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Abstracts Of Recent Publications Of The Professional Staff Of The Henry Ford Hospital And The Edsel B. Ford Institute For Medical Research

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ABSTRACTS OF RECENT PUBLICATIONS OF THE PROFESSIONAL STAFF OF THE HENRY FORD HOSPITAL AND THE EDSEL B. FORD INSTITUTE FOR MEDICAL RESEARCH

REVERSED FIGURE SIX ILEORECTOSTOMY. J. BARRON. *Dis. Colon & Rectum* 2:452, 1959.

This loop procedure has been employed in 10 cases of ulcerative colitis and five cases of multiple polyposis. In all but two instances, colectomy and anastomosis were performed in one operation. In two patients, the ileostomy was performed first and later the colon was removed and the ileum was attached to the rectum. All of the cases of ulcerative colitis represented the most serious form of the disease and had failed to respond to intensive and prolonged medical treatment. In these patients there was rectal involvement of some degree and all had moderate to severe toxemia. With increased experience, I believe we will have reason to feel quite encouraged and with the passage of time I believe we will find that the use of ileal loops will provide certain advantages not only at the time of surgery but in the postoperative period. The possibility of rectal preservation will always attract many patients and it should be possible for the surgeon to accomplish it in the earlier stages of the disease before it has advanced to the point where surgical intervention is hazardous or malignant degeneration has occurred.

*MECHANISM OF AMINONUCLEOSIDE-INDUCED NEPHROSIS IN THE RAT. I. METABOLISM OF TRITIATED AMINONUCLEOSIDE. P. BARTLETT AND S. SHELATA. *Proc. Soc. Exper. Biol. & Med.* 102:499, 1959.

The preparation and metabolism of radiochemically pure aminonucleoside, 6-dimethylamino-9-(3'-amino-3'-deoxy- β -D-ribofuranosyl)-purine, labeled with tritium by the Wilzbach procedure, is described and discussed. Data are presented for the distribution of radioactivity in body fluids and urine as well as in kidney and liver nucleic acids. Study of the chemical nature of tritium activity in an acid-soluble nucleotide fraction, prepared from pooled kidney tissue of rats rendered nephrotic with the tritiated aminonucleoside, indicates that the rat is capable of metabolizing the latter into labeled products utilizable in the biosynthesis of adenosine and cytidine nucleotides. Labeling of these nucleotides, which cannot be accounted for in terms of an exchange mechanism involving the hydrogens of body water, is considered in terms of alternative metabolic pathways.

*EFFECT OF CHOLIC AND HYODEOXYCHOLIC ACIDS ON METABOLISM OF EXOGENOUS CHOLESTEROL IN MICE. W. T. BEHER, G. D. BAKER, AND W. L. ANTHONY. *Proc. Soc. Exper. Biol. & Med.* 103:385, 1960.

In the female mouse fed a cholesterol-free diet: (1) supplement of 1% cholesterol did not alter liver or carcass cholesterol levels; (2) 1% cholesterol plus 0.5% cholic acid brought about large increases in liver and carcass cholesterol levels; (3) hyodeoxycholic acid reversed the effect of cholic acid and prevented cholesterol accumulation.

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***INFLUENCE OF BILE ACIDS ON CHOLESTEROL METABOLISM IN THE MOUSE.** W. T. BEHER, W. L. ANTHONY, AND G. D. BAKER. *Proc. Soc. Exper. Biol. & Med.* 102:317, 1959.

Feeding various bile acids to mice for 3 weeks had the following effects: Cholic acid increased hepatic and intestinal cholesterol levels, but had no effect on kidney cholesterol. It decreased hepatic cholesterol synthesis rates, but had no effect on intestinal synthesis rates. Hyodeoxycholic and lithocholic acids decreased liver cholesterol levels. Hyodeoxycholic acid had no effect on intestine and kidney cholesterol, or on intestinal cholesterol- $x-C^{14}$. Both acids effected large increases in hepatic cholesterol synthesis. Deoxycholic acid significantly decreased liver, small intestine and kidney cholesterol levels. It also decreased hepatic cholesterol synthesis. Results of this study suggest that homeostatic control of cholesterol metabolism in tissues other than liver is independent of hepatic control.

