MEDICINE

Use Skin for Cancer Test

Possible method of mass detection of dread disease in early stages foreseen by testing for changes in electrical resistance of skin.

➤ FIRST STEPS toward a skin test for detecting cancer have been taken by Dr. Curt P. Richter at Johns Hopkins Hospital and Medical School, Baltimore.

The test might become the long sought means of mass detection of early, unsuspected cancer in the population, but Dr. Richter says it is much too early to know about that. So far, he has used it mostly on cases of cancer that were well along. He is planning now for a trial on a large number of very early, suspected cancer cases.

Changes in electrical skin resistance will tell whether or not cancer is present in apparently healthy persons, if the test succeeds. Dr. Richter has already found very great changes in electrical skin resistance in patients known to have cancer of the lungs, stomach and breast.

To make the test, an electrode is fastened to the patient's ear. Another electrode on a roller wheel is run over the patient's skin while the doctor watches the galvanometer to see whether the skin's resistance to an electric current is higher or lower than normal.

In some cases Dr. Richter has studied the skin resistance was very high. These were cases of lung cancer in which the cancer was pressing on or had destroyed part of the sympathetic nervous system chain. The effect is the same as is seen when these nerves are cut surgically. The part of the skin supplied by them does not sweat and has very high electrical resistance.

So, in cancer testing by this method, if the roller electrode running over the patient's skin picks up an area of high resistance, it means pressure on or destruction of nerves supplying that area of skin. Since doctors know the path of nerves supplying various areas, they can tell where the pressure is and examine the patient further to see whether cancer or a non-cancerous tumor is causing it.

Very low electrical skin resistance, and sweating, will show up in areas where the cancer or tumor is causing pressure or destruction of certain other nerves. These are the ones operating the referred pain mechanism. By referred pain, doctors mean pain felt in the skin or at the surface of the body although the cause of it is located in one of the internal organs which may not even lie directly below the surface area that pains. Classic example is the pain of angina pectoris where the cause of the pain is in the heart but the pain is referred to and felt in the chest and a thin strip along the inner side of the upper arm.

Cancers of the digestive system might show up on the test by giving a low electrical skin resistance because the referred pain mechanism was affected. The referred pain mechanism is complicated and consequently the skin resistance test may not be practical for detecting all types of cancers.

Science News Letter, April 12, 1952

MEDICINE

Bathroom Sponge Grows Cancer Cells for Research

➤ THE BATHROOM sponge is now a tool for cancer research. Tiny slices of cellulose sponges are used for growing cancer cells outside the body.

This new technique, whereby cells can grow and change as they do inside the body, was announced at the National Cancer Institute by its inventor, Dr. Joseph Leighton, 30-year-old pathologist.

The sponge provides a sort of skeleton upon which the cells can grow and divide. In previous methods, when scientists put cells into a culture, those cells multiplied, but the new cells were always like their parents. Now, with the sponge skeleton, new and different cells are formed from the first cells, just as in the human body.

By watching how the differences occur, scientists may get some clue as to how cancer cells, which are "different" from normal cells, develop.

The part of the body from which the cells were taken may now be discovered with this new method. Each organ in the body has its individual cell structure and the structure that grows in the sponge is therefore a clue. This may be useful when cancer from one organ has spread through the body and settled in other sites. Its structure will have the same characteristics as the place where the cancer originated.

Dr. Leighton also plans to put both normal and cancer cells from the same part of the body on the same sponge and watch the differences in their growth and division.

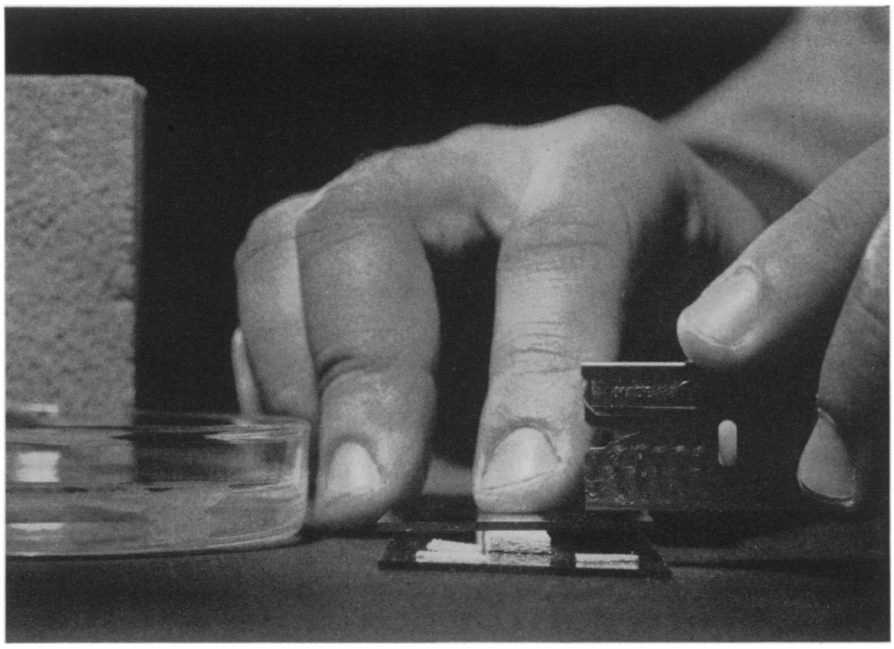
Science News Letter, April 12, 1952

BIOCHEMISTRY

Giant Molecules of Life Are Seen for First Time

➤ SCIENTISTS HAVE seen for the first time the giant chemical molecules that seem to play an important role in heredity and the changing of one disease into another.

Drs. John W. Rowen, Murray Eden and Herbert Kahler of the National Cancer In-



SPONGE FOR CANCER CELLS—The first step in the sponge method for tissue culture developed at the National Cancer Institute is pictured above. Using an ordinary razor blade, narrow strips are cut from the cellulose sponge. These are washed and sterilized before being placed in test tubes to receive implantations of tissue.