ABSTRACTS

Acute Rheumatism


The authors attempt to evoke a local immunity by bringing an antigen into direct contact with the arterial tissues. The antigen used they call an anavaccine; it is a lysate of streptococci, enterococci, and staphylococci. It is injected slowly into the femoral artery, at intervals of 4 to 7 days. Injections are followed by a slight rise in temperature, and in some patients by a blanching of the fingers resembling the Raynaud phenomenon and lasting 1 to 1½ hours. No serious reactions were encountered in several hundred intra-arterial injections in patients with Bouillaud's disease. Vaccine injections are not begun until acute symptoms have abated under salicylate therapy. The authors think the method is of special value in prolonged or relapsing types of the disease. They think it too early to say that the prognosis can be modified in this way, but believe that the clinical effects they record are worthy of attention. Kenneth Stone.


The authors point out that there are two types of agglutination; in one the antigen appears in non-encapsulated living streptococci and disappears after the organisms have grown for more than 14 hours, or after shaking and centrifugation, this being termed "L agglutination"; in the other an antigen occurs in autoclaved haemolytic streptococci and is termed by Thulin "O-antigen". The authors studied L agglutination of Group A type I haemolytic streptococci suspended in a special broth (formula given) by a series of 206 sera from cases of rheumatoid arthritis (nearly all cases being tested repeatedly), a control series of 105 normal sera, and 72 sera from cases of rheumatic fever. The inactivated serum, serially diluted with 0·3% NaCl to titres up to 1 in 640 is incubated for 2 hours at 52°C. after addition of an equal broth suspension, and the result read after leaving overnight in the refrigerator. Three degrees of positive agglutination are recognized, particle and clump formation being considered positive. Positive agglutination (beyond a titre of 1 in 10) developed in 68% of sera from cases of rheumatoid arthritis compared with 6% of the control sera, and there was a significant correlation with the rate of erythrocyte sedimentation. In rheumatic fever, 35% of sera gave a positive agglutination: 5 individual charts are shown. It appears that the agglutination titre becomes raised several months after the acute stage (22% were positive up to 4 months, whereas 47% of the sera were positive after 4 months from the onset). Three explanations are offered to account for these findings : (1) The late positive reactions result from a continuing streptococcal infection; (2) The streptococcus may change after a period and produce this different late antigen (the most feasible explanation according to the author). (3) The reaction is a non-specific flocculation reaction such as is seen with colloidin particles (Wallis). E. G. L. Bywaters.

Comparison of Salicylate Therapy by Mouth, Intravenously, and with a Retarding Agent in Acute Rheumatism. (Comparaison de la salicylothérapie "per os" intraveineuse, et retard, dans la maladie de Bouillaud.) CAMELIN, A., PELLERAT, J., MURAT, M., and MAGERAND, M. F. (1948). Lyon Médicale, 18, 605-611.

A concentrated artificial plasma "subtosan 25" was used to maintain a high salicylate level in the blood in the treatment of acute rheumatism by the administration of sodium salicylate intravenously. A 5% solution of sodium salicylate in 10% glucose was given, with the addition of 10 ml. subtosan 25 to each dose. Twenty-five patients were treated with 6 to 9 g. daily, given in two or three doses at 8- or 12-hourly intervals. It is claimed that a satisfactory salicylate level in the blood of 175- to 200 mg. per litre was thus maintained. No toxic symptoms occurred and sclerosis of the veins did not develop, even after 3 weeks' treatment by this method. The authors state that the salicylate is also fixed in the tissues, particularly the myocardium, at a much higher level than after oral administration of the drug, and that the method is useful in salicylate-resistant patients. It is impossible to decide if there is any advantage in the method here described. T. G. Reah.


Nineteen children ranging in age from 8 months to 11½ years were treated with sodium salicylate or acetylsalicic acid in doses of either 0-10, 0-125, or 0-15 g. per kilo body weight per day. Six patients, from 3 to 11½ years old, were given 0-15 g. per kilo body weight daily. Five showed toxic symptoms—hyperpnoea,
apathy and lassitude, anorexia, and tinnitus. Administration of the drug was stopped before more severe toxic symptoms occurred. Plasma salicylate levels in these cases ranged from 32 to 41 mg. per 100 ml. The one child who showed no toxic symptoms on this dosage was afebrile and convalescent when treatment started. Acetylsalicylic acid appeared to be more toxic than sodium salicylate. An early fall in serum carbon dioxide content, followed by a gradual further fall, was noted; blood pH rose at first, falling gradually later. The urine contained albumin, casts, red and white blood cells, and acetone. Gerhardt's test was positive constantly; reduction of Benedict's solution was noted occasionally. When the dose of salicylate was reduced to 0·10 g. per kilo body weight daily, plasma salicylate values averaged only 20 mg. per 100 ml., well below the advocated therapeutic level of 35 mg. per 100 ml. With the intermediate dose of 0·125 g. per kilo body weight daily, plasma salicylate values ranging from 30·9 to 39·4 mg. per 100 ml. were obtained. None of the children receiving his dose showed any symptom of toxicity after prolonged administration, and serum carbon dioxide content and blood pH values were normal. In infants and children under 3 years of age therapeutic plasma levels were not reached with doses of sodium salicylate up to 0·15 g. per kilo. 

P. T. Bray.


This paper adds nothing to existing knowledge of the use of nirvanol in chorea. The rare but unpredictable disasters which occur are a deterrent to the use of a dangerous symptomatic remedy in a self-limited disease. 

C. E. Donaldson.


It is concluded that, "Rheumatic heart disease probably has no inhibiting effect on the growth of children once the infection has subsided. The type of rheumatic infection and the presence of cardiac enlargement are also without effect." 