***INHIBITION OF CHOLESTEROL BIOSYNTHESIS BY CHOLIC ACID.** W. T. BEHER AND G. D. BAKER. *Am. J. Physiol.* 197:1339, 1959.

The effects of dietary cholic acid on free, total and ester cholesterol levels in liver and serum, and on the relative rates of incorporation of acetate-I- C^{14} and mevalonic acid-2- C^{14} were investigated in the rat. Cholic acid caused equally significant increases in free and ester liver cholesterol. No significant changes were found in serum cholesterol levels. The incorporation rate of acetate-I- C^{14} into liver and serum cholesterol was inhibited by 65% when cholic acid was fed to rats, while the inhibition of mevalonic acid-2- C^{14} incorporation was 25%. It is suggested that cholic acid inhibits cholesterol biosynthesis between mevalonic acid and cholesterol, or retards the entire series of reactions between acetate and cholesterol.

THE SIGNIFICANCE OF PLEURAL EFFUSION COMPLICATING OTHERWISE OPERABLE BRONCHOGENIC CARCINOMA. G. L. BRINKMAN. *Dis. Chest* 36:152, 1959.

Bronchogenic carcinoma complicated by pleural effusion which is not attributable to congestive heart failure or systemic disease, presents a difficult problem in management. It is apparent that the presence of pleural effusion, whether malignant cells are demonstrated in the fluid or not, is of serious prognostic significance. At thoracotomy, 17 of these patients showed evidence of extrapulmonary spread of their disease, and only one has survived for over two years. Twenty-one cases of bronchogenic carcinoma with pleural effusion occurring as the only manifestation of possible extrapulmonary involvement are reported. All were subjected to thoracotomy, but only survived for more than two years. It is questioned whether thoracotomy is justified in these patients, even though malignant cells are not demonstrated in the pleural fluid.

SOME DEVICES FOR THE MANAGEMENT OF LYMPHEDEMA OF THE EXTREMITIES. B. E. BRUSH, J. H. WYLIE, JR., AND J. BENINSON. *S. Clin. North America* 39:1493, 1959.

Lymphedema of the extremities is a common, distressing and disabling condition. In the leg, it may be the sequel of phlebitis, inguinal lymph node dissection, obstruction

*From Edsel B. Ford Institute For Medical Research.

of the veins for any reason, lymphangitis and cellulitis. The etiology of some swellings, as in Milroy's edema, is obscure. By far the most common cause of swelling of the arm is radical mastectomy, with and without postoperative irradiation. We have found that several new mechanical devices are of great value in the treatment of swelling of the leg or arm. There are improved models of apparatus for the application of intermittent pressure as a primary part of the therapy. There are available especially efficient types of elastic stocking, leotard and sleeve, which are custom-made for the individual patient. A total of 275 patients have been treated by intermittent positive pressure and the JOBST elastic stocking or sleeve. There were 160 upper extremities and 115 lower extremities. The results in most of these have been gratifying, especially when treatment has been vigorous and prolonged. There have been no significant complications of treatment. Recurrent lymphangitis has been almost nonexistent. Only rarely has a patient objected to the inconvenience of the elastic sleeves or stockings.

SOME BASIC ASPECTS OF CLOT DISSOLUTION. M. J. CALDWELL, R. C. HORN, JR., AND S. A. JOHNSON. *Am. J. M. Tech.* 25:373, 1959.

