Levels of DNA in blood test correlated with ovarian cancer outcomes

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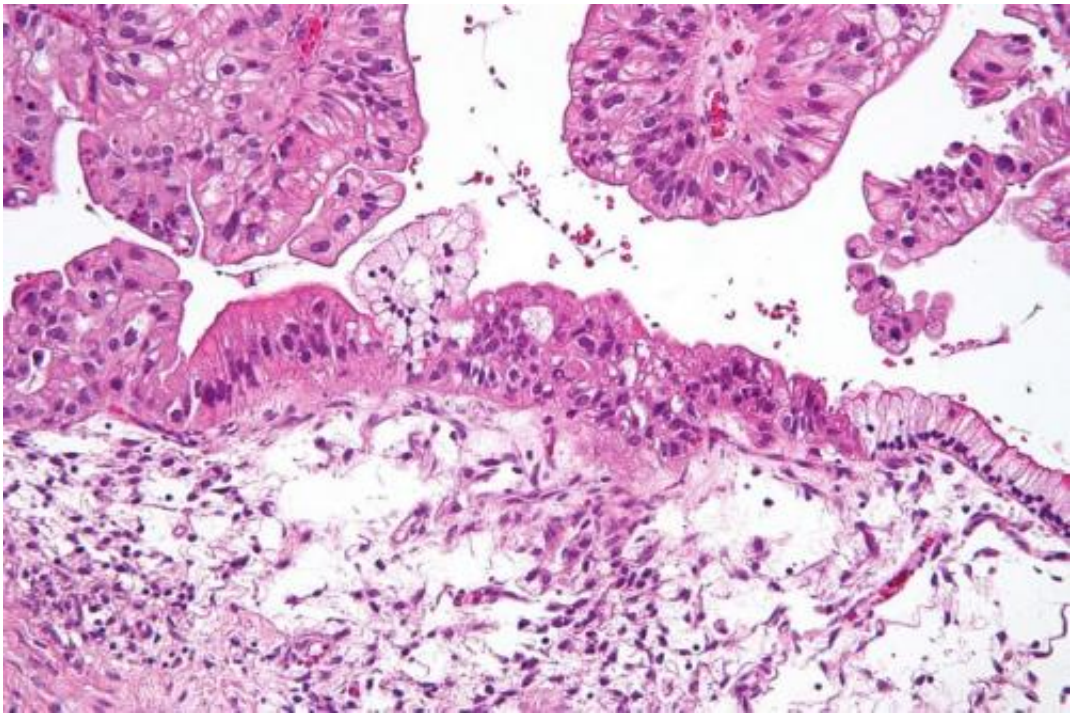

Intermediate magnification micrograph of a low malignant potential (LMP) mucinous ovarian tumour. H&E stain. The micrograph shows: Simple mucinous epithelium (right) and mucinous epithelium that pseudo-stratifies (left - diagnostic of a LMP tumour). Epithelium in a frond-like architecture is seen at the top of image. Credit: Nephron /Wikipedia. CC BY-SA 3.0

Levels of circulating tumor DNA (ctDNA) detected in a blood test are correlated with the size of ovarian cancers and can predict a patient's response to treatment or time to disease progression, according to a

retrospective study of cancer patients' blood samples published in *PLOS Medicine* by Nitzan Rosenfeld and James Brenton of Cancer Research UK Cambridge Institute and colleagues.

Blood levels of a protein called CA-125 are currently used to gauge treatment response in women receiving chemotherapy for high grade serous ovarian cancer (HGSOC). However, CA-125 levels don't change rapidly enough to guide treatment changes after one or two cycles of chemotherapy. In the new study, researchers measured levels of ctDNA carrying mutations in the gene TP53, which are detected in 99% of patients with HGSOC. 318 blood samples from 40 HGSOC patients, taken before, during, and after standard-of-care treatment were analyzed. CT images of the patients' tumors were collected, as well as data on the progression of their cancers.

The fraction of mutated TP53 in ctDNA (TP53MAF) was correlated with volume of disease as measured by CT scan (Pearson r=0.59, p