This paper reports a survey of juvenile rheumatic fever carried out at the Royal Alexandra Hospital for Children in Sydney in 1946-7. The author states that the person most likely to develop rheumatic fever would be a child between the ages of 4 and 12 years, with a family history of the disease, living in an over-crowded area, and exposed to group A haemolytic streptococcal infection. 

W. S. C. Copeman.


The authors examined 107 normal healthy children for complement titre, using the 50% haemolysis method.

Of the 128 serum samples examined, 83% lay between 0·0040 ml. and 0·0069 ml. complement titre; 6·3% had higher and 10·2% lower values. The values obtained did not vary with age, sex, or season of the year, nor did repeated samples from the same subject show any significant variation. 

C. L. Oakley.


For comparison 421 samples from a mixed collection of 330 children, either suffering from or convalescent from illnesses, supposedly susceptible to rheumatic fever or suffering from it, were examined for complement titre. No evidence was found that recent illness alters the complement titre, though 25% of 75 normal children had low values during intercurrent non-rheumatic illnesses. A similar proportion of children suffering from acute rheumatic fever had low values. No evidence was obtained that complement activity is a factor in hereditary susceptibility to rheumatic fever. 

C. L. Oakley.


Heart disease may diminish arterial oxygen tension and so reduce the oxygen supply to body tissues and disturb cell metabolism, including that of heart-muscle cells. Inhalation of an oxygen-enriched atmosphere containing 40 to 60% oxygen may improve the oxygenation of the heart muscle in such cases. The value of inhaling an oxygen-enriched atmosphere in heart disease was explored previously by Barach and his associates, who considered it of less value in inflammatory than in degenerative heart disease, and by Pouton, who found improvement in acute rheumatic carditis.

The authors discuss the results of 2 years' work on 44 children, and support Pouton's views. Two special chambers were constructed in which 3 children at a time were observed continuously (except for x-ray examination) for an average time of 12 weeks in an atmosphere of 45 to 50% oxygen and 1·3 to 1·5% carbon dioxide at 66 to 68° F. and 60 to 70% humidity. Circulation of the atmosphere was achieved by convection. The 44 children treated are grouped as: (1) 24 with acute carditis whose response was favourable; (2) 17 with acute carditis and fixed mechanical cardiac disability with unfavourable response; (3) 3 who showed marked intolerance of the treatment and were classified as having "bronchitic" types of rheumatic cardiac disease. Progress of those who responded favourably was assessed under these headings. (1) Clinical. In 18 out of 24 the temperature became normal within 24 hours. Respiration in all cases improved immediately. Weight was gained by 22 out of 24 more rapidly than expected. Appetite increased irrespective of the course of the disease. The colour of the face improved in most cases irrespective of any change in haemoglobin value.
Almost all showed rapid improvement in behaviour pattern. (2) Cardiac. The pulse rate was reduced in all cases from 110-130 to 70-90 in 24 hours. (This is the most significant finding recorded in this paper if the view is held that an actively inflamed heart will suffer the more damage the more rapidly it beats.) Clinical improvement in carditis was measurable in all cases. Changes in murmurs indicative of improvement were noted in some cases. All 7 patients with anginal pain together with ST segment changes in the electrocardiogram showed marked improvement. In the electrocardiogram conduction disturbances, ST segment changes and Q-T interval all showed changes commonly interpreted as indicating improvement. (The authors recognize that the above criteria are not absolute indications of the value of oxygen therapy because the natural history of the disease will not allow rigid comparisons.) (3) Rheumatic activity. The natural history of the disease was not significantly altered by oxygen therapy.


The authors find that in acute rheumatic carditis the significant electrocardiographic finding was a lengthening of Q-T time which indicates prolonged cardiac contraction with a relatively unchanged T-Q time which indicates curtailed cardiac relaxation in diastole. As it is during diastole that myocardial cellular balance is restored it seems that such curtailment may aggravate the acute carditis. These abnormalities run parallel to the clinical state, and when they are present for a prolonged time various rhythm disturbances develop or cardiac dilatation or hypertrophy with objective signs of heart failure. It is suggested that oxygen therapy in the early acute phase of carditis (called the stage of anoxia by the authors) may favourably influence the course of the disease by prolonging the rest period. It was shown that oxygen therapy diminished the heart rate and restored the normal relation of Q-T to T-Q intervals. Previously the authors showed that recovery of carditis is accompanied by shortening of the Q-T interval with an unaltered T-Q period. They now show that with oxygen therapy the Q-T time remains unaltered while the T-Q time is prolonged; in either event the normal relation between Q-T and T-Q is restored, though by different mechanisms. This prolongation of T-Q is achieved without increasing conduction delay. It is postulated [reasonably] that the chemical economy of the heart is assisted by the longer diastole and that such assistance may prevent further damage to the heart during acute carditis.

The authors use a graphic method to express Bazette's formula (which states that K = Q-T time in seconds where the upper limit of K in normal children is 0.405) and illustrate their text to bring out these points. [These papers contain much useful information.]

John Anderson.


Two children with acute rheumatism and carditis in which abnormal rhythms were recorded are described. One, aged 11, with moderate carditis, showed a rhythm in which the ventricle responded to impulses from the auriculo-ventricular node at a rate of 107 per minute; the auricular beat independently at 83 per minute. The abnormal rhythm appeared to last 2 days. The child recovered. The second, a girl aged 8, had acute carditis which was progressive even though undertreatment. After several weeks there was an attack of dyspnoea and her colour became ashen grey; the pulse rate rose to about 150 and was irregular. The cardiogram showed a rate of about 150 with P and T waves superimposed; P gradually approached the previous QRS, and when they became contiguous there was a longer cycle; the following P wave preceded QRS by 0.2 second. Later congection failure appeared, but the heart rate was slower and a sinus rhythm with a P-R interval of 0.2 second was recorded. The child died, and at necropsy there was evidence of pancarditis.

