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Five patients with perforation of the esophagus due to gastroscopy with fiberoptic instruments are reported. Possible causes of this injury are discussed and a comparison made of the fiberoptic instruments with the standard gastroscope. It is maintained that adequate deflexion of the instrument tip is important for prevention of perforations. The blunt end of the fiberoptic instrument is thought to be the cause of these accidents and the use of a rubber finger for the tip of the instrument has been suggested. It is emphasized that proper training and skill are necessary for modern gastroscopy.


Studies were made of beta excited x-ray sources utilizing $^{85}$Kr, in the gaseous form, and Cu foil target. The gas phase necessitated the construction of a special source holder. An example of the spectrum produced, as detected by an argon-methane flow counter, exhibits the classical form, with a well defined $K_x$ doublet and the white radiation continuum. Comparison of $^{85}$Kr to $^{205}$Tl, a non-gaseous emitter of similar beta $\Sigma_{max}$, indicates the $^{85}$Kr source, as constructed, to be approximately 10 times less efficient than $^{205}$Tl in K x-ray production. This difference in efficiency is probably due to the variation in source geometry, as $^{205}$Tl-Cu has 5 mil Cu backing and $^{85}$Kr-Cu has no backing target. The K photon to total photon ratio is 0.33 for $^{85}$Kr-Cu vs 0.69 for $^{205}$Tl-Cu with 1.2 mil Cu and 1.3 mil Cu respectively. Such a noble gas, beta-excited source of stimulated x-rays provides a photon source uniquely safe, in the event of rupture of the seal.


Biopsies of skin lesions and clinically normal skin from 137 patients, including patients with systemic lupus erythematosus (SLE), discoid lupus erythematosus (DLE), scleroderma, and polymorphous light eruption (PMLE), were tested by the direct fluorescent antibody technique for the “band” of localized immunoglobulins seen at the dermal-epidermal junction in LE skin. The “band” was present only in lesions of SLE and DLE except for bullous pemphigoid and one of four Jessner’s lymphocytic infiltrate lesions. The bullous pemphigoid band differed morphologically from that seen in LE. The “band” was also seen in clinically normal skin in SLE and bullous pemphigoid. It was frequently present in histopathologic nondiagnostic LE skin lesions and was especially valuable in the early confirmation of a clinical diagnosis of SLE.
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Sixty-six patients were evaluated medically and in terms of social-emotional factors. Data was gathered from medical records and personal interviews. An "emergency room" group of 42 patients had had a hypertensive emergency after discontinuing treatment. The "control" group of 24 patients had had prolonged, consistent treatment with good control of their disease. The pretreatment severity of disease was found to be comparable for both groups. Emergency diagnoses were mainly encephalopathy, congestive heart failure and epistaxis. The "emergency room" group showed statistically significant differences from the control group. They were younger, disease duration was shorter, they were less educated, had less income and were more likely to be Negro blue collar workers. Three main factors stand out as influencing antihypertensive treatment: the socio-economic status of the patient, conditioned responses, and the education of the patient about the disease. Many patients did not realize that "feeling well" did not necessarily mean "being well." The study suggests that by educating the patient about his disease and the importance of appropriate management, an improvement in morbidity and mortality of hypertensive diseases may be achieved.


The kinetics and some biochemical properties of reninlike enzyme found in the pregnant dog uterus were compared to kidney renin. Both enzymes were partially purified. They showed maximum precipitation at the same ammonium sulfate concentration, similar K_m values, and the same pH optimum of 7.1. However, the uterine enzyme produced a pressor material when incubated with plasma from which the renin substrate had been previously removed by digestion with hog renin, and dialysis. It was concluded that the uterine enzyme, although similar to renin, is able either to digest another substrate in addition to renin substrate, or that there are two different enzymes in the uterus that are capable of producing a pressor material when incubated with plasma.


