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# JOURNAL OF CLINICAL PATHOLOGY

EDITED FOR  
THE ASSOCIATION OF CLINICAL PATHOLOGISTS

BY

A. GORDON SIGNY

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And the Editor of the *British Medical Journal*

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## ABSTRACTS

This section of the JOURNAL is published in collaboration with the two abstracting journals, *Abstracts of World Medicine*, and *Abstracts of World Surgery, Obstetrics and Gynaecology*, published by the British Medical Association. In this JOURNAL some of the more important articles on subjects of interest to clinical pathologists are selected for abstract, and these are classified into four sections: bacteriology; biochemistry; haematology; and morbid anatomy and histology.

### BACTERIOLOGY

**A Clinical Evaluation of a Recent Sulfonamide: Nu-445.** RODGERS, R. S., and COLBY, F. H. (1948). *J. Urol.*, 59, 659.

The authors have used the new sulphonamide, "Nu-445" (3,4-dimethyl-5-sulphanilamido-isoxazole) in 20 cases of urinary infection caused by Gram-negative organisms, chiefly *Bacterium coli*, *Proteus vulgaris*, and *Pseudomonas pyocyanea*. By *in vitro* experiments, they found that the drug was most effective at a pH of between 7 and 8. The urine of all patients was therefore rendered alkaline during the treatment by the administration of sodium citrate. The usual daily dose of Nu-445 was 4 g., but some patients received 8 g. and others even 12 g. daily. There was no response in 13 cases, but 7 showed definite improvement. There appeared to be no relation between the levels of the drug in blood or urine and the clinical results. *Thomas Moore.*

**Treatment of Persistent Colon Bacillus Infections of the Urinary Tract by Sulfasuxidine and Streptomycin.** CROWLEY, E., and O'CONNOR, V. J. (1948). *Surg. Gynec. Obstet.*, 86, 224.

The authors conclude that there is "an unusual efficacy" in the combined administration of sulphasuxidine and streptomycin in otherwise resistant bacillary infections of the urinary tract.

**Administration of Chloromycetin to Normal Human Subjects.** LEY, H. L., SMADEL, J. E., and CROCKER, T. T. (1948). *Proc. Soc. exp. Biol., N.Y.*, 68, 9.

**Chloromycetin in the Treatment of Patients with Typhus Fever.** SMADEL, J. E., LEON, A. P., LEY, H. L., and VARELA, G. (1948). *Proc. Soc. exp. Biol., N.Y.*, 68, 12.

Two normal male subjects received a prolonged course of chloromycetin beginning with a single dose of 1 g., followed by 1 g. daily (divided into 0.2 g. doses 4-hourly) for 10 days. The amounts of the drug in blood and urine were determined by a method in which the inhibition by the antibiotic of the growth of *Shigella dysenteriae* (Sonne) is measured. Maximum levels of 5 to 10 µg. per ml. were obtained in blood within 2 hours of the initial dose, this level falling rapidly until none was detectable at 8 hours. Maximum levels in urine of about 200 µg. per ml. were obtained.

On the results obtained in a limited number of cases it is concluded that chloromycetin is relatively safe in the dosage employed; the results were sufficiently encouraging to warrant further clinical trials.

*R. Wien.*

**Fibrin Web Culture of Tubercle Bacilli from Exudates in So-called Idiopathic Pleurisy.** (Die Fibrinsspinnwebhäutchen-kultur von Tuberkelbazillen, aus Exsudaten bei sog. idiopathischen Pleuritiden.) SÜLA, L. (1947). *Schweiz. Z. Path. Bakt.*, 10, 125.

The author describes a method of culturing tubercle bacilli from the fibrin web of pleural exudates, so that up to 300 ml. of exudate may be examined in a single culture. An ascitic fluid nutrient medium is used, and the culture sealed. Colonies of tubercle bacilli can be seen in the fibrin web after 14 to 20 days' incubation. By this method tubercle bacilli were grown from 23 out of 47 cases of so-called idiopathic pleurisy.

**Primary Atypical Pneumonia. A Report of 112 Cases with a Positive Cold Agglutination Reaction.** (In English.) LAURELL, G. (1948). *Acta med. scand.*, 130, 299.

The author studied 112 patients with suspected primary atypical pneumonia who showed a positive cold agglutination reaction, of a titre of at least one-eighth to one-sixteenth, during convalescence after it had been negative in the acute stage, or who showed a rising titre in convalescence. The earliest positive cold agglutination reaction was obtained from the eighth to the twenty-eighth day, the majority occurring in the second and third weeks. The highest titre occurred from the tenth to the twenty-eighth day and the first significant drop between the third and fifth weeks. The titre was not related to the maximum temperature but showed some correlation with the duration of fever and the white cell count. *J. Maclean Smith.*

**Some Virus Diseases During Pregnancy and Their Effect on the Foetus.** (Nagra virussjukdomar under graviditet och deras verkan på fostret.) GRÖNVALL, H., and SELANDER, P. (1948). *Nord. Med.*, 37, 409.

