



Editor - Captain L. B. Marshall, MC, USN (RET)

Vol. 24

Friday, 24 September 1954

No. 6

TABLE OF CONTENTS

Residency Training Policy..... 2

"Second Look" Procedure for Cancer 3

Electric Shock 6

Pulmonary Blastomycosis 10

The Age for Immunization 12

Vivax Malaria..... 13

Porphyria 15

Pulmonary Tuberculoma in Childhood..... 17

Metastasis to the Central Nervous System and Meninges 19

Pyrazinamide 21

Tumors and Cysts of the Kidney..... 22

Correspondence Course Program 24

The 1955 Aero Medical Association Meeting 25

Atomic Medicine Correspondence Course 26

From the Note Book 26

Recent Research Reports..... 28

Board Certifications 29

Civilian Physicians (SecNav Inst. 6260.1) 30

Care-of-the-Dead Program (BuMed Inst. 1770.10) 30

Factory Training (BuMed Notice 12230) 31

The Farnsworth Lantern (BuMed Notice 6730) 31

Influenza Vaccine (BuMed Notice 6230)..... 31

Diagnostic Titles, Definitions Relating to (BuMed Notice 6310)..... 32

* * * * *

Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

* * * * *

Notice

Due to the critical shortage of medical officers, the Chief, Bureau of Medicine and Surgery, has recommended, and the Chief of Naval Personnel has concurred, that Reserve medical officers now on active duty who desire to submit requests for extension of their active duty for a period of three months or more will be given favorable consideration.

* * * * *

Residency Training Policy for Reserve Medical Officers on Active Duty

BUMED INSTRUCTION 1520.7 dated 4 August 1954, promulgates and prescribes the Department of Defense policy with respect to residency training programs for medical officers of the Regular Navy and U. S. Naval Reserve.

1. In addition to medical officers of the Regular Navy, Reserve medical officers who are on active duty, and who have completed their obligations for active duty imposed by the Universal Military Training and Service Act, as amended, are now eligible to compete for assignment to residency training in naval hospitals, in those specialties in which there exists a definite shortage at the time of application for such training.

2. At the present time shortages exist in the residency training program in the following specialties: Anesthesiology, Otolaryngology, Ophthalmology, Pathology, Orthopedics, Obstetrics and Gynecology, Pediatrics, and Urology.

3. Eligible and interested Reserve medical officers should make application to the Bureau of Medicine and Surgery, via the chain of command.

Letters of application should contain an agreement to volunteer for the period of residency training requested, and to remain on active duty in the Navy for a period of 1 year following completion of the training, for each year of training received. In general, the Bureau prefers to approve officers for residency training on a year-to-year basis.

4. From time to time the list of medical specialties in which shortages exist will be revised and brought up to date, to reflect the then existing needs. (ProfDiv, MuMed)

* * * * *

"Second Look" Procedure for Cancer

Despite the use of extensive primary operations for visceral cancers, there remains a large group of patients who are not cured by this initial procedure.

The systematic use of a second or even several exploratory operations following the original excision of a visceral cancer is a resolute effort to cure a higher proportion of the patients who have metastatic cancers. It is an experimental venture, not in accord with traditional views, which has generally been received with tolerant skepticism. In this report the authors describe the plan of treatment used, present the current status of the study, and discuss some of the difficulties met in pursuing it.

Second look operations, as described in this report, are re-exploration operations done on patients who had gastric, colic, or rectal cancers with lymph node metastases. Approximately 6 months after the original excision and while they are still asymptomatic and have no clinical evidence of residual cancer, these patients are reoperated upon, and if possible, any residual cancer found is removed. If cancer is found at this second look operation, subsequent exploratory operations, called third or fourth looks, are carried out at similar intervals of time until no more cancer is found. Once a patient has undergone a negative exploration, no more surgery is recommended.

The details of this plan for doing re-entry operations are deserving of some further explanation. These details have been developed during the study as the total experience in doing secondary operations for cancer has increased, and in time they are certain to undergo further improvements and refinements.

For some time the second look operations have been limited to patients with cancers already metastasized to the regional nodes at the time of the primary operation. At the beginning of the study, reoperations were also used for asymptomatic patients who originally had large colic cancers adherent to adjacent structures but with no lymph node involvement, essentially large Dukes group B lesions. Residual cancer was found in none of these, however, and the conclusion was reached that an aggressive primary resection is usually curative for this type of cancer.

The patients whose cancers have metastasized to the regional lymph nodes or to sites away from the primary lesion offer a more challenging problem. They make up approximately two-thirds of any group with resectable visceral cancers, yet with conventional types of surgery only a relatively small percentage are cured. The second look operation was designed especially for them.

It has been difficult to set the best interval of time to allow between operations. By the time the second look is done any residual local cancer should have grown large enough so that it can be detected by the surgeon but still be small enough so that it can be completely removed. Although approximately 6 months is given in the outlined plan as the suggested interval, some patients have had much longer intervals between their operations, up to 12 or 14 months, and still were found to have only small, resectable nodules of cancer when exploration was finally carried out. On the other hand, other less fortunate individuals have been found to harbor unresectable cancer even though they were explored after an interval of only 6 months. There is doubtless considerable variability in the rate at which residual cancer will grow large enough to produce symptoms, though in many patients, as Friesen and one of the authors indicate, the "silent interval" is apt to be long -- as long, in fact, as it often is before the primary tumor first causes symptoms. At any rate, there is no reliable way at present of deciding the best interval between operations for any individual patient. Somewhat shorter intervals for the patients with gastric cancer have come into use than for those with carcinoma of the colon, favoring an interval of slightly less than 6 months for the former and a somewhat longer interval, up to 8 months, for the latter.

Once the type of case to be treated and the period of time to elapse between operations have been chosen the surgeon is faced with another decision, when to stop reoperating. If it is possible to resect all the evident cancer at each operation, the surgeons have continued to reoperate at intervals until a negative exploration (with negative histologic study of tissues removed) has been achieved. Every effort has been made to do the reoperations thoroughly removing if possible all suspicious tissues.

At the beginning a few patients who had cancer of the stomach or rectum were declared free of cancer after a second operation, but subsequently showed residual cancer.

In the colon group, however, no residual cancer has become evident in the group declared negative. It has been of great interest that thus far all of the patients who finally became free of cancer after having had residual cancer removed--the successfully treated patients--still show no evidence of residual cancer. In any case, it would appear that identification of residual cancer has been accurate.

One hundred and three patients with lymph node positive cancers of the stomach, rectum, or colon, have had second look operations. Further exploratory operations, after the second look, were done on many of them so that they have undergone a total of 141 operations following their original

excisions. There were 6 operative deaths, giving a patient mortality rate of 5.8% or an operative mortality rate of 4.3%. The procedure does not seem to be unduly hazardous especially when it is pointed out that these operations are often difficult and long, even when no cancer is found; and if cancer is discovered, multiple bowel resections in addition to a wide retroperitoneal excision, and a partial liver resection may be undertaken in an individual patient. With the techniques and supports of modern surgery, patients whose average age in this group was 65.5 years usually can be safely brought through a course of repeated extensive abdominal operations.

Obviously, sufficient time has not yet passed to establish or disprove the assumption that residual, abdominal cancers may often be completely resected. Yet, the early experience of the authors, especially with cancer of the colon, suggests that this may be possible, at least, for some types of residual cancer. In all the satisfactorily treated "second look" patients the residual cancer has been located in only one or a few lymph nodes and limited to one area of the abdomen. For patients with this type of residual cancer the second look procedure may prove to be a crucial addition to the therapy.

In all cases an aggressive attempt has been made if the cancer appeared to be technically resectable even though it was located in several areas. However, liver metastases found at second look operations have so far not been completely ablated. Liver resections have been done at re-entry operations in 9 patients, yet all but 1 of these individuals are now dead or have developed inoperable recurrences. Many of these liver resections for metastatic cancer were done in a timid manner; they were simply enucleations of one or two metastatic nodules. Perhaps help may be given even to these patients if wider liver resections which are now possible are employed. A determined attack against the relatively advanced lesions has not been abandoned.

The second look operation for other cancers. Attention in this report has been directed exclusively to cancers of the stomach, colon, and rectum, but the second look can be used for other malignant lesions with equal justification. There have not been enough of the less common visceral cancers treated with the second look as yet to justify a review of the authors' experience, but it has been used for patients with hypernephroma, carcinoma of the ovary, and fibrosarcoma. It may be of value in treating these and in treating other visceral cancers such as carcinoma of the small bowel as well. The principle has been applied also in treating carcinoma of the breast and it could be used similarly for other nonvisceral cancers.

