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Hemorrhoids are found in over 50 percent of the adult population. The basic principles of treating hemorrhoids: cautery, ligation or excision are remarkably alike throughout history. It is common knowledge that in most cases, hemorrhoidectomies are rather uncomfortable, to say the least. The general public is all too aware of this and all too frequently suffer for many years with bleeding and prolapse of their hemorrhoids. As a result of this fear of surgery, all too often the chances for an early diagnosis of cancer of the rectum and colon are greatly decreased. The public is reluctant to lose time from work, and they are also aware of the definite recurrence rate for hemorrhoids. Injection therapy has offered little except as a temporary measure. This article reviews experiences with 200 consecutive cases in which the internal hemorrhoids were ligated with rubber bands in the out-patient clinic. The instruments used and the results obtained are described. The increasing list of grateful patients is strong evidence that the public will accept a method which does not involve anesthesia, hospitalization and severe pain.


Chronic lymphocytic thyroiditis appears as a unilateral enlargement in some patients. Surgery may be carried out because of the interpretation of this enlargement as due to pathologic nodule formation or because pathologic nodule formation actually coexists with the thyroiditis. It is possible to recognize chronic lymphocytic thyroiditis in many patients by correlating the history, physical findings, and laboratory data. Most patients with chronic lymphocytic thyroiditis are managed satisfactorily by therapy with thyroid. Carcinoma was associated with chronic lymphocytic thyroiditis in approximately 5 percent of our patients who had undergone operation. Involutional nodules or adenomas were seen in about 26 percent of patients for whom surgery was performed. Surgery is indicated in chronic lymphocytic thyroiditis when associated with pathologic nodule formation or in the occasional patient with pressure symptoms in the neck produced by huge enlargement of the thyroid gland. The surgical procedure indicated in the patient with chronic lymphocytic thyroiditis will depend on surgical findings. Pathologic nodules should be managed without consideration of the thyroiditis. In others, the excess bulk of thyroid tissue is removed. Total thyroidectomy is not justified as the procedure of choice for chronic lymphocytic thyroiditis. Patients with chronic lymphocytic thyroiditis should receive thyroid therapy indefinitely. Relatively large doses may be necessary to prevent enlargement of the gland and control symptoms. This was emphasized in our experience by the fact that 20 of 95 patients previously operated upon for chronic lymphocytic thyroiditis returned later with symptomatic enlargement of their remaining thyroid tissue.


Aseptic necrosis of the femoral head occurred in two patients after they had received intensive corticosteroid therapy. In neither case was the primary disease process one usually associated with this complication. In one case, that of an 18-year-old woman, the medication was taken for chronic severe skin disease, diagnosed as pemphigus vulgaris. In the other, that of a 52-year-old woman, the hormone was administered for recurrent exfoliative dermatitis. A direct hormonal effect on osteoblastic activity is offered as explanation for the bone necrosis. Prompt attention to symptoms of hip pain in patients receiving corticosteroid therapy may markedly alter the course of this complication.
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Ophthalmodynamometry measures relative pressure of the retinal arteries and constitutes a rapid and safe test for internal carotid artery occlusive disease. A comparison of the retinal artery pressures when the patient is standing with those when he is sitting or in a supine position enhances the sensitivity and diagnostic usefulness of the test. The effect of posture on the retinal artery pressure was measured in 58 patients, 20 with carotid artery occlusive disease, 18 with intracranial cerebrovascular disease, and 20 with miscellaneous conditions. The greatest value of postural ophthalmodynamometry was the detection of chronic and bilateral, as well as early, carotid artery occlusive disease. Six cases illustrate the significance of the results.


Metabolism of approximately 20 mg of N\textsuperscript{15} from glycine, ingested as a single dose, was studied in each of 2 dogs, in 5 successive experiments wherein total intake of free glycine increased stepwise from 1.5 to 19.5 g/day. Output of N\textsuperscript{15} as total nitrogen, urea, and ammonia, as well as the amount in fibrinogen, were determined 6, 12, 24, and 48 hours after ingestion. Percentage of N\textsuperscript{15} retained after 24 hours, and the percentage observed in fibrinogen, were both inversely proportional to the logarithms of total free glycine intake. The 13-fold increase in glycine intake reduced the former percentage by about one third, and the latter by about two thirds. Rate of urea formation, expressed as milligrams of urea nitrogen per kilogram of body weight per hour, was a linear function of glycine intake during the most active period of catabolism (second 6-hour period after ingestion). Percentage of urinary ammonia originating from ingested glycine during the first two 6-hour periods increased linearly with glycine intake during the first 4 levels of supplementation, but not at the highest level. Glycine evidently had a sparing effect on formation of ammonia from other sources, but this effect was limited.


