Abstracts
ABSTRACTS


Experience with 43 below-knee amputations in 40 patients with diabetes mellitus is recorded. Only one patient later required an above-knee amputation because of failure of healing at below-knee level. This patient had below-knee amputation on the contralateral leg that also required revision, not because of healing difficulty, but because of pain thought to be due to a neuroma. One other patient also required revision because of late ulceration due to pressure over a bony prominence when he was wearing the prosthesis. Success requires meticulous technique in the operation, postoperative care, and rehabilitation. In selection of patients for the operation, the gross appearance of the skin and leg and the presence or absence of hair growth at the leg level have been the most helpful criteria. The advantages of the below-knee level over the midthigh level to the patient have warranted its continued use. The majority of patients ambulated with a prosthesis postoperatively after the below-knee amputation despite many mitigating factors in the group of patients involved, including age, poor cardiovascular status, senility, poor vision, residual paralysis from strokes, and obesity.

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ABSTRACTS


In a series of 69 cases of intrathoracic sarcoidosis diagnosed between 1955 and 1961, the diagnosis was generally made on the basis of a consistent clinical picture, roentgenographic findings of hilar lymph node enlargement and/or pulmonary involvement and the finding of noncaseating epithelioid tubercles in biopsied tissue. The most common symptoms were cough, fatigue, dyspnea, weight loss, and fever or sweats. One-fifth had no symptom at the time of diagnosis. Elevation of serum globulin, particularly the gamma fraction was the most consistent laboratory abnormality. Eight subjects had a close relative who had had tuberculosis. In 17 per cent of 64 cases, the tuberculin test was positive. In only three of 47 was the histoplasmin skin test positive. Ninety-one biopsies were made in 68 subjects. Scalene node biopsy revealed epithelioid tubercles in 40 of 44 cases in which it was done. A variety of pulmonary involvement was seen, including local and widespread disease, ranging from fine to coarse shadows. Evidence of no change or progression of disease was noted in 21 of 32 with a two-year or more follow-up. Five of the 69 subjects had erythema nodosum. Pulmonary function abnormalities included both restrictive and obstructive phenomena and blood gas abnormalities. Extrathoracic sarcoidosis (exclusive of liver or lymph nodes) was demonstrated in nearly one-fourth of the subjects, more often in Negroes. Five persons are known to have died, four from cardio pulmonary causes.


It is now well established that 5-Fluorouracil treatment, in some patients with carcinoma of the rectum and large bowel, will cause a major decrease in the size of metastatic lesions in lung, liver and other sites. 5-Fluorouracil has been administered to 13 patients through a modified Courand catheter advanced from the brachial artery into the hepatic artery. Continuous infusions averaging seven days in duration and providing an average dose per course of 170 mg./kg. were given at monthly intervals from one to three times to each patient. Leukopenia below 2,500, enteritis, and other severe complications of 5-Fluorouracil therapy were not seen. Thorotrast visualization of hepatic metastases allowed objective measurement of lesions. Nine of 13 patients with enteric neoplasms experienced objective regressions lasting an average of 83 days. One adenocarcinoma of the stomach, one adenocarcinoma of the jejunum, two functioning carcinoid tumors, and five adenocarcinomata of the colon responded to treatment. The patients with carcinoid tumors exhibited prompt lowering of serum serotonin and urinary 5-hydroxy-indole-acetic acid levels.


The treatment of pituitary tumors in the last 50 years has remained controversial, and the different approaches to the solution of this problem have varied with emphasis on either partial surgical removal or various forms of irradiation. In the early 1900's the surgical approach was the treatment of choice, as the statement of Cushing exemplifies. The progress in radiotherapeutic technics in the last two decades has somewhat modified this statement; however, surgery of pituitary tumors remains one of the most successful ways to treat these conditions. A series of 100 pituitary tumors has been reviewed. An outline of laboratory and diagnostic procedures used in establishing the diagnosis of pituitary tumor is presented. Clinical manifestations of the patients with chromophobe tumors have been compared with the cases presenting signs and symptoms of acromegaly. Objective visual function has been tabulated in each case and a comparison is made between the cases undergoing surgery, irradiation or a combination of these forms of treatment. Adequate follow-up has been accomplished in 90 per cent of the cases presented. No gross difference in the improvement of visual efficiency between the groups treated by irradiation, surgery or a combination of these is observed. Management of pituitary tumors is summarized and indications for surgery and irradiation are outlined.