Other than those actually afflicted with cancer, no group can hope more fervently for something better than surgery with which to treat disease than surgeons themselves. A more powerful tool is badly needed. Yet for most visceral cancers there is at present nothing else to use, and there may be nothing better for some time. It is far wiser to explore diligently every reasonable way by which the present most effective treatment, surgery, may be put to wider use. Clinical experimentation guided by imaginative thinking

and consistent with sound knowledge of pathology is justified and, in fact, is essential if the results of surgical treatment are to be improved upon.

The second look is such a clinical experiment. The authors do not at present recommend its general acceptance but only suggest that an open frame of mind be used in its scrutiny and that the tentative success so far achieved in a few patients be measured against the utter hopelessness of recurrent cancer in the past. (Surg. Gynec. & Obst., Sept., 1954; O. H. Wangenstein, M.D., F. J. Lewis, M.D., S. W. Arhelger, M.D., J. J. Muller, M.D., and L. D. MacLean, M.D., University of Minnesota Medical School, Minneapolis, Minnesota)

* * * * *

Electric Shock

Seventy-six men in the U. S. Navy were killed by electric shock in the seven years, 1946 through 1952 inclusive. Civilian employees of shipyards or other naval establishments are not included.

This article brings out clearly: (1) that fatalities, both afloat and ashore, dropped sharply from a rather high level in 1946 to a lower level in 1947 and have stayed at about the 1947 level ever since; and (2) that for all the years considered, the fatalities ashore have been considerably more numerous than those afloat.

Summaries of reports on the deaths of four men ashore reveal an ignorance of, or a contempt for, the deadly potentialities of electric power lines that is almost incredible.

In this article only electric shock on board ship, its causes and its prevention, is considered. At the outset it is emphasized that the steel hull of a ship, which is an excellent conductor, and the probable presence of salt water and perspiration, which reduce body resistance, create conditions aboard ship which are more hazardous from the standpoint of electric shock than the conditions which are normally encountered ashore. For this reason better and safer electrical equipment afloat and more attention to safety precautions are needed.

Twelve, or better than 50% of the 22 fatalities aboard ship were caused by circuits of 115 volts or less. Whether alternating current or direct current, 115-volt and lower voltage circuits are dangerous under the conditions which are encountered aboard ship. There is evidence to the effect that direct current is less dangerous than alternating current of the same effective voltage, but a death which occurred on a 10-volt dc voltage regulator circuit furnishes incontrovertible proof that 110-volt direct-current circuits are not safe.

Noted also is the unenviable position occupied by portable equipment, including a radio receiver and a grounded plug inserted incorrectly which was involved in 8, or more than a third of the 22 fatal accidents aboard ship.

For this reason protection from shock by portable electrical equipment is considered in detail by the authors.

The basic causes of electric shock are: (1) equipment failure; (2) human failure; (3) a combination of equipment failure and human failure; and (4) a fortuitous combination of events so unlikely and so unusual that even the most prudent of men could hardly be expected to anticipate and guard against it. Accidents of this kind can happen, have happened, and will undoubtedly happen again. Fortunately, they are extremely rare. Otherwise, working with electrical equipment would be very hazardous indeed.

Although equipment was necessarily involved in each of the fatal accidents, this does not in itself mean that the accident was caused solely by equipment failure or would have happened if there had been no human failure. Except for one case, none of the fatal accidents aboard ship was caused by the sudden, unforeseen, and unpredictable failure of approved equipment which had been properly installed, tested for safety after installation, and used in accordance with applicable safety precautions. In the one case which is a possible exception, the insulation resistance of an installation was measured and found satisfactory just one day before an electric shock which killed a man working on the installation. Perhaps the insulation failure which caused the shock occurred before the man started to work on the installation, and could have been detected by another measurement of insulation resistance just before starting to work. Perhaps it did not occur until the man started to work. This case is uncertain.

In all other cases the defect in the equipment could have been found by tests before the fatal accident, or was definitely known to exist before the fatal accident because of minor shocks given by the equipment. But the tests were not made, or the warnings were disregarded, and the defect was not corrected until after the fatal accident occurred.

Human failures or errors which were partly or wholly responsible for the 22 shock fatalities aboard ship are listed. It is probable that many of the human failures which are responsible for fatal electric shocks on board ships are due to a natural but extremely unfortunate tendency to carry from shore to ship the rather casual regard for the deadly potentialities of electric circuits and equipment which is acquired ashore. The 110-volt circuits and equipment in homes are usually not considered to be unduly hazardous, and in fact are not extremely dangerous under most of the conditions existing in homes. Certain exceptions are well recognized, notably the danger of electric shock to a person who handles electric equipment while in a bathtub. But it seems to be frequently forgotten by men afloat that: (1) the conditions which exist on naval vessels are quite different from those which exist in homes ashore and are far more conducive to danger from electric shock; (2) insofar as danger from electric shock is concerned, the man afloat on a naval vessel is "living in a bathtub" practically all the time; and (3) human ingenuity has not yet solved the problem of making electric equipment which will not shock its user when improperly used. Therefore, all who have anything to do with electric equipment must give some thought to their own safety and the safety of their shipmates.

Certain fundamental principles relating to electric shock are discussed in order that the need for, and the nature of, safety precautions may be properly appreciated.

To begin with, current rather than voltage is the proper criterion of shock intensity. If 60-cycle alternating current is passed through a man from hand to hand or from hand to foot, the effects noted when the current is gradually increased from zero are as follows: (1) at about 1 ma (0.001 ampere) the shock is perceptible; (2) at about 10 ma (0.010 ampere) the shock is of sufficient intensity to prevent voluntary control of the muscles and the man may be unable to let go and free himself from the electrodes through which current enters his body; and (3) at about 100 ma (0.100 ampere) the shock is fatal if it lasts for 1 second or more.

These figures are approximate only because men differ in their resistance to electric shock, but the results of a number of investigations show that the figures given above represent correctly the order of magnitude of 60-cycle currents which will produce the effects indicated. It has also been found that 60-cycle alternating current is somewhat more dangerous than current of lower frequency, including direct current which is of zero frequency. The difference is not very large, however, and the same measures that are used to protect personnel from shock by 60-cycle alternating current should also be used to protect personnel from shock by direct current. For this reason, and also because 60-cycle alternating current is used more extensively than direct current on U. S. Naval vessels, the remainder of this article deals with 60-cycle alternating current.

Two conditions must be satisfied for current to flow through a man: (1) the man must form part of a closed circuit in which current can flow; and (2) somewhere in the closed circuit there must be an electromotive force or a difference in potential to cause current flow.

The application to safety is immediate. To guard against electric shock: (1) a man should if possible see to it that his body never forms part of a closed circuit through which current can flow; (2) if this is not possible and it is necessary to include any part of his body in a closed circuit, he should be absolutely sure (a) that the resistance in the circuit is high, or (b) that any electromotive force or difference of potential tending to cause current flow in the circuit is low, or still better, (c) that the resistance is high and the difference in potential is low.

If a man does none of the above and allows his body to form part of a closed circuit in which there is an appreciable voltage and in which the total resistance is low, he will never have another chance. In this connection it should always be kept in mind that a circuit may be closed by metallic conductors or nonmetallic conductors, or capacitors. A capacitor passes alternating current (and also direct current when the voltage is changing) and does not open a circuit in which it is included even though the plates of opposite polarity are separated by insulating material.

An ungrounded distribution system is one in which there is no intentional metallic or conducting connection from ground (the steel hull) to either line conductor of a two-wire distribution system (ac or dc), or between ground and any line conductor or the neutral of a three-phase ac distribution system, or between ground and either line conductor or the neutral of a three-wire dc distribution system.

On U. S. Naval vessels (1) all ac power and lighting distribution systems, both three-phase and single-phase, are ungrounded; (2) some polyphase, high voltage ac electric propulsion systems have a neutral which is grounded through a resistor; (3) most three-wire dc distribution systems are ungrounded; and (4) a few three-wire dc distribution systems are grounded with a grounded neutral.

Let it never be assumed, however, that a man can safely stand on a steel deck and touch a bare conductor on a real ungrounded system. He could do so in the case of the perfect ungrounded system considered, but in the case of a real ungrounded system he might survive, and he might not. There are a number of reasons for this extremely important difference between perfect and real ungrounded systems. Four are considered: (1) possible low insulation resistance to ground; (2) possible presence of poorly designed or improperly installed radio interference filters; (3) possible total "capacitance-to-ground" value (sum of capacitances to ground for cables, connected loads, transformers radio interference filters, if any, and so on) which is large enough to have a low impedance for alternating current, and which will, therefore, be a shock hazard; and (4) the virtual impossibility of making any tests or checks which will establish in advance that it is safe to touch one of the live conductors while standing on the steel deck.

