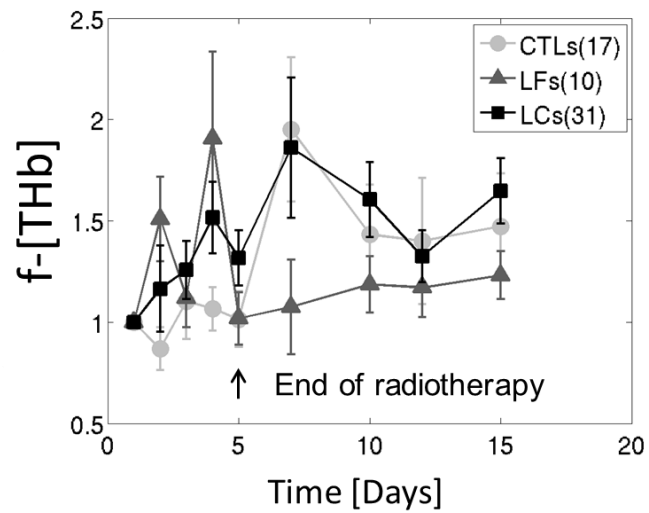


Supplementary data:

Supplementary Figure 1: Total hemoglobin concentration increase during radiotherapy

Early increases of the mean baseline-corrected total vascular hemoglobin concentration (f-[THb]) for the local control and local failure groups suggests that the increase of the overall blood volume or perfusion is as a result of radiotherapy. A similar, increase of the mean f-[THb] in the control group may be related to tumor-directed angiogenesis. The two-degree test for a difference among groups in trajectory across time had a p-value of 0.02.



Supplementary Figure 2: Raw and baseline-corrected oxygen kinetics for each tumor in the 7.5, 9.5, 13.5 Gy and the control groups.

A. The raw oxygenation kinetic for each tumor radiated with 7.5, 9.5, 13.5 Gy and for each control tumor. **B.** The baseline-corrected oxygen kinetic for each tumor radiated with 7.5, 9.5, 13.5 Gy and for each control tumor. Tumors radiated with 13.5 Gy showed higher increases in baseline-corrected $SO_2\%$ than the control tumors.

