

## News and Notes

### NEW CEREBRAL TREATMENT CARRIED OUT IN UNITED KINGDOM FOR FIRST TIME

A doctor at Addenbrooke's Hospital, Cambridge—one of the leading teaching hospitals in the country—has successfully carried out a new treatment for patients with weakened or damaged arteries at the base of the brain. It is the first time that this operation has been performed in the United Kingdom.

Arterial weakness or damage can occur at a site inaccessible to conventional brain surgery and if untreated will cause serious complications.

To overcome this problem it is now possible to position a miniature latex balloon, filled with silicone, in the artery at the affected site, blocking-off that section of the artery. The blood continues to flow to the brain through the other cerebral arteries.

The first patient to receive this new form of treatment was a 33 year old Cambridgeshire bricklayer who recently developed complete paralysis of the right eye. Detailed X-ray studies of his cerebral arteries revealed the cause to be a ballooning or aneurysm of his right internal carotid artery behind the eye.

The operative procedure took two-and-a-half hours and was performed by Dr. Desmond Hawkins, Consultant Radiologist. It involved passing a number of catheters, one of them with a balloon tied to its tip, along the artery to the base of the brain. The position of the balloon was continually checked on a television monitor linked to an X-ray image intensifier. Once the weakened point was reached, the tiny balloon was tested, filled with silicone and held in position until it had solidified and then detached from the catheter.

Within two days of the operation the patient's eye movements had started to return and after two weeks the paralysis had largely disappeared.

Dr. Hawkins said after the operation, "This was very much a team effort. It would not have been possible without the combined expertise of everyone involved and the modern equipment and facilities that we enjoy at Addenbrooke's Hospital. I am happy to say the patient is progressing very well.

"The method was first described in 1974 by F.A. Serbinenko of the Academy of Medical Sciences in Moscow and improved upon by Professor Gerard Debrun in Paris from whom I learned the technique. It is a natural development from experience gained in the investigation of arterial diseases of the brain. It is possible that the method could be used for the treatment of vascular disease elsewhere in the body."

The aneurysm of the internal carotid artery was situated in an inaccessible position within the cavernous sinus through which pass the nerves supplying the eye. The cavernous sinus is beside the sella turcica ("Turkish Saddle") which contains the pituitary gland.

Four catheters were used for the operation: three of these are introduced into the internal carotid artery—the introducer catheter, a catheter used to detach the balloon and the balloon catheter itself, each inside the other. They are continually perfused with heparinised saline slightly above arterial pressure to prevent blood clotting in the catheter system.

As will be appreciated, this operation calls for precision in positioning the balloon before detachment.

The balloon catheter was manipulated under visual control using an X-ray image intensifier to a television monitor and video-tape recorder.

The balloon used measured 5 mm in length and 1.3 mm in width when deflated and had a capacity of 0.6 ml when fully distended.

The blood flow to the right cerebral hemis-

phere was measured before and during temporary occlusion of the internal carotid artery by the balloon, using radio-active Xenon gas. The blood flow was found to be 70 per cent of normal during carotid occlusion, which was acceptable. The balloon was then permanently inflated with a mixture of liquid silicone and polymerising agent before being detached from the catheter.

Cerebral angiography one week later showed that the aneurysm no longer filled with blood and had been successfully isolated from the cerebral circulation by thrombosis of the internal carotid artery.

## NEW NCRP REPORTS

The National Council on Radiation Protection and Measurements (NCRP) today announced the publication of two new NCRP Reports: NCRP Report No. 54, Medical Radiation Exposure of Pregnant and Potentially Pregnant Women and NCRP Report No. 55, Protection of the Thyroid Gland in the Event of Releases of Radioiodine.

For a number of years, the NCRP has included in its recommendations a statement suggesting certain limitations of the time, relative to the menstrual cycle, when pregnant or potentially pregnant women might be subjected to X-ray diagnostic examinations of the abdomen or pelvis. Since the last recommendations on this topic were issued in 1971, there has been considerable discussion of the practical difficulties involved in implementing the NCRP's recommendations and of the effects of irradiation on the embryo or fetus. As a result, the NCRP decided to reexamine the question. NCRP Report No. 54 carries the results of this reexamination. The new report treats factors to be considered in the cases of women who may be pregnant, including dose considerations and timing considerations. The report also treats factors to be considered when pregnancy is discovered after medical radiation exposure of the fetus. The new report includes an Appendix covering methods for estimating the dose to the embryo-fetus from radiographic examinations.