It should be perfectly clear that standing on a steel deck and touching a bare conductor on either a grounded or a real ungrounded distribution system is very much like playing Russian roulette. To be safe make sure that: (1) a bare conductor, except when necessary, is never touched; (2) when the nature of work is such that it is necessary to touch a bare conductor, then either (a) deenergize the conductors on which work is to be done, plus all those in the vicinity that might accidentally be touched, and that will stay deenergized until the work is completed, or (b) if work is necessary on live conductors, which sometimes happens, observe the safety precautions that are necessary to protect from shock.

Avoidance of contact with live conductors requires continuous caution and the habit of working in such a way as to minimize the possibility of contact. Keep in mind that portable cords and other equipment should never be used in such a way that a male plug can be energized except when it is in a receptacle, there is danger of accidental contact with a live terminal. Men have died because of this. Chapter 60 of BuShips Manual gives safety precautions to be observed when working on live conductors.

Remember that there are right and wrong ways to rig casualty power cables to supply power to a motor.

Current cannot flow through the body unless it can get in and get out. If it is necessary to work on live conductors with the bare hand (remember it is better to use rubber gloves if possible), the hand is the point of entry. Safety depends upon seeing to it that there is no point of exit. That is why rubber mats or other suitable insulators must be used to insulate from ground and all metallic or conducting structures connected to ground, and from all conductors on the power line except the one on which work is being done. That is why one hand only should be used for the job whenever possible. (BuShips Journal, July 1954; Lt R. L. Kline, USN, and Dr. J. B. Friauf, Electrical Branch, Bureau of Ships)

* * * * *

Pulmonary Blastomycosis

A rational and optimistic therapeutic approach to pulmonary blastomycosis is now possible. A safe, effective chemotherapeutic agent is available and pulmonary resection may be employed when indicated. This report reviews the accumulated experience with stilbamidine and 2-hydroxystilbamidine therapy and analyzes 20 reported cases and 6 cases of the authors' personal experience with pulmonary resection in this disease.

The hypomycete, *Blastomyces dermatitidis*, causes cutaneous and visceral lesions with equal frequency. The dermatitis is relatively benign but the mortality in recognized cases of visceral disease has, until recently, been approximately 90%. The lungs are involved most frequently, then the skeletal system, but lesions have been found in every organ and tissue of the body. There is evidence that the lung is the portal of entry, at least in the systemic disease. There is pathologic evidence that even without specific therapy there is a strong healing tendency in the lungs. It is probable that unrecognized and self-limited cases have occurred.

The problem of correctly identifying a lesion in the lung is the same in blastomycosis as in other pulmonary disease. Awareness of the disease is an essential prerequisite for a correct diagnosis. The clinical picture is not diagnostic. Even when one is aware of the possibility and uses every test at his command, correct preoperative diagnosis is often difficult.

Smear and culture of the sputum is the ideal way of making a positive diagnosis. Unstained pus particles from the sputum, liquefied by potassium hydroxide, frequently reveal typical organisms. Diagnostic techniques are neither difficult nor costly, but the organisms may be difficult to identify.

Diagnostic thoracotomy will continue to be necessary in some cases of localized, possibly neoplastic, disease, but it is hoped that with increasing experience the diagnosis may be established more frequently without operation. In the 20 reported cases of pulmonary resection the diagnosis was established prior to operation in only 4 instances. A preoperative diagnosis was made in 1 of the 6 cases.

It seems inescapable that the diagnosis of blastomycosis is frequently missed both clinically and at autopsy. The organisms are difficult to recognize in exudates and in tissues, and the pathologic lesions are not diagnostic. Whenever diagnostic suspicion has increased, the incidence of the disease in the locality has arisen. Even when the disease is suspected, diagnosis is sometimes difficult, and organisms have not been recovered on repeated examination and culture of sputum in cases with active disease.

The best chemotherapeutic agent known is 2-hydroxystilbamidine because of its effectiveness and freedom from toxicity. It will usually, but not always, cause a regression of the pathologic lesions with closure of cavities. It will usually cause the sputum to revert to negative and will alleviate the clinical manifestations of the disease.

Blastomycosis, contrary to many published pathologic studies, may cause extensive destruction of pulmonary tissue with abscess and cavity formation. It is to be expected, as several authors have suggested, that in some instances surgical excision of residual cavities and destroyed tissues will be indicated following chemotherapy. This was true in one reported case and would probably have been true of the cavitory lesion in another case. Only further experience will indicate how frequently planned surgical excision will be necessary following chemotherapy.

Smith has had no occasion to recommend excision in his experience with 16 cases. In some cases under recent treatment it is too early to decide whether resection will be indicated. Hughes has two cases under observation following stilbamidine therapy which apparently should have the residual lesions resected.

The parallelism between the management of pulmonary tuberculosis and pulmonary blastomycosis is apparent. Both represent phases of a systemic infection. Effective chemotherapy is available for both. In both conditions surgical excision is helpful in the removal of destroyed tissue and residual lesions following medical treatment.

It is highly desirable that the diagnosis be made prior to operation. With effective chemotherapy operation may be obviated, but if required will be much safer. Diagnostic thoracotomy may still be occasionally required and if the diagnosis is made only after resection a postoperative course of 2-hydroxystilbamidine is indicated. The amount of drug that should be used depends on the character of the lesions present. If resection is impossible diagnostic biopsy is valuable as it will enable specific chemotherapy. Resection may be possible later if required. (J. Thoracic Surg., Aug., 1954; P. W. Acree, M.D., A. Ochsner, M.D., Tulane University School of Medicine, New Orleans; and Major P. T. DeCamp MC AUS, U. S. Army Hospital, Fort McClellan, Ala.)

* * * * *

The Age for Immunization

The age at which inoculation of antigens should take place is one of a number of facets of the general consideration of active protection against certain communicable diseases. With this in mind the evidence for the value of inoculation, except as it bears on the question of age, is not presented in this study. The discussion is limited largely to diseases for which active protection is routinely desired, namely, diphtheria, pertussis, tetanus, and smallpox. Brief consideration is given to other diseases for which active protection may be sought under certain circumstances but, as with passive protection, this involves the problem of occasion rather than age at which inoculation is desirable.

The statement was made incidentally that the optimal goal for protection of the individual and the community is to attain maximal protection against pertussis, diphtheria, tetanus, and smallpox with a minimal number of injections and reactions, and to accomplish this as early in life as is practicable. However, among the foregoing diseases, only pertussis occurs with any degree of regularity at present. Cruickshank states, in connection with diphtheria, that many parents know the disease only by name and "may require a great deal of persuasion to have children inoculated against what is to them a hypothetical danger." With a decrease in cases and carriers, applicable to diphtheria and pertussis, the length and adequacy of protection are less because of the infrequency of natural stimulation provided by contact with the organism; hence the need for more artificial stimulation. In consequence, physicians must be prepared with satisfactory reasons to persuade parents who doubt the value and safety of inoculation against the diseases mentioned.

Inoculation with scarlet fever antigens is not recommended for infants and children unless they reside in institutions, in which instance the procedure is considered advisable by some. Likewise, typhoid fever inoculations are not recommended except for children and adults who reside in, or contemplate travel, to endemic areas. Active immunization against Rocky Mountain spotted fever is suggested at all ages only if residence is contemplated in certain heavily tick-infested areas in Montana where a severe form of the disease prevails. The disease is milder elsewhere in the United States, and presence of ticks in such areas does not necessitate inoculation, for the newer antibiotics are very effective in the treatment of this disease. Routine inoculation against influenza is not recommended for children or adults unless to them, as weaklings, an attack of the disease would be hazardous. At best, immunity appears to be short-lived, and the vaccine used must contain the strain of virus to which the individual will be exposed. In contrast to adults, infants and young children may react rather severely to influenza vaccine, and some investigators feel the antibody response is inferior. Although mump vaccine is available commercially, it is not recommended as a routine procedure. Inoculation of adults prior to the occurrence of an outbreak has demonstrated lower attack rates among the inoculated. Much additional

information is necessary with respect to duration of protection and other factors before inoculations can be recommended for children.

At the present time inoculation of single antigens need not be given except under special circumstances, such as using pertussis antigen at one or two months of age.

Because multiple antigen preparations generally produce little more reaction than antigens used singly, and antibody production is equal to, or better, because of an adjuvant effect, as in the instance of diphtheria and tetanus in the presence of pertussis antigen, multiple antigen preparations containing these antigens should be employed beginning not later than three months of age, and earlier if the occurrence of pertussis, diphtheria, or both, so warrants.