From a survey of the literature it is apparent that intravascular clotting is being studied from two diverse approaches, from that of clot formation on the one hand, clot dissolution on the other. Both lines of investigation are very complex, but it appears now that more attention is being paid to the problems, and the ability to use some of the simple fibrinolytic tests is becoming important to the laboratory technologist. When a fibrinolytic test is being used to follow intravenous infusion of the active enzyme, fibrinolysin, it is necessary to take great care with the blood sample. The active enzyme, as such, is very labile and the assay must be carried out as soon as the blood is drawn or the plasma must be frozen immediately. The interference of fibrinolytic activity in the determination of fibrinogen is emphasized.

COMBINED OPERATION OF GASTRECTOMY AND VAGOTOMY. L. S. FALLIS AND J. BARRON. *West. J. Surg., Obst. & Gynec.* 67:260, 1959.

Recurrent ulceration is the most serious of the postgastrectomy sequelae. The disappointment of the patient, caused by the reappearance of ulcer symptoms after an operation of the magnitude of subtotal gastrectomy, is matched only by the chagrin of the surgeon. Recurrent ulceration is rare after gastrectomy for gastric ulcer, but occurs with sufficient frequency after operation for duodenal ulcer to constitute a real problem. The addition of vagotomy to partial gastrectomy is an effective means of reducing recurrent ulceration. On the basis of this study postoperative ulceration appears to be commoner after the Billroth I than the Billroth II operation, even with the benefit of protective vagotomy. Recurrent ulceration after the Billroth I operation is usually controlled by medical measures, whereas when it occurs after the Billroth II procedure, reoperation is usually required.

THE WORKSHOP OF THE SURGEON — THE MODERN OPERATING ROOM. L. S. FALLIS, C. R. LAM, AND J. L. PONKA. *S. Clin. North America* 39:1469, 1959.

A description has been given of some of the things which the modern operating room provides which enhance the surgeon's ability to work and contribute to his comfort. Among these are convenient lights, easily maneuverable operating tables, a lounge and chapels for relatives, and comfortable shoes.

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THE PUGH NAIL IN THE TREATMENT OF HIP FRACTURES. J. L. FLEMING. *S. Clin. North America* 39:1507, 1959.

The Pugh nail has been used in our hospital in 39 cases within the past 28 months. These were all intracapsular fractures including basilar, neck and subcapital. One pathological fracture was included. Early failure occurred in two instances as a result of poor placement of nail in one and poor reduction in the second. In one case the nail backed out at three weeks and renailing was necessary. Aseptic necrosis was a complication in this case. With this exception nonunion has not been a factor in our cases, but in many it is too early for a final statement. The Pugh nail is a distinct advance in treatment of "the unsolved fracture" and its precise use is recommended to the surgeon operating upon hip fractures.

SIMULTANEOUS HYPERTHYROIDISM AND HYPERPARATHYROIDISM. B. FRAME AND R. H. DURHAM. *Am. J. Med.* 27:824, 1959.

A case of hyperthyroidism and hyperparathyroidism occurring simultaneously is reported. The presence of a kidney stone and peptic ulcer, present before the onset of symptoms of hypermetabolism, suggests that the hyperparathyroidism preceded the hyperthyroidism.

PULMONARY RADIATION REACTION: A VITAL-CAPACITY AND TIME-DOSE STUDY. J. R. GISH, E. O. COATES, L. A. DUSAULT, AND H. P. DOUB. *Radiology* 73:679, 1959.

A study has been made of the pulmonary radiation reaction with reference to the time-dose relationship. Vital capacity studies were made on patients who showed pulmonary reaction. The vital capacity studies showed mild changes from the normal. None of these patients exhibited clinical signs of impaired pulmonary function. In patients who received 250-kv roentgen therapy, 44 per cent showed some evidence of pleuropulmonary reactions. In those receiving cobalt-60 therapy, only 20 per cent showed pleuropulmonary reactions, although they received a higher tissue dose. The small degree of lung reaction is largely attributable to tangential therapy and modern methods of lung-shielding in routine cases.

*EFFECT OF PARTIAL COAGULATION UPON THE SIZE DISTRIBUTION CURVE IN HETERODISPERSE COLLOIDAL SYSTEMS. W. HELLER, E. ROWE, R. BERG, AND J. H. D. WATSON. *J. Phys. Chem.* 63:1566, 1959.