[In Case 2 the correct interpretation of the abnormal rhythm would appear to be partial auriculo-ventricular block showing the Wenckebach phenomenon; in Case 1, in which the auriculo-ventricular node does control the ventricles at times, the rhythm, though it may be described as ventricular escape, also resembles nodal tachycardia, and although in this the auricles also are usually controlled by the auriculo-ventricular node. Occasional ventricular responses to a sinus impulse are shown in Fig. 1 of the paper as indicated by slight alterations in cycle length and in the shape of the ventricular complex. Probably the focus which controls the ventricles is situated in the lower part of the auriculo-ventricular node.] S. H. Cookson.


A man, aged 38, had mitral regurgitation and stenosis of rheumatic origin, with auricular flutter. He had repeatedly had arterial embolism. An embolus, lodged in his left femoral artery, was successfully removed and 2-2 g. of heparin was given intravenously in 5 days. Subsequently dicoumarol was given daily for nearly a year, the patient remaining ambulatory. The dosage was controlled by determination of the prothrombin time by Quick's method. Dicoumarol administration was begun in the usual manner, 300 mg. being given the first day, 200 mg. the next day, and 100 mg. thereafter. A maintenance dose of 50 mg. daily was used. With this a prothrombin time of 50 to 60 seconds was maintained. Slight nasal bleeding was taken as a sign of overdosage since it occurred when the prothrombin time was nearly 80 seconds. F. A. Langley.


Discussion is based on 700 personally observed cases of rheumatic fever, of which 147 (21%) had ECG
abnormalities. The latter are grouped as follows:
(1) Conduction defect. Eighty-eight out of the 147 abnormalities were conduction defects—partial A-V block, complete A-V block, and intraventricular block. These changes are usually transient. A P-R interval of 0.2 to 0.22 second is taken as normal, but with rapid heart rates shorter P-R intervals represent normality. Serial records which show a shortening of P-R interval of more than 0.04 second are taken as evidence of transient conduction defect. In 4% of cases with prolonged conduction time the change was fixed over a period of months, and the authors suggest that this may mean that the isolated prolongation of conduction time found in normal aviators may be due to rheumatic carditis. (2) T-wave changes. Of the 147 abnormalities 52 took the form of inverted or diphasic T waves in leads I, II, and IV in the absence of clinical pericarditis. It is emphasized that serial electrocardiograms may show that an isolated pattern which could be accepted as normal is in fact abnormal. The mechanism of these T wave changes is uncertain, but they are similar to experimentally produced subepicardial inflammatory changes in the ECG. (3) Miscellaneous changes. Twenty-six of the abnormalities consisted of abnormal rhythms, inverted P waves (P2, P3), or alterations in electrical axis, but these changes were rarely isolated and were not accepted alone as evidence of carditis. Auricular fibrillation was rare. Inflammatory foci in the myocardium may be responsible for the abnormal origin of stimuli and P wave inversion. Where the ECG and clinical findings disagree observation of progress is necessary to decide whether carditis is active or whether the ECG changes represent old inactive disease and scarring of the myocardium.

John Anderson.


In 62 soldiers, aged 17 to 21, admitted to hospital for acute rheumatic fever, serial electrocardiograms were taken every other day during the first week and twice a week thereafter until the patient’s discharge for convalescence. The limb leads and lead CF4 were taken, and lead III was taken during normal respiration and again during held inspiration. Changes were determined by the limb leads alone. Only one case showed entirely normal records throughout. The most important changes were: alterations in T waves and ST segments in 38 cases; first-degree auriculo-ventricular block in 26; prolongation of the Q-T interval in 22 (Kv cycle exceeding 0.4 second); elevation or depression of ST segments in 14; S1, Q3 pattern in 7; inversion of T waves in limb leads in 7; S2 greater than 3 mm., without axis deviation, in 7. It is emphasized that a larger number showed changes in final deflections than lengthening of P-R intervals, and that the return to normal of the electrocardiogram cannot be accepted as indicating complete remission of rheumatic activity.

(The authors’ method for determining axis deviation seems unusual. Case 5, interpreted as showing a wandering pacemaker, may well have been one of dissociation with interference.)

A. Schott.


Chronic Articular Rheumatism

(Rheumatoid Arthritis)


Thirty-three patients were treated with “solganol B oleosum” (aurothioglucose) or “neosolganol” (aurokeratin) and the gold content of plasma and urine was serially estimated. In 8 toxic phenomena developed; of these, 6 had dermatitis (2 severely exfoliative), 1 aphthae and mild diarrhoea, and 1 albuminuria. No relation was found between concentrations of gold in plasma or size of dose and the presence or absence of toxic reactions. It is concluded that the latter are an expression of hypersensitiveness, and that they cannot be avoided. BAL was beneficial. [No mention is made of any relation between toxic reactions and duration of treatment.]

Bernard Freeman.


In one of the two cases reported there was hypoplastic bone marrow. Splenectomy appeared to restore the blood condition to normal and also undoubtedly improved the patient’s self-confidence and resistance to infection, but the authors do not stress the value of this operation as regards arthritis. [Similar observations were made by Steinberg (Ann. intern. Med., 1942, 17, 26). “Chronic Arthritis in the Adult, Associated with Splenomagaly and Leucopenia” is the title of a short article by Felty in the Bulletin of the Johns Hopkins Hospital, 1924, 35, 16. The condition was briefly reviewed in the British Medical Journal, 1940, 2, 636.]