The problem of intestinovesical fistulas is reviewed and the etiology, pathogenesis, diagnosis, and treatment are discussed on the basis of a review of 21 patients and the
ABSTRACTS

literature. The congenital intestinovesical fistulas represent a special category and are not included in this discussion. Each variety of intestinovesical fistula actually also represents distinct problems and requires individual approaches in management. Diverticulitis is the most common cause of intestinovesical fistulas and accounts for approximately one half of the cases. Carcinoma of the colon is the next most frequent cause, and trauma, a close third, the latter now usually representing a postoperative or postradiation complication. Cystoscopy is the most reliable diagnostic procedure for establishing the presence of intestinovesical fistulas. An appraisal of the one stage resection for sigmoidovesical fistulas is presented. This procedure is indicated for selected patients. Individual consideration of each case is necessary for treatment.


The transformation of highly purified preparations of the DPNH dehydrogenase of the respiratory chain to DPNH-cytochrome reductase under the influence of heat, proteolytic enzymes, urea, and thiourea is described. The process is accompanied by the loss of the characteristic ability of the dehydrogenase to catalyze the DPNH-ferricyanide reaction and, except in the case of urea treatment, by the emergence of diaphorase (DCIP-reductase) activity. Analysis of the isolated products reveals that major changes in the molecular and catalytic properties of the dehydrogenase occur during the transformation. Although the unmodified dehydrogenase is a high molecular weight enzyme, the products isolated are much smaller (about 80,000 molecular weight). Transforming agents as varied as heat, acid-ethanol treatment, and digestion with the protease of *B. subtilis* produce fragments which, in terms of the criteria applied, are indistinguishable from Mahlers cytochrome reductase. Similar molecular weight products of different substrate specificity are produced by trypsin. Evidence has been presented for the possible occurrence of high molecular weight, labile intermediates in these transformations. Current knowledge of this unique transformation of one type of an enzyme into another and its biological implications are discussed. It is concluded that most of the DPNH-oxidizing enzymes of mitochondrial origin described in the literature are not naturally occurring enzymes but are modified fragments of the respiratory chain-linked DPNH dehydrogenase.


A group of 93 children with nerve deafness were seen and treated. This group comprised 67 children with congenital deafness and 26 with an acquired deafness. Of the total, 50 per cent of those with congenital deafness were seen before the age of five years, but only 23 per cent of those with acquired nerve deafness were seen before that age. The causes of the hearing loss were many and varied and were determined in approximately 73 per cent of those with acquired deafness and 38 per cent of those with congenital nerve deafness. The congenitally deafened child had, as a rule, a greater loss of hearing than the child with an acquired loss, and a greater number were fitted with a hearing aid. A hearing aid was advised and fitted in 59 children, 63 per cent of our total group. We found 11 (16 per cent) of the congenitally deafened children with evidence of cerebral palsy, mental retardation, or considered to be athetoid. This special group of 11 greatly handicapped children necessitated the advice and help of the parents, the otologist, the audiologist, the pediatrician and the teachers, with the co-ordination of a social service worker.


A review of 474 gastric ulcer patients emphasizes two problems: (a) discerning benign and malignant lesions, and (b) a recurrence rate in benign gastric ulcers of at least 35 per cent. Using generally available diagnostic methods and adhering strictly to criteria by which a brief therapeutic trial is interpreted, accuracy in discerning benign and malignant lesions approached 99 per cent. Inadvertent neglect of a malignant gastric ulcer is almost always avoidable. The likelihood of malignancy in a gastric ulcer which heals satisfactorily during a brief trial period of closely supervised medical therapy is less than

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ABSTRACTS

the risk of gastric resection. Almost half of 359 patients initially selected for a therapeutic trial eventually required a surgical remedy because of failure to heal or recurrence of their gastric ulcers. The problem of recurrence and subsequent complication in benign gastric ulcer disease, in our experience, more often weighs in favor of invoking a surgical remedy than does fear of overlooking an occult malignancy.


