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A comparative study of bile acid metabolism was made in the rat, mouse, hamster and gerbil. Bile acid elimination was mainly via fecal excretion; less than 7% was excreted in the urine. Little or no bile acid side-chain oxidation took place in any of the species. A study of bile acid distribution in the rodent tissue showed that from 80 to 90% was present in the small intestine plus gall bladder. The cecum was another site which contained considerable quantities of bile acids. The chief pool bile acid in each case was cholic acid. Chenodeoxycholic acid was present in significant amounts in rat and hamster, and in trace amounts in mouse and gerbil bile. Cholic acid half-lives (days) were: rat, 3.5; mouse, 5.0; gerbil, 2.3; and hamster, 1.0. Chenodeoxycholic half-lives (days) were: rat, 2.0; mouse, 2.5; gerbil, 1.3; and hamster, 1.8. The rat had the largest bile acid pool (27.2 mg); the mouse (5.6 mg) and gerbil (7.12 mg) intermediate amounts; and the hamster the smallest pool (2.3 mg). The relationship between bile acid synthesis rates and the rate of accumulation of tissue cholesterol after feeding cholesterol-supplemented diets was discussed. Positive correlations were noted.


Subcutaneous and other soft tissue calcifications such as muscle and tendon are unusual incidental findings in idiopathic hypoparathyroidism. A patient was studied with idiopathic hypoparathyroidism whose main presenting symptoms were those related to increased soft tissue calcification masquerading as ankylosing spondylitis. Biochemical studies were diagnostic of idiopathic hypoparathyroidism. Spinal roentgenograms showed paraspinal calcification as the cause of the ankylosis. A search of the literature suggests that this presentation may be common enough to warrant calcium and phosphorus determinations in individuals with spondylitis who have atypical clinic or roentgenologic features, as well as spondylitis developing in the elderly. Certain relationships are discussed pertaining to the rare association of soft tissue calcification in idiopathic hypoparathyroidism.
Abstracts


Numerous experiments have shown that increasing the amount of oxygen in the cell at the time of irradiation enhances dose response. This study examines oxygen enhancement of radiotherapy of spontaneous tumors in mice, due to breathing 95% O2 + 5% CO2 during treatment, for correlation of various aspects of fractionation of the dose. The cure rate was increased to the same degree when the series extended over 18 days as when it covered 25 days; overall time within these limits does not affect oxygen enhancement. The size of the fractional dose, however, has a marked effect, oxygen enhancement being twice as great for 1000 R fractions as for 400 R fractions. Small tumors (8 to 11 mm in diameter) showed greater response to breathing carbogen during treatment than did large tumors (12 to 15 mm). Breathing carbogen did not increase oxygen tension to the same degree in various normal tissues so that the therapeutic ratio depends on the tumor site.


This article describes methods of labeling bone in vivo with tetracycline antibiotics, and subsequent methods of measuring and analyzing undecalcified sections prepared from bone biopsies, as an aid in studying metabolic bone disease and endocrine and pharmacologic actions on bone.


One hundred and thirty-two high mandibular condylectomies have been done on 122 patients in the past 16 years. With the exception of three patients who have required postoperative psychotherapy and one patient with metastatic lymphoma involving the condyle, all patients have remained asymptomatic and are functioning normally. The condylectomies were done to provide relief of continuous pain in the joint and diagnosis was supported by clinical and roentgenographic evidence of arthritic degeneration of the condyle except in the patients that were done early in the series. This group was operated on the basis of clinical findings only and not necessarily with evidence of articular pathology. Indications for surgery have been tightened in the past six years to allow surgical intervention only when articular pathology is evident as substantiated by positive roentgenographic findings. The surgical procedure consists of exposure of the joint through a preauricular incision and excision of the articular portion of the condyle. No attempt is made to limit jaw function postoperatively but adjustment of the dental occlusion is usually required two or three weeks following surgery. This is followed by gradual return to normal function without discomfort.