G. F. Walker.

(Spondylitis)


The authors accept the statements that ankylosing spondylitis starts in the sacro-iliac joints and that it is nearly always bilateral and gives rise to no specific symptoms. [That is contrary to some recent views that the early changes are in the intervertebral facets—diminution in joint space and para-articular osteoporosis.] They think, however, that in the early stages spondylitis probably causes symptoms referable to the sacro-iliac joints; these symptoms disappear when the
joint becomes rigid. They thus regard the diagnosis of the disease as possible in the early stages, the difficulty being to distinguish it from cases of infective sacro-iliac arthritis due to tuberculosis and typhoid fever. Four cases are described, all with symptoms and radiological signs of unilateral sacro-iliac arthritis; in 3 cases the arthritis became bilateral and there were subsequent signs of spondylitis. The interval between the first sacro-iliac signs and those in the vertebrae may be 5 to 6 years. The authors think that patients are rarely seen in the stage of unilateral disease; they also think that oblique x-ray films may be of some help and they stress that when unilateral sacro-iliac changes are present spondylitis should be thought of as a possibility.

Paul B. Woolley.


This paper reports 6 cases of osteotomy of the spine for deformity due to ankylosing spondylitis. The longest period over which any case has been studied since operation is 18 months. In 5 cases the osteotomy was performed posteriorly only, and simple redressement after the posterior bone section was sufficient to correct the deformity. In one case division of intravertebral disks was also necessary. The deformity appears to have been well corrected in all 6 cases. Two of the patients had troublesome but transient root pains in the thighs after the osteotomy. The author’s criterion of a good result is the ability on the part of the patient to lie flat on his back with his calves, the lower part of his back, and the back of his head all in contact with a flat base board. The indications for the operation are discussed in some detail.

D. Li. Griffiths.

(Miscellaneous)


Among 160 patients receiving gold salts for the treatment of rheumatoid arthritis, 4 developed thrombocytopenia and a haemorrhagic diathesis. In 3 the blood disorder was mild, and in 2 recovery was spontaneous when gold treatment was stopped; 1 patient had a single blood transfusion of 500 ml. The fourth case was more serious, the complication occurring after repeated courses of gold; there was continuous oozing from nose and gums and red cells appeared in the urine; ecchymoses and purpura appeared and there was at first some uterine haemorrhage. Four blood transfusions were given without effect. The sternal marrow was hyperplastic with increase in megakaryocytes. Splenectomy was therefore decided on and carried out successfully. The platelet count rose from 10,000 per c.mm. before operation to 210,000 per c.mm. 4 hours after operation; 3 months later the platelet count as 550,000 per c.mm. There was no postoperative bleeding. This experience suggests that splenectomy may be worth while in the rare case which fails to respond to ordinary measures.

M. C. G. Isräels.


This is a report of 3 cases of acute leukemia in children in which the onset was accompanied by joint pains. The types of radiographic changes in bones that may be found in leukemia in childhood are classified as follows: (1) Bone absorption often seen in the metaphysis of long bones as small scattered, usually elongated, areas of destruction, but which may be scattered over the whole bone, giving a worm-eaten appearance. Very fine streaky rarefaction may be the earliest stage. (2) Generalized osteoporosis, which may lead to spontaneous fractures and even gibbus, resembling Pott’s disease. (3) Periosteal layering, seen as dense lines parallel to the shaft, sometimes ensheathing the whole bone in a lamellar manner. (4) A band of ossified density, a few millimetres wide, in long bones, parallel to the epiphyseal line. (5) Osteosclerosis. None of the appearances is pathognomonic of leukemia.

A. Piney.


Study of the innervation of 152 elbow-joints showed the following: the largest and most constant contribution comes from the ulnar nerve, usually as a single twig, often as two, and occasionally as several; a less constant and smaller contribution is derived from the median nerve with some reciprocity with the ulnar nerve; an occasional branch comes from the musculo-cutaneous nerve; some twigs leave the radial nerve where it meets the radial and interosseous arteries, and some come from the plexus from the branch of the radial nerve to the anconeus muscle, lying in or beneath that muscle. At operative denervation the joint is approached through three incisions. The first is made between the biceps tendon and the medial epicondyle, exposing both median and ulnar nerves; branches are identified 2 in. (5 cm.) above the joint to the elbow; one to three branches are found and severed. The second incision lies between the biceps tendon and the lateral epicondyle, where articular branches from the musculo-cutaneous nerve are divided beneath the biceps, and, deeper still, articular branches from the radial nerve near its bifurcation are severed. The third incision is made behind the lateral epicondyle over the anconeus muscle, where the nerve filaments together with a small vascular plexus are removed. In all cases the nerves are stripped; the anatomical law that articular branches are supplied before muscle branches is found reliable.

Eleven patients were followed up for periods of from 4 to 21 months. Before operation they all had pain aggravated by use and persisting at night, and radiographic evidence of osteo-arthritis. After the denervation the sharp stabbing pain on movement had disappeared and sleep was undisturbed. The previous
range of movement was quickly regained, but forced movements caused discomfort. In all cases but one improvement was maintained and the patients returned to their former occupations. The development of a neurotrophic joint is considered unlikely by the author, as deep sensation passing along tendons and muscles is not interfered with.

J. C. R. Hindenchach.


Because the intracapsular distribution of the nerves to the shoulder-joint has never been studied, the author re-investigated the nerve supply of the joint both macroscopically and microscopically, by dissecting eleven adult specimens and by preparing serial sections at 10 \( \mu \) of four joints from 11-week and 12-week foetuses.

The joint is supplied by the circumflex and suprascapular nerves, the posterior cord of the brachial plexus, the stellate ganglion, and, less constantly, the lateral anterior thoracic and the radial nerves. The circumflex nerve gives off branches which supply the inferior, antero-inferior, and posterior-inferior aspects of the capsule. One twig ascends in the bicipital groove to the head of the humerus. The suprascapular nerve supplies the capsule on the superior, antero-superior, and postero-superior aspects of the joint. It sends twigs to the coraco-acromial ligament and the acromio-clavicular joint. The posterior cord of the brachial plexus gives off, close to its termination, a branch which divides. One twig supplies the anterior aspect of the capsule; another joins a sympathetic filament which, arising from or near the stellate ganglion, descends in the adventitia of the axillary artery and reaches the joint by way of the articular branches of the latter. In about 40% of subjects the lateral anterior thoracic (lateral pectoral) nerve supplies the antero-superior part of the capsule and sends a twig into the joint by way of the bicipital groove. It also supplies the acromio-clavicular joint. In a small number of cases the radial nerve sends small twigs into the joint by way of the bicipital groove.