The importance of oxygen in determining the response to radiation has been demonstrated in numerous experiments. The test objects range from roots, seeds, and bacteria to tissue cultures and transplanted tumours in mice. The general conclusion reached is that the effect produced by radiation depends on the oxygen within the cell at the time of irradiation. Since there is no way of determining this, results are usually expressed in terms of the amount of oxygen immediately surrounding the cell. The cure rate of spontaneous mammary adenocarcinomas in C3H mice irradiated daily while breathing air can be increased by changing to treatment twice a week or by allowing the mice to breathe pure oxygen at three atmospheres during treatment. Pure oxygen at atmospheric-pressure is no more effective than air, probably due to depression of the respiratory rate by the oxygen. Oxygen at either pressure markedly increases systemic effects, as shown by early deaths. A mixture of 95 per cent oxygen and 5 per cent carbon dioxide at three atmospheres has about the same effect as pure oxygen at the same pressure on both cure rate and systemic effects. Only the gas mixture at atmospheric pressure gives the increased cure rate (because the respiratory stimulation and vasodilation resulting from the carbon dioxide carries more oxygen to the tumour) without increasing normal tissue reactions over those of air. It is, then, the technique of choice among those investigated.


Five cases of attempts at salvage of seriously damaged limbs are reported: 3 of them successful, 2 involving major vascular injury. From this direct experience, plus some unquoted indirect experience, the writer suggests some principles for handling such cases. These are: Repair the major arterial and venous structures necessary to maintain viability of the limb, after an initial intramedullary osteosynthesis with one of the solid cross-section devices. Repair all nerves primarily, and primarily repair or/and rearrange all possible motor structures, so that the limb leaves the operating room in a potentially functioning state. Skin defects should be handled in the usual manner. If subsequent procedures are necessary to obtain acceptable function and cosmesis, they should be done at as few sittings as possible and delayed until after the patient has been able to return home and, if possible, to do some type of work.


A perilacunar “halo” of low density bone has been observed around the osteocyte lacunae in undecalcified sections obtained from four cases of vitamin D resistant rickets, three being from Henry Ford Hospital Orthopaedic Research Laboratory and one previously reported by Engfeldt, Zetterstrom & Winberg. This feature and its pattern appear to be characteristic of and unique to this disease.


Clinico-pathologic correlations are demonstrated which support the contention that, in a majority of peptic ulcer patients with so-called intractable symptoms, the change in subjective distress and the ineffectiveness of medical therapy reflect alterations in the pathologic anatomy of the ulcer crater, notably penetration and confined perforation.
ABSTRACTS


From experience with direct urethrocystometry in 64 apparently normal adult females evidence has been presented that urinary incontinence secondary to dyssynergic detrusor dysfunction occasionally occurs in the absence of overt neurologic manifestations. Although the presence of subtle neurologic factors could not be denied, they were seldom discovered by comprehensive neurologic examinations. Usually, the diagnosis was first suspected by direct urethrocystometry. The milder grades of dyssynergic incontinence frequently were confused with stress urinary incontinence. All treatment was unsatisfactory including the usual operations for stress urinary incontinence. Direct urethrocystometry is highly sensitive parameter of detrusor activity.


The Rebuck human skin window technic was utilized to study the cellular response to suspensions of a strain of staphylococci and a purified polysaccharide antigen prepared from the same strain of staphylococci. These experiments were done in patients with furunculosis, in patients with various dermatoses and in normal controls. A higher incidence of basophilic and/or eosinophilic response was observed in patients with furunculosis and “open” skin lesions. The basophilic and eosinophilic response was elicited only when suspensions of the whole cocci, living or killed, were used as the inoculum in the skin windows. In striking contrast, in a similar group of patients, application of a purified polysaccharide antigen prepared from the same strain of staphylococci failed to elicit a basophilic and/or eosinophilic response. The possible role played by the basophils and eosinophils in the hypersensitivity reaction is discussed. It is proposed that possibly the basophilic and eosinophilic response following exposure of skin to staphylococci represents one manifestation of hypersensitivity reaction to the organisms.


