ABSTRACTS

This section of the Journal is published in collaboration with the two abstracting Journals, ABSTRACTS OF WORLD MEDICINE and OPHTHALMIC LITERATURE, published by the British Medical Association. The abstracts are divided into the following sections: Syphilis (Clinical, Therapy, Serology, Pathology, Experimental), Gonorrhoea, Non-Gonococcal Urethritis and Allied Conditions, Chemotherapy, Public Health and Social Aspects, Miscellaneous. After each subsection of abstracts follows a list of articles that have been noted but not abstracted. All subsections will not necessarily be represented in each issue.

SYphilis (Clinical)


The diagnosis of cardiovascular syphilis presents many difficulties and finally rests on a combination of clinical and radiological signs and the results of laboratory tests.

The present report from the University of Modena is based on a study of 25 cases of cardio-aortic involvement, thirteen having aortitis, four aortic regurgitation, seven an aortic aneurysm, and one a cardiac infarct. The methods of clinical and radiological investigation in these cases are enumerated, but the authors' main purpose is with the immuno-allergic reactions.

The mean age of the patients was 54, ranging from 36 to 80 years. In only nine cases was there a known antecedent syphilitic infection and these patients had had only incomplete courses of treatment, the onset of cardiovascular syphilis being 13 to 38 years after the primary infection. In twenty patients (80 per cent.) some at least of the classic serological reactions were positive, but even when these were negative the treponemal immobilization (T.P.I.) test gave a positive result. On all patients the luotest, an intradermal test with purified specific antigen prepared from a Nichols strain treponeme from early rabbit oritchis was carried out. (A reference to the preparation of this antigen is given and the test is also discussed with reference to the literature. It is considered to be absolutely specific and to characterize the late stage of syphilis.) This test, as well as the T.P.I. test, gave positive results in all 25 cases.

In addition to the above 25 cases, two are described in greater detail. Both gave a positive history of syphilis with some treatment, but all serological reactions, including the T.P.I. reaction, were negative, although the response to the luotest was positive. The authors consider that cardiovascular disease with a negative T.P.I. reaction is not of specific origin. F. Hillman


Description of a case of extended ulcer of the cornea, of irregular outline, accompanied by a reaction of the iris and hypopyon. Long-standing syphilis had been incompletely treated. The Wassermann reaction was clearly positive. Classical treatment was useless, but general and local treatment with penicillin, potassium iodide orally, and injections of mercury cyanide resulted in rapid healing. The author concludes that this was a case of syphilitic corneal gumma. — [Author's Summary]


A review of syphilitic eye affections for the general practitioner. W. Leydhecker


Demonstration of a few cases with unusual features. Two are interpreted as keratitis linearis migrans, an vascular form of syphilitic keratitis related to the interstitial keratitis of congenital syphilis; in one, however, the syphilis was acquired. In a 50-year-old patient, a kind of Moore's ulcer near perforation and necessitating conjunctivoplasting was done by a positive Wassermann test to be a gumma, and responded well to penicillin. Another man had a tumour-like inflammatory exccresence behind the limbus, the whole anterior chamber being filled with exudate. Again, serological examination pointed to secondary or tertiary acquired syphilis. Other cases showed acute sero-fibrinous iridocyclitis, a gumma of the disc, and an anatomical preparation of the optic nerves in tubers. In spite of its relative rarity, syphilis should still be kept in mind, and the Wassermann test and specific treatment may help in diagnosis. L. Wittels

Explanation of the Argyll Robertson Phenomenon by the Reafference Principle. (Deutung des Argyll-Robertson-Phänomens durch das Reafferenzprinzip.) Garnaeg-Danelsen, B. (1960). Confin. neur. (Basel), 20, 315. The reafference theory taken from the technology of regulation serves as a model of biological processes. The essentials of the reafference theory are briefly outlined, and the Argyll Robertson pupil is explained according
ABSTRACTS

SYPHILIS (Therapy)


As part of a programme being carried out by the District of Columbia Department of Health to seek alternative therapeutic agents to penicillin in the treatment of early syphilis, an assessment was made of the results in 29 patients with early syphilis (primary or early secondary stages), all with dark-field positive tests, who were given orally a total dose of 10 g. propionyl erythromycin—2 g. initially at the clinic, then 1 g. per day for 6 days, and a final 2 g. at the clinic on the 8th day. Evaluation was made on the basis of clinical examination, dark-field examination (1 week), and the usual serological tests, which were performed at monthly intervals up to one year.