Isodose charts in general use are made for beams of radiation incident normally on the skin. In practice, it is often necessary or desirable to treat with the axis of the beam making some angle with the skin surface other than 90°. This situation can be rendered amenable to dose calculation with these isodose charts by the use of bolus. However, there are times when this is inadvisable; for example, bolus would destroy the skin-sparing aspect of teletherapy with high-energy radiation. The time required to prepare isodose curves for all field sizes for a great number of angles of incidence is prohibitive. There is need, therefore, for a simple, rapid method of calculating dosage under these conditions, using standard isodose charts, which will have sufficient accuracy for clinical use. A method of calculating dosage for oblique fields, based on the use of tissue-air ratios, is described. The procedure can also be used to obtain isodose curves with a changed FSD and for the determination of the thickness required for a compensating filter.


Observations have been reported and viewpoints discussed relative to the treatment of rickets and osteomalacia of vitamin-D-refractory type. Evidence has been cited that an orally administered solution of sodium phosphates has been found effective in certain adults with the acquired form of refractory osteomalacia. In contrast, we have submitted both clinical and laboratory evidence that such therapy, as the only measure for a period of one year, was without apparent benefit in three children with refractory rickets. Failure of the latter to respond may be due to a difference in the basic disease process or failure to obtain the normally high levels of serum phosphorus in children which conceivably must be reached before significant mineralization will proceed.

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Since epinephrine is a potent lipolytic hormone and the level of thyroid function conditions its hyperglycemic and hemodynamic actions, hyperthyroid, hypothyroid and euthyroid subjects were compared in respect to FFA, and in some instances glucose, responses to infused epinephrine. Whereas, at the end of the infusion only minimal differences were observed, following the epinephrine the regression of FFA levels was accelerated in hyperthyroids and delayed in hypothyroids. These differences were interpreted in the light of the known effects of thyroxin on the actions of epinephrine with due regard to the interrelationships of these two hormones with glucose and FFA metabolism. Both hyperthyroid and hypothyroid patients were similarly studied after specific therapy and their respective FFA response curves were corrected toward normal.


A new method for the preparation of primary human amnion cells is reported in which pancreatin solution is used instead of trypsin for the digestion of amnion membranes. The chief advantage of the pancreatin digest is in its mucolytic action and cell dispersion, both being accomplished during a one-step procedure. Cells obtained by this means can be grown and can support the growth of viruses equally as well as the cells obtained by the trypsinization procedure. Such cells are also satisfactory for primary virus isolation from clinical material.


A case is reported of gastrointestinal polyposis associated with mucocutaneous pigmentation (Peutz-Jeghers syndrome) which terminated fatally with metastases from a cancer in the region of the gastroduodenal junction. This is believed to be the first reported case of disseminated gastrointestinal cancer in this syndrome. It is believed that incomplete forms of the syndrome occur, e.g., pigmentation without polyposis. Review of 43 cases of gastric or small intestinal polyposis yields one case which might represent an instance of the Peutz-Jeghers syndrome with polyposis but without known pigmentation.


In 3 women who died with so-called primary pulmonary hypertension, degeneration was present in the tunica media of normotensive systemic arteries as well as in the hypertensive pulmonary arteries. The systemic arterial lesions involved the blood supply to both the sinus node and A—V node, which suggests they contribute to the syncope and sudden death commonly observed in this disease. Equally significant, however, is the evidence that the basic pathology in this disease may be a generalized degenerative arteriopathy, and that the pulmonary hypertension is a devastating but largely secondary phenomenon.