The size distribution of the unaggregated particles remaining after partial coagulation of a colloidal solution of spheres is found to be altered in favor of the large particles as compared to the distribution in uncoagulated control specimens. The results obtained in a di-disperse latex of polystyrene were quantitatively compared with the ones expected on the basis of Müller's theory. The order of magnitude of the effect observed agrees with that expected from the difference in probability of collisions between unequal sized particles as compared to equal sized particles. The same type of shift is found for a heterodisperse polystyrene latex. All results can be explained satisfactorily without the assumption that the collision number (the "stability") varies with particle size within the colloidal range.

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DENTAL CARE PLANNING IN HOSPITALS. F. A. HENNY. J. Oral Surg., Anesth. & Hosp. D. Serv. 17:18, 1959.

A well staffed, well equipped dental department contributes much to the over-all care of both resident and ambulatory hospital patients. The hospital is also the proper atmosphere for the dental care of the physically and mentally handicapped. In addition, hospitals provide excellent facilities for formal graduate education in the dental specialties and should also function as centers for continuing education of dentists at the community level.

PRESENT AND FUTURE PROBLEMS IN ORAL SURGERY. F. A. HENNY. J. Oral Surg., Anesth. & Hosp. D. Serv. 17:66, 1959.

Although the specialty of oral surgery has made great progress in recent years, many problems remain. The solution to them is largely dependent on the constant improvement of graduate education and the continuing development of a strong national oral surgery organization. Both will contribute greatly to an ever-increasing quality of patient care.

ROLE OF THE ELECTROCARDIOGRAM IN THE DIFFERENTIAL DIAGNOSIS OF ACUTE CHEST PAIN. T. N. JAMES. South. M. J. 52:1391, 1959.

In this review discussion was limited to electrocardiogram features of diseases that may cause acute pain in the chest. In some of these diseases other laboratory examinations are more important than electrocardiography, and in all of them a good clinical examination is the most valuable. By knowing what may be expected of the electrocardiograph, however, one may obtain the utmost value of that instrument. The pertinent positive and negative electrocardiographic findings that occur in certain diseases that cause acute chest pain have been described. The diseases considered include angina pectoris, myocardial infarction, pulmonary embolism, pericarditis, dissecting aneurysm and spontaneous pneumothorax.

*FUNCTIONAL ORGANIZATION OF THE RESPIRATORY CHAIN IN LIVER MITOCHONDRIA. T. KIMURA AND T. P. SINGER. Nature 184:791, 1959.

The question of whether the mitochondrion is compartmentalized into separate respiratory chains serving the individual cytochrome-linked dehydrogenases and acting independently of each other, or whether all or most of these dehydrogenases are structurally and functionally linked to a common electron transport system, has been an open and much debated one. The findings suggest that the respiratory chains of liver mitochondria, at least so far as the succinic and choline oxidase systems are concerned, are not compartmentalized, but are interlinked at and above the oxidation-level of cytochrome c_1 , although the b components do not appear to be on a common path. Intercommunication between the chains (alternative (3)) is indicated by the fact that the equantitative effect of titration with an inhibitor, such as azide or cyanide, depends on the relative turnover rates of the dehydrogenase and the cytochrome component being titrated, respectively, and may be altered by depressing the activity of the dehydrogenase. Neither mechanism (1) nor (2) is compatible with this behaviour, but it is to be expected from the third one.

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SOME ADDITIONS TO AND SUBTRACTIONS FROM THE ARMAMENTARIUM OF THE CARDIAC SURGEON. C. R. LAM. S. Clin. North America 39:1553, 1959.