Of the 29 patients, only seventeen completed treatment and follow-up satisfactorily with a negative serology and normal cerebrospinal fluid findings; of the other twelve, five were lost to follow-up, three failed to respond to therapy, and four developed re-infections. The three failures all occurred in patients with syphilis in the secondary stage; these showed an initial response, but relapsed in 3 to 4 months. In all cases the dark-field examination became negative within 4 days. At least half the patients suffered gastro-intestinal side-effects. It is concluded that at these dosages the results obtained with erythromycin are not comparable to those obtained with the usual course of penicillin.

Allene Scott

SYPHILIS (Serology)


In performing the fluorescent treponemal antibody test the sera are usually diluted 1 in 200 with buffered saline because it has been found that some sera from non-syphilitic patients may give non-specific fluorescence with treponemes at lower dilutions. This necessity for dilution reduces the sensitivity of the test. Working at the Faculty of Medicine, Lyons, the authors have investigated the cause of this non-specific fluorescence.

They found that absorption of the anti-human globulin conjugates used in the test with dried organ powders (mouse and rabbit liver or rabbit testicle) failed to abolish non-specific fluorescence. A conjugate was then prepared from the serum of a patient in whom syphilis could be excluded with certainty, but which nevertheless gave a
marked non-specific reaction. This conjugate also showed non-specific staining, leading the authors to conclude that this was a property of the serum itself and not of the conjugates used in the test. Absorption of this conjugated normal serum, or of other normal sera, with powdered rabbit testis was found to abolish non-specific staining, whereas absorption with rabbit liver powder was not so effective. It is thought that substances in the tissue fluids of the testes from which the treponemes have been extracted may react with some normal sera; these substances presumably coat the surface of the treponemes during fixation of the suspension on the slide.

The factors in normal sera responsible for non-specific staining are rendered inactive by heating the sera to 62°C for 30 minutes, specific antitreponemal antibodies being unaffected by this temperature. The authors recommend that the test should be performed with serum diluted to 1:30 which is then shaken with dried rabbit testis powder for two periods each of one hour, centrifuged, and the supernatant fluid heated to 62°C for 30 minutes. This procedure has been used to test a hundred normal sera and is thought to give specific results.

A. E. Wilkinson


In a brief preliminary discussion of the Treponema pallidum immobilization test, the authors, writing from the Institute of Hygiene of the University of Palermo, mention the “pre-lytic” changes which occur in pathogenic T. pallidum before the immobilization and also the prolonged exposure to antibody necessary to induce preparedness for immobilization. They then report a study of the immobilization of actively motile Reiter treponemes by homologous sera and by sera from syphilitic rabbits and patients. The methods of cultivation and other technical details are briefly indicated [but the total number of tests is not given].

Reiter’s treponeme, less actively motile than T. pallidum, is not immobilized in 18 hours by normal rabbit serum. With anti-Reiter immune serum immobilization begins in one hour and is almost complete in 2 hours, when morphological changes also begin, lysis being almost complete in 12 hours. In contrast immobilization of T. pallidum only approaches completeness in 16 to 18 hours with particularly potent sera and morphological changes have by then occurred which correspond to those seen in the Reiter organism in 2 hours. As the Reiter’s treponemes studied were suspended in Brewer’s thioglycollate medium and T. pallidum in Nelson–Mayer maintenance medium an immobilization test using T. pallidum suspended in Brewer’s medium was carried out. After 6 hours immobilization affected only 16 per cent. of the organisms and longer exposure was not possible because T. pallidum does not survive in Brewer’s medium.

The results were compared of complement-fixation reactions with cardiolipin and Reiter protein antigens and immobilization reactions with Reiter’s treponeme and T. pallidum against various sera. The main results were as follows:

<table>
<thead>
<tr>
<th>Type of Serum</th>
<th>Complement Fixation</th>
<th>Immobilization</th>
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<tbody>
<tr>
<td></td>
<td>Cardiolipin</td>
<td>Reiter Protein</td>
</tr>
<tr>
<td>Anti-Reiter’s treponeme</td>
<td>--</td>
<td>+</td>
</tr>
<tr>
<td>Anti-Reiter protein</td>
<td>--</td>
<td>+</td>
</tr>
<tr>
<td>Anti-lipoïd</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Rabbit syphilitic</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Human syphilitic</td>
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The rapid lysis of Reiter’s treponeme compared with the long “preparatory” period preceding the immobilization of T. pallidum is attributed by the authors to the absence from Reiter’s organism of a lysozyme-sensitive envelope such as has recently been described on T. pallidum. The specificity of the immobilizing antibody is emphasized. Syphilitic human and rabbit sera, although strongly reacting in complement fixation tests with the Reiter protein antigen, do not immobilize Reiter’s treponeme. The immobilization of Reiter’s treponeme by anti-Reiter protein sera must be interpreted cautiously, because traces of lipid and polysaccharide, of no consequence in tests in vitro, may well lead to the production of antibodies on immunization in vivo.