Within the substance of the joint capsule most of the nerves follow the vessels into the inner, synovial, vascular layer, and appear to be distributed to the vessels themselves, but some nerve fibres ramify in the outer fibrous layer of the capsule and probably terminate in endings of the Ruffini type; these latter fibres are most numerous in the antero-inferior and antero-superior parts of the capsule, that is, in parts subject to great deformation during movement.

H. Hughes.


This study is based upon the dissection of 7 adult elbow-joints and the examination of 10\( \mu \) serial sections of 5 foetal joints.

The elbow-joint is supplied by the musculo-cutaneous, median, ulnar, and radial nerves. (1) The articular branch of the musculo-cutaneous nerve arises from the nerve to the brachialis muscle in the middle third of the arm. It descends on the medial edge of this muscle, passes deep to it, supplying humeral periosteum, and dividing into a variable number of twigs enters the anterior aspect of the capsule. Some filaments reach the synovial membrane. (2) The branch of the median nerve usually arises just above the pronator teres and supplies the capsule near the medial epicondyle. A branch may also arise from the anterior interosseous nerve to supply the postero-inferior part of the capsule along the lateral edge of the olecranon process. (3) The branch of the ulnar nerve usually arises behind the medial epicondyle but may come off much more proximally. It supplies the postero-medial region of the capsule and the ulnar collateral ligament. (4) The radial nerve has the most extensive distribution to the joint. One branch usually arises in the radial groove and descends in the lateral head of triceps. A second arises just proximal to the olecranon process and supplies the capsule in the olecranon fossa. A third arises from the ulnar collateral nerve just proximal to the medial epicondyle and supplies the capsule proximal to the olecranon process. A fourth arises from the radial nerve just after it pierces the lateral intermuscular septum and supplies the radial collateral and annular ligaments and the ante-lateral aspect of the capsule. A fifth arises as the radial nerve lies anterior to the joint and supplies the anterior region of the capsule.

Each nerve supplies therefore a definite region of the joint and of these the anterior has the richest supply. This is the region most subject to compression on movement. The regions overlap, and the nerves may vary in their course towards the joint. The articular branch of the musculo-cutaneous is the most constant both in course and in distribution.

H. Hughes.

Narrowing of Intervertebral Foramina Resulting from Degenerative Vertebral Processes as a Cause of Neuralgic Pain in the Shoulder and Pelvic Girdle Areas and in the Limbs. (Die Einengung der Foramina intervertebraalia infolge degenerativer Wirbelsäulenprozesse als Ursache von neuralgienischen Schmerzzuständen im Bereich des Schulter- und Beckenguerts sowie der Extremitäten.) Duus, P. (1948). Nervenarzt, 19, 489.

Degenerative changes in the vertebra and the intervertebral disks have been studied by Schmorl and his pupils and described as "ostechondrosis". This changes of this kind can produce neurological signs and symptoms is not a new finding. The author has observed some 50 cases, 6 of which are described; all these suffered from "stiff neck", pain in one or both arms, spreading towards the tips of the fingers, paraesthesiae, and increasing discomfort during the night if the cervical spine was affected; osteochondrosis of the lumbar spine produced lumbago, pain spreading into one or both legs, and increased pain during the night.

In some of these cases no abnormal neurological findings were encountered, in others impairment of reflexes and hypoaesthesia or anaesthesia were found. X-ray examination revealed "osteochondrosis", and oblique radiographs of the cervical or lumbar spine revealed narrowing of the intervertebral foramina. This narrowing of some foramina is, in the author’s
opinion, the characteristic and important pathological basis of the whole clinical picture, causing compression of the nerves passing through the foramina. None of the patients died, but examination of other necropsy material enabled the author to demonstrate the histological findings in cases of narrowed intervertebral foramina. He recommends a plaster-of-Paris jacket and administration of calcium and phosphorus.

[The histological findings are interesting, though the patients were very old (83 and 74 respectively) and obviously suffering from very advanced "osteochondrosis". Some of the author's statements are unacceptable, for instance, that disk herniation plays no part in the pathology of the cervical spine, that the L5 dermatome is situated at the lateral side of the foot, and that the reflex arc of the ankle-jerk involves L5 and S1, 2, and 3.]  
F. K. Kessel.


This is a straightforward and unbiased account of the results of synovectomy and includes a full list of references on the subject. It should be read by those interested in the procedure.

G. E. Thomas.


The deep and superficial parts of the medial ligament of the knee-joint are attached to the edge of the lateral meniscus. The deep part of the lateral ligament (a part of the true capsule of the joint) is firmly attached by its posterior border—the arcuate ligament—to the edge of the lateral meniscus. The upper fibres of the popliteus muscle are inserted into this arcuate ligament and the lateral meniscus. The lateral meniscus is attached not only to the tibia by its cornua, but also to the femur by the strong ligaments of Humphry and Wrisberg. The movement of flexion takes place in the upper compartment of the joint because the menisci move with the tibia. Free rotation is possible only in the flexed position, because then the medial and lateral ligaments are relaxed and a smaller surface of the femur is in contact with the tibial plateau. It occurs in the lower compartment of the joint, the menisci moving with the femur. The posterior cruciate ligament forms the axis about which the tibia rotates and the movement is effected by the hamstring muscles. The popliteus has the important function of pulling the lateral meniscus posteriorly and out of the way of injury when medial rotation of the tibia occurs with the joint in the flexed position. The lateral rotation of the tibia which occurs when the position of the joint approaches full extension is affected by the lower fibres of the vastus lateralis. The popliteus is the antagonist.