Smallpox vaccination may be carried out at any time during the first year of life, but preferably on the last injection of the full course of three or four injections of a multiple antigen preparation.

No absolute schedule can be followed under all circumstances, particularly in view of the differences in immunity status of communities, and because field studies have lacked adequate population units at risk to pertussis and diphtheria under test conditions other than mild endemic occurrence. Further investigations are needed to elucidate the problems involved. (Ann. Int. Med., Aug., 1954; F. H. Top, M. D., Iowa City, Iowa)

* * * * *

Vivax Malaria

The return of personnel of the Armed Services from Korea has afforded an opportunity of assessing the effects of some of the more recent developments in the therapy of vivax malaria. This article reviews briefly the history of the development of various therapeutic agents used in the treatment of vivax malaria and reports on the results of therapy in a group of 496 cases of Korean vivax malaria admitted in 1952 to various Department of Veterans Affairs hospitals throughout Canada.

The group of 496 cases studied by the authors had all been on suppressive prophylaxis with paludrine in doses of 100 mg. per day while in Korea which, in most cases, had been continued until their return to Canada. For the most part the Korean veterans were admitted to hospitals with delayed primary attacks of malaria, but a few had been treated for malaria while in Japan or in other Canadian hospitals. The monthly admission rate bore a striking resemblance to that observed in the authors' recent publication, with 70% of the admissions occurring during the three summer months, July being the most active. Only those patients who were proven by direct blood smear to have vivax malaria were included in this study. Some patients were directly observed by the authors, but in a majority of cases, the pertinent information was obtained by a study of individual hospital case records.

These cases have been followed for at least one year and the majority for close to one year and a half. It is well known that recurrences in vivax malaria can occur up to three and four years, but that most occur within the first year and a half. The therapeutic agents, their approximate dosage schedules and the recurrence rates are presented. The efficiency of the cinchona alkaloids, the 4-aminoquinoline compounds and the biguanides in the control of the acute attack of malaria lies in the ability of these drugs to destroy the asexual forms of the parasite in the blood. They have little, if any, effect on the reservoir of parasites present in the liver, the so-called tissue phases or exoerythrocytic cycle. Because of this the recurrence rate with these therapeutic compounds is relatively high. With quinine, it has been variously reported as high as 80 or 90% and is generally over 50%. Chloroquine and paludrine lead to almost as many recurrences as quinine. In this group 109 clinical attacks were treated with chloroquine alone in an approximate dosage of 3 gm. of the diphosphate salt given over a three-day period. There were 38 recurrences (35%). Where chloroquine was continued in weekly doses of 0.5 gm. for 6 or 12 weeks the recurrence rate in 100 cases was considerably less (23%). There were 41 recurrences (53%) where quinine only was used in the treatment of 77 clinical attacks. The dosage of quinine was generally 10 gr. t. i. d. for ten days.

The success of the 8-aminoquinoline compounds in the treatment of malaria lies in their ability to affect the exoerythrocytic forms of the parasite. It has now been well established that the liver is the main reservoir of infection leading to recurrences. The 8-aminoquinoline compounds demonstrate little activity against the asexual forms of the parasitic infestation and thus are unable to terminate a clinical attack of malaria. They are, however, capable of destroying the tissue phases of vivax malaria and of reducing the recurrence rate. The first drug of this series to be given clinical trials was pamaquine and as far back as 1931 and 1932, recurrence rates as low as 5 and 8% were reported when this drug was combined with quinine in the treatment of acute attacks. More recent figures on this form of combined therapy have varied between 10 and 17% relapses. Experience with this type of therapy has been 7 relapses (11%) among 63 treated cases, which compares favorably with the above figures.

The relatively high incidence of toxic reactions to pamaquine therapy, particularly among Negroes, resulted in a careful study of this group of compounds and led to the discovery of primaquine. Clinical trials revealed that it was far less toxic than pamaquine. It has been used extensively on Korean veterans, largely in the form of prophylactic therapy, but as yet there are few reports as to its efficacy in preventing relapses. A combination of chloroquine and primaquine was used in 137 clinical attacks. There were 11 recurrences (8%). In 50 attacks where quinine was combined with primaquine, there were 2 recurrences (4%).

The time interval between therapy and relapses with the various therapeutic regimes is of interest. With the so-called non-curative drugs, relapses with quinine occurred far earlier than with chloroquine. This is a common

experience. There are too few relapses with the "curative drugs" to permit any definite opinion about the time interval, but it appears from this study that relapses with quinine and pamaquine tend to occur earlier than those with quinine and primaquine or chloroquine and primaquine.

This report includes a brief historical note of the development of these newer preparations and the results of therapy in a group of 496 veterans of the Korean War with proven vivax malaria. Recurrence rates in this series with quinine and chloroquine respectively were 53 and 35%. The recurrence rate with a combination of quinine and pamaquine was 11%, only slightly higher than the recurrence rate (8%) with chloroquine and primaquine. The lowest recurrence rate (4%) in this series was found in the group of cases treated with quinine and primaquine. However, the number of clinical attacks treated in this latter group was considerably smaller than the chloroquine-primaquine group and it is doubtful if the differences in relapse rates can be considered as significant.

It would appear from the results of this study that the treatment of choice of Korean vivax malaria is a combination of quinine and primaquine, although in comparable groups, chloroquine and primaquine would probably prove to be as effective. There has not been an opportunity to assay one of the latest antimalarial compounds, daraprim.

In all investigations directed toward the effect of therapeutic agents on the recurrence rate of plasmodium vivax malaria, it has been noted that different strains of the parasite from different countries show different degrees of sensitivity to the same drug. The authors do not attempt to imply that the relatively low relapse rates found in this series, where the 8-aminoquinoline compounds were employed, necessarily will reflect the relapse rates of other than the strain of the parasite found in Korea. (Canadian Services Medical Journal, Sept., 1954; T. R. Hale, M. D., and G. W. Halpenny, M. D., Queen Mary Veterans Hospital, Montreal, P. Q., Canada)

* * * * *

Porphyria

Porphyria is considered to be an "inborn error" in the metabolism of the porphyrins. Many of its clinical manifestations are neurologic or psychiatric or both. It is not unusual to have the metabolic disorder discovered only after the neuropsychiatric symptoms have developed. This imposes a responsibility on the part of the physician to be alert to the possibility of such a process in appropriate neurologic and psychiatric cases and to be acquainted with the symptoms and signs produced by this disorder of pyrrole metabolism. For this reason the authors report three cases illustrating the different clinical features of the disease and the neuropathologic changes observed in two of them.

The presence of uroporphyrin in the urine is said to be characteristic of porphyria. At times a colorless urine may be noted in acute porphyria.

It contains porphobilinogen which can be converted to uroporphyrin by heating with a mineral acid. Obviously this must be a chronic metabolic defect. Yet sometimes the abnormal biochemical process appears to occur intermittently over long periods of time. Associated with the abnormal porphyrinuria are various clinical manifestations. Possibly depending somewhat on the isomers excreted, but depending more on the course of the disease, the clinical manifestations of porphyria have usually been classified as follows:

1. Congenital porphyria. Recessive inheritance; males more commonly afflicted in a ratio of 2:1; noted in infancy; continuous urinary excretion of uroporphyrin I and coproporphyrin I; syndrome consisting of cutaneous photosensitivity (hydra aestivale), red-brown to purple pigmentation of teeth (erythrodonia), red urine, hirsutism, and bones discolored by uroporphyrin I.

2. Acute (intermittent) porphyria. Dominant inheritance; females more commonly afflicted in a ratio of 4:1; occurs in third and fourth decades of life; urinary excretion of uroporphyrin III and I, either predominating, with increased amounts of coproporphyrin III or I; large amounts of porphyrins excreted during the attacks; the colorless porphobilinogen (precursor of porphyrin) may be found in urine; variably combined symptoms of (a) abdominal pain, vomiting, constipation, ileus, sometimes fever and leucocytosis and tachycardia, often vascular hypertension, (b) convulsions, sensory and motor disturbances of extremities, bulbar palsy, delirium, confusion, acute hallucinosis, and depression.

3. Chronic (mixed) porphyria. A chronic disease, often considered to be a mild combination of the first two forms: continuous urinary excretion of large amounts of coproporphyrin III, but also coproporphyrin I, and uroporphyrin I and III. There is moderate cutaneous photosensitivity, abdominal pain, nausea, and vomiting.