In previous NCRP reports any questions centering primarily on nuclear reactor accidents have been avoided. The Council has noted, however, the increasing interest in the potential of protective actions for alleviating some of the effects of the release of radioactive materials that might ensue in the event of a reactor accident. Protective actions relating to the release of radioactive iodine have received considerable attention. One of the proposals frequently mentioned calls for the administration of natural iodine in a form which would quickly enter the blood system and be taken up by the thyroid gland, thus blocking the admission of radioactive

iodine. NCRP Report No. 55 is intended to be informative on this topic but does not attempt to suggest that iodine prophylaxis is the method of choice in any particular situation. Rather, the purpose of the report is to define the efficacy of blocking agents and the counter indications for their use.

The report deals with the overall question of the uptake of radioactive iodine by the thyroid gland, the radiobiological effects resulting from the uptake, and with questions that have to be examined in evaluating the need for a prophylactic program.

The NCRP also announced the release of two corrigendum sheets for NCRP Report No. 49 Structural Shielding Design and Evaluation for Medical Use of X-Rays and Gamma Rays of Energies Up to 10 MeV. The first of these corrects an omission in Table 21 of the Report which sets out minimum lead shielding requirements for cobalt-60 therapy installations for controlled areas. After publication of NCRP Report No. 49 it was found that Table 21 entries for a distance from the source to an occupied area of 261 meters had been omitted from the Table. The result of this omission was the specification of more shielding than is actually required for all distances greater than 1.5 meters. The first corrigendum sheet sets out the corrected Table. The second corrigendum sheet relates to the derivation of two equations for the determination of the thickness of barriers required to shield against leakage radiation. The deviation given in Report No. 49 is for the specific case where the occupancy factor, T, is equal to one. The corrigendum sheet sets out the more general case. The final equations for determining the thickness of barriers remain unchanged, however, because the modifications made to fit the general case cancel out in the derivation. Copies of the two corrigendum sheets will be made available free of charge. Copies will be sent to individuals and organizations on the NCRP standing order list at the time that new reports are distributed. Others may obtain copies by directing a request to the NCRP Publications Office.

Copies of the two new reports can be purchased at the following prices:

NCRP Report No. 54 Medical Radiation Exposure of Pregnant and Potentially Pregnant Women.

1 through 99 copies, each copy \$4.00.  
100 through 999 copies, each copy \$3.75.  
1,000 or more copies, each copy \$3.50.

NCRP Report No. 55, Protection of the Thyroid Gland in the Event of Releases of Radioiodine.

1 through 99 copies, each copy \$5.00.  
100 through 999 copies, each copy \$4.75.  
1,000 or more copies, each copy \$4.50.

Individuals and organizations already on the NCRP standing order list will receive copies of the new reports automatically and be invoiced for their order. Others may purchase copies of the new reports or place their names on the standing order list by directing their order to:

NCRP Publications  
P.O. Box 30175  
Washington, D.C. 20014

### NEW WHO PUBLICATION

Directory of On-going Research in Cancer Epidemiology 1977, edited by C.S. Muir and G. Wagner, Lyon, International Agency for Research on Cancer, 1977, xii and 599 pages (IARC Scientific Publications No. 17). Price: Sw.fr. 25.-, US \$10.00. Distributed for IARC by the World Health Organization.

A wealth of information is contained in the 1977 Directory of the Clearing House for On-going Research in Cancer Epidemiology, in which abstracts of 908 ongoing, as yet unpublished research projects in cancer epidemiology are reported from 70 countries. This represents a 45% increase over the number of studies included in the first Directory (1976). The content of the new Directory shows an increasing interest in the health consequences of specific industrial exposures. It also reveals that, while some common cancers such as those of lung, breast and cervix uteri are being intensively and widely studied, there is still very little being done on other common cancers, such as those of the pancreas and the prostate.

While most of the work reported is from Europe, North America and Australia, there has been a proportionate increase in the number of studies notified to the Clearing House from developing countries.

The introduction to the Annual Directory explains in some detail how the Clearing House operates and the complex data processing involved in the production of the Directory. It is easy to find desired information as there are by key-word, by cancer site, by type of study and by country where the study is being undertaken. A notably useful feature is the index of investigators where the full address of all principal investigators is given.