£2000. Therefore, the cost to the health economy has been approximately £50-80K over 5 years in single centre. **Keywords:** endobronchial ultrasound

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P02.13
Pneumothorax and CT Guided Biopsy for the Investigation of Lung Cancer

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Introduction: CT guided biopsy is a well established diagnostic test in the lung cancer pathway. Established guidance from the British Thoracic Society in 2003 suggests reported pneumothorax rates between 0-61%; 3.3%-15% required chest drains and there was no relation between FeV1 and the incidence of pneumothorax, but those with COPD more likely to receive chest drain if a pneumothorax occurs. Care should be exercised with those with an FeV1 of less than 1L or less than 35% predicted.[1] A recent review of 23,104 patients suggested an 25.9% pneumothorax rate; 6.9% required a drain and a pneumothorax was associated with larger calibre needle, multiple punctures and no pleural apposition of the mass being biopsied.[2] We proposed to review our local practice to better inform any risk to patients. **Methods:** The notes of all the patients who udnerwent a CT guided biopsy between April 2011 to December 2019 were analysed. Radiological and spirometric findings as well as pre and post procedural aspects were analysed. Any resultant pneumothorax was measured according to established international guidance and any interventions documented. Descriptive statistics were applied to the data. **Results:** 789 biopsies were performed during the period described, on 418 male (53.3%) and 271 (46.7%) female patients. The mean age was 73.3 years (IQR 68-80, range 35-96). The mean number of pleural passes was 1.7 (range 1-3). 134 resulting pneumothoraces were identified (16.9%). 116 of those patients had a biopsy using an 18 French Gauge needle. British Thoracic Guidance was applied and 21 pneumothoraces were large by their definition. 5 of those were symptomatic and required intervention with a chest drain. 16 pneumothoraces were small and required intervention, 15 with chest drains and 1 with a pleural vent which is a novel device for ambulatory management. Of those patients, none of the masses had pleural contact and 90% of patients had radiological emphysema detected. 80% had spirometric evidence of COPD. The mean FeV1 was 1.89 litres (range 1.27-2.71) and no bullae or fissures were crossed during the biopsy. **Conclusion:** This is one of the largest retrospective reviews of CT guided biopsy looking at the incidence of pneumothorax. Our rates are much lower than quoted in the literature and might be attributable to using a smaller calibre biopsy needle. There was no relationship between Fev1 and pneumothorax incidence, or the need for intervention. The main risk factor seems to be radiological detection of emphysema and the masses not having pleural contact. We thus provide a safe service. Ambulatory management of CT guided pneumothorax is an aspect of this to be studied further. References 1. Manhire A, Charig M, Clelland C (et al) Guidelines for Radiologically Guided Lung Biopsy. British Thoracic Society Guidelines. Thorax 2003; 58: 920 – 936 **2.** Huo YR, Chan MV, Habib AR et al. Pneumothorax rates in CT-Guided lung biopsies: a comprehensive systematic review and meta-analysis of risk factors. *Br J Radiol.* 2020;93(1108):20190866. https://doi.org/10.1259/bjr.20190866 **Keywords:** Pneumothorax, CT guided biopsy, lung cancer

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P02.14
Radiotherapy-Associated CT Imaging as a Potential Screening Tool for COVID-19

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Introduction: COVID-19 is associated with characteristic lung CT findings, such as rounded ground-glass opacities in certain distributions. Diagnosing COVID-19 is a particular concern in oncology care, since cancer patients are a vulnerable population who receive treatment in close proximity to other patients and staff. Radiotherapy patients routinely undergo CT simulation before starting therapy. We hypothesized that simulation CT scans obtained on patients treated during the pandemic would reveal characteristic COVID-19 findings and represent a tool to identify patients with asymptomatic COVID-19. **Methods:** We reviewed patients undergoing CT simulation during a six-week period (March 1 to April 13, 2020) at a major tertiary cancer center located in an early epicenter of the COVID-19 pandemic in the United States. Most scans were done under free-breathing conditions, with slice thickness ≤3mm and without IV contrast. All scans were reviewed according to the RSNA classification of COVID-19 lung CT findings ("typical," "indeterminate," "atypical," or "negative" for COVID-19 pneumonia) by radiation oncologists who had been trained by a diagnostic radiologist. All "typical" or "indeterminate" scans were considered suspicious and re-reviewed by a board-certified diagnostic radiologist. Radiographic classifications were then compared with available COVID-19 PCR test results. A one-tailed T test was used to compare the rate of positive COVID-19 tests in the radiographically suspicious vs. non-suspicious groups. **Results:** 414 CT simulation scans that included the lungs were performed on 400 patients during the study period. 119 patients (corresponding to 130 scans, or 31.4%) had COVID-19 PCR test results available. The most common cancer types were breast (37%), lung/thoracic (23%), and spine (21%). On initial review by radiation oncologists, 17 scans (4.1%), were deemed "typical" for COVID-19 pneumonia, 54 (13%) were "indeterminate," 85 (21%) were "atypical," and 258 (62.3%) were "negative." Of the 71 suspicious (typical or indeterminate) scans, 23 had corresponding COVID-19 test results, of which 3 (15.7%) were positive for infection. 107 non-suspicious (atypical or negative) scans had corresponding COVID-19 test results, and 9 were positive (8.4%). This difference in COVID-19 positivity between radiographically suspicious and non-suspicious groups was not statistically significant (p=0.23). Upon re-review by a diagnostic radiologist, 25 (35%) of the suspicious scans were still deemed suspicious while the majority (n=46, or 65%) were deemed "atypical." **Conclusion:** Simulation CT scans obtained for radiation treatment planning can be reviewed for signs of COVID-19 pneumonia. About 17% of patients simulated in our metropolitan pandemic epicenter demonstrated findings suspicious for COVID-19 when reviewed by radiation oncologists according to consensus criteria. However, few of these patients proved to have COVID-19 infections based on PCR testing, and there was no significant correlation between radiographically suspicious simulation CT scans and COVID-19 positivity in this study. Analysis was limited by the lack of available COVID-19 test results in many patients. The concordance between radiographic classification by radiation oncologists vs. diagnostic radiologists was also low. These results suggest that routine review of radiotherapy simulation CT scans is of limited value in identifying asymptomatic COVID-19 infection. **Keywords:** COVID-19, radiotherapy, CT