Aneurysm of the heart resulting from muscle necrosis is most commonly associated with atherosclerosis of the coronary arteries, and less frequently attributed to aberrant origin of the coronary arteries, syphilis, trauma, rheumatic heart disease, myocarditis, and developmental abnormalities. While it occurs in 10 to 39 per cent of myocardial infarcts, subsequent rupture of the involved area is less frequently encountered (6 to 9 per cent) and is only rarely compatible with life. There are, however, instances of survival following myocardial rupture. These have resulted from the development of an extra chamber due to pericardial adhesions confining blood to a limited space. A case is reported of coronary atherosclerosis leading to myocardial infarction of the left ventricle and rupture of the left lateral posterior wall with limitation of the hemorrhage by fibrotic parietal pericardium. Formation of the false aneurysm allowed the patient to survive 5 years and 10 months after it was clinically recognized.


During sinus tachycardia following stimulation of the stellate ganglion, retrograde pressure in the sinus node artery decreased below control level. This decrease occurred independently of changes in central aortic pressure and was, furthermore, not observed in other atrial or ventricular coronary arteries. Procedures which abolished the cardiac accelerator response from adrenergic stimuli also eliminated the period of decreased retrograde pressure. These observations are considered compatible with the hypothesis of an inverse relationship between the caliber of the intranodal artery and the rate of pacemaking discharge by the sinus node.


An excellent first aid pneumatic dressing splint can be safely and rapidly applied by personnel with minimal training. It will permit control of hemorrhage and transport to proper medical facilities without the risks associated with improperly applied conven-

The purpose of this presentation is to report the status of erythrocyte sterilization in plasma free preparations against viruses in general. Betaprone is the only agent found among 700 evaluated which can be used in sterilizing concentrations without producing significant hemolysis. Our results indicate that it is necessary to know whether the virus is or is not intimately associated with the erythrocytes. There is a marked difference in the method of treatment and ease with which the erythrocytes are freed of virus activity depending on the association of the virus with erythrocyte. When viruses are intimately associated with the erythrocytes, it is necessary to use a virucidal agent for sterilization. Therefore, in attempting to sterilize the erythrocytes against the hepatitis agents in man, it must be assumed that the virus is intimately associated with erythrocytes until it can be proved otherwise. MM and EEE viruses can be washed free from erythrocytes obtained from infected animals during the stage of viremia while LCM virus can not. Erythrocytes seeded with virus infected tissue (MM, EEE and LCM) can not be washed free of all virus activity even after 10 washings in volume ratios of 1:10 and beyond LD50 titers for the respective viruses. Erythrocytes, whether artificially seeded or obtained from infected animals, can be sterilized with Betaprone solution against all three viruses (MM, EEE and LCM). Human erythrocytes in CDL solution can be treated with virucidal concentrations of Betaprone solution with only 5 to 6 per cent hemolysis on 21 days of storage. This is not possible with other suitable virucides tested, namely sulfur mustard and ethylene oxide. In vivo erythrocyte studies in man by the Ashby Count Method showed that Betaprone treated erythrocytes survived 7-14 days in two healthy individuals and only 24-48 hours in two chronically ill individuals (Tuberculosis and Cancer).


Lipoil dehydrogenase has been isolated from beef liver mitochondria. The enzyme was found to have a molecular weight of 102,000 and to contain 2 moles of flavin adenine dinucleotide per mole of enzyme. In these respects, as in substrate specificity, Michaelis constant, absorption spectrum, and mechanism of action, it agrees closely with preparations isolated from pig heart. The enzyme from beef liver was isolated by a combination of procedures previously published for the heart enzyme and by a new method, which utilizes extraction with phospholipase A and mild conditions of isolation. The two preparations showed identical properties. Both preparations showed the presence of six enzymically active flavoprotein components when examined by chromatography on ion exchange resins and by starch gel electrophoresis. Groups of isoenzymes separated on diethylaminoethyl cellulose were indistinguishable in regard to absorption spectrum, sedimentation velocity, and catalytic properties.


Manifestations of muscle impairment may be the initial and at times the predominant feature in myxedema. Objective motor impairment with proximal muscle weakness is a significant part of the clinical picture and can be correlated with mucinous degenerative alterations on histologic study of the involved muscles. Electromyographic disturbances support the clinical and pathologic findings. Pseudomypotonia and pseudomuscular hypertrophy are infrequently mentioned in myxedema, but occur more often than is generally recognized. The term myxedema myopathy is a term suggested to define the clinical and pathologic picture observed in certain patients with myxedema who present with proximal muscle weakness.