The cases presented are relatively classic examples of the so-called acute, or intermittent, porphyria. This form is of special interest to the neuropsychiatrist. The onset of this disease process, with acute abdominal symptoms (pain, nausea, and vomiting), is almost invariable. Because of the not infrequent accompaniment of low-grade fever, leucocytosis, and tachycardia, it is not surprising that surgical procedures are frequently carried out on these patients, only to have the same abdominal pain continue afterward. It is considered possible that the usual preoperative barbiturates, anesthetic agents, postoperative sedatives, or antibiotics may aggravate the disease in a susceptible person.

A series of symptoms and signs may appear indicating involvement of the nervous system. Apparently there is nothing pathognomonic about the neuropsychiatric manifestations. They vary considerably in severity and variety from case to case. The rapidity of development and the rate of progression of the symptoms also vary. Often the clinical picture is that of a severe polyneuritis which may develop gradually at times. The neurologic picture may be that of a progressive involvement of the spinal cord, as is described in the symptom-complex known as Landry's ascending paralysis.

This may progress to involvement of the cranial nerve nuclei with resultant bulbar palsy and death due to respiratory failure. The neurologic picture may last a long time, with apparently complete recovery. The process may manifest itself by progressive weakness and intense atrophy of voluntary muscles. Convulsive seizures occur frequently. Symptoms may develop rapidly into a toxic delirious state, with hypersomnolence or coma. Nuchal rigidity and Kernig signs, pleocytosis, hyperalbuminosis, and increased pressure of the cerebrospinal fluid, and porphyrins in the cerebrospinal fluid have been recorded.

Mental symptoms may develop early. Anxiety attacks have preceded the development of neurologic symptoms. The mental symptoms may be the most marked indication of the disease process, although the etiologic importance of porphyria in psychiatric processes may have been over-emphasized. However, in some cases a chronic emotional disturbance may develop, or a confusional, delirious, hallucinatory state extending into the stage of stupor and coma.

Once the neurologic symptoms have developed, the mortality rate has been estimated to be more than 75%, but apparently chronic invalidism or complete recovery can ensue. What factors determine the course of the illness are still unknown, but the use of certain drugs (barbiturates, heavy metals, sulphonamides, et cetera) probably can accentuate the metabolic disorder. (Arch. Int. Med., Aug., 1954; University of Pennsylvania School of Medicine, G. A. Schwarz, M. D., Philadelphia, and J. A. L. Moulton, M. D., Cincinnati, Ohio)

* * * * *

Pulmonary Tuberculoma in Childhood

Resective surgical treatment of well-defined and isolated tuberculous pulmonary lesions in adults has become a widely accepted and successful procedure. Yet the applicability of radical resection of peripheral parenchymal lesions in children has so far not been unequivocally decided.

The following types of parenchymal tuberculomas (the term used in the broad sense of a well-defined area of granulomatous tissue reaction due to the *Mycobacterium tuberculosis* of Koch) can be classified as more or less distinctive entities: (1) primary peripheral tuberculoma of minute size with the tendency to heal with or without radiological residuals; (2) extensive primary or post-primary pneumonic lesions which tend to heal with more or less extensive fibrocalcific nodular residuals; (3) reinfection type of isolated tuberculomas, oftentimes called "coin lesions"; (4) cavitary lesions, a rare occurrence in children, which may develop either as a re-activation of a primary tuberculoma or as a result of disintegration of a secondary tuberculoma.

In considering the criteria which guide in the therapeutic management of adolescent and adult tuberculosis, these foregoing childhood types of

pulmonary lesions pose the question of whether or not resective surgery, following a proper course of chemotherapy, appears applicable. To the present time there are conspicuously few reports available on pulmonary resections in childhood tuberculosis.

A basic difference exists between the residual lesion, after chemotherapy, in the lung parenchyma of the mature person, and the peripheral tuberculous process in the lungs at early and mid-childhood. This collateral lymphadenitis represents the main, if not the only differential feature in childhood and adult tuberculosis. It is known that all the lymphatic organs undergo a progressive involutionary development in adolescence.

Miller and Wallgren stress the fact that "the characteristic feature of primary tuberculosis of the lungs is the accompanying swelling of the lymphatic glands of the hilum. These swollen glands are never so prominent in other forms of tuberculosis."

This prominent role played by the participation of the central tracheo-bronchial lymph nodes in the primary and postprimary tuberculous process has to be taken into account in considering the therapeutic management of such patients.

Eleven typical cases were selected from the Children's Service of Muirdale Sanatorium, and Milwaukee Children's Hospital of the last twenty-eight years, a total of roughly 1,000 inpatients (an average of 36 new admissions per year). These cases illustrate the four classes of childhood lesions previously mentioned, with the idea of evaluating the applicability of radical pulmonary resection for these different types of diseases.

Only in the exceptional instances of proved cavitary lesions should pulmonary resection be considered alongside other more conservative and reversible methods of treatment. The danger of a bronchogenic dissemination or the improbability of cavity closure under non-resective therapy are strong arguments. The complete therapeutic success of excisional surgery in one reported case helps to justify this method of treatment in destructive pulmonary tuberculosis in children. However, the one instance of another case, which shows complete disappearance of a giant cavity under artificial pneumothorax treatment and permanent healing after 23 years of continuous observation, points toward the validity of the more conservative approach, even in the rare instances of cavitary lesions in children.

The author concludes that the proper identification and classification of isolated nodular lesions in children's lungs will lead to a proper therapeutic program which, as a rule, will be entirely successful without radical surgery. (J. Pediatrics, Aug., 1954; K. E. Kassowitz, M.D., Milwaukee Children's Hospital, Milwaukee, Wisconsin)

* * * * *

Metastasis to the Central Nervous
System and Meninges

There are few reports of metastatic neoplasms in the central nervous system and meninges based on study of a large series of complete necropsies. An unusually large number of such examinations on patients with cancer was available at Montefiore Hospital. An analysis of the findings in this group is presented.

The breast and lung were by far the commonest sources, accounting for more than one-half of the 207 patients with neuraxial metastases. From data presented it is apparent that characterization may be made of the picture which is peculiar to the two commonest types of metastatic tumors. The other groups are small in number and do not justify generalizations concerning their behavior.

Metastases to the brain from carcinoma of the bronchus are among the most malignant. There is usually a short interval of about 5 months between the onset of the primary disease (if known) and the signs of cerebral involvement. In some cases the neurologic signs are the first to be noted. Once intracranial signs appear, the course is extremely short, the patients surviving an average of only 3 months. The absolute number of both primary lesions and metastases is higher in men than in women, but there is a higher proportion of metastases in women. The spread is far more frequent to the central nervous system than to the meninges. The brain may be the only site of metastases in a few cases. This involvement occurs most commonly with pulmonary neoplasms, probably because they are the most frequent invaders of the brain. Metastases to the cerebrum may be solitary, but the course is usually so rapid that this feature is of little avail prognostically. These tumors are frequently accompanied by cerebral swelling.

Carcinoma of the breast with intracranial metastases may present a different picture. Although obviously a malignant neoplasm, nevertheless the interval between the onset of the primary growth and that of the metastases is longer than in the case of the lung, and occasionally may be many years. Similarly, the duration of life after the onset of neurologic symptoms is longer than with pulmonary tumors, and in a small number of instances is compatible with life for as long as four years. In many instances there may be no signs related to the cerebral metastases and death results from other causes. The sexual incidence is dominated by the fact that breast carcinoma is rare in males. The metastases in half the cases are found in the dura alone. This is in part the explanation for the relatively more benign course. In addition, cerebral swelling is less common.

It is interesting that neoplasms of the gastrointestinal tract, including the esophagus, stomach, colon, and rectum, although occurring commonly, have an extremely low incidence of metastases to the neuraxis. Other organs with a low rate of metastasis include the ovaries, pancreas,

gallbladder, uterus, cervix, and urinary bladder. It should be noted, however, that any malignant neoplasm is capable of metastasizing to the brain or meninges. The explanation for the low frequency of metastases of some tumors and the high frequency from carcinoma of breast, lung, and kidney is not readily apparent. In the case of the lung, the ability of tumor cells to enter the pulmonary vein and thereafter the left side of the circulation may perhaps explain the behavior of this tumor, but this explanation is hardly feasible for carcinoma of the breast without intrathoracic extension, or for carcinoma of the kidney. The meningorachidian or vertebral system of veins described by Batson is not a wholly acceptable alternative explanation.

Clinically, most of these patients presented relatively simple neurologic problems because in most instances the existence and site of the primary growth were well recognized. Some points of clinical and theoretical interest arose from a review of the findings. Headaches were commoner with parenchymal than with meningeal lesions. This finding is somewhat unexpected because it might be argued that pain-sensitive structures are commoner in the meninges, and hence pain should be encountered more frequently. In cases of dural and leptomeningeal infiltrations there were rarely clinical evidences of meningeal irritation. Convulsions also were uncommon with meningeal neoplasms, despite the fact that the duration of life was longer in these instances.