In hepatic failure with ascites, plasma kininogen values were lower than normal; but no significant changes were observed in the kinin and kininogenase activity of the plasma. An increase in plasma kininogen was observed during the last gestational quarter of pregnant women, but there were no significant changes in kinin and kininogenase activity. The plasma kininogen content was significantly greater in normal men than in normal non-pregnant women. It is suggested that besides the decreased production of kininogen due to impaired liver function, endocrine changes associated with hepatic failure might influence the concentration of kininogen. In addition, it is hypothesized that reproduction and sex hormones affect the concentration of substrate in plasma.


Incubation of endotoxin with blood samples failed to release kinins. Furthermore, the authors found no amount of kinins released after i.v. injection of endotoxin in the dog. The kinin content of venous blood was below the sensitivity of the method employed (0.1 ug/100 ml of blood). The experiments involving i.v. injections of Kallikrein demonstrated that the method used in detecting release of kinins in circulating blood was reliable. No significant differences in the kininogen content of plasma were noted at various intervals following onset of shock. The failure to demonstrate polypeptide-like substances as reported by others may be due to differences in the specificity of the methods employed. Therefore, if kinins are released during endotoxin shock in dogs, the concentration does not seem sufficiently large
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to ascribe a physiologic role to them. Following similar hypotensive episodes produced by Kallikrein injection, considerable amounts of kinins were detected. The study showed no significant participation of the plasma kinins in endotoxic shock in the dog.


Thirty patients, normal or with hiatal hernias, were examined using simultaneous recording on the same cine film of the radiographic appearance and manometry of the distal esophagus and adjacent stomach. A closed sphincter measuring one to two cm in length was found. A high-pressure zone longer than two cm was due to factors other than the intrinsic sphincter. The primary peristaltic wave terminated at the sphincter. The sphincter moved one to four cm cephalad with swallowing. Detection of a small segment of stomach above the diaphragm during and shortly after swallowing is normal.


Two cases of intestinal intramural gas in infants are presented, with radiographs. Both infants exhibited the clinical syndrome referred to by many authors as necrotizing enterocolitis. The first child expired at four days of age following medical management. The second child survived following resection of necrotic proximal colon. Of the 82 previously reported infants with intramural intestinal gas, only 19 cases have been presented with radiographs showing gas in the bowel wall. It is emphasized that intramural intestinal gas in infants is probably not a sign of intestinal necrosis, and should not be considered a benign finding as in adult pneumatosis cystoides intestinales.


There is experimental and clinical evidence to suggest that local factors within the bone marrow, rather than a basic defect in the bone itself, may play a causal role in osteoporosis. The possibility is considered in this paper that such marrow factors may be an important consideration in the skeletal loss occurring in osteoporosis. A negative bone balance occurs at the endosteal surface of bone in age-related osteoporosis. This results in an enlarging bone marrow cavity and cortical thinning. This phenomenon has been considered by most investigators to be caused by a primary skeletal disorder, influenced by hormonal imbalance and mineral deficiency. Evidence is presented that alterations in the bone marrow may be responsible for the enlarging marrow cavity and subsequent decrease in cortical thickness in osteoporosis. It is postulated that cellular, humoral and vascular changes in the bone marrow may enhance endosteal bone resorption. Bone marrow mast cells are increased in patients with involutional osteoporosis. Heparin, which is synthesized by mast cells, could act as a local bone-resorbing co-factor at the endosteum. It could potentiate the bone-resorbing effects of circulating parathyroid hormone and help explain the enlarging bone marrow cavity observed in osteoporosis.


In recent years primary hyperparathyroidism has been recognized with an increased frequency by use of routine analysis of serum calcium and the realization that the diagnosis can be suspected on the basis of a multiplicity of manifestations other than renal lithiasis and cystic bone disease. Nearly half of the patients at the Henry Ford Hospital with histologically confirmed primary hyperparathyroidism have been identified in the past five years, whereas 30 years were required to recognize the first 50%. In the past two years, 9 of 21 patients demonstrated neither renal calculi or cystic bone disease. Although the manifestations may appear mild or questionable in older age groups, operation appears justified if a reasonable life expectancy otherwise is expected. Assay for serum levels of parathyroid hormone can be expected to be of increasing help in the diagnosis and preoperative localization of parathyroid tumors. The occurrence of abnormalities of multiple parathyroids
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in perhaps 20% of patients and the inability of precise differentiation of adenomas from hyperplasia in multiple glands by histopathologic study makes necessary at operation the careful gross evaluation of all parathyroid tissue with removal of all grossly abnormal parathyroids.