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Profound and disturbing neurologic manifestations occur in myxedema and may be the most prominent feature of the disease. Myxedema coma is now more frequently recognized and is a medical emergency requiring the prompt use of rapid-acting parenteral thyroid preparations and proper ventilation to combat carbon dioxide narcosis. Progression of this condition to death can occur in a few hours to days after the onset of coma. Convulsions, psychosis, and cranial nerve involvement are additional features of the advanced hypothyroid state. The cerebellar syndrome which occurs in myxedema is usually but not always improved by replacement therapy. Myxedema neuropathy consisting of paresthesia and sensory loss should be added to the list of conditions causing peripheral neuritis. A characteristic feature of myxedema is the high gamma globulin and total protein in the cerebrospinal fluid.


To be able to determine the nature of various types of crystalline materials, which are found in the human body associated with disease conditions, often will contribute to an accurate diagnosis of and possibly be a guide to proper therapy. In some cases, concretions are large enough to be removed from the body by the surgeon as in the case of urinary, lung or pancreatic calculi. In other cases the nature of the minute concretions observed through a polarizing microscope can only be speculated upon, using the experience of the pathologist as a guide. Even a relatively large kidney stone may consist of multiple layers of material of different composition, thus providing only a small amount of material for analysis. In order to identify such concretions, methods must be used where the presence of very small amounts of the specimen material is not a serious handicap. X-ray diffraction powder analysis is an analytical tool which is well suited to identify unknown powdered crystallites even in quantities of less than a milligram. The apparatus needed for this type of analysis is discussed and the details of the technique of mounting such powder in a suitable capillary support is described. It has been found that small needle-like slivers of crystal bearing tissue may be mounted in the capillaries by a similar method which is completely described. The amorphous tissue contributes some blackening to the x-ray diffraction patterns bearing the sharp lines characteristic of the included small crystallites. However, by cutting the sliver specimens very thin the latter darkening is not a matter of serious consequence. Examples of the use of x-ray diffraction analysis are given. These include urinary calculi and gallstones. A table is included which shows the composition distribution among 723 urinary calculi analysed by x-ray diffraction of Edsel B. Ford Institute for Medical Research from January 1949 through November 1961. Other examples cited of small concretion analyses are (1) calcium carbonate crystals from the pancreas gland (2) otoconia from the ear (calcite or aragonite) (3) sodium acid urate associated with joints and also as an ear tophus (4) mercuric sulphide found in a skin granuloma which resulted from a tattoo (5) cystine crystals taken from a lymph node from a case of suspected cystine metabolic defect (6) cholesterol centrifuged from brain fluid.


A study is presented of 200 patients past the age 60 who were admitted to the hospital for treatment of acute abdominal pain. Biliary-tract disease accounted for 55 admissions, intestinal obstruction for 35, peptic ulcer for 21, diverticulitis for 20, acute appendicitis for 16, acute pancreatitis for 15, and complicated hernia for 11 admissions. Careful attention to the clinical history and examination, x-ray findings and laboratory analyses will resolve most diagnostic problems; in a few cases special x-ray and electrocardiographic studies are required. Generalized arteriosclerosis, arteriosclerotic heart disease, arterial hypertension, metabolic, pulmonary and renal disease are the chief concomitant diseases that complicate the problem of acute abdominal pain in aged patients. The mortality rate for this group of 200 patients was 11 per cent, i.e., 22 patients died during the period of hospitalization from the acute illness. Of these 22 deaths, septicemia accounted for 9, arteriosclerosis and its complications for 9, acute pancreatitis for 3, and biliary cirrhosis for 1 death. Improvement in survival statistics and decreased morbidity will result from better management of the weighty problem of arteriosclerosis. Potentially dangerous diseases such as biliary-tract lithiasis, peptic ulcer, severe diverticulitis and hernias should be treated earlier. The management of acute abdominal pain in aged patients conforms basically to that in younger patients, with the exception that individualization of treatment is necessary because of the high incidence of complicating diseases.
ABSTRACTS