The clinical and microscopic features of three cases of pseudosarcomatous fasciitis involving the perimandibular soft tissues are presented. Two of the lesions were initially misdiagnosed histopathologically as malignancies. Of 293 reports of this lesion in the literature, only one case has been cited in the dental literature. It has been variably termed nodular fasciitis, subcutaneous pseudosarcomatous fibromatosis, infiltrative fasciitis and proliferative fasciitis. Although a benign mesenchymal tumor of the cutaneous or subcutaneous tissue or both, it may be misdiagnosed histopathologically as a malignant lesion thereby resulting in unnecessarily radical treatment. A discussion of the clinical course, microscopic features, classification and theories of histogenesis of this lesion is given.
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Since the development of a technique for continuous lavage therapy of severe corneal ulcers, especially those caused by Pseudomonas, 22 patients have been treated in this manner. A tube through the upper lid into the cul-de-sac is used to deliver a colistin-sulfacetamide solution. In one patient it was necessary to eviscerate the globe and this may prove necessary in another. The results in other patients were satisfactory enough to encourage the author to recommend subpalpebral lavage with appropriate antibiotics in the management of Pseudomonas keratitis.


The technique of subconjunctival injection of sclerosing solutions has been utilized elsewhere to induce experimental glaucoma. Such experiments were repeated here using a 5% solution of phenol in almond oil to obliterate the subconjunctival aqueous veins. Glaucoma did not develop in any of the 20 eyes of 10 rabbits so treated. This technique was found to be an unreliable way to induce experimental glaucoma.


Late cutaneous leishmaniasis is uncommonly reported in the literature; however, its incidence in some endemic mideastern countries is as high as 10%. The disease consists of small cutaneous granulomata which are disfiguring and which, clinically, resemble lupus vulgaris. Systemic involvement is lacking. The disease occurs months to years after primary infection with _L. tropica_, but has not been reported with infections by _L. braziliense_. Treatment is palliative and the recurrence rate is high. Systemic pentavalent antimony plus intralesional steroids seem to offer the best chance of improvement.


Nasopharyngeal teratomas are a cause of respiratory distress in the newborn. A case is presented in which plain radiographs and contrast studies of the nasopharynx were useful in evaluation of the size and location of the mass prior to surgery. Contrast examination of the nasopharynx was simple and was done without local anesthesia. It demonstrated the origin of the mass and helped to localize its pedicle.


Multiple ulcerations and perforations of the colon occurred in a patient with rheumatoid arthritis. Isolated, punched-out, necrotizing areas exhibiting little or no inflammatory reaction were characteristic features of these unusual colonic lesions. The abundant growth of Escherichia coli in cultures of the colonic content and peritoneal exudate in this patient (and those with necrotizing enteritis complicating Crohn's disease) raises the possibility that such organisms are not always "bystanders," and may contribute to a new necrotizing process.


A localized lesion of the eosinophilic granuloma type, which involved the anal epidermis and mucous membrane of a 34-year-old man, was studied by light and electron microscopy. The electron microscopic examination revealed profiles of granules which are characteristic of the Langerhans cells of the epidermis. These were found throughout the cytoplasm and within the nucleus. There was evidence for genesis of these granules from overlapping of portions of the plasma membrane of the histiocytes. The findings lend further support to the hypothesis that the epidermal Langerhans cell is itself a macrophage.
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Fourteen patients with renal dialysis were given tetracycline labels in vivo and subjected to a rib biopsy. Microscopic analysis of undecalcified sections of these biopsies revealed consistent and large reductions in the thickness of new bone deposited in unit time and the percentage of osteoid seams which accepted the labels. These findings were similar in kind, magnitude, and statistical significance, on haversian canal and cortical-endosteal surfaces. Mean seam thickness was slightly decreased on the haversian and increased on the cortical-endosteal envelopes, but not significantly so.


The gastrocamera is a unique instrument for obtaining high-quality color photographs of the gastric mucosa. The pictures of gastric pathology complement radiologic studies and help establish the diagnosis in cases of ulceration, superficial mucosal disease and subtractive defects, such as tumors and polyps. The technique is simple, safe and comfortable for the patient. Gastrocamera photography should be added to the standard methods for diagnosing stomach disease.

The rates of binding of reduced nicotinamide-adenine dinucleotide analogs to liver alcohol dehydrogenase. J. D. Shore. Biochemistry 8:1588, 1969.

The rates of binding and dissociation of coenzyme analogs with liver alcohol dehydrogenase were studied using a stopped-flow spectrophotometer which performs rate measurements in the millisecond range. This technique made it possible to separate the binding reaction into at least three discrete steps based on the "on" and "off" velocities of the analogs relative to unmodified coenzyme. The results indicated that the adenine ring of NADH binds first, followed by the pyridine ring, and finally by the amide group of the pyridine ring. The amide group binding is essential for proper positioning of the coenzyme for the next step, transfer of hydride from the coenzyme to aldehyde. The inferences of this work are discussed with regard to the catalytic mechanism.