The authors conclude that rubella, mumps, infective hepatitis, and anterior poliomyelitis may injure the foetus, though rubella in this respect may be much less dangerous in Sweden than it seems to be in Australia; in the latter country it has been suggested that rubella early in pregnancy is an indication for inducing abortion.

[See also Landtman, *Arch. Dis. Childh.*, 1948, 23, 237, who found that in a series of 73 mothers giving birth to malformed children, 12 had had infectious diseases during the first three months of pregnancy.]

### BIOCHEMISTRY

**Differential Agglutination of Normal and Sensitized Sheep Erythrocytes by Sera of Patients with Rheumatoid Arthritis.** ROSE, H. M., RAGAN, C., PEARCE, E., and LIPMAN, M. O. (1948). *Proc. Soc. exp. Biol., N.Y.*, 68, 1.

An agglutination test is described which is specific for active rheumatoid arthritis. A 1% saline suspension of sheep erythrocytes is prepared from fresh defibrinated sheep blood by washing the cells 3 times in saline, centrifuging, and resuspending. A similar 1% suspension

of erythrocytes sensitized by the addition of anti-sheep rabbit serum is prepared, 2 units of haemolysin being used. With each of these 2 suspensions, 1 plain and 1 sensitized, the patient's fresh serum (inactivated by heating at 56° C. for 30 minutes) is titrated. After incubation at 37° C. for 1 hour the tubes are left in a refrigerator at 4° C. overnight; the end-point is read immediately after removal from the refrigerator by tapping the tube with the finger and estimating the degree of agglutination.

In 27 cases of active rheumatoid arthritis the D.A.T. was 16 or more; in 8 of 16 cases of inactive rheumatoid arthritis the D.A.T. was over 16; in 2 cases of active Still's disease the titre was 128, and in 1 in remission the titre was 4. The only 1 of 5 cases of ankylosing spondylitis with peripheral joint involvement was also the only one in which the D.A.T. exceeded 16. In other diseases, including rheumatic fever, infectious mononucleosis, and other forms of arthritis, titres were low. Thus the test appears to be specific and related to activity of the disease.

**Plasma Proteins in the Normal Newborn Infant.** (La protidemia del neonato normale.) BRUSA, P. (1948). *Med. ital., Milano*, 28, 65.

The author reports on plasma-protein determinations in 18 normal, full-term, newborn infants. The subjects of the investigation were all healthy and breast-fed.

Determination at the age of 3 to 4 days yielded the following results: total plasma protein average 6.43 g. per 100 ml. (range 5.94 to 6.94); albumin average 3.71 g. per 100 ml. (range 3.12 to 4.14); globulin average 2.78 g. per 100 ml. (range 2.22 to 3.64). A comparison with corresponding values for adults shows that total protein and albumin figures are lower while globulin figures are higher than the average adult levels. Determinations at 16 to 17 days gave the following results: total protein average 6.08 g. per 100 ml. (range 5.34 to 6.56); albumin average 3.40 g. per 100 ml. (range 3.04 to 4.00); globulin average 2.79 g. per 100 ml. (range 2.10 to 3.30).

Hypo-albuminaemia is probably and principally a manifestation of hepatic immaturity and functional incapacity to manufacture plasma proteins. The large amounts of antibodies of maternal origin present in the newborn infant and associated with the globulin fraction of the plasma proteins may be responsible for this initial hyperglobulinaemia.

[C. Smith, *The Physiology of the Newborn Infant*, Springfield, 1946, pp. 179-200, and 286, states that the hypoproteinaemia of the newborn infant is essentially the result of globulin deficiency, and gives various references.]

P. E. Polani.

**The Guterman Test for Pregnancy.** MERIVALE, W. H. H. (1948). *Brit. med. J.*, 1, 685.

**The Guterman Test in Threatened Abortion.** A Report Based on 100 Consecutive Cases. BENDER, S. (1948). *Brit. med. J.*, 1, 683.

Both authors conclude that this test is unreliable as a routine test for the diagnosis of pregnancy. In 33 patients with threatened abortion the first author obtained a positive test in 20, and of these 17 continued their pregnancy, whilst of 13 with negative results 11 aborted. The second author claims that if cases of threatened abortion are treated with progesterone only if the excretion of the hormone is low, abortion will occur only in 18 per cent. If no such division is made 41 per cent will abort if no progesterone is used and 45 per cent if it is used indiscriminately in all cases.