H. Hughes.


A case of this uncommon condition is reported in which the periodic recurrence of joint effusion affected one knee and then the other and later affected also the ankle-joints at regular intervals of 6 days. The effusions were at first painless; after 2 years the swelling was accompanied by tenderness, a rise of temperature, and an increase in erythrocyte sedimentation rate. Accepting allergic sensitivity as the cause of intermittent hydrarthrosis, the author concludes that there is only a quantitative difference between this syndrome and rheumatic disease of joints. J. T. Leyberg.


Lesions of the cartilage of the patella are second only to those of the menisci as a cause of internal derangements of the knee. They are of three types. (1) Congenital chondromalacia causes symptoms in the second and third decades which are usually mistaken for rheumatism. The whole of the cartilage is affected, lacking its normal hardness; it has a bluish tinge and an uneven, undulating surface. Areas of irregular fragmentation occur. (2) Traumatic chondritis follows a local tear. The surface elsewhere is at first normal; but since hyaline cartilage has no power of repair not only does the laceration persist, but it gradually enlarges from the trauma of continued friction and compression. (3) Degenerative chondrosis is a pre-senescent change found in patients over the age of 30. For many years, it may be the only manifestation of such an arthrosis progressing to affect the whole skeletal system. The cartilage is yellowish, with a granular surface and areas of fissuring and fragmentation.

The first type is treated by meticulous scalpel shaving of the entire articular surface of the patella down to the basal layer of cartilage. Localized curettage of the major defect only will not forestall the inevitable breakdown of the less involved areas. Patellotomy is contraindicated in the young age group for two reasons: first, there is a considerable capacity for repair of hyaline cartilage by fibrocartilage, and secondly, it is desirable to retain the protection afforded by the patella to the femoral condyles. The second type, when it is the result of patella fracture or recurrent dislocation of the patella, is best treated by patellotomy. In other circumstances, the patella is retained for its protective function, and the treatment is a uniform shaving down of the entire involved facet to the level of deepest penetration of the traumatic defect. Patellotomy is the only satisfactory treatment for pre-senescent degenerative chondrosis.

H. J. Croot.


In this article 6 cases of non-suppurative tenosynovitis affecting the extensor pollicis brevis and the abductor longus pollicis are described. Trauma is the usual predisposing cause, and pain—described as deep in the wrist-joint—the chief symptom. Examination reveals tenderness and swelling along the course of the tendon behind the lower end of the ulna.
and clicking or grating may be felt over the affected part on moving the wrist. At operation in the 6 cases congestion and thickening of the synovial lining of the tendon sheath were found. The only reliable method of obtaining relief is by slitting the sheath; although in some cases the thickened synovial lining was also removed, it is suggested that slitting alone is sufficient.

[Although the authors do not refer to the condition as a stenosing tenosynovitis it is clear from the description that some of the cases conform to this type of lesion.]

G. E. Thomas.


The authors report 10 cases in all of which there were radiological changes of hypertrophic osteoarthropathy. Swelling of the joints and joint pains were the cause of 8 of these patients seeking advice, and radiological investigation of their joints revealed the periosteal proliferation in the neighbouring bones. In all 8 there were lung changes; 6 were finally found to have a cancer of the lung, and the other 2 almost certainly had a malignant tumour of lung, though there was no positive pathological proof. Of the two patients who did not complain of joint pains and swelling but had hypertrophic osteoarthropathy, one had chronic myelogenous leukaemia whilst the other was suffering from non-tropical sprue.

These findings again show the importance of examination of the chest in such cases of hypertrophic osteoarthropathy. It is interesting to note that when the primary condition was removed there was rapid and complete disappearance of the symptoms arising from the hypertrophic changes.

L. G. Blair.


Fifty cases of primary vertebral osteomalacia were treated at Bispebjerg Hospital between 1935 and 1946. The most common presenting symptom was pain, usually in the lumbar region but occasionally in the gluteal region or the thorax. Radiologically, the rarefaction of the vertebral bodies was very pronounced in every case and in 27 patients there was also a compression fracture of a lumbar and/or thoracic vertebral body. The serum calcium and serum phosphate levels were normal in every case, but in 24 cases the history suggested that the diet had been deficient in calcium or vitamin D. The patients were treated with a diet rich in calcium phosphate supplemented by a daily dose of 7,000 to 10,000 i.u. vitamin D₂. Follow-up examination of 30 patients in 1946 showed that only 23 had observed the dietary instructions given to them: in 21 of these there had been a subjective improvement in the form of decreased pain. Radiography revealed no sign of calcification, but showed arrest of the disease. Of the 7 who had not continued treatment, 6 patients showed radiological signs of deterioration and 5 of these had pain. These therapeutic results suggest that the condition is a deficiency disease, but the preponderance of elderly women in the series seems to indicate that there may also be a hormonal factor at work.

B. Nordin.


Spalteholz describes the following bursae lying between the skin and the extensor tendons on the dorsum of the finger-joints: (1) dorsal digital subcutaneous bursae beneath the skin on the dorsal surface of the digital articulations; (2) dorsal metacarpo-phalangeal bursae; (3) intermetacarpo-phalangeal bursae over the dorsal aspect of the transverse capitular ligament, 1 to 3 in number. Among 523 injuries to professional and amateur boxers and wrestlers referred to in the present article there were 22 injuries to the knuckles of 21 boxers. Of these 22, 12 were simple contusions and were cured in a few days with hot soaks. The remaining 10—all in negroes—were diagnosed as traumatic bursitis of the affected knuckles, and this was confirmed by aspiration of bloody or gelatinous fluid. Of these 10 patients, 7 were cured by aspiration, hot soaks, strapping, and physical treatment, but in 3 operative removal of the bursa was necessary.

W. E. Tucker.


The results of a variety of surgical procedures used in the treatment of 17 cases of so-called congenital or developmental coxa vara are evaluated. Nothing new is brought to light.