Studies of test lesions in the skin of patients with ulcerative colitis have been extended to 41 patients. Twenty-six of these patients revealed excess basophilic granulocytic migrations. Increased metachromatically granulated cells (basophil-mast cell complex) now have been reported in the actual colonic and dermal lesions of the natural disease process. Similar window studies demonstrated extensive basophil leukocytic exudations in eight of nine patients suffering from interstitial cystitis (Hunner's ulcer). All five of the urinary bladder biopsies in this group revealed an increase in the basophil-mast cell complex at the bladder site. Excess basophilic leukocytic functional activity was evidenced by pericellular metachromatic diffusion, the formation of exudative lakes of metachromatic material, cytoplasmic fragmentation, and explosive degranulation. The normal inflammatory leukocytic responses in man consisting of neutrophils followed by lymphocytes, hypertrophied lymphocytes, and macrophages were retarded and impaired with persistence of the neutrophilic response and affection of lymphocyte-macrophage participation. The responsive and reparative leukocytic sequences in such patients were hampered then by interference with normal leukocytic functioning in the presence of excessive numbers of cells bearing histamine, heparin, chymotrypsin, and possibly other pharmacologically active compounds. In turn, hemorrhage and ultimate excessive fibrosis are logical resultant. Accompanying eosinophilic migrations were observed. In Hurler's disease, the presence of unusual intercellular materials (chondroitin sulfuric acid B and/or heparin monosulfuric acid) leads not only to their ingestion by the histiocytes with the formation of quasi-mast cells, but, in addition, an unexpected, undue migration of basophilic granulocytes ensues. Inasmuch as tissue mast cell activation has been implicated in the mediation of the anaphylactic response; basophilic leukocytic degranulation similarly has been demonstrated in anaphylactic reactions to cold, penicillin, and bee sting; and increased basophilic granulocyte formation occurs after antigenic stimulation, it is proposed that in the pathogenesis of ulcerative colitis and interstitial cystitis, a new type of hypersensitivity is operative. This is manifested by increased basophilic leukocytic migrations, hyperplasia of tissue mast cells, impaired sequential leukocytic responses, hemorrhage, and eventual fibrosis. In addition, the aberration of the inflammatory process may so alter intercellular substance as to enhance such basophilic leukocytic migrations and perpetuate the process.


A relatively simple method of external hepatic-artery catheterization of patients with metastatic carcinoma of the liver, permitting prolonged intraarterial infusion with little risk or discomfort to the patient, is outlined. When liver metastases are the major site of tumor, hepatic-artery infusion is probably the route of choice. This should be started before massive replacement of the liver occurs to avoid portal-hypertension complications secondary to tumor regression. Because no other present therapy controls hyperserotonemia and thus prevents development of serious cardiovalvular and gastrointestinal complications antitumor chemotherapy is the treatment of choice of carcinoid syndrome. Carcinoid tumors, both functioning and nonfunctioning, are usually sensitive to 5-fluorouracil or alkylating agents.


Evidence of the importance of the mast cell in human physiology has been accumulating since the description of this cell by Ehrlich in 1877. It is now some 13 years since Ellis described the first autopsied case of urticaria pigmentosa with systemic involvement. A great deal of evidence has been presented to implicate the tissue mast cell as a prime effector cell in connective tissue reactions to inflammation, in hypersensitivity states, including the auto-immune disorders and in diseases of the adrenals, thyroid, pituitary and ovaries. In spite of this knowledge and the possession of fairly potent therapeutic means to block histamine and heparin, and other indirect means of altering the degranulation of the tissue mast cell we are, for the most part, unable to report satisfactory application of this knowledge to therapy. A further challenge exists in the controversial relationship of the mast cell to lipid transport and its possible relationship to atherosclerosis. Opportunities to apply accumulating knowledge of the mast cell are present in glaucoma, irido-cyclitis, malignant exophthalmos, localized myxedema, the myopathy of hypo- and hyperthyroidism, senile osteoporosis, premenstrual edema, lack of fertility, and the collagen diseases.
ABSTRACTS


The records of 29 patients with chronic idiopathic orthostatic hypotension (IOH) were reviewed and compared with records of 11 patients with a similar syndrome who had diabetes mellitus. Fifteen patients with IOH had significant central nervous system findings consisting of extrapyramidal defects, paresthesia, sphincter disturbances, pyramidal tract signs, and impotence, confirming the presence of a degenerative neurological disease in these patients. Diagnosis was made when there was the simultaneous occurrence of dizziness and syncope with a decline in standing blood pressure of 30/20 mm Hg. Treatment consisted of the use of physical measures to increase venous return, and the administration of vasopressor agents such as ephedrine. When such therapy was ineffective, fludrocortisone acetate was used and resulted in marked improvement in five patients.