Another interesting feature was the absence of extrapyramidal signs, although there were 29 cases with implication of the basal ganglions. In some of these cases there were, in addition, widespread metastases to other regions of the brain, but extrapyramidal signs were still absent. A corollary of this would be that the development of extrapyramidal signs during the illness of a patient with cancer is probably related to another process and not to intracerebral metastasis.

In the sphere of the cranial nerves, papilledema was not common (15% of the cases), and hence its absence does not aid in ruling out metastatic brain disease. Alterations of pupillary reactions to light and on convergence are also rare, except when there is a great increase in intracranial pressure, or terminally. Implication of multiple cranial nerves is rare in true metastases, although commoner in instances of extension of neoplasms at the base of the skull, such as that from tumors of the nasopharynx.

The patients with known neoplasms received intensive therapy--surgical, supportive, antibiotic, radiologic, hormonal, and chemical. This factor, too, may have played a part in determining the extent of metastasis. The necropsy rate and the frequency of examination of the nervous system when necropsy is performed are additional variables. If the brain is not examined routinely, a low estimate of the frequency of metastasis will result. Overestimation may occur if the brain is examined primarily in those patients with cancer who have symptoms of neurologic disorder. In these cases permission for complete necropsy may be specially sought, and more

limited study will be accepted in many instances where neurologic signs are lacking. Routine examination of the brain will disclose a surprisingly high incidence of neuraxial metastases, with death occurring before these become symptomatically apparent (32% in this series).

The multiplicity of variables makes it difficult to decide what the frequency of cerebral metastases would be in a wholly unselected group of cancer patients. It seems probable that it would be higher than the approximate 5% indicated by some studies. (Arch. Neurol. & Psychiat., Aug., 1954; S. Lesse, M. D. and M. G. Netsky, M. D., Montifiore Hospital, New York City)

* * * * *

Pyrazinamide

Following the synthesis of pyrazinamide during a survey of compounds related to the thiosemicarbazones and nicotinamide by Kushner and associates it was established by Malone, by Dessau, and by Solotorovsky and their respective associates that the compound possesses some degree of effectiveness against tuberculosis in experimental animals. Successful demonstration of the antituberculous action of pyrazinamide in man was made by Yeager, Monroe, and Dessau, and a clinical study of the compound was begun in September 1951. A total of 181 patients have received 202 courses of treatment with pyrazinamide for periods up to 16 months, either alone or in combination with streptomycin, para-aminosalicylic acid (PAS), or isoniazid. Early in the study of this drug it was learned that its effect, although definite when used alone, was relatively short. It was then used in multiple-drug therapy. It was hoped that the total drug action would be prolonged and the overall clinical value increased over that which would have been the case if one of the drugs used in the pairings had been used alone. Failure in this hope occurred from the pairing of pyrazinamide and PAS, and of pyrazinamide and streptomycin, but the pairing of pyrazinamide and isoniazid proved to be successful.

The majority of patients treated on any of the regimens had previously been unsuccessfully treated with streptomycin-PAS, as well as with bed rest, collapse, or surgical therapy, when the last-named was feasible. A few patients who had become hypersensitive to streptomycin or PAS were included. Moreover, with the regimens containing streptomycin or PAS, a few patients with far advanced cavitory disease who had not had previous chemotherapy were treated with the hope of expediting the study of the incidence of drug-resistant organisms. Among the patients who received pyrazinamide alone, a particular attempt was made to select patients with fever and pulmonary lesions with a recent progressive component added to long-standing chronic disease in order to assess therapeutic efficacy. As the study of the multiple-drug regimens was originally planned to be chiefly

one of bacterial resistance and toxicity, patients with recent acute spreads treated with any of these regimens were not common.

Pyrazinamide used alone in a dosage of 2.8 gm. daily was found to be an effective drug in the treatment of pulmonary tuberculosis, although for only a short period of time.

The administration of streptomycin, 1 gm. twice weekly, or para-aminosalicylic acid (PAS), 12 gm. daily, together with 3 gm. of pyrazinamide daily did not enhance the effectiveness of pyrazinamide or streptomycin or delay the emergence of PAS-resistant or streptomycin-resistant tubercle bacilli. It was not possible to determine the drug susceptibility of tubercle bacilli to pyrazinamide in vitro.

Chemotherapy with pyrazinamide and isoniazid has been found to be a very effective regimen in the treatment of pulmonary tuberculosis and to be at least the equal of any combination of streptomycin, PAS, or isoniazid in use at present. In spite of the reported toxicity, the low incidence of jaundice encountered in this series prompts the recommendation that the combination of pyrazinamide and isoniazid be used more widely in the treatment of tuberculosis, particularly in streptomycin-resistant cases. (Am. Rev. Tuberc., Sept., 1954; W. S. Schwartz and R. E. Moyer, Veterans Administration Hospital, Oteen, N. C.)

* * * * *

Tumors and Cysts of the Kidney

With the advent and increasing use of excretion urography in the differential diagnosis of various lesions, more and more instances of space-filling defects or enlargements of retroperitoneal areas are being shown. It seems appropriate to discuss the subject of differential diagnosis of renal tumors and cystic disease of the kidney.

Renal tumors, that is, solid tumors of the kidney, comprise about 0.8% of all tumors found in the body. Cystic disease of the kidney is more common. The cardinal symptoms of renal tumor are hematuria, pain in the loin or upper abdomen, and palpable mass. More important even, in the light of present searching diagnosis, is a fourth cardinal sign, the deformity found in the urogram, whether it is an excretion urogram or a so-called retrograde pyelogram.

The author emphasizes the frequency of a silent lesion of the kidney. Cystic disease of the kidney is much more often silent than neoplastic disease, but both can be silent for a long time. All physicians are familiar with clinical patients who have one type of lesion or another, a tumor showing in the lung, a suggestion of an intracranial tumor, granular tissue in the nose, soft tissue enlargement, all of which are secondary to a silent tumor of the kidney. In fact, the physician is usually called when a patient has an unexplained tumor of the lung, a suggestion of a tumor of the lung, or a suggestion of a brain tumor, and he must be sure to rule out the three areas of silent primary tumors--the kidneys, the prostate, and the testicles.

The diagnosis of renal tumor and cyst includes all of the conditions which cause total hematuria, this being the condition in an individual who passes urine all of which contains the elements of hemorrhage.

As to the palpable mass, in a recent survey of 224 consecutive cases of solid tumors of the kidney and 48 cystic conditions other than polycystic disease, with renal tumor a palpable mass was present in 32% of the cases, and in cystic disease 22%. Total hematuria was found at some time in the course of the disease in 66% of the cases of tumor, whereas it was present in less than 20% of the cases of renal cystic disease. These symptoms are helpful in the overall summary and differentiation, although they are not definitive.

With regard to the interpretation of palpable mass in the upper abdomen or loin, on the right side, in addition to tumor, there must be excluded palpable renal cyst of a solitary nature, polycystic disease of the kidney, and perirenal tumors which arise in the adrenal gland or in other structures in the retroperitoneal region, most commonly those that arise from the fascial areas or the sheath of the psoas muscle. In addition, one of the interesting and confusing things on the right side is linguiform lobulation of the liver, so-called Riedel's lobe, which may suggest an enlarged kidney.

Echinococcus cyst is comparatively rare in this country, but in South America it constitutes a common differential problem. It would appear that there would be no difficulty in differentiating an aneurysm of the aorta from a renal tumor or renal cyst, but such is not the case. The physician must be constantly on guard not to mistake a large saccular aneurysm of the abdominal aorta for a renal tumor. The error may occur because these aneurysms are frequently close to the renal artery, with hematuria a not uncommon symptom. Hematuria clots passing from the renal pelvis down the ureter may cause a typical type of renal pain.

Other intra-abdominal tumors include those that are primary in the ovary with a long pedicle, and tumors on the right side that arise in the cecum and ascending colon. On the left side the same differential problem exists, with the addition of two other important conditions, enlargement of the spleen and conditions in the tail of the pancreas, notably cysts.

The author stresses the point that any study which remotely suggests the presence of a neoplasm of the kidney is completely inadequate unless a thorough chest x-ray study has been made. Neoplasms of the kidney, particularly of the solid portion of the kidney, most frequently metastasize to the chest or to the lung and often either cotton-ball splash areas are evident when the lesion within the kidney has caused no symptoms. It is, therefore, unthinkable that the physician would undertake to differentiate a renal tumor from a cyst or other retroperitoneal mass, and consider surgery unless he had definitely shown that there are no metastases in the chest.

