Retooling Pap test to spot more kinds of cancer

LAURAN NEERGAARD - AP Medical Writer - Associated Press

For years, doctors have lamented that there's no Pap test for deadly ovarian cancer. Wednesday, scientists reported a tantalizing hint that one day, there might be.

Researchers are trying to retool the Pap, a test for cervical cancer that millions of women get, so that it could spot early signs of other gynecologic cancers, too.

How? It turns out that cells can flake off of tumors in the ovaries or the lining of the uterus, and float down to rest in the cervix, where Pap tests are performed. These cells are too rare to recognize under the microscope. But researchers from Johns Hopkins University used some sophisticated DNA testing on the Pap samples to uncover the evidence — gene mutations that show cancer is present.

In a pilot study, they analyzed Pap smears from 46 women who already were diagnosed with either ovarian or endometrial cancer. The new technique found all the endometrial cancers and 41 percent of the ovarian tumors, the team reported Wednesday in the journal Science Translational Medicine.

This is very early-stage research, and women shouldn't expect any change in their routine Paps. It will take years of additional testing to prove if the so-called PapGene technique really could work as a screening tool, used to spot cancer in women who thought they were healthy.

"Now the hard work begins," said Hopkins oncologist Dr. Luis Diaz, whose team is collecting hundreds of additional Pap samples for more study and is exploring ways to enhance the detection of ovarian cancer.

But if it ultimately pans out, "the neat part about this is, the patient won't feel anything different," and the Pap wouldn't be performed differently, Diaz added. The extra work would come in a lab.

The gene-based technique marks a new approach toward cancer screening, and specialists are watching closely.

"This is very encouraging, and it shows great potential," said American Cancer Society genetics expert Michael Melner.

"We are a long way from being able to see any impact on our patients," cautioned Dr. Shannon Westin of the University of Texas MD Anderson Cancer Center. She reviewed the research in an accompanying editorial, and said the ovarian cancer detection would need improvement if the test is to work.

But she noted that ovarian cancer has poor survival rates because it's rarely caught early. "If this screening test could identify ovarian cancer at an early stage, there

would be a profound impact on patient outcomes and mortality," Westin said.

More than 22,000 U.S. women are diagnosed with ovarian cancer each year, and more than 15,000 die. Symptoms such as pain and bloating seldom are obvious until the cancer is more advanced, and numerous attempts at screening tests have failed.

Endometrial cancer affects about 47,000 women a year, and kills about 8,000. There is no screening test for it either, but most women are diagnosed early because of postmenopausal bleeding.

The Hopkins research piggybacks on one of the most successful cancer screening tools, the Pap, and a newer technology used along with it. With a standard Pap, a little brush scrapes off cells from the cervix, which are stored in a vial to examine for signs of cervical cancer. Today, many women's Paps undergo an additional DNA-based test to see if they harbor the HPV virus, which can spur cervical cancer.

So the Hopkins team, funded largely by cancer advocacy groups, decided to look for DNA evidence of other gynecologic tumors. It developed a method to rapidly screen the Pap samples for those mutations using standard genetics equipment that Diaz said wouldn't add much to the cost of a Pap-plus-HPV test. He said the technique could detect both early-stage and more advanced tumors. Importantly, tests of Paps from 14 healthy women turned up no false alarms.

The endometrial cancers may have been easier to find because cells from those tumors don't have as far to travel as ovarian cancer cells, Diaz said. Researchers will study whether inserting the Pap brush deeper, testing during different times of the menstrual cycle, or other factors might improve detection of ovarian cancer.

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