Data from Head and Neck Cancer CT Atlas

PURPOSE:
Cross sectional imaging is essential for the patient-specific planning and delivery of radiotherapy, a primary determinant of head and neck cancer outcomes. Publicly shared RT data is scarce due to high complexity of RT structure data and the need for registration in time, space, and across planning sets. We here introduce an open access imaging database for patients treated with radiotherapy for head and neck squamous cell carcinoma (HNSCC).

MATERIALS AND METHODS:
2840 consecutive patients with HNSCC treated with curative-intent RT at MD Anderson Cancer Center from 2003 to 2013 were screened. Patients with whole-body PET-CT or abdominal CT scans both before and after RT were included (n=215). Clinical data were retrieved from the MD Anderson Cancer Center custom electronic medical record system, ClinicStation. Using cross sectional imaging, we calculated total body skeletal muscle and adipose content before and after treatment. All files were de-identified and transferred to The Cancer Imaging Archive servers using the RSNA Clinical Trial Processor program. Files were screened for errors or residual PHI using TagSniffer and Posda Tools software, reviewed by TCIA curators, then confirmed at the parent institution.

RESULTS:
The HNSCC collection is a dataset consisting of 433,384 DICOM files from 3,225 series and 765 studies collected from 215 patients, which includes de-identified diagnostic imaging, radiation treatment planning, and follow up imaging. All imaging data are subject- and date-matched to clinical data from each patient, including demographics, risk factors, grade, stage, recurrence, and survival.

CONCLUSION:
Recent advances in data archiving, patient de-identification, and image registration have allowed for the creation of a high quality RT-enriched imaging database within TCIA. Open access to these data allows for interinstitutional comparisons of complete RT details in non-randomized patient populations, allowing for a more granular understanding of three dimensional factors that influence treatment effectiveness and toxicity sparing.

This is the companion data set for the following paper:


Download
- Image Data - DICOM Imaging Output Details
- Clinical information - Patient and Treatment Characteristics.xlsx
- Clinical Data Dictionary - Field Descriptions for Patient and Treatment Characteristics.xlsx

Other Publications Using This Data

If you have a publication you'd like to add please contact the TCIA Helpdesk.