The clinical manifestations of Marfan's syndrome are confined to three major systems: cardiovascular, ocular and skeletal. The disease is transmitted by a dominant, nonsex-linked gene. The defect varies from the slightest suggestion of a forme fruste of the disorder to full-blown abnormalities in all three systems. Thus, changes may be present to a marked degree in the cardiovascular system while little or no ocular or even skeletal abnormalities may occur. Clinical and necropsy data of a 19 year old boy who had Marfan's syndrome and dissecting aneurysm of the aorta and the right coronary artery are presented. A thrombus distal to the dissected right coronary lumen resulted in a large myocardial infarction. The immediate cause of death was a massive hemopericardium. Chronic intimal proliferation in the proximal right coronary artery was believed to be the cause of an unusual myocardial degeneration seen through diffuse areas of heart muscle.


The radioiodinated rose bengal liver function test was carried out in 36 jaundiced patients in order to evaluate its reliability in the differential diagnosis of jaundice. Detection of radioactivity in the bowel lumen within 1 hour of the intravenous injection of the tagged rose bengal excluded the diagnosis of extrahepatic jaundice. The I\(^{131}\)-rose bengal function test, however, did not give consistent results when patients with jaundice of intrahepatic origin were examined. The test is not the final arbiter, but may provide important supportive evidence in the differential diagnosis of jaundice.


Internal remodelling of bone occurs continually during life in discrete foci throughout cortex and large trabeculae. It is defined as the process of replacement of primary appositional bone with Haversian bone occurring within the periosteal-endosteal envelope. The foci are produced by osteoclastic resorption of pre-existing bone and are subsequently filled in by successive waves of osteoblasts that deposit new matrix. In this study, measurements of the surface area of Howship's lacunae in rib diaphyseal cortex are presented for 137 relatively normal individuals of both sexes and ranging from one month to 84 years of age. Undecalcified cross-sections were prepared fresh from rib obtained at thoracotomy or post-mortem. Measurements were performed with a calibrated Zeiss Integrating Eyepiece II. It was found that the values for this resorption index were highest in infancy and lowest in middle and early adult life. The maximum adult values were attained in the seventh decade. No differences were noted that could be accounted for by sex. Correlation of these data with an index of secondary bone formation in this same group of bones enabled the authors to conclude that the internal remodelling rate of rib cortex is highest in infancy, lowest in the fourth decade and attains a secondary peak in the seventh decade. The authors suggest that the phasing of the changes noted are due to some as yet unknown programming of the mesen-
ABSTRACTS

chymal cell. Since no increases coincided with growth spurts during childhood and adolescence, they conclude that the process of internal remodelling may be under a completely different mechanism of control from that governing skeletal growth and maturation.


The peculiarities of the type of liver cirrhosis that occurs in patients with cystic fibrosis of the pancreas depend on a number of factors. Two such factors, which have received little attention in the past, became apparent during a study of the livers of patients dying of this disease at this hospital. Firstly, the onset of the disease in fetal life may disturb the development of the bile duct system whose normal development is essential for normal structural relationships to be maintained in the liver. Focal lesions of intrahepatic biliary atresia will then complicate the histologic picture of “multilobular biliary cirrhosis”. Secondly, scars formed in an infantile liver will considerably distort the subsequent growth of the liver, resulting in bizarre nodularity. Despite massive deformation large portions of the liver will still be composed of primary parenchyma that will enable normal liver functions as revealed by laboratory tests.


Certain selected characteristics of a group of coronary heart disease deaths, 45 years of age and under, occurring in Baltimore during 1954-57 were compared with those of a group of deaths from other causes, occurring in the same period and matched by race, sex and age group. The following statistically significant differences in these groups were found: A larger proportion of coronary deaths were married than the controls; also, the coronary deaths had been married more frequently and their wives were on the whole older than those of the control deaths. Analysis of their lifetime residential history indicated that a larger proportion of the coronary deaths than of the controls had moved to Baltimore after 16 years of age. The wives of the coronary deaths had higher mean serum cholesterol levels than the wives of the control deaths. Similarly, the male offspring of the coronary deaths had higher levels than did those of the control deaths. The coronary and control deaths were not found to differ with respect to relative socio-economic status, educational level, occupation, nativity and parents' origin, smoking habits and major religious affiliation. The implications of these findings from an etiologic viewpoint were briefly discussed.


