BRIEFS FROM THE LITERATURE

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Suggestions and criticisms for increasing the effectiveness and appeal of this new section will be welcomed by Dr. John W. Pender, 300 Homer Avenue, Palo Alto, California.

ADRENAL INSUFFICIENCY Low adrenal reserve may be detected by time-consuming and "often unnecessary" tests. Cortisone should be given preoperatively and postoperatively to patients in whom a low adrenal reserve may be expected. (*Hurxthal, L. M.: Postoperative Shock Due to Adrenal Insufficiency, S. Clin. North America 37: 715 (June) 1957.*)

ADRENAL INSUFFICIENCY Adrenal metastases were found in 32.9 per cent of 82 autopsies in individuals with metastatic carcinoma. Lung, large bowel and stomach were frequent primary sites. A case of chronic adrenal cortical insufficiency was reported in an individual with primary carcinoma of the stomach. The high incidence of adrenal metastases serves to emphasize need of evaluating adrenal cortical function preoperatively and postoperatively in individuals with malignancy. (*Leary, O. G., and Masters, J. J.: Adrenal Insufficiency Produced by Metastases from Gastric Carcinoma, Ann. Int. Med. 46: 1161 (June) 1957*).

ADRENAL STEROIDS In 7 and 12 patients, respectively, both ACTH infusion and extensive surgery produced a rapid and comparable rise in plasma free 17-hydroxycorticosteroids. In the 12 patients there was a modest but not significant increase during the preliminary hour of anesthesia with a prompt and significant elevation by mid-surgery, followed by a gradual additional rise. A return to normal occurred in the second to sixth postoperative days. (*Helmreich, M. L., and others: Adrenal Cortical Response to Surgery: II. Changes in Plasma and Urinary Corticosteroid Levels in Man, Surgery 41: 895 (June) 1957.*)

ADRENAL STEROIDS In 21 patients undergoing cardiovascular surgery during hypothermia, some of the following results were noted. Hypothermia produced a significant mean rise in plasma free 17-hydroxycorticosteroids. Hypothermia then suppressed further adrenocortical activity during prolonged and extensive surgery. Upon rewarming adrenocortical output reflected the magnitude of the surgical trauma. (*Swan, H., and others: Adrenal Cortical Response to Surgery: III. Changes in Plasma and Urinary Corticosteroid Levels During Hypothermia in Man, Surgery 42: 202 (July) 1957.*)

ADRENAL RESPONSE Alterations in adrenocortical functions based on quantitative determination of both plasma and urinary 17-hydroxycorticosteroids were studied in 18 male patients subjected to a wide variety of major and minor surgical procedures. Free plasma 17-hydroxycorticosteroids rose promptly in the majority of procedures, reaching a peak in 4 to 12 hours postoperatively and falling to preoperative levels between 24 to 72 hours. Urinary 17-hydroxycorticosteroids were elevated postoperatively for 1 to 4 days. It is believed that general anesthesia, pain and shock are just as significant in stimulating adrenocortical response as is actual tissue trauma. (*LaFemine, A. A., Marks, L. J., Teter, J. G., Leffin, J. H., Leonard, M. P., and Baker, D. V.: Adrenocortical Response in Surgical Patients, Ann. Surg. 146: 26 (July) 1957.*)

ADRENAL SECRETION Experiment shows epinephrine secretion can be evoked by direct stimulation of areas of the cat brain cortex, indicating the presence of corticofugal fibers to the adrenals. A di-

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rect vasomotor response to such stimulation is shown to be mediated by other discrete pathways from the cortex. (*Ferguson, R. W., Folkow, B., Mitts, M. G., and Hoff, E. C.: Effect of Cortical Stimulation upon Epinephrine Activity, J. Neurophysiol. 20: 329 (July) 1957.*)

CATECHOL AMINE RESPONSE High tolerance to positive G stress produced by acceleration in the human centrifuge was found associated with high urinary output of a norepinephrine-like substance. Low G tolerance was associated with low norepinephrine and high epinephrine output. It was similarly demonstrated that individuals exhibiting anxiety during stress showed a predominant urinary excretion of epinephrine while those exhibiting agression or hostility released increased amounts of norepinephrine. (*Zuidema, G., Silverman, A. J., Cohen, S. I., and Goodall, McC.: Catechol Amine and Physiologic Correlates of Vascular Responses, New England J. Med. 256: 976 (May 23) 1957.*)

HYPOTHERMIA In 23 patients cooling produced a transient rise in blood pressure followed by a fall which was maximal 30 minutes after body temperature reached its lowest point. The pulse rate fell progressively. Blood pressure and pulse were lost to auscultation and palpation during cooling. The cardiovascular reflexes appear to be intact and adequate in humans under hypothermia between 26 to 31 C. (*Blair, E., and others: Study of Cardiovascular Changes During Cooling and Rewarming in Human Subjects Undergoing Total Circulatory Occlusion, J. Thoracic Surg. 33: 707 (June) 1957.*)

HYPOTHERMIA A comparative analysis was made of the ability of adrenergic blocking agents to facilitate the induction of hypothermia. Chlorpromazine permitted the most rapid induction of hypothermia and was most effective in preventing shivering. A study of renal function was also made in 57 dogs following hypothermia and adrenergic and ganglionic blocking agents. None of the agents were effective in providing any significant protection against depression in renal function associated with hypothermia. (*Moyer, J. H., Greenfield, L., Heider, C., and Handley, C.: Hypothermia II: Effect of Agents which Depress Sympathetic Nervous System on Hypothermic Induction Time and on Renal Functional Alterations Due to Hypothermia, Ann. Surg. 146: 12 (July) 1957.*)

PROLONGED HYPOTHERMIA Twenty-three dogs were induced with ether and carried to 23 C. and held at this temperature up to 26 hours. After 2 hours, there was a decrease of 76 per cent in the cardiac index. Cardiac index then remained the same until between 10 to 14 hours when there was a significant fall. If prolonged for 24 hours hypothermia produced a severe fall in cardiac output, resulting in stagnant anoxemia and an increased arterio-venous oxygen difference. (*Fisher, B., and others: Effect of Hypothermia of 2 to 24 Hours on Oxygen Consumption and Cardiac Output in Dog, Am. J. Physiol. 188: 473 (March) 1957.*)

HYPOTHERMIA Tensile strength is reduced in wounds inflicted during hypothermia below 28 C. in rabbits. (*Bertil, L., and Bengt, Z.: Effects of Induced Hypothermia on Wound Healing: An Experimental Study in Rabbit, Acta chir. scandinav. 112: 152 (Feb.) 1957.*)

LOCAL HYPOTHERMIA Using cold sterile saline intraperitoneally the temperature of the liver in dogs was lowered without marked systemic temperature lowering. This technique was employed in one patient for a partial hepatectomy. (*Huggins, C., Carter, E. L., and McDermott, W. V.: Differential Hypothermia in Experimental Hepatic Surgery, A. M. A. Arch. Surg. 74: 327 (March) 1957.*)

CARDIAC ARREST Induced cardiac arrest with potassium citrate solution proved to be an invaluable adjunct in the surgical repair of certain cardiac defects. Because of some difficulties with the induced hyperpotassemia, the use of acetylcholine has been suggested to produce temporary cardiac arrest in intracardiac surgery. (*Cooley, D. A., Belmonte, B. A., DeBakey, M. E., and Latson, J. R.: Temporary Extracorporeal Circulation in Surgical Treatment of Cardiac and Aortic Disease, Ann. Surg. 145: 898 (June) 1957.*)

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