The case of a young man with Friedreich's ataxia who died of intractable atrial arrhythmias and cardiac failure is presented. At necropsy there was widespread involvement of the small arteries of the myocardium (including the cardiac conduction system) and lungs. After critical review of previous necropsy studies in this disease, it is suggested that the most likely explanation for the cardiopathy of Friedreich's ataxia is obliteration of the small coronary arteries. Potential significance of the pulmonary arteriopathy is briefly discussed.
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Heart block is one of the well-known features of diphtheria, which is now an uncommon disease in modern civilization. Atrial arrhythmias also occur during diphtheria but are much less common than heart block. Although there are numerous excellent reviews concerning the heart in diphtheria, there have been relatively few studies of the pathology of the cardiac conduction system. The recent death of a child with diphtheria afforded us the opportunity to study the cardiac conduction system at necropsy. During her terminal illness she developed both atrial arrhythmias and heart block. The histopathology of the sinus node, the atroventricular node, and the atroventricular bundle of the heart is presented. The terminal illness included atrial arrhythmias and heart block. The possible importance of the neuropathology of the diphtheritic heart is indicated.


During the course of investigations utilizing direct perfusion of the sinus node through its own artery, we noted that a pulsatile pressure of considerable magnitude was present in this artery, the origin of which had been ligated. This report concerns studies performed to determine the source of this retrograde pressure and pulse. Retrograde pressure and pulse were studied in the ligated sinus node artery of 37 dogs. The principal determinant of retrograde pressure is central aortic pressure, and the principal determinant of retrograde pulse is right atrial contraction.


The term “obstructive cardiomyopathy” was first used by Goodwin et al. in a description of a group of patients who presented with a history exactly simulating aortic stenosis, but who were found to have normal valves and an obstruction to left ventricular outflow due to myocardial hypertrophy in the ventricle itself. A case of obstructive cardiomyopathy is presented, with a brief review of the latest literature concerning this condition. The etiology of the muscular hypertrophy is unknown. Many patients suffering from the condition die suddenly, so that early diagnosis and treatment are imperative. Patients can now be successfully treated by new surgical techniques.


A technique for applying the Debye-Scherrer x-ray diffraction powder method for identifying various microcrystalline materials found by pathologists in biopsy and autopsy specimens is discussed. This x-ray diffraction technique is illustrated by the following specific cases and findings: (1) heart pericardium — magnesium silicate hydrate, (2) heart calcification — apatite, (3) tattoo granuloma — mercuric sulfide, (4) crystals in liver and spleen — thorium dioxide, (5) crystals in lung — silica and kaolin, (6) cranial cyst crystals — cholesterol, (7) kidney disorder — cystine crystals found in kidney tissue. It is not unusual for crystalline substances to be found by the physician or pathologist in the human body. Normally the occurrence of such materials is limited to the inorganic salts found in bones and teeth, and to the larger body concretions such as kidney stones and gallstones. Not infrequently the pathologist will observe small microcrystals embedded in soft tissue obtained from biopsy and autopsy specimens. The latter crystallites are usually observed in tissue section slides examined at rather high magnification. The origin of these tiny crystals may be exogenous or endogenous and range from the numerous possible metabolic crystals to the unlimited number of foreign materials which may gain entrance to the body. The crystals observed may be only incidental findings and of no immediate significance. However, often their nature can be of major diagnostic importance.


A technique employing 7 orderly steps to achieve anesthesia locally for hernia repair is described and illustrated. From a practical neuroanatomic point of view certain areas demand
special consideration by the surgeon employing local anesthesia. These include: the free nerve endings in the epidermis; peripheral nerve supply mediated through the twelfth thoracic and first and second lumbar nerves, sympathetic nerve supply to the blood vessels and spermatic cord; innervation of the pubic tubercle and periosteum; and innervation of the peritoneum. Successful local anesthesia demands knowledge of anatomic details, patience, and a most valuable virtue in a surgeon — gentleness.


Tumors of the hypothalamic region may cause a syndrome of marked emaciation, alertness, and euphoria. Four cases of this diencephalic syndrome are presented. Radiographs of the extremities of these patients show a complete absence of fatty tissue. This has not been observed by the authors in any other condition, although it is conceivable that it could occur in starvation due to decreased food intake. Awareness of this condition is important as the severe emaciation may occur well before any neurological signs. Diagnosis can then be sought by pneumoencephalography.