Cystic disease of the kidney is much more common than previously thought. All diagnostic measures are necessary and the final analysis of the true nature of the condition often depends upon surgical exploration.

(Postgrad. Med., Aug., 1954; V. J. O'Connor, M.D., Northwestern University Medical School, Chicago)

Correspondence Course Program

Why does the Navy have a correspondence course program? Is correspondence course study an effective method of teaching? How much does a person learn by taking a correspondence course? Questions such as these deserve an answer.

Some people look upon correspondence study as an inferior method of learning. Their opinions are not based upon scientific findings, but result from a lack of knowledge about current correspondence course programs. Prior to 1926, correspondence schools which gave value received were in the minority.

Most of the research in the field of correspondence study has been made by colleges and universities of high standing and the validity of these studies has been recognized for many years. Such studies indicate that correspondence study as a method of instruction is equally as good as resident instruction. The author has been unable to locate a single study which concludes that correspondence study is a poorer method of instruction than is resident study. (A word of caution is in order here. No one should reach the conclusion from the above that Navy correspondence courses are equally as effective as Navy resident schools. No study has been made to determine the relative effectiveness of these methods of instruction and no such implication is intended by this article. What has been stated above is that correspondence course study can be an effective method of instruction.)

Aside from being an effective method of instruction, correspondence course study offers certain distinct advantages: (1) The student can be encouraged to form his own judgments. (2) He can do all the work himself. (3) He can work alone and independently. (4) He can concentrate uninterruptedly. (5) He can control his own time and speed of work. (6) He can secure courses in which he is interested but which are otherwise unavailable. (7) He assumes considerable responsibility for his own progress.

As in any method of instruction, there are also certain disadvantages of correspondence study: (1) The student misses direct contacts with the instructors. (2) He may become discouraged by the size of the task facing him. (3) He may become discouraged by the interval of waiting for corrected lessons. (4) He may start courses without being able to measure his ability to deal successfully with them.

The values of correspondence course study seem to have become well recognized. Over 5,000 industrial and commercial corporations, including railroads, banks, manufacturing concerns, department and chain stores, et cetera, think so highly of correspondence study that they have some kind of contractual relation with various home study schools for the purpose of training and promoting their employees. Most of the leading colleges and universities offer correspondence courses and, in many cases, give credit toward academic degrees. In 1945, there were over 10,000 students enrolled in correspondence courses offered by the University of Chicago alone. Many universities have cooperated with governmental agencies

and commercial organizations in the development of correspondence courses to serve special interests.

Every branch of the Armed Forces operates a large correspondence course program. The Navy has eight programs, the largest of which are the two programs administered through the Naval Correspondence Course Center at Brooklyn, New York, with 220,708 officer and enlisted personnel enrolled on 31 May 1954. The Air Force has approximately 60,000 students enrolled in its correspondence courses. The Army offers correspondence courses through approximately 11 schools with an annual input of approximately 100,000. Other large programs include the Marine Corps Institute, the Marine Corps Correspondence School, the Coast Guard Institute, and the Maritime Studies Institute. In addition, there were on 30 March 1954, 161,916 military personnel currently enrolled in USAFI correspondence courses and another 17,186 enrolled through USAFI in correspondence courses offered by participating universities.

The prime objective of the Officer Correspondence Course Program is to provide all Regular Navy and Naval Reserve officers (whether on active or inactive duty) with a wide selection of courses which may be used during off-duty hours for increasing their knowledge and proficiency in the duties of their rank or specialty, and at the same time enable Naval Reserve officers on inactive duty to earn promotion and retirement point credits. Correspondence courses will also be used in the near future in the promotion program of Regular Navy officers.

Enrollment in the Officer Correspondence Course Program is open to all officers, Regular and Reserve, whether on active or inactive duty. The only form of compulsion is that Naval Reserve officers on inactive duty are required to complete courses before they can be promoted. Most questions are of the objective type, all study materials are usually provided at one mailing, and enrollees' questions are answered by subject matter specialists. All work must be the result of the student's own effort. When used properly, correspondence courses constitute a valuable method of training for both Regular Navy and Naval Reserve officers. (Naval Training Bulletin, Aug., 1954; Dr. B. H. Williams, Training Division, NavPers)

* * * * *

The 1955 Aero Medical Association Meeting

The 26th annual meeting of the Aero Medical Association will be held at the Statler Hotel, Washington, D. C., on 21-22-23 March 1955.

It is hoped that the Scientific Program will exceed that of last year's Silver Anniversary meeting. To this end, it is desired to firm up the best possible program at an early date. Flight surgeons or others in the field of Aviation Medicine who desire to make presentations to the Aero Medical Association are requested to submit titles of their papers plus any additional explanatory comments desired to the Navy Member of the Scientific Program Committee--Commander R. L. Christy (MC) USN, Bureau of Medicine

and Surgery (Code 531), Department of the Navy, Washington 25, D. C., as soon as possible.

Captain C. P. Phoebus (MC) USN is the Chairman of the Scientific Program Committee and has indicated that the scientific presentations will be limited to 15 minutes. The various papers will be grouped into related areas on the program after the presentations have been judged acceptable by the Committee. (AvMedDiv, BuMed)

* * * * *

Radiological Defense and Atomic Medicine
Medical Department Correspondence Course

Objective type questions for the Medical Department correspondence course, entitled Radiological Defense and Atomic Medicine (NavPers 10701), are now available for distribution. This course evaluation remains at thirty-six (36) Naval Reserve promotion and retirement points. The text material for this course has not been changed. Officers who completed the earlier thesis type course for credit will receive no further credit for completion of this course. (Naval Medical School, NNMC)

* * * * *

From the Note Book

1. Rear Admiral Lamont Pugh, MC USN, the Surgeon General, was represented by Rear Admiral B. W. Hogan, MC USN, at the Annual Meeting of the American College of Hospital Administrators in Chicago, September 12-14, 1954, and at the Mare Island Centennial Celebration in Vallejo, California, September 16, 1954. (TIO, BuMed)
2. Rear Admiral D. W. Ryan, DC USN, Assistant Chief for Dentistry and Chief of the Dental Division, Bureau of Medicine and Surgery, participated in a conference of the Council on Federal Dental Services, American Dental Association, held in Chicago, September 13, 1954. (TIO, BuMed)
3. Captain C. L. Andrews, MC USN, was named Director of the Professional Division, Bureau of Medicine and Surgery, on September 1, 1954, vice Captain Lloyd R. Newhouser, MC USN, who had served in that capacity since July 14, 1953. (TIO, BuMed)
4. CDR J. V. Niiranen, DC USN, was recently awarded the Legion of Merit for his meritorious conduct in the performance of outstanding services to the Government of the United States. (TIO, BuMed)

5. CDR F. B. Voris, MC USN, Head, Special Activities Branch, Aviation Medicine Division, will represent the Bureau of Medicine and Surgery at two professional meetings in Europe during September-October, 1954. He will attend the Third Annual Meeting of the French-Speaking Branch of the Aero Medical Association to be held at the Zurich Cantonal Hospital, Zurich, September 18-24, 1954, and the Eighth General Assembly of the World Medical Association at the Palace of Congresses, Rome Universal Exposition, Rome, September 26 to October 2, 1954. (TIO, BuMed)
6. The Bureau of Medicine and Surgery was represented at three important meetings of international medical organizations held in Washington, September 6-11, 1954, by Dr. H. T. Karsner, Research Advisor to the Surgeon General of the Navy. These meetings were: International Congress of Clinical Pathology under the sponsorship of the International Society of Clinical Pathology, on invitation of the American Society of Clinical Pathologists; International Conference of Geographical Pathology under the sponsorship of the International Society of Geographical Pathology on invitation of the National Committee for the United States; and the International Meeting of the International Association of Medical Museums. (TIO, BuMed)
7. Retrolental fibroplasia is a disease causing blindness in premature infants, and has increased in incidence at such a rate that it is the largest cause of child blindness in the country today. (Postgrad. Med., Aug., 1954; L. E. Hoeck, M. D.)
8. Thirty-five percent of the patients in a series showed evidence of dangerous cardiac embarrassment in alcohol-tetraethylthiuram disulfide (antabuse) testing despite negative cardiac history and absence of abnormal clinical findings. (Arch. Int. Med., Aug., 1954; E. S. McCabe, M. D. and W. W. Wilson, M. D.)
9. Clinical observation of a series of 30 consecutive patients indicates that the Knott technic of blood irradiation therapy is a valuable adjunct to the treatment of threatened abortion and in the prevention of immediate and delayed complications in inevitable abortion. (Am. J. Surg., Sept., 1954; I. T. Schultz, M. D.)
10. Total pelvic exenteration and anterior partial pelvic exenteration for far advanced pelvic cancers are operations which can afford effective palliation and also 5-year "cures" when no other known method of treatment can afford opportunity for comparable relief. (Surg. Gynec. & Obst., Sept., 1954; A. Brunschwig, M. D. and W. Daniel, M. D.)
11. The author's modification of a decompression operation appears indicated in the treatment of trigeminal neuralgia in preference to chemical or surgical destruction of the peripheral branches of the ganglion or section of the posterior root. (J. Am. Dent. A., Sept., 1954; D. Cleveland, M. D.)

