How Long After Radiation Can Tumor Keep Shrinking?

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Dear OncoLink "Ask The Experts,"

How long after stopping radiation can you continue to see tumor shrinkage?

This is a complex question. The first point to be made here is that, with the exception of spermatozoa and lymphocytes (among the two most rapidly dividing cells in the body), cancer cells die what is called a mitotic death. This means that the cell dies when it attempts to divide. So, if a cell does not divide, then it does not die, but just sits there. At the same time, if a cell doesn’t divide, it also cannot grow and spread.

For tumors that divide slowly, the mass may shrink over a long, extended period after radiation stops. The median time for a prostate cancer to shrink is about 18 months (some quicker, some slower). For colon cancers, some may grow more quickly and others may grow more slowly and this will affect how they are killed by radiation.

The second issue is how the tumor appears on a radiology scan after radiation. As the tumor cells die and break up, the body’s white cells clear the debris and cause an inflammatory process, like a bruise.

This inflammatory reaction can make the mass look larger, but this does not necessarily reflect tumor response or growth. These inflammatory reactions usually subside over time, but it may take a few months to see this on CT scan or even up to a year on MRI. PET scans can indicate tumor activity, but can also show inflammation, so are also not generally accurate in areas treated with radiotherapy until several months have passed.

In summary, some types of tumor cells shrink very quickly, and this shrinkage can be seen on a radiology scan. Even if no shrinkage is seen right away, cells may still be dying in response to radiation, sometimes causing an inflammatory response that can even make a mass look larger! Over time after radiation, your oncology team will be watching scans to ensure that tumor masses either shrink or stay the same on CT or MRI scan. A PET scan can be used after radiation to detect residual or recurrent tumor activity.

OncoLink Team
radiation, tumor shrinking
No

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