The antimicrobial activity of ampicillin was, in general, equal to or only slightly less than that of penicillin G and V for strains of Viridans group streptococci, nonpenicillinase-producing staphylococci, and enterococci. Ampicillin exhibited a high degree of bactericidal activity. Ampicillin was less highly bound to serum protein and lost less of its activity in the presence of serum than either penicillin G or V. Peak serum concentration of ampicillin was less than that of penicillin V after oral administration of the two agents. Penicillin V produced greater serum inhibitory activity against a Viridans group streptococcus and nonpenicillinase-producing staphylococcus than did ampicillin.


Changes in the color of organs have always attracted the attention of pathologists and have led to such terms as brown induration and atrophy, xanthelasma, and so on. They are produced by substances that can be classified into two groups, lipids and hemochromogens, and mixtures of the two lead to a variety of shades of color. Although they are normally present in small quantities in many organs, lipids attract attention only when present in abnormal amounts. In this paper we are presenting the clinical and morphologic features of an infrequently described entity referred to as pseudoxanthoma, xanthogranulomatous pyelonephritis, foam cell granuloma, xanthic lesion, and “Staphylomykosen.” Four cases featuring lipid-containing cells involving the kidney are reported and reviewed, together with 31 similar cases previously reported. Problems in diagnosis and differential diagnosis are discussed, and the need for distinguishing this benign condition from the clear cell renal adenocarcinoma, which it may closely resemble, is stressed.


In cross sections of diaphyseal bone, one may note both complete, intact osteons and incomplete ones in various stages of formation or destruction. Partially destroyed osteons are termed remodeled osteons. Between these osteons lie the interstitial lamellae, which are in part remodeled osteons. The question — “How long does an osteon retain its architectural integrity after formation?” — is unanswered. The phenomenon of permanent tetracycline deposition in newly mineralizing lamellar bone and its subsequent visualization in undecalcified sections by microfluorescence provides a tool that can be used to determine osteon half-life. We describe here a technique that is simple and accurate.
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From 1940 to 1961, ninety cases of epidermoid carcinoma arising in osteomyelitic foci were reported in the literature. These cases were reviewed and 12 additional cases were reported. Twenty-two regional or visceral metastases or metastases of both types occurred in 71 patients who had follow-ups of 18 months or longer. Additional metastases may have occurred, but 31 patients were followed for less than 18 months. Malignant degeneration should be suspected when there is any increase in chronic symptoms or a flare-up of quiescent osteomyelitis. Biopsy should include tissue from all portions of the sinus, or ulcer, including the marrow space. Early, adequate amputation is advised when malignant degeneration occurs.


Neurofibromata have been associated with increased numbers of blood vessels, fat, and fibrous tissue producing clinically unique-appearing localized masses. The association of lymphatic vascular abnormality with neurofibroma has not been found in our search of the literature and is the basis for this report. An example of lymphatic ectasia and aneurysm formation is reported, occurring in a neurofibroma of a patient with generalized neurofibromatosis. The development of a preauricular mass following trauma to the area lends support to the thesis that the lymphatic participation is reactive and not neoplastic.


While technical methods are now available that render it possible to repair acute arterial injuries with a great deal of success, experience suggests that lesions of this type still are often improperly treated. Unnecessary complications, loss of time, and even loss of limb or life, can be the result. It seemed useful, therefore, to review our observations with civilian arterial trauma in an attempt to clarify and re-emphasize some of the important therapeutic principles and evaluate the clinical results of the technical methods used. The clinical experience with 61 civilian arterial injuries has been reviewed and classified as to early and late lesions. The prompt and correct treatment of laceration, transection, thrombosis, and spasm of injured arteries forestall morbidity and incapacitation and prevent late sequelae such as arteriovenous fistulae and false aneurysms. Arterial damage must be suspected whenever signs of ischemia appear after blunt or crushing injury, even in the absence of bleeding. Hemorrhage after a penetrating injury demands immediate exploration of the artery likely to be responsible for it. The results of surgical management of these lesions have been most satisfactory when carried out correctly.