The authors suggest that this test may be useful in helping in the identification of immobilizing antibody.

F. Hillman


The prozone phenomenon in flocculation tests for syphilis has been attributed to inhibition of the union of antibody with antigen by an excess of antibody, the reaction becoming more intense as the serum is diluted with saline in a quantitative test. In this study the authors, working at the Faculty of Medicine, Bordeaux, have analysed the results obtained over a 6-year period during which, of 90,106 sera examined by the standard Kline test, using a cardiolipin antigen, 21,467 gave positive results, and of these 259 (1.2 per cent.) showed zoning reactions. Most of the sera showing zones came from patients with infections of long standing, 149 having tertiary lesions, 101 latent disease, and nine secondary lesions. Although many sera from cases of early syphilis were examined during the period reviewed, none gave zoning reactions. In seven of these sera the reaction with undiluted serum was completely inhibited, whereas on dilution titres of 1:8 to 1:256 were obtained. In 243 of the sera there was only partial inhibition of the reaction with
undiluted serum, and these gave titres of 1:4 to 1:2,048 on dilution. Nine sera showed a “double zone” effect; thus at first the reaction with undiluted serum was almost maximum, but as dilution proceeded it became first weaker and then stronger again, before finally becoming negative.

The authors suggest that the titre of a serum is not the only factor responsible for the zone phenomenon; zoning occurred most frequently in sera giving titres of 1:32 or 1:64, but ten of the sera had low titres of 1:8 or less. The total inhibition of low titred sera was most marked with sera from patients with tertiary syphilis, suggesting that the reagin produced at this stage of the disease may be less avid in its reaction with antigen. The sera of some patients may continue to give zoning reactions for long periods; one case is cited in which zoning was seen in fifteen separate specimens of serum. The zone effect can be overcome to some extent by enhancing the contact of antibody with antigen by centrifuging the serum-antigen mixture or by increasing the salt concentration used in the Kline test. The authors found zone reactions to be more marked in the Kahn and Meinicke tests, but not to occur at all in the Kolmer complement-fixation test. They recommend that both a complement-fixation test and a flocculation test should be used as screening procedures and that when the result of the former is positive but the latter negative, the flocculation test should be repeated by a quantitative technique in order to avoid a false negative result due to a zoning reaction.

A. E. Wilkinson


In view of the success of the rapid plasma reagin (R.P.R.) test for syphilis as a quick and economical procedure for screening large numbers of patients, search has been made at the Venereal Disease Research Laboratory, Atlanta, Georgia, for a test capable of utilizing satisfactorily the same antigenic suspension with unheated plasma or unheated serum. The following technique was devised: 0.05 ml. of unheated serum is mixed with 1/45 ml. of improved (Portnoy) R.P.R. antigen suspension on a 14-mm. paraffin-ringed slide and the reaction noted. This test gave 97.4 per cent. agreement with the V.D.R.L. test and other standard tests for syphilis in one series of 492 patients and a second group of 100,000 cases examined in New York. The similarity in procedure with the standard V.D.R.L. test will, it is suggested, make this new test a simple one to introduce into the laboratory.

Allene Scott


In the treponemal immobilization (T.P.I.) test the treponemes are immobilized by syphilitic serum in the presence of complement and the persistence of excess complement at the end of the test period is demonstrated by its ability to lyse sensitized sheep cells. The reproducibility of the test was studied at the State Bacteriological Laboratory, Stockholm, using a very carefully standardized technique [for details of which the original paper should be consulted]. Tests were set up in duplicate on 16 days over a 5-week period using aliquots of the same pool of positive serum and of a pool of complement which had been stored at —60°C. Determinations of the serum dilution which immobilized 50 per cent. of the treponemes and of the 50 per cent. lysis titre of the complement showed very good reproducibility over the period of testing.