This article contains much that is historical. The instruments used for the first operation on the mitral valve in 1925 by Souttar are shown. Twenty years later there had been no important additions to the armamentarium of the cardiac surgeon except for the modifications in artery clamps made by Gross and by Crafoord for their operations for patent ductus arteriosus and coarctation of the aorta. Then came the clamps for the "blue baby operations," the Blalock clamp for the subclavian-pulmonary anastomosis and the Potts-Smith clamp for the side-to-side aortic-pulmonary anastomosis. Experiences with the six-fingered glove for mitral commissurotomy, the two-pointed needle in atrioseptopexy and of the evolution of pulmonary valvotomy are discussed.

FRACTURES AND FRACTURE — DISLOCATIONS OF THE ANKLE. C. L. MITCHELL AND J. L. FLEMING. Postgrad. Med. 26:773, 1959.

Accurate diagnosis and proper choice of treatment in fractures and fracture-dislocations of the ankle require a knowledge of the mechanisms of injury. Good x-rays, centered over the joint in true anteroposterior and lateral projections, are also prerequisites to accurate diagnosis. Closed methods of treatment may be used in many cases, but certain fractures require open reduction. Surgery must be precise, and, to allow the indicated correction to be made, x-rays should be taken in the operating room before the wound is closed.

PRESIDENTIAL ADDRESS (AMERICAN ORTHOPAEDIC ASSOCIATION, 1959) C. L. MITCHELL. J. Bone & Joint Surg. 41-A:1157, 1959.

Great changes have taken place in the past twenty-five years in the practice of orthopaedic surgery and in the training of our residents. Unquestionably great advances have been made in the training programs, the clinical approach to orthopaedic problems, and in conducting and stimulating basic and clinical research in our specialty. However, although great advances in the progress of orthopaedic surgery have been made in the past and will continue to be made in the future by individuals of stature in our profession working more or less independently, we must recognize the importance of the team approach to problems of mutual interest in research, clinical investigation, and therapy. We must accept and assume our rightful role as leaders in the over-all care of patients with problems primarily of an orthopaedic nature but be prepared to cooperate to the fullest with other medical specialties involved. We should forever strive to take advantage of knowledge and assistance from other medical or scientific sources for conducting of research projects and for improvement in the clinical treatment of our patients. In our training programs we should provide an opportunity for our residents to grasp a firm knowledge of the sociomedical and medical-economic aspects of our specialty and instill in them the idea of the team approach and the total care of the patient.

CARDIAC ARREST OUTSIDE THE OPERATING ROOM WITH SUCCESSFUL RESUSCITATION: REPORT OF TWO CASES. C. MOTA, E. A. ZIKRIA, AND R. E. TABER. Ann. Int. Med. 51:577, 1959.

A review of the literature concerning successful resuscitation in cardiac arrest occurring outside the operating room reveals 13 cases. Two additional cases who

have made a complete recovery are herein reported. A description of the cardiac resuscitation method employed is outlined. In the future there should be more instances of successful resuscitation of patients dying suddenly from coronary artery disease. Two prime indications for the use of manual cardiac systole are demonstrated by the cases we describe. One ambulatory patient had had known coronary artery insufficiency and died suddenly, the other was under treatment for a myocardial infarction at the time of sudden and unexpected death.

EFFECT OF MACROGLOBULINS AND THEIR DISSOCIATION UNITS ON RELEASE OF PLATELET FACTOR 3. M. R. PACHTER, S. A. JOHNSON, AND D. H. BASINSKI. *Thrombosis et Diathesis Haemorrhagica* 3:501, 1959.

Recent work has shown that macroglobulins prepared from patients afflicted with macroglobulinemia of Waldenström have the capacity to "coat" the platelet surface and prevent the normal release of the prothrombin activation component, platelet factor 3. On the basis of coagulation, fluorescence and electron microscopical studies the authors proposed that the hemorrhagic diathesis, noted in some two thirds of all cases of primary macroglobulinemia, might frequently be accounted for on the basis of this mechanical blockade. The possibility of a combination of an external effect plus entrance of the macroglobulin into the platelet with resultant deleterious action on the contained elements has also been postulated. Despite the ability to abolish the "coating phenomenon" by use of specific rabbit-anti-macroglobulin serum the exact relationship that exists between the macromolecule and the platelet surface has remained obscure. It has been shown that dissociation units of native macroglobulins fail to exert any deleterious effect upon platelets. Evidence is presented to support the theory that molecular size is of paramount importance in preventing platelet factor 3 release.