**The Renal Excretion of Potassium.** MUDGE, G. H. FOULKS, J., and GILMAN, A. (1948). *Proc. Soc. exp. Biol., N.Y.*, 67, 545.

With a urea diuresis, potassium clearances were 5 to 10% above creatinine clearances and, at a diuresis with minute volumes of 18 to 35 ml., clearances were as much as 80 to 90% above creatinine clearances. The effect of alkalosis was studied in dogs receiving potassium chloride by intravenous infusion; in these animals potassium clearances were greater than the filtration rates. It is concluded that tubular secretion of potassium does occur.

G. Loewi.

## HAEMATOLOGY

**Histochemical Methods Applied to Hematology.** RHEINGOLD, J. J., and WISLOCKI, G. B. (1948). *Blood*, 3, 641.

This paper is a good review of how histochemical methods are being applied to blood cells. The specific reactions with Sudan black B, Feulgen's reagent and ribonuclease, and Gomori's procedure for phosphatases and the Bauer-Feulgen test for glycogen are considered.

**Studies on the Megakaryocyte. I. The Normal Granulopoiesis of the Megakaryocyte.** SCHWARZ, E. (1948). *Arch. Path.*, 45, 333.

The development of granules in megakaryocytes is a sign of a cell's increasing maturity, as it is with the polymorph series. The staining reaction of the granules is not that of chromatin; and the nucleus plays no part in their formation.

**In Vitro Study of Bone Marrow. III. Erythropoiesis in vitro of Sternal Marrow from Cases of Pernicious Anemia and Lymphatic Leukosis Under Therapy.** CLEMMESSEN, J., ESPERSEN, T., and PLUM, C. M. (1948). *Blood*, 3, 155.

Using Locke's fluid with the addition of 1% serum the authors have studied the development of non-nucleated erythrocytes in their marrow cultures. They found that normal marrow produced less erythrocytes when serum from a case of pernicious anaemia was used in the culture medium than when normal serum was used, and that the pernicious anaemia marrow was more active in normal serum than in autogenous serum. After treatment with liver extract there was a return to normal. Marrow and serum from two patients with lymphatic leukaemia behaved in the same way. The leukaemic marrow was more active in normal serum, and the serum retarded the development of erythrocytes in normal marrow.

**Temporary Remissions in Acute Leukemia in Children Produced by Folic Acid Antagonist, 4-Amino-pteroyl-glutamic Acid (Aminopterin).** FARBER, S., DIAMOND, L. K., MERCER, R. D., SYLVESTER, R. F., and WOLFF, J. A. (1948). *New Engl. J. Med.*, 238, 787.

Ten out of 16 children improved both clinically and haematologically when aminopterin was administered, and details of five who responded well are given. One patient remained well for as long as 43 days, but the remissions are not expected to be more than temporary. The drug is a dangerous one and has a marked depressive effect on all the cells in the bone marrow, and great caution is necessary in its administration. Severe stomatitis is a common toxic manifestation.

**Preliminary Results of Treatment of Acute Leucoses by Exsanguination-transfusions.** (Premiers résultats du traitement des leucoses aiguës par les exsanguino-transfusions.) CROIZAT, P., REVOL, L., DURAND, J., CHABANON, R., and MOREL, —. (1948). *Lyon méd.*, 180, 477.

A report is given of 5 patients with acute leukaemia treated by exsanguination transfusion. In each case the blood and bone marrow picture became almost normal. The longest remission lasted for about 3 months.

**Rapid Test for the Demonstration of Sickle Cells and its Clinical Significance.** SINGER, K., and ROBIN, S. (1948). *J. Amer. med. Ass.*, 136, 1021.

A suspension of *B. subtilis* is mixed on a slide with the blood to be tested and the sealed preparation incubated at 37° C. Reduction in oxygen tension by the respiration of the bacteria rapidly causes sickling in the presence of the sickle-cell trait.

**Studies in Iron Transportation and Metabolism. VI. Absorption of Radioactive Iron in Patients with Fever and with Anemias of Varied Etiology.** DUBACH, R., CALLENDER, S. T. E., and MOORE, C. V. (1948). *Blood*, 3, 526.

#### MORBID ANATOMY AND HISTOLOGY

**Necrosis of the Brain due to Radiation Therapy.** PENNY-BACKER, J., and RUSSELL, D. S. (1948). *J. Neurol. Neurosurg. Psychiat.*, 11, 183.

