva failed to reveal bacteria or pleuroneumonia-like organisms. Giemsa-stained smears of conjunctival scrapings revealed cytoplasmic inclusion bodies in all five patients; these were more numerous when chloramphenicol eye-drops were discontinued. From three of the infants, elementary body strains were isolated after inoculation of conjunctival scrapings into the yolk-sac of the chick embryo. These strains were indistinguishable from agents of the psittacosis-lymphogranuloma venereum-trachoma group, with which they shared a common group antigen for purposes of a serological complement-fixation test. The agent produced follicular conjunctivitis in cynomolgus monkeys and in a laboratory worker.

The author states that the data obtained on this agent, which was not impaired by storage of conjunctival scrapings at -60°C. for up to 6 months, are very similar to those reported for trachoma by workers in other countries.

D. Geraint James


I. Toxicities of strains of trachoma and inclusion conjunctivitis viruses differing in virulence for the chick embryo were compared at different times during their growth in the chick embryo yolk sac. As measured by the ability to kill mice and to induce skin lesions in guinea-pigs, toxicity increased until the time at which embryos began to die. All strains possessed similar particle:toxin ratios. It is considered unlikely that the differing virulence of the strains depends on differences in the amount of toxin per elementary body.

II. Growth in the chick embryo yolk sac of trachoma and inclusion conjunctivitis (TRIC) strains which differ in virulence for the chick embryo was measured in terms of ELD 50 inclusion forming units in HeLa cells and total particles. Observed differences in rates of growth are consistent with the assumption that greater virulence depends on a high rate of multiplication in the chick embryo. All strains are equally labile when heated at 37°C. in vitro but only the more virulent kill chick embryos at 37°C.

Authors’ Abs.


Yolk sac material infected with the trachoma agent was inoculated on to the conjunctiva of the author, and the clinical picture of trachoma was produced. Four weeks after the inoculation, the complement-fixation titre rose to 16. When re-inoculated 85 days after the initial inoculation, inflammation of the conjunctiva appeared in 24 hours and disappeared within 3 days. Trachoma was also induced in seven out of thirteen volunteers by inoculation with egg-grown agent. A super-inoculation experiment was also carried out. Seven patients diagnosed as Tr III were inoculated with egg-grown agent and one of the seven showed a flare-up of inflammation. Aoki concludes that re-infection and super-infection are possible in trachoma.

Y. Mitsui


Mita-strain, the trachoma agent isolated in Japan, was used in this study. 12 hours after inoculation into the yolk sac, the infectivity of the agent disappeared and re-appeared after 12 hours’ eclipse. Maximal infectivity was attained 96 hours after inoculation as shown by the titre of 105 Egg LD50/g. yolk sac, which was maintained up to the death of the embryo on the 7th day.

The agent in homogenized yolk sacs was inactivated in 10 minutes at 100°C., in 30 minutes at 56°C., in one day at 37°C., in one week at room temperature, and in one month at 4°C. The infective agent was preserved in homogenized yolk sacs for 4 months or more at -20°C. and for 13 months or more at -50°C. In a lyophilized state it was possible to preserve it for 16 months or more.

Y. Mitsui


A survey was conducted into the prevalence of trachoma in Aborigines in the far north of South Australia. This was found to be high, as in previous reports in Western Australia and the Northern Territory, but the rate of severe lid deformities and blindness was low.

Bacteriological studies showed an association between the active stages of trachoma and bacterial infections.

Material was collected for cytological examination and virological culture, and the nature of the disease was confirmed by the demonstration of inclusion bodies in eye smears and the isolation of ten PLT viruses, two of which have been identified as TRIC virus.

A study of more than 300 cases of mild follicular conjunctivitis in Adelaide showed that this mild disease, unlike trachoma clinically and in its freedom from sequelae, is associated with the presence of a PLT virus morphologically resembling the TRIC virus.

Ronald Lowe


A brief outline of the technique.

Ronald Lowe


Trachoma virus was grown on the yolk sacs of developing chick embryos. The healthy conjunctiva of
four human volunteers was inoculated and two developed signs of trachoma. An approximately specific reaction to a complement-fixation test was obtained from one of the volunteers.  

Ronald Lowe


A clinical trial of tetracycline-L-methylene lysine ("tetralysal") in 54 cases of non-gonococcal urethritis is reported from St. Mary's Hospital, London. All except two of the patients gave a negative response to serological tests for syphilis. The drug was given in a dosage of one capsule (containing 150 mg. of tetracycline base) four times daily for 6 days. Follow-up examinations were planned at 7, 14, 28, 56, and 84 days after the start of treatment, but many defaulted during the follow-up period, so that only 37 patients remained for final assessment. Of these, only seven (18.9 per cent.) needed further courses of treatment within 3 months, the proportion of Negroes needing re-treatment being 27.3 per cent. compared with 15.4 per cent. of white patients. It is suggested that, if it can be assumed that most of the defaulters "failed to re-attend because they were better", the overall results would appear to be comparable to those of a 6-day course of treatment with conventional tetracyclines, with which cure rates in the region of 81 to 85 per cent. have been reported.  

D. Gerait James


The cases of one male and one female patient are described in which the initial stages of the illness were appropriate to Reiter's disease with keratoderma. The subsequent course in the male resembled psoriasis and that in the female resembled psoriasis with rheumatoid disease, and the authors consider that the changing patterns of the evolving illnesses "emphasize the clinical link between Reiter's syndrome and psoriasis with arthritis".  

J. A. H. Hancock


Local application of chemotherapeutic agents will not eradicate *Trichomonas vaginalis* from the female and male genito-urinary tract. The cure of *Trichomonas vaginalis* necessitates the proper examination and simultaneous treatment of the male sex partner. The male can be a symptom-free carrier of the protozoa and the organism can be detected from a freshly ejaculated semen specimen and/or prostatic fluid. To evaluate the curative properties of a trichomonacide, cultures are essential.

Metronidazole ("flagyl") taken orally for 10 days is a highly effective drug in the treatment of trichomoniasis. Comparative studies [at Mount Sinai Hospital, New York] of semen examinations before and after therapy with flagyl show no ill effects on the qualitative or quantitative character of the semen and no depression of spermato genesis.  

Authors' summary


PUBLIC HEALTH AND SOCIAL ASPECTS