Tests were then performed using individual complements from sixteen guinea-pigs and pools of complement from animals selected at random. No proportionality was found between the immobilizing activity and the haemolytic activity of the various complements tested. Sera from ten patients with untreated or treated early syphilis which had a low titre of immobilizing antibody were then tested with two further pools of complement (E and F). These pools had almost equal haemolytic activity, but one (E) had previously been shown to have a higher immobilizing activity than the other (F). With Pool E, the T.P.I. test gave a positive result in seven sera and a doubtful result in three; with Pool F, the result was doubtful in four and negative in the remaining six sera. It was shown that the complement did not lose its immobilizing activity even after storage for one year at —60°C. Thus it is possible to enhance the sensitivity of the T.P.I. test by using complement which has been previously selected as having a high immobilizing activity.

A. E. Wilkinson


GONORRHOEA

Sensitivity of *N. gonorrhoeae* to Antibiotics. [In English.]

In the last few years physicians in Sweden have noted an increasing number of cases of gonorrhoea which fail to respond to the customary dose of 600,000 units of procaine penicillin. In this study, 777 strains of *gonococci* isolated in the course of routine diagnostic work at the National Bacteriological Laboratory, Stockholm, during 1959–60 were tested for sensitivity against sulphonamide, penicillin, streptomycin, and tetracycline. Chocolate agar plates were flooded with a suspension of about twenty colonies of *gonococci* in 3 ml. broth. After drying, paper disks containing 2-4 mg sulphonamide, 20 units benzylpenicillin, 50 μg streptomycin, or 50 μg tetracycline, were applied, the plates being left at room temperature for 3 hours for diffusion to occur and then incubated in an atmosphere containing 10 per cent. CO₂ for 24 hours. The minimum inhibitory concentrations were then calculated from the diameter of the inhibition zones.

Of the 777 strains, 99 per cent. were sensitive to sulphonamide, most being inhibited by 0-5 mg. per 100 ml. or less, but three strains (0-4 per cent.) were highly resistant. The majority of the strains were sensitive to penicillin in concentrations of 0-06 unit per ml. or less, but 1-7 per cent. were sensitive only to 0-13 to 0-5 unit per ml. To streptomycin 97-9 per cent. were sensitive to a concentration of 4 μg per ml., but nine strains (1-2 per cent.) were highly resistant, and these often also showed a reduced sensitivity to penicillin. All the strains were sensitive to tetracycline, being inhibited by concentrations of 0-25 μg per ml. or less. Some of the streptomycin-resistant strains were traced to the same source. The fact that all nine strains appeared within a 3-month period during 1960, five of them within 18 days, indicated that these strains were epidemiologically stable and able to spread within a community. A. E. Wilkinson


Treatment of Blennorrhagia with Triacetylelonamycin.


Phagocytosis of *Neisseria gonorrhoeae* in Tissue Culture.


NON-GONOCOCCAL URETHRITIS AND ALLIED CONDITIONS


Three groups of patients with non-gonococcal urethritis received urethral suppositories containing nitrofurazone as the basic ingredient with the addition, respectively, of topical anaesthetic, of topical anaesthetic and oestrogen, and of topical anaesthetic and hydrocortisone. The aetiology of the urethritis was varied, and some patients had a urethral stricture and others pelvic inflammatory disease as well. There was an unspecified number of women amongst the 54 patients treated. One suppository was inserted daily until symptomatic relief was obtained.

The results were considered to be “excellent” or “good” in the majority of cases. The nitrofuracin-anaesthetic combination is said to have been particularly effective in female urethritis and male urethral stricture, while the nitrofuracin-anaesthetic-oestrogen suppository was beneficial in senile and postmenopausal urethritis, and the nitrofuracin-anaesthetic-steroid combination in severe and post-instrumental urethritis.

G. W. Csonka


At the Institute of Ophthalmology, London, 211 males with uveitis were investigated for the presence of pus in the prostatic fluid, and it was found that 145 (68.7 per cent.) had either clumps of pus or more than ten leucocytes per 1/12-inch (2-6 mm.) microscope field. This suggested chronic prostatic-vesiculitis. In a group of 75 controls of the same age range, selected from in-patients in the general medical and surgical wards of two teaching hospitals, the incidence of chronic prostatitis was fourteen (18-6 per cent.). Amongst the group of patients with uveitis, Reiter’s disease occurred in 45 (21-3 per cent.) and ankylosing spondylitis in 26 (12-3 per cent.). In seven patients plantar fasciitis or sacro-iliiitis alone were found. It is suggested that chronic prostatic-vesiculitis may be the underlying cause of anterior uveitis. Reiter’s disease, ankylosing spondylitis, atypical sacro-iliiitis, and plantar fasciitis.

G. W. Csonka

CHEMOTHERAPY