BIOTECHNOLOGY

Camera Probes Stomach

A small camera on the end of a control cable has been developed to photograph the inside of stomachs suspected of being cancerous or ulcerous.

➤ A SMALL NEW CAMERA with flashing lamp has been developed to photograph the inside of human stomachs suspected of cancerous or ulcerous areas. It was designed in Japan and the recently improved model is widely used there where stomach cancer is common.

A slim apparatus on the end of a plastic-covered control cable takes 32 color photographs about one-fifth of an inch in diameter. It is a great improvement over formerly used stomach photography, as it is adapted to the small organs of the Japanese.

The conventional way of performing this gastric photography is to use a fibroscope, an optical tube of internal reflecting fibers, which works somewhat like a periscope. This tube, however, must be larger in diameter than is needed by the new camera operated on a cable method.

Dr. G. D. Hadley of the Middlesex Hospital, London, reported on the new camera in the British Medical Journal, Nov. 20, 1965, pointing out that the Olympus Optical Company, which assisted the University of Tokyo in its development, has no foreign agents or subsidiaries where servicing and minor repairs can be made. Instructions at this time can be obtained only in Tokyo.

The new camera is less than one-half inch in diameter and about two and a half inches long. These dimensions include a flashlight, a rolled up, foot-long strip of film, lens, camera and the tip of a tube to blow air into the stomach.

The "business end" of the camera is at the end of a quarter-inch probe, through which pass the controls for the camera and tubes for its operation. This camera is thinner and more flexible than its predecessors, and it photographs the stomach directly, thus getting a sharper, better-quality picture.

The stomach is a "singularly difficult organ to visualize," Dr. Hadley explains. "It is a flabby organ, distensible only to its possessor's tolerance, hopelessly asymmetrical, subject to great variation in size and shape, and prone to distortion by spasm, disease or surgical mutilation."

The camera is not intended to replace X-rays, and it is sometimes desirable to take X-rays to check its position fluoroscopically after it is in position in the stomach.

Its use is comparatively easy to teach, and in Tokyo at the National Cancer Center as well as the University Clinic, weekly meetings are held at which X-ray and gastro-camera films are shown side by side and discussed by clinician, radiologist and endoscopist.

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Argonne National Laboratory

CANCER STUDY—Dr. Robert N. Feinstein of Argonne National Laboratory, Argonne, Ill., measures the activity of catalase, an enzyme which destroys hydrogen peroxide, in a study on the link between hydrogen peroxide and cancer. Dr. Feinstein has developed strains of mice almost completely lacking in blood catalase.

PUBLIC HEALTH

Fluorides Help Prevent Some Bone Diseases

➤ BONE LOSS, which could become a problem in space travel, may be prevented by fluorides, which may also be useful in preventing other bone diseases.

Dean Reidar F. Sognnaes of the School of Dentistry at the University of California, Los Angeles, noted increasing evidence that fluorides have great potential in a broad field of preventive medicine.

The two types of bone disease in which fluorides may be useful are osteoporosis and severe localized jaw bone destruction.

Preliminary evidence suggests that bone loss may be a problem on extended space flight. Duration of flights thus far has been too short for the problem to arise, although calcium loss in a small way has been reported.

Long periods of immobilization due to illness or injury are known to lead to bone loss. Weightlessness on space flight may also contribute to the problem. Fluorides may offer special protection to the skeletal system during space travel.

Body tissues appear able to tolerate much higher levels of fluorides than can readily be brought in through fluoridated water, Dean Sognnaes reported in Science 150:989, 1965.

He recommended further studies to see if more concentrated fluoride administration, such as intravenous injections and topical applications, might afford better protection of the skeleton and also prevent premature loosening of teeth.

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MEDICINE

New Drugs Aid Arthritis

➤ ARTHRITIS SUFFERERS can hope for relief of pain by using two different drugs being checked for evidence of side effects.

Indomethacin, called Indocin by Merck Sharp & Dohme, which furnished supplies of the drug for experimental use in London, has the approval of the U.S. Food and Drug Administration for prescription use, but produces some side effects. Phenylbutazone, sold under the trade name of Butazolidin by Geigy Pharmaceuticals, likewise has FDA approval, but must also be supervised by the prescribing doctor for its side effects. Neither of these drugs is a steroid or of hormone origin and the two are not related to each other nor are they to be given at the same time.

One of the most recent studies by Drs. F. Dudley Hart and P. L. Boardman of Westminster Hospital, London, reported in the British Medical Journal, Nov. 27, 1965, involved 26 patients with definite rheumatoid arthritis. A double-blind study, in which neither patient nor physician knew which drug was being given, resulted in 15 patients expressing a preference for phenylbutazone, 10 finding the drugs equally effective, and one preferring indomethacin.

"It is increasingly apparent," the researchers reported, "that the therapeutic effect of indomethacin has many similarities to that of phenylbutazone, irrespective of the mode of action."

The trial confirmed that there was no significant difference in the relief of pain and stiffness in rheumatoid arthritis between 75 milligrams of indomethacin daily, and 300 milligrams of phenylbutazone. Phenylbutazone seemed to reduce early morning stiffness better than indomethacin, but the latter drug showed greater reduction of joint swelling. Personal preference was in favor of phenylbutazone.

Other tests by these researchers showed that "during the two and a half years that indomethacin has been available" for their use, only three patients with rheumatoid arthritis have been started on long-term corticosteroid therapy or ACTH.

"The fact that a non-steroid, anti-inflammatory agent is now available may well make a profound difference to the present use of corticosteroids in this condition," the investigators concluded.

Cortisone can have dangerous side effects, and is not advised where other drugs are effective.

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