MACROGLOBULINEMIA OF WALDENSTRÖM: CLINICAL, LABORATORY AND ANATOMIC FEATURES. M. R. PACHTER. *Postgrad. Med.* 26:315, 1959.

In macroglobulinemia of Waldenström, there appears to be a questionably malignant involvement of the lymphatic reticuloendothelial system which causes bleeding, anemia and infections. The etiology is unknown and the outcome is eventually fatal. Various clinical features and laboratory findings help to differentiate this disease from multiple myeloma, chronic lymphatic leukemia, lymphosarcoma and purpura hyperglobulinemia. Treatment is symptomatic, consisting of blood transfusions and administration of adrenocortical steroids and adrenocorticotrophic hormones.

COEXISTING CARCINOMA AND DIVERTICULA OF THE COLON; A REVIEW OF THREE HUNDRED FIFTY-FIVE CASES OF CARCINOMA OF THE COLON. J. L. PONKA, J. D. FOX, AND B. E. BRUSH. *A.M.A. Arch. Surg.* 79:373, 1959.

A review has been made of 355 cases of carcinoma of the colon occurring in the five-year period 1953-1957 inclusive. The location of these lesions and percentages has been noted. In 75 cases (21%) diverticulosis and diverticulitis were present as well. A close study was made of the 35 cases of sigmoid carcinoma with closely associated sigmoid diverticula. The clinical suspicion of carcinoma was the most valuable single diagnostic aid noted. Proctosigmoidoscopic examination was directly valuable in diagnosing carcinoma and confirmed the clinical impression of carcinoma in 57% of our cases. It was of little value in diverticulosis. The surgical attitude of aggressive,

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prompt action in all cases of diverticula which appear at all suspicious of carcinoma is the one method by which cure rates may be improved. Surgery should be used more frequently in carefully selected cases. Such an aggressive attitude will undoubtedly save lives in the future, in a population which is aging and destined to have more and more colonic diseases.

CYST OF THE LEFT TRIANGULAR LIGAMENT OF THE LIVER. A. K. POZNANSKI. *Radiology* 73:896, 1959.

Cysts of the hepatic ligaments are relatively rare as shown by the fact that only 7 cases could be found in the literature. Four of these were in the falciform ligament and 3 in the ligamentum teres. No cases were described in the triangular ligaments. A case of cyst of the triangular ligament of the liver is presented, which was best demonstrated by the aid of pneumoperitoneum.

FAMILIAL RECURRING POLYSEROSITIS: A DISEASE ENTITY. R. J. PRIEST AND R. K. NIXON. *Ann. Int. Med.* 51:1253, 1959.

The clinical and diagnostic criteria of familial recurring polyserositis have been presented. It is likely to be another disease added to the list of inborn errors of metabolism. Its etiology and pathogenesis are incompletely understood, although its hereditary nature has been established in certain ethnic groups. Patients with this disease face serious economic and sociologic problems because of the seemingly interminable recurrences. The recognition of this entity must be made more widespread, and it is hoped that the grim prospect of its chronic recurrence will be lightened by further research.

THE MANAGEMENT OF GASTRIC POLYPS. T. BRIDWELL AND R. J. PRIEST. *Bull. Gastroscopy & Esophagoscopy* 6:1959.

Eighty patients with gastric polyps have been studied from a group of 3,000 gastroscopies (2.4 percent). The factors influencing the decision for management have been evaluated, including initial and progress x-ray and gastroscopic examinations and other clinical and laboratory criteria. Small gastric polyps, benign in appearance, can be followed by progress x-ray and gastroscopic observation. One polyp with an intraepithelial carcinoma was encountered and one patient with adenocarcinoma had an associated benign polyp. It would appear from our experience that partial gastrectomy has been done more frequently than necessary. Gastrotomy with local excision of benign appearing gastric polyps has been made for surgical management rather than a medical followup.