12. A technique for irrigating the renal pelvis by intermittent or continuous flow is described in J. Urol., Sept., 1954; J. H. Semans and H. F. LaGuette.

13. A new synthetic anti-rheumatic drug, which does not have hormonal effects of cortisone, has been shown to exert anti-rheumatic effects in gouty arthritis and rheumatoid arthritis.

The drug, G-25671, is a derivative of phenylbutazone (Butazolidin). It exerts a less powerful anti-rheumatic effect but does not cause retention of sodium and water, thus showing that there is a possibility of eliminating at least one harmful effect of phenylbutazone. In addition, the new compound lowers blood uric acid to a marked degree by causing its excretion in urine. (P. H. S., H. E. W.)

14. The stomach plays a more important role in the absorption and secretion of drugs than has heretofore been known, according to a study reported by scientists of the National Heart Institute.

In these studies, the stomach membrane is pictured as an oily barrier between gastric juice and blood plasma. Drugs may pass both ways through this membrane barrier. Alkaline drugs pass the barrier in the direction of the stomach, and acid drugs pass the barrier in the direction of the blood stream.

15. Health officials of some 20 States and Canada attended a National Conference on Shellfish Sanitation in Washington, on September 9 and 10. The meeting was to discuss important problems related to the future of the Service's Federal-State-Industry Shellfish Certification Program.

About 50 representatives of various components of the shellfish industry participated, as well as officials of the Department of State, the Fish and Wildlife Service of the Department of the Interior; and the Public Health Service and Food and Drug Administration, both of the Department of Health, Education and Welfare. (P. H. S., H. E. W.)

* * * * *

Recent Research Reports

Naval Dental Research Facility, NTC, Great Lakes, Ill.

1. Summaries of Dental Research, 15 Apr 1947--31 Dec 1953.

Naval Air Development Center, Johnsville, Pa.

1. Development of Scintillation Counting Techniques for Use in Acceleration Stress Studies. NM 001 060.08.01, 30 Jul 1954.

2. Lethal Levels and Gross Pathology of Rats Exposed to Positive and Negative Forces of Acceleration, NM 001 060.11.02, 30 Jul 1954.

3. A Method for Arterial-Venous Blood Glucose for the Evaluation of Brain Glucose Utilization, NM 001 060.03.07, 3 Aug 1954.

Naval Medical Field Research Laboratory, Camp Lejeune, N. C.

1. Experimental Evaluation of Glycerol Pectate for Plasma Volume Replacement and Expansion. NM 006 014 10.01, June 1954.
2. Replaceable Covers for Straight Pole Litters. NM 007 083.03, June 1954.

* * * * *

Board Certifications

American Board of Internal Medicine

LT William J. Andrews (MC) USNR

American Board of Obstetrics and Gynecology

LT Stephen W. Cobb (MC) USNR (Inactive)

American Board of Ophthalmology

LT Dexter Meyer (MC) USNR

American Board of Otolaryngology

LT Frederick R. Haase (MC) USNR (Inactive)

American Board of Pathology

CDR Sarkis S. Sarkisian (MC) USN

American Board of Pediatrics

LTJG Richard E. Ando (MC) USNR (Inactive)

American Board of Psychiatry and Neurology

LT Harold A. Ladwig (MC) USNR (Inactive)

American Board of Radiology

LT Edward M. Cook Jr., (MC) USNR (Inactive)

LT John P. Fotopoulos (MC) USNR (Inactive)

American Board of Surgery

CDR Charles D. Belcher Jr., (MC) USNR (Inactive)

LCDR Karl A. Lofgren (MC) USNR (Inactive)

* * * * *

The printing of this publication has been approved by the Director of the Bureau of the Budget, June 23, 1952.

* * * * *

SECNAV INSTRUCTION 6260.1

13 Aug 1954

From: Secretary of the Navy
To: All Shore Stations

Subj: Utilization of civilian physicians at industrial activities

This instruction authorizes the utilization of civilian physicians to provide medical care at industrial activities.

Due to limitations on the number of naval medical officers, it has been determined that it will be necessary to utilize the services of civilian physicians at industrial activities of the Navy and Marine Corps. Civilian physicians utilized under this instruction shall be under the technical control of the Bureau of Medicine and Surgery. This control shall include determination of the need for civilian physicians, and their qualifications. Funds shall be provided from appropriations under the cognizance of the Bureau having management control of the industrial activity; except that at medical facilities at Industrial Fund Installations, the payment of civilian physicians will be financed by the Navy Industrial Fund. Where employment (personal services) is involved, personnel ceilings shall be provided by the management Bureau.

* * * * *

BUMED INSTRUCTION 1770.10

19 Aug 1954

From: Chief, Bureau of Medicine and Surgery
Commandant of the Marine Corps
To: All Ships and Stations

Subj: Care-of-the-dead program; administrative and fiscal accounting instructions relative to

Ref: (a) NAVCOMPT Manual para 023304, 024343-4, 024404-5, and 026100-026115
(b) Chap 17, ManMedDept
(c) Chaps 13, 52, and 55, MarCorps Manual
(d) Field Accounting and Reporting Instructions for appropriation Marine Corps Troops and Facilities (NAVMC 1092-FD)
(e) BUMEDINST 1770.8, addressed to Naval Activities in Continental United States Having Navy Contracts for Care of the Dead
(f) BUMEDINST 1770.4A, addressed to Activities in Continental United States Having Annual Navy Contracts for Care of the Dead; All Commandants of Naval Districts and River Commands, Continental United States; and Commandant, Tenth Naval District

This instruction amplifies existing instructions relative to the responsibility for care-of-the-dead matters, and provides fiscal accounting instructions relative to care of the dead under the appropriations "Medical Care, Navy," "Marine Corps Troops and Facilities," and "Military Personnel, Marine Corps."

BUMED Instruction 7300.1 is cancelled. Also cancelled are Marine Corps Memoranda 7-52 and 27-54, and subparagraph 1(a) of Marine Corps Memorandum 64-54.

* * * * *

BUMED NOTICE 12230

27 Aug 1954

From: Chief, Bureau of Medicine and Surgery
To: Activities Under the Management Control of BUMED
Subj: Factory Training; request for information on

This notice requests addressees to submit on a quarterly basis certain data regarding Factory Training.

* * * * *

BUMED NOTICE 6730

31 Aug 1954

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Medical Personnel Regularly Assigned
Subj: BUMED Instruction 6730.2 CH 1 (The Farnsworth Lantern; adoption of as an official U. S. Navy color vision test lantern)

Encl: (1) Subject change

This notice provides replacement pages 3 and 4 for BUMED Instruction 6730.2. This page change reflects a change in the unit price of the Farnsworth Lantern, lists additional activities directed to submit requisitions for the item and outlines instructions for disposition of the lantern upon deactivation or decommissioning of holding activities.

* * * * *

BUMED NOTICE 6230

31 Aug 1954

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical Corps Personnel Regularly Assigned

Subj: Influenza vaccine; use of

This notice provides information concerning utilization of influenza vaccine for military personnel.

* * * * *

BUMED NOTICE 6310

7 Sept 19544

From: Chief, Bureau of Medicine and Surgery
 To: All Ships and Stations Having Medical Personnel Regularly Assigned
 Subj: BUMEDINST 6310.3 CH 2 (Instructions and definitions relating to certain diagnostic titles, individual statistical report of patient, and morbidity report)

Encl: (1) Subject Change

This notice corrects disagreement concerning the submission of NavMed-F and DD Form 442 for Army and Air Force personnel and provides replacement pages 29b and 29c for enclosure (1) of BUMEDINST 6310.3.

* * * * *

★ U. S. GOVERNMENT PRINTING OFFICE : 1954 O - 311211

Permit No. 1048

OFFICIAL BUSINESS

WASHINGTON 25, D. C.

DEPARTMENT OF THE NAVY
 BUREAU OF MEDICINE AND SURGERY

PENALTY FOR PRIVATE USE TO AVOID
 PAYMENT OF POSTAGE, \$300