Five cases of necrosis of the brain following radiation therapy are reported. They were treated in different centres with accepted techniques and dosages. In each case there was a long latent period between the radiation treatment and the onset of clinical signs of necrosis. The shortest interval was 9 months, the longest 5 years. The pathology of the necrosis appears to be related to reactions in the smaller blood vessels, in which collagenous thickening, fibrinoid necrosis, and thrombosis are conspicuous. It is suggested that radiation should be reserved for inoperable tumours and those cases in which no further surgical procedures are contemplated.

**Myoepithelial Sweat Gland Tumor: Myoepithelioma. Report of Three Cases with a Review of the Literature.** LEVER, W. F. (1948). *Arch. Derm. Syph., Chicago*, 57, 332.

It is suggested that the group of benign sweat-gland tumours in which the myoepithelial cells represent the majority of the cellular elements should be called "myoepitheliomata." The paper deals with the occurrence of myoepithelial cells in many types of sweat-gland tumour, with reports of 12 cases of myoepitheliomata abstracted from the literature of the subject, and with details of 3 observed cases. There is a discussion on the classification of apocrine gland tumours.

**"Basaliomata" of Spiegler.** (Basaliome vom Typus "Spiegler.") GREITHER, A. (1948). *Arch. Derm. Syph., Wien*, 187, 224.

The various synonyms are discussed (cylindroma, basal-cell epithelioma, multiple benign epithelioma, trichobasalioma), and the term basalioma (Spiegler) is suggested as being more correct pathologically. Histologically, the structure of the tumours resembled that

of hair follicles, but there was not enough evidence to show that the growths originated from the latter. A feature in one case was the presence of the so-called mixed parotid tumour, but no aetiological connexion was thought likely. None of the cases reviewed by the author, including his own 2 cases, showed definite malignant changes. G. W. Csonka.

**Myxoma, the Tumor of Primitive Mesenchyme.** STOUT, A. P. (1948). *Ann. Surg.*, 127, 706.

The author defines a myxoma as a true neoplasm composed of stellate cells set in a loose mucoid stroma through which course very delicate reticulin fibres. Denser areas with larger numbers of spindle cells and less mucoid material may be encountered in a myxoma, but the presence of recognizable differentiated cells, such as chondroblasts, lipoblasts, or rhabdomyoblasts, rules out the diagnosis. Myxomata do not metastasize, but may kill by pressure or direct spread into vital organs. Using these criteria, the author found 49 myxomata in the records of the surgical pathological laboratory of Columbia University. Over 100 cases of myxomata involving the heart, and another 95 excluding the heart, have been found in the literature. The common sites for myxomata are the heart, the subcutaneous tissues, the bones (especially the jaws), the urogenital tract (usually the bladder), and the skin. The sex incidence is about equal, the age incidence from infancy to senility, and the size very variable. The average duration of the tumour has been 4 years, the actual duration ranging from 2 weeks to 37 years. A pre-operative biopsy is advocated.

The paper includes six well-illustrated case reports.

R. S. Handley.

**Allergic Hyperglobulinosis and Hyalinosis (Paramyloidosis) in the Reticulo-endothelial System in Boeck's Sarcoid and Other Conditions. A Morphologic Immunity Reaction.** TEILUM, G. (1948). *Amer. J. Path.*, 24, 389.

**Hyperglobulinemia, Periarterial Fibrosis of the Spleen, and the Wire Loop Lesion in Disseminated Lupus Erythematosus in Relation to Allergic Pathogenesis.** TEILUM, G. (1948). *Amer. J. Path.*, 24, 409.

Periarterial fibrosis of the spleen and lymph nodes, such as was first described by Libman and Sacks in disseminated lupus erythematosus, occurs also in Boeck's sarcoid. It is associated with the increase in  $\gamma$  globulin in the blood which exists in both diseases. The lesion is due to the accumulation of hyalin (in concentric rings), and results from the precipitation of the abnormal globulin. Hyalin (or pre-hyalin) is also found in relation to the granulomatous foci, and in the early stages of its formation may be mistaken for caseous material. The abnormal globulin in states of hyperglobulinosis is formed by plasma and other cells of the reticulo-endothelial system, and these cells were often increased in the vicinity of the hyalin.

In the second paper the author maintains that the diffuse lesions (such as the periarterial fibrosis of the spleen, and wire-loop lesions of the glomeruli) are not the result of widespread degeneration of collagen but are due to an infiltration with hyalin. He believes that the hyalin is formed by precipitation of globulin, which is present in excess. He regards the hyperglobulinosis as indicating a state of hyperimmunity, and as "allergic," in the wider use of the term. D. M. Pryce.