ANESTHESIA: HISTORY'S ANSWER TO MAN'S NEED. M. REVZIN. *J. Oral Surg., Anesth. & Hosp. D. Serv.* 17:49, 1959.

Anesthesia developed in response to man's need to be free from pain due to illness and surgery. Its discovery and growth occurred when man's environment was ripe for its development. This article traces anesthesia from a superstition to a science.

USE OF RELAXIN IN MANAGEMENT OF ULCERATION AND GANGRENE DUE TO COLLAGEN DISEASE. H. REYNOLDS, AND C. S. LIVINGOOD. *A.M.A. Arch. Dermat.* 80:407, 1959.

The use of relaxin in the management of two patients with disabling trophic ulceration and gangrene, with Raynaud's phenomenon, due in one case to scleroderma-

dermatomyositis and in the other to scleroderma, is described. Significant improvement was obtained.

EVALUATION OF GELFILM® IN CYCLODIALYSIS CLEFTS — PART II.

R. A. SCHIMEK AND D. BARSKY. *Eye, Ear, Nose & Throat Month.* 38:847, 1959.

Three patients with apparently intractable glaucoma were treated by cyclodialysis, with Gelfilm® inserts to hold open the cyclodialysis clefts. In only one patient was the tension lowered for a significant length of time; and this eye was finally enucleated in phthisis. With Gelfilm® inserts there was evidence of a minimal but prolonged intra-ocular inflammatory response, and there was formation of anterior peripheral synechiae to either side of the Gelfilm® inserts. Therefore, the use of Gelfilm® implants in cyclodialysis clefts is not recommended at the present time.

AN ELASTIC DACRON ARTERIAL SUBSTITUTE. D. E. SZILAGYI. *S. Clin. North America* 39:1523, 1959.

An account is given of the experimental and clinical findings in the use of an arterial substitute, woven of Dacron yarn, which is seamless, smooth-walled, finely porous, light, and has elastic qualities. In animal experiments, during 24 months of observation, the prosthesis showed low tissue reactivity, good arteriogenesis and excellent durability. Used as direct replacement and as by-pass graft in the aorta-iliac and femoropopliteal areas, in 186 clinical cases (the earliest of which has been followed for 24 months) the prosthesis has yielded patency rates only slightly lower than those obtained by us with homografts. The assumption that the *late* patency rate of these prostheses will be better than that of homografts is supported by both theoretical considerations and by experimental evidence, but it will not be proved or disproved until the results will have been followed for much longer periods of time.

CLINICAL CONTRIBUTION OF ELECTROCARDIOGRAPHY IN MECHANICAL MALFORMATIONS OF THE CARDIOVASCULAR SYSTEM. R. F. ZIEGLER. *Am. Heart J.* 58:504, 1959.

The principal contribution of the electrocardiogram in the study of patients with congenital cardiovascular malformations (most commonly mechanical defects with an otherwise normal myocardium) is the evidence it provides of single-chamber functional "strain" and anatomic "enlargement." Now it is usually considered that a cardiovascular examination is incomplete if any of the "standard," and perhaps some of the not so standard, technical diagnostic methods, such as electrocardiography, fluoroscopy and conventional radiography, cardiac catheterization, and contrast angiocardiology, are omitted. Which method provides a given type of diagnostic information with the least risk, the greatest technical ease and facility, the maximum accuracy, etc.? At least potentially, and to an already great extent actually, a properly recorded and accurately interpreted electrocardiogram probably provides the most specific clinical index to not only the presence but also the basic hemodynamic type, and to a certain extent the degree, of increased single or combined cardiac chamber work and its resulting anatomic enlargement. Specific electrocardiographic criteria are summarized briefly and illustrated as to simple basic patterns.



