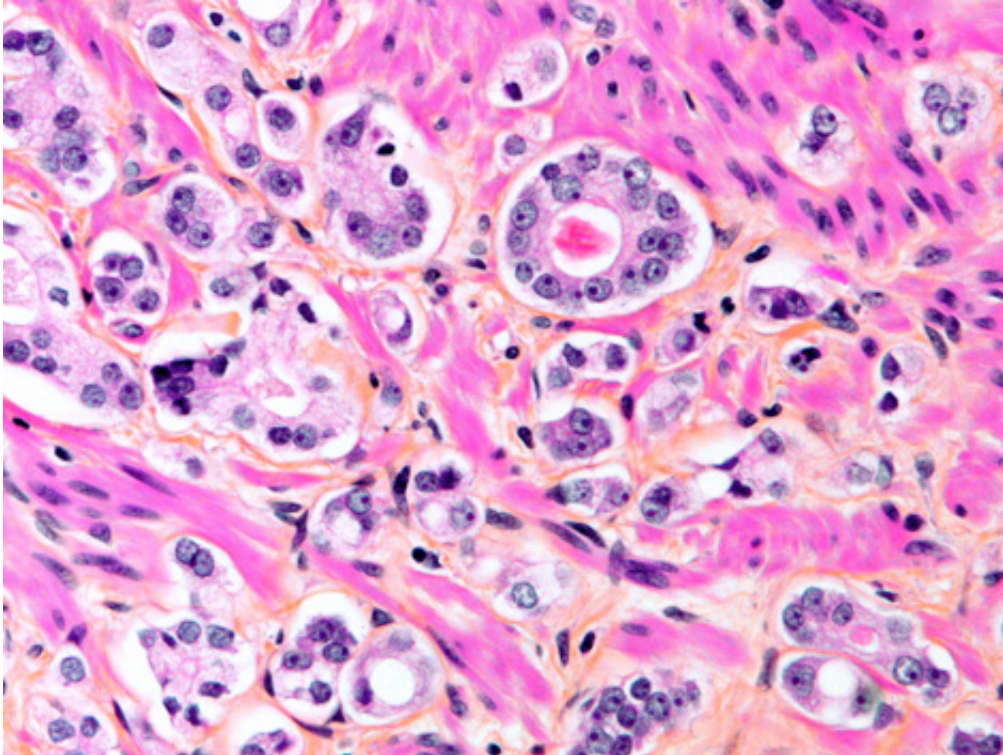


Cancer grading gets an upgrade

July 14 2014, by Rosie Hales



A microscope view of prostate cancer. Credit: David M. Berman, 2014.

(Medical Xpress)—Prostate cancer is the second most commonly diagnosed cancer among Canadian men but only about half of these cancers grow rapidly enough to require treatment.

However, determining which prostate cancers need to be treated can be tricky because it's hard to predict through biopsy which cancers will eventually become harmful. In fact, because biopsies often do not yield

accurate information, between a third and half of patients initially diagnosed with harmless prostate cancers are likely to be "upgraded" to potentially harmful cancers within a year or two of diagnosis.

A research team led by Dr. David Berman, a professor in the Department of Pathology and Molecular Medicine at Queen's, and Dr. Tamara Lotan from Johns Hopkins University discovered that the decline of a specific protein within a tumour could help identify the tumours requiring treatment.

"We have shown that a tumour-suppressing protein called phosphatase and tensin homolog, or PTEN, is lost most frequently in prostate tumours that will become harmful and require treatment," says Dr. Berman. "The team from Johns Hopkins has done a terrific job of making this test more reliable and valid and applicable to prostate cancer and to other forms of cancer." Currently, the Gleason Grading system is used to determine the harmful potential of prostate cancers. Scores usually range from 6 to 10, with lower numbers often indicating cancers that are unlikely to become harmful.

One hundred and seventy four [prostate cancer](#) patients with a Gleason score of 6 had The team measured PTEN levels in cancers biopsied from 174 patients, who appeared to have harmless cancers with Gleason scores of 6 or less. Seventy-one of these cases were upgraded to potentially harmful cancers with a score of 7 after the entire [prostate](#) was surgically removed and examined by pathologists. Importantly, PTEN loss found in biopsies helped separate harmless cancers from their more dangerous look-alikes.

"The 71 patients who had their tumours upgraded had a three times higher rate of PTEN loss than the group that was accurately graded," says Dr. Berman. "Although the percentage of [patients](#) who have PTEN loss is low, this finding is extremely exciting as it proves that measuring

proteins in biopsies can improve accuracy. Also, it's a fairly simple test that could be done in any pathology lab."

Provided by Queen's University

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