Sciatica


The authors report 59 patients with sciatica submitted to operation. They refuse to accept as a disk prolapse anything other than a clearly demonstrable protrusion of considerable size, and they found acceptable protrusions in only 20 of their 59 cases. Of the other patients, hypertrophy of the ligamentum flavum was accepted as the cause of the sciatica in 15, in 5 the pain was attributed to "bony lesions", no fewer than 9 had neoplasms as the cause, 1 had an arachnoiditis, and no cause at all was found in 9.

The disk prolapses were more often (in 12 cases) situated in the space between the fourth and fifth lumbar vertebrae than in the lumbo-sacral space (8 cases). In all the 59 operations the lesion was exposed by a wide laminectomy of at least two vertebrae. Of the protruding masses of disk material, 9 were studied histologically. Five of these showed a pseudo-myxomatous degeneration, which the authors consider to be a very important cause of herniation of a disk. The degeneration does not affect nuclear material alone, but was seen quite well in the annular portion of the disk. It is considered that removal of the degenerate material is enough to cure the sciatica permanently. On the whole the results in the
prolapsed disk series were excellent. Over a prolonged follow-up period all the patients were found to be free from sciatica, and only 1 had any significant backache despite the very wide laminectomy.

Hyper trophy of the ligamentum flavum is held to be a not uncommon cause of sciatica. The cure rate after its appropriate treatment is, however, considerably lower than that after the removal of a prolapsed disk. Only 10 of the 15 cases of hypertrophy of the ligament gave good long-term results. The authors consider that undue importance is generally attached to disk herniation as a cause of sciatica and, quite apart from lesions of the ligamentum flavum, they state a case for consideration of lesions of intervertebral joints and other portions of the spine as possible causes. D. L. Griffiths.


Three cases of sciatica successfully treated by the author by excision of a fibrous cyst in the region of the sciatic nerve are described. The patients were women (aged 46, 36, and 46 years) with a history of low backache, the pain radiating down the back of one thigh and leg and the history extending over many years. The onset was related to a fall or falls on the back. The pain was worse on sitting. There were areas of tenderness, usually over the lumbo-sacral spine and the sacro-iliac region on the affected side, and tender nodules, and "trigger areas" in the sacro-iliac region in which pain was relieved by local analgesia. In 2 of the cases a definite lump was palpable in the affected buttock. In the third case a lump was not palpable but the clinical picture so resembled that in the previous 2 cases that surgical exploration of the sciatic nerve in the buttock was undertaken and a fibrocystic mass found and excised. All 3 patients also had several fascial fat hernias.

Treatment consisted of surgical excision of the fascial fat hernias and of the fibrocystic mass. Microscopical examination of the latter showed fibrous cysts and fibro-adipose tissue, the seat of chronic inflammation. The lesions varied but were close to the sciatic nerve, so that with certain movements the nerve was subjected to abnormal pressure producing pain. The operation gave complete relief. T. J. Evans.


Cases of sciatica where no disc herniation or other pathological cause of the typical pain has been discovered have generally been treated with "novocain" block of the lumbar sympathetic trunk; the results have been good. If the blocks have given only temporary relief, lumbar sympathectomy has been resorted to in severe cases of sciatic pain, especially if the affected extremity is also cold and moist, which indicates alteration in the sympathetic reflex connexion. Sympathectomy was performed in 8 cases; in 7 the result was good and in 1 there was no improvement. After the operation the temperature of the skin was normal. [Author's summary.]


During operative removal of a fourth lumbar disk the rongeur slipped right through the interspace and wounded a great vessel, but it was possible to complete the operation. It became clear later that an abdominal arterio-venous aneurysm had developed. After 6 months, laparotomy revealed a communication between the right common iliac artery and vein, each of which was ligated above and below the sac. Progress was satisfactory. [This is by no means the first of such accidents to be reported.]

David Le Vay.


The morphology of the sciatic nerve and its popliteal divisions was studied by dissection and serial section in material from 40 adult dissecting-room subjects. [This paper is so detailed and factual as to render a full summary impossible. Those interested should consult the original.] R. Barer.


Intervertebral disk lesions are common. Among 160 patients between 14 and 87 years of age who died from various causes, 60 had nerve-root compression from disk or intervertebral joint lesions. In this paper 17 examples are discussed: in only 6 of these had lumbago or sciatica occurred with certainty. Degenerative changes were found where the issuing nerve or its root had been compressed, and especially in the ventral root fibres, and changes were noted in the posterior root ganglion, which in some cases was flattened. In these cases the ganglion as a whole showed an increased amount of connective tissue and gross alteration in its interior structure, the cells being often deformed and atrophied. The authors have investigated the question of the supposed association between arachnoidal proliferations and compressed roots, and found that such proliferations occur as frequently in relation to roots which have not been as in those which have been compressed. It seems to be wholly by chance that disk protrusions and arachnoidal proliferations sometimes affect the same segment.

[This demonstration of degenerative changes in the fibres of the roots and ganglion of the issuing spinal nerves as the result of compression by protruded nuclear material or enlarged intervertebral joints was to have been expected. Similar observations were made by Harvey Jackson in Britain in 1946.] Lambert Rogers.


The authors deal with median herniations of cervical intervertebral disks producing cord symptoms. Details of 4 cases (all in men of middle age) are given. The authors stress that lumbar puncture should be performed
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on every patient suspected to be suffering from a degenerative disease of the spinal cord, and that, if there is any suspicion that a herniated cervical intervertebral disk is present, myelography should be carried out with subsequent removal of the contrast medium. It is suggested that the symptoms may be caused by pressure on the anterior spinal artery, or projection of the cord backwards with consequent traction on the dentate ligaments, as postulated by Kahn. Lambert Rogers.