Blunt trauma severe enough to cause fracture of the long bones of the limb may damage seriously adjacent arteries either by direct or indirect force. Disruption or thrombosis of the traumatized artery usually ensues, and the viability of the extremity may be jeopardized. The pertinent findings in ten patients with fracture of long bones and associated arterial injury are reviewed. Successful restoration of the circulation was accomplished in eight of the ten. Recognition of the associated arterial lesion is essential to successful management. This requires critical evaluation of the peripheral circulatory state, and determination of any deficiency in the peripheral pulses. A diagnostic arteriogram should be performed promptly if there is any doubt about an associated arterial lesion. An aggressive operative approach is mandatory to prevent unnecessary morbidity and loss of limb. Team work between orthopedist and surgeon will afford the best opportunity of success. Reduction and secure stabilization of the fracture, usually by an appropriate form of internal fixation, must precede thrombectomy (when necessary) and meticulous arterial reconstruction of the damaged vessel.


The median sternotomy incision is finding increasing use in a variety of cardiac operations. In addition to affording good overall exposure of the heart, the incision enables the surgeon to avoid entering the pleural spaces while carrying out the operative procedure. Unfortunately,
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A significant incidence of wound dehiscence is associated with the use of this incision. The authors noted the complication most frequently in patients who require an accompanying tracheostomy. The disruptive forces of violent coughing produced by tracheal suctioning combined with vigorous expansion of the chest by mechanical respirators are believed to be important contributing factors. Examination of the dehisced wounds revealed little solid sternum remaining to hold either through-and-through sutures or bands around the sternal body. Therefore, a method was devised which relies on pericostal sutures outside of the sternotomy area. A special blunt needle attached to monofilament stainless steel wire facilitated the closure method which has been used successfully in more than 200 adults and children. The needle is also useful for approximating transverse sternotomy wounds. Sternotomy wound dehiscence has become a rare occurrence in their experience.


A female patient with TTP was treated shortly after admission with continuous intravenous heparin, supplemented later by intravenous methylprednisolone in high dosage. The clinical impression was corroborated by the finding of a typical lesion in the fixed section of a spicule from the bone marrow aspirate. Three isolated infusions of clinical dextran during the acute phase of the illness resulted in exacerbations of neurologic symptoms and worsening of the thrombocytopenia. The patient recovered over a six weeks' period, and has remained well during follow-up over the succeeding 12 months. She represents the first survivor of this disease at Henry Ford Hospital. The case is further noteworthy in that transient, but well documented, diabetes insipidus developed during the course of illness, an observation not previously reported, but consistent with the high incidence of microvascular lesions seen in the neurohypophysis by Lukes in his review of the pathologic features of TTP.


The epithelial cells in a jejunal biopsy of a patient with Whipple's disease were examined carefully by electron microscopy and bacilli were found in and between the epithelial cells, as well as in the lumen and in the usual locations within the lamina propria. The majority of epithelial bacilli were extracellular, but they were also found intracellularly either free, encapsulated singly or in groups within phagosomes in the cytoplasm. Many intracellular bacilli were identified within lysosomes in the epithelial cells and in a variety of states of degeneration within epithelial macrophages. Bacilli were also recognized in the lumen close to or within the furry coat of the microvilli. In addition to lipid droplets, fibrin was discovered associated with the bacilli both in the lamina propria and in the epithelium.


Several syndromes associated with chromosome deletion have been used as experiments of nature in an attempt to map human genes. A patient with a short arm deletion of chromosome 18 is presented to help define a somewhat cloudy clinical syndrome and to confirm reports that none of the known genetic markers can be placed on the short arms of chromosome 18. The 37-month-old boy was referred for evaluation of short stature and mental retardation. He weighed 13.4 kg with a height of 86 cm. Head circumference was 48 cm and ears were prominent and low set. He featured a high arched palate, bilateral pterygium colli, hypotonic musculature, hyperextensible joints and bilateral clinodacty. The second toe was shorter than the great toe and raised above the adjacent toes. Routine laboratory studies were normal. Bone age showed variations from 6 to 24 months. One striking finding in this patient and others with a deleted short arm of chromosome 18 is higher performance IQ than verbal IQ. The ABO locus and the Rh and MN loci were shown not to be located in the short arm of chromosome 18.