When the diagnosis of mitral stenosis is established, there are certain definite indications for an open heart type of surgical correction. Perhaps the term "commissurotomy" is inadequate, as suggested by Bailey, because there may be other important details of the reconstructive procedure. Ranging from absolute to relative, the indications for open operation seem to be: a previous closed (or open) operation; evidence of left atrial thrombosis; complicating insufficiency; calcification of the valve; coexisting disease of the aortic or tricuspid valves; and finally, the presence of uncomplicated mitral stenosis when the patient is to be operated on in a center where there is a surgical team with adequate experience with the surgical technics of extracorporeal circulation.


An interrelationship between the hemolytic system and the coagulation factors in paroxysmal nocturnal hemoglobinuria (PNH) is now reasonably certain. Thrombin has been presumed by Crosby to destroy a heat stable PNH-inhibitory factor, resulting in increased hemolytic activity. This is the basis for his diagnostic test. Moreover, an important clinical observation has been that the thrombotic tendency seen in PNH fluctuates directly with
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Hemolytic activity. Thrombosis is more common at night, as is acceleration of hemolysis. Related to this is the almost constant finding of some degree of thrombocytopenia in patients with PNH. The proclivity of PNH platelets to agglutinate in vitro has suggested that the thrombotic tendency depends in part on a spontaneous alteration of platelets in vivo as a result of sensitivity to PNH plasma factors. This could lead to the formation of agglutinates of sticky platelets (viscous metamorphosis) without requiring preliminary trauma to platelets, such as is thought to occur in normal blood coagulation. Studies on the hemostatic mechanism in two patients with paroxysmal nocturnal hemoglobinuria, using specialized techniques have been described. Platelet thromboplastic function, as measured by the thromboplastin generation test, was found to be normal. A hypercoagulable state of the platelet-poor plasma was not demonstrated by the techniques employed.


In hypophysectomized rats, growth hormone increased incorporation of N\(^{15}\) from intraperitoneally injected ammonium citrate into proteins of liver, heart, muscle, kidney, and spleen. Distribution of N\(^{15}\) from this source among nine amino acids isolated from liver protein suggested that improved utilization of ammonia nitrogen resulted from: (a) its transfer to amino acids directly involved in urea formation and transamination; and (b) increased utilization of these amino acids for protein synthesis. Incorporation of N\(^{15}\) from intraperitoneally injected glycine, L-alanine, L-aspartic acid, and L-glutamic acid into liver protein of untreated hypophysectomized rats was much larger than that reported previously for muscle protein fractions; the positive effect of growth hormone, though always observed in liver, was correspondingly reduced in percentage. N\(^{15}\) from all five sources, appearing in liver or muscle protein as arginine, increased in treated groups, indicating that urea formation was not interfered with by growth hormone, at least up to the point of arginine synthesis. In untreated animals, transfer patterns of N\(^{15}\) from alanine and glutamic acid were quite similar, while those for N\(^{15}\) from ammonium citrate and aspartic acid differed considerably. Distribution of N\(^{15}\) from ammonium citrate to amino acids other than serine resembled that of N\(^{15}\) from glycine.


The operative correction of coarctation of the aorta is one of the most satisfying operations in the field of surgery. As a localized, frequently single congenital defect, it produces profound effects that are largely eliminated by the removal of the obstruction. Therefore, there can be no argument about the general indications for the operation. There is, however, difference of opinion on the timing of the operation when the anomaly is discovered in infancy. Because the problems are so different, the seven categories of anomalies are discussed in separate sections: Uncomplicated Coarctation; Coarctation of the Aorta with Ventricular Septal Defect; Coarctation Plus Distal Patent Ductus Arteriosus With or Without Associated Interventricular Septal Defect); Coarctation Plus Proximal Patent Ductus Arteriosus (With or Without Associated Interventricular Septal Defect); Coarctation of the Aorta with Associated Aortic Stenosis; Coarctation of the Aorta and Subendocardial Fibroelastosis; Coarctation and Atrial Septal Defect. Evidence is presented to establish the fact that operation for correction of coarctation of the aorta is feasible in infancy, and in certain cases is urgently indicated as an emergency measure. Using criteria described in this communication, one third of infants with uncomplicated coarctation seen during the first year of life were subjected to operation without mortality. The presence of the additional anomaly of ventricular septal defect makes the operation even more urgent. Patent ductus arteriosus, either proximal or distal to the coarctation, makes the prognosis much poorer, but operation gives the infant his only chance.