Headache due to pathological changes in the cervical disks may be located in the scalp, the face, or the cervical, suboccipital, or other region. If the orbital or temporal region is painful, the ipsilateral eye may be kept partly or completely closed. Movements in the cervical region may be limited, the patient maintaining his neck in a slightly tilted, rigidly fixed, or "poker neck" position. The muscles of the neck may be spastic, and with cervical sclerosis or lordosis unilateral prominence of the cervical muscles may be present. Of more importance are points of tenderness in the suboccipital and cervical regions, the pectoral girdle and the upper extremity.

When there is a cervical disk lesion some relief is usually afforded by maintaining head traction for a minute or so. This manoeuvre is not only of diagnostic value but also gives information about the probability of effective treatment by head traction. Loss of the normal cervical curve is the most consistent abnormality disclosed on x-ray examination. In most cases conservative treatment suffices; few patients have such severe headache and associated radicular signs that operation is necessary.

R. M. Stewart.

General Pathological Articles


This is a record of the antistreptolysin reaction elicited by a modification of Kalbak's method in 495 so-called unselected patients. The results were unselected, but the sera were sent to the laboratory because the clinical picture suggested that the antistreptolysin titre might be significantly raised. The authors have accepted a titre figure up to 200 as being within possible normal limits, and have regarded only those titres above 200 as increased.

It is of interest to note in cases of acute polyarthritis, of which the antistreptolysin titre was increased in 80%, that the erythrocyte sedimentation rate may be falling rapidly while the antistreptolysin titre is still rising. Cases of primary chronic polyarthritis may have a normal antistreptolysin titre, but the secondary cases, especially when there are active signs, show an increased titre. (The definition of primary and secondary chronic polyarthritis is not apparent, although it is clear that acute polyarthritis signifies rheumatic fever.) Of 21 cases of acute nephritis 18, and all of 6 cases of acute tonsillitis, had an increased antistreptolysin titre. In general this increase was exhibited when the condition might be presumed to be associated with an acute Streptococcus pyogenes infection.

[In most of the cases recorded only one estimation was made. The advantages of serial estimations are obvious, especially in obscure conditions. This work suggests that the antistreptolysin titre is some indication of the activity of the disease, but until more extensive data have been collected the real value of the technique cannot be fully assessed.] H. J. Bensted.


A woman of 58 years, after panhysterectomy at the age of 34, developed severe deformities with bone pains and spontaneous fractures. Radiography disclosed a mixed picture of Paget's disease of a few, and severe decalcification of most, of her bones. Intensive oestrogen therapy caused rapid remission of her clinical symptoms with obvious improvement in the radiological picture, but later withdrawal of this therapy caused an exacerbation. After 2 years of treatment by daily doses of 0·33 to 1·66 mg. of oestradiol benzoate improvement had been maintained and no untoward symptoms had appeared.

[This is a very good article on the relation of oestrogens to bone formation and contains a full list of references.] G. E. Thomas.

Other General Articles


This is a full report of the epidemic of Reiter's disease in Finland which was briefly described by Prof. O. Holsti at a recent Heberden Society meeting, and reported in the Annals of the Rheumatic Diseases of September 1948, Vol. 7, p. 180.

[On the basis of Dr. Paronen's material Reiter's disease would appear to be definitely associated with dysentery though this relation has not been clearly substantiated elsewhere. The low incidence of extragenital keratosis blennorrhagica is striking. The collection of the immense amount of data presented in this work, which also includes an extensive bibliography of 150 (mainly continental) references, is a very creditable achievement.] R. R. Willcox.


Forty-two cases of the shoulder-hand syndrome are reported, in 36 of which both the shoulder and the hand were involved. The aetiology in 11 cases could not be determined, 9 followed myocardial infarction, 5 trauma, and 5 a cerebrovascular accident. The
authors refer to a number of papers in the literature describing changes in the hand and/or shoulder following coronary infarction; one reference occurs in Osler's Principles and Practice of Medicine, 1898 edition. Other conditions, such as osteo-arthritis of the cervical spine, hemiplegia, herpes, and nodular panniculitis, have also been described in the literature as being followed by symptoms in the shoulders and hands. The authors postulate the existence of a painful reflex arc of which (a) the afferent component is a sensory or autonomic nerve, (b) the component in the cord is the extensive network of interconnecting neurones described by Lorente de Nó as the internuncial pool, and (c) the efferent component is an autonomic and/or motor nerve. This hypothesis is considered to be the only one to account for the following features: (1) identical clinical pictures are produced by conditions differing widely in their location—for example, myocardial infarction, peripheral injuries, cerebral accidents; (2) autonomic, motor, and sensory pathways are involved; (3) the disturbance does not show a segmental distribution; and (4) clinical improvement may follow sympathectomy. 

H. A. Burt.


The effect of Bogomoletz's antireticular cytotoxic serum (A.C.S.) in rheumatic conditions was investigated. It is concluded that there is no indication for A.C.S. in the treatment of osteo-arthritis and fibrosis. In rheumatoid arthritis and spondylitis, conditions which are resistant to other treatment, a trial may be justified. J. Koszyk.


A rapid and simple method of determining the serum salicylate level is described and shown to be comparable with the method used by Coburn. The administration of sodium salicylate and acetylsalicylic acid in doses of 0.1 g. per kilo every 24 hours produced a rapid elevation of the serum level to between 332 and 561 g. per 100 ml. if given in divided doses at 12-hour intervals. If given 2-, 3-, 6-, or 8-hourly, lower serum levels were obtained. W. T. Cooke.


The authors conclude that sodium gentisate appears to be equal to, or more effective than, salicylate in rheumatic conditions, and that the action of salicylates is probably due to its oxidation product gentisate.

Titles of the Articles in the Current Literature


Monocytic Reactions in Different Forms of Rheumatism in Childhood. [In Russian.] GRIGOROVA, O. P. (1948). Pediatriya, 4, 32.


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