Hypertension, on the basis of morning basal blood pressure recordings or the average of at least two casual pressure recordings exceeding 150 mm Hg systolic and 100 mm Hg diastolic, was present in 14 (17.5%) of 80 patients for whom primary hyperparathyroidism was corrected surgically. An evaluation of hypertension led to the diagnosis of hyperparathyroidism in five patients. Of the 14 patients considered to be hypertensive, in six no clinical or radiologic evidence of renal impairment could be found. Following surgical correction of the primary hyperparathyroidism, hypertension was significantly reduced or eliminated in one-half of the hypertensive patients. Improvement of blood pressure appeared to be unrelated to the presence or absence of renal impairment. A number of factors, both related and unrelated to hypercalcemia, appear to have a role in the genesis of hypertension when associated with primary hyperparathyroidism. In patients for whom the etiology of hypertension is not obvious, levels of serum calcium should be determined as a screening measure for the possible existence of primary hyperparathyroidism. Following correction of primary hyperparathyroidism, if hypertension persists, a search should be made for other causes of hypertension, including other endocrine lesions.


Extramedullary occurrence is rare. Its commonest site is the nasopharynx, while the skin is the least commonly involved organ. Only four cases could be found in the literature labeled "plasmacytoma cutis". This paper presents a patient with a solitary plasmacytoma of the skin which later metastasized to the regional lymph nodes and reports the only one on record of a malignant plasmacytoma originating in the skin. Multiple myeloma has occurred a long time after the development of extramedullary plasmacytoma, but this patient has not yet disclosed the presence of multiple myeloma.


In this review of 21 patients, the clinical picture which brought the patient to the hospital was invariably that of intestinal obstruction. Usually, the patient was elderly and presented a long history of bowel dysfunction. The most common physical finding was distention of the abdomen. Positional roentgenograms of the abdomen revealed marked distention of the bowel causing a characteristic gaseous pattern; barium enema examination has the added advantage of revealing the true nature of the obstruction. However, barium enema studies are omitted in gravely ill patients, or those with peritonitis. A plan of management of volvulus of the colon is given. There was one death, thus a mortality rate of 4.8%.


The authors surveyed the case histories of 1,542 patients with operations on the abdominal aorta and its branches for occlusive and aneurysmal disease, and found that in 453 cases (29.4%) there were coincidental nonvascular lesions (or there were dual or multiple lesions) of potential surgical importance. In 120 cases, or in 7.8% of the total group, it was advisable or necessary to correct the associated lesion (or lesions) surgically. The most common associated entities were cholelithiasis, chronic and acute cholecystitis, diverticulosis, diverticulitis, duodenal and gastric peptic ulcer, and malignant neoplasia. Throughout the management of the patients, generally accepted surgical principles were observed and the available statistical information on the survival expectation, under various therapeutic conditions, of abdominal aortic aneurysm and of malignant neoplasia were regarded.

Aortic insufficiency which is present during mitral valve replacement prolongs the operation and increases blood trauma. The surgeon may clamp the aorta, but this frequently leads to coronary air emboli, particularly if intermittent clamping is used. Selective coronary perfusion complicates the operation and is uncertain while one is operating in the mitral area. A method has been devised for preserving coronary flow in this difficult situation. It consists of suture closure of the aortic cusps through a short aortotomy. The aortotomy is clamped temporarily until the prosthetic mitral valve is implanted. With the use of a pericardial patch, the method may be used in the presence of a deformed aortic valve in instances in which a double valve replacement is planned. The method has been successfully used in 35 patients with aortic insufficiency accompanying mitral valve replacement.


