MEDICINE

Cancer, Hormones Linked

A link between lung cancer and the hormones that stimulate sex glands has been documented for the first time—By Faye Marley

➤ HORMONES called gonadotropins, which stimulate the sex glands, have been reported in lung cancer for the first time.

Lung cancer, which causes many hormonal abnormalities, has now been linked with the sex hormone in a finding never before documented, Dr. Saul W. Rosen, senior investigator, National Institute of Arthritis and Metabolic Diseases, Bethesda, Md., told SCIENCE SERVICE.

The discovery was made by Dr. Rosen, in collaboration with Dr. Frank D. Fusco of Georgetown University School of Medicine, Washington, D.C., in studies of four male patients at the Veterans Administration Hospital, also in Washington. Dr. Fusco was formerly on the staff of the VA Hospital.

All four of the patients had enlarged mammary glands, a condition called gynecomastia, which has occasionally been associated with lung cancer. They were all cigarette smokers.

"We do not mean to imply that all cases of gynecomastia in patients with lung cancer are invariably related to increased gonadotropin," the researchers warned, "but the lesson is clear. Whether or not it is associated with increased hormone, when a physician discovers enlarged mammary glands in an adult smoker, it demands careful evaluation and observation for carcinoma of the lung."

All four of the men had smoked from one to two packs of cigarettes a day for 20 years. Three of them were in their forties, sexually active and with children. The fourth was 77 and childless.

Lung cancer has been known to cause endocrine disorders such as Cushing's syndrome in which there is increased function of the adrenal glands. It also has been reported to produce parathyroid hormone as well as the antidiuretic hormone, which causes the body to hold onto water.

"We believe we are the first researchers to have documented the production of gonadotropins by lung cancer, however," he said.

The findings are reported in the New England Journal of Medicine, 275:507, 1966. The first convincing evidence of a relationship between gynecomastia and lung cancer was reported in 1941 by Argentinian researchers, who demonstrated that the breast enlargement diminished after the cancer was irradiated in three patients. Other workers have noted disappearance of the gynecomastia after the lung tumor was removed surgically.

The researchers found no known causes of the mammary enlargement other than lung cancer in the four cases in which gonadotropins were discovered.

For example, none of the patients had received hormones, digitalis, chlorpromazine or reserpine, or spironolactones. It is unlikely that malnutrition had anything to do with the breast enlargement, as all except one of the men appeared to be well nourished. Nothing in the clinical or autopsy findings supported a diagnosis of any of the other diseases such as cirrhosis of the liver and hyperthyroidism known to be associated with breast enlargement.

It is improbable that the pituitary gland was the source of the gonadotropin because the four patients' pituitaries were relatively depleted of the hormone. Postmenopausal women, on the contrary, show the highest levels of urinary gonadotropin activity among the normal population and have the highest concentration of gonadotropins in their pituitary glands.

MEDICINE

Hands Clue to Diagnosis

➤ PALM-READING physicians are able to diagnose a myriad of diseases, a Michigan doctor has reported. The eyes also offer valuable opportunities for diagnosis.

An alert physician can detect 80 diseases and congenital disorders by examining a patient's hands and eyes, Dr. Harold F. Falls of the University of Michigan told the International Congress of Human Genetics meeting in Chicago.

Gout, sickle cell anemia, cretinism and a wide variety of skin problems are only a few of the many diseases that show themselves in part in changes in the hands.

Unusual skin or hair coloring of the hands, tremor, muscle wasting, deformities of the nails, joints or fingertips, and many growths, lesions and skin textures may all be signs of a disorder somewhere in the body.

Enlarged, tubular fingers, for example, can be an indication of sickle cell anemia.

A person suffering from congenital cretinism would have short, broad hands with misshapen little fingers and thumbs; dry, cold, hard skin; spatulate finger tips, and joints that are stiff or even rigid.

Both the hand and the eye are remarkable for the complexity of their structure and function, Dr. Falls said. Hands and eyes may offer positive signs of a specific disease in some cases, while lending supportive evidence of a diagnosis based on other factors in others, he noted.

Careful study of any hand abnormalities, viewed in the light of any eye complications, may play an important part in the conclusive diagnosis of disease.

MEDICINE

Chronic Lead Poisoning No Threat to U.S.

➤ AMERICANS are not threatened with chronic lead poisoning despite the fact that we live in a highly leaded environment.

This is the conclusion of Dr. Thomas J. Haley, toxicologist at the University of California at Los Angeles Laboratory of Nuclear Medicine, who has recently made a survey of the lead problem.

Some scientists have expressed fear of chronic lead poisoning from an atmosphere polluted with exhaust from engine burning leaded gasoline. The use of leaded gasoline has increased 250% in recent years.

However, this increase does not appear to be a threat, Dr. Haley said, because only a very small percentage of inhaled lead is of a particle size to be retained in the lungs.

Furthermore, he noted, the bulk of lead is obtained by way of food and not through inhalation.

The body does a good job of getting the lead out. If lead consumption is increased, the excretion rate is comparably increased.

Thus the average individual is in "lead balance" and does not accumulate excess lead to add to his total body burden.

Lead body burdens of the U.S. population have been maintained at the same level for the past 30 years, Dr. Haley said.

Incidence of acute lead poisoning has been reduced in recent years, he added.

Decrease in use of lead in paints and insecticides has removed some of the major sources of accidental lead ingestion.