In the period 1958 through 1961, 240 hips of 120 stillborn and newborn babies were dissected by one of us (S.S.). These babies ranged in age from the fifth to the ninth month of intrauterine life. The newborn babies in this series had lived from six to twenty-four hours after birth. Among the 240 dissected hips (120 infants), eight hips (in seven infants) were found to have congenital abnormalities. These included two dislocated hips, three subluxated hips, and three dysplastic hips. The anatomical-pathological findings in this study were the result of development in utero, and for this reason represent congenital disease of the hip uninfluenced by extrauterine factors. Prenatal superoposterior and anterior dislocation and superoposterior subluxation were found but not posterior dislocation of the hip in the anatomical-pathological sense. In Case 1 (prenatal superoposterior dislocation of the hip), the limbus was completely absent. In the cases of superoposterior subluxation of the hip, the normal limbus was absent bilaterally on the superoposterior aspect of the acetabulum and fused with the capsule elsewhere. In our anatomical-pathological studies, a common finding was hypertrophy of the iliopsoas tendon. All stillborn and newborn babies with pathological findings in the hips were white and had been born in the occiput position. Among 120 babies whose hips were dissected, only three were born in the breech position, but dissection of their hips failed to reveal any pathological findings. In Case 2, the only pathological finding was in the acetabula; both femoral heads and necks were normal. The deformities of the hips in our anatomical-pathological material were different in the dislocations, subluxations, and dysplasias. Because of this it is extremely difficult for us to believe that they all had the same cause.
ABSTRACTS

Variations in osteoblastic activity with age by the osteoid seam index. A. R. Villa­

The need for the replacement of pre-existing osseous tissue due to various physiologic and pathophysiologic demands is fulfilled by the resorption-formation process of the skeleton. These processes can be broadly categorized into two phases: Internal remodelling or the replacement occurring within the periosteal-endosteal envelope, and growth remodelling or the remodelling occurring at the periosteal-endosteal surfaces during growth. The authors reason that changes in the numbers of new osteons found in cortex with age would provide insights into the mechanism(s) governing the production of these centers of new bone forma­
tion. Undecalcified cross-sections of human rib from 139 relatively normal subjects ranging from one month to 84 years of age were prepared by Frost's method and stained with 1 per cent basic fuchsin. The total number of osteons containing active osteoid seams was deter­
mined. The surface area of each cross-section was measured and the data converted to a unit of number of seams/mm² of cortex. The largest number of seams/mm² occurred in infancy, with a gradual decline until the fourth decade. This was followed by a subsequent rise with a secondary peak in the seventh decade. The differences in means of the fourth and seventh decade were significant at the 1 per cent level. Similar changes were noted in specimens of clavicle in 34 of the study cases. It is felt that the data indicates a net suppres­
sive effect by gonadal hormones on the process of internal remodelling of diaphyseal cortex. Since the numbers of seams present at any given instant are representative of previous events affecting differentiation of the mesenchymal cell, the data indicates that the mechanism(s) controlling this process in the internal remodelling of rib and clavical cortex may be in­
dependent of the mechanism(s) controlling differentiation of mesenchymal cells in growth and maturation of the skeleton.
12. Turner's Syndrome in Males.
   Pierre Caron, M.D., William C. Mieher, M.D., Raymond
   C. Mellinger, M.D., and Edward W. Green, M.D.

   John Peacock, M.D. and Raul Calderon, M.D.

14. Epidermoid Cyst Formation Seventeen Years Following Cutis Graft
    Repair of Incisional Hernia.
   G. D. Couris, M.D., and J. H. Wylie, M.D.

15. Letter To Editor: Angular Projection of Medical Illustrations.
    William Loechel

16. Program: Henry Ford Hospital Medical Society.

17. Abstracts of Recent Publications of the Professional Staff of the Henry
    Ford Hospital and the Edsel B. Ford Institute for Medical Research.