Replacement of the mitral valve in patients with stenosis and a small left ventricle requires a prosthesis which does not lead to impaired ventricular filling, either due to a restrictive primary orifice or obstruction through the secondary orifice between the occluder and ventricular wall. It is also desirable to avoid a large space-occupying occluder within the ventricle and projection into the ventricular ejection pathway. A low profile disc valve has been designed using the full-orifice principle to accomplish these goals. It has a larger primary orifice and features which minimize outflow obstruction around the occluder. Pulse duplicator testing, steady flow studies, fatigue testing, and animal implantations indicate that the valve may have definite advantages, particularly for replacement of the stenotic mitral valve.


Three cases of large mastoid antrum were difficult to distinguish from cholesteatomas because of their size. Two of these have been proved surgically. Tomography was of diagnostic assistance and, in one, demonstrated normal middle ear structures and established the diagnosis of large antrum.


This paper is concerned with techniques for the measurement of power output of medical ultrasonic applicators in the range of 0.02 to 2 W. A calorimeter is described consisting of 12.7 mm diameter copper piping 20 cm long, filled with castor oil into which ultrasound is radiated. Comparison with another calorimeter is given. The paper then describes a radiation force meter consisting of an aluminum conical float which is attached to a converted mA meter with an extremely fine strand of nylon. The strand is wound around and glued to a pulley which replaces the meter coil. All parts are submerged in water and surrounded by absorbing lining. A procedure for calibration is given. The meter is direct reading, has rapid responses, has been used for a number of years, is relatively easy to construct and the technique of measuring force differs from that employed previously. Acoustic outputs, as determined by the two instruments based on physically independent principles, agreed to within 10 per cent.


A case of capillaritis involving the left upper extremity of a 7-month-old baby girl is presented. The eruption developed at four months of age and the child was in good health in all other respects. A biopsy was taken and showed a superficial capillaritis. No therapy was given and the lesions underwent spontaneous involution. The eruption is differentiated from angiomaserpiginosum, which is a nevoid proliferation of vascular elements, by the definite superficial capillaritis seen on the histopathologic section. This is the youngest case of capillaritis since a child of 2½ years was reported in the literature.
Abstracts


The karyotype of the mongolian gerbil, Meriones unguiculatus, was studied from bone marrow preparations. The two N number was 44. The chromosomes could be morphologically grouped into six groups by relative length, arm ratio and centromere index. Chromosomes 1, 4 and 13 could be identified with certainty. By a combination of morphological characteristics and autoradiographic techniques the X and Y chromosomes could also be identified.


Adrenal hypoplasia not associated with abnormalities of the pituitary gland has been considered to be either an autosomal recessive disease or a sporadic event. We have studied a family in which the gene for this abnormality was inherited as an X-linked recessive. A summary of previous cases supports this observation. Three of four male sibs had adrenal hypofunction shown by clinical and biochemical determinations and failure of adrenal response to ACTH stimulation. One infant died after hernia repair; hypoplasia of the adrenal glands in the presence of a normal pituitary gland was confirmed at necropsy. Blood group determinations established different fathers for each of the affected children. X-linked inheritance is therefore believed to be established in this family. Of 25 additional reported cases of adrenal hypoplasia not associated with tuberculosis, adrenal hemorrhage or pituitary abnormalities, 20 were male and five were female. Fifteen affected males had affected male sibs, while only one female sibship is reported. The characteristic adrenocortical histology found in males, lack of organization of the adult cortex into cords, and the presence of clumps of large pale staining cells has not been described in females. These findings support the contention that this distinctive form of adrenal hypoplasia is inherited as an X-linked recessive.


The authors describe a new technique for specific filling of the internal auditory canal with iophendylate (Pantopaque). Following fluoroscopic placement of the contrast material, the patient is turned supine for tomography of the internal auditory canal, thus avoiding false negative results due to loss of contrast material into the middle cranial fossa. Contrast material retained in the lumbar subarachnoid area can be used to follow the course of suspected small intracanalicular lesions.


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