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FP13.02

Costal Pleura-attached Noncalcified Nodules Newly Seen on Annual Low-Dose CT Screenings

Y. Zhu,¹ R. Yip,¹ N. You,² Q. Cai,¹ C. Henschke,¹ D. Yankelevitz¹¹Radiology, Icahn School of Medicine at Mount Sinai, New York/NY/US, ²Department of Radiology, Icahn School of Medicine at Mount Sinai, New York/NY/US

Introduction: It has previously been demonstrated that solid costal pleura-attached noncalcified nodules (CP-NCN) with average diameter <10.0 mm and lentiform, oval, semicircular (LOS) or triangular shapes and smooth margins on baseline CT do not need short-term follow-up and instead can be recommended to return for annual repeat screening. Determine whether the same criteria apply for new CP-NCNs seen on annual repeat screening rounds. **Methods:** In 111,102 annual screening scans in the International Early Lung Cancer Action Program (I-ELCAP) between 1992 and 2019, we identified 21 new solid CP-NCNs, 3.0 mm to 30.0 mm in average diameter that were lung cancer (median months to diagnosis: 1.8, IQR: 1.1-4.7). In 4,425 annual screening scans in the Mount Sinai Early Lung and Cardiac Action Program between 2010 and 2019, we identified 56 new solid CP-NCNs, 3.0 mm to 30.0 mm; 55 were benign (median follow-up: 79.6 months, IQR: 61.0-102.5). Shape (triangular, LOS, polygonal, round, or irregular), margin (smooth or non-smooth), pleural attachment (broad or narrow), emphysema and fibrosis within 10 mm of each CP-NCN was determined. Intra- and inter-reader agreements (B statistic) on triangular/LOS shaped solid CP-NCN with smooth margin were assessed. **Results:** Mean age of the participants with the 76 CP-NCNs was 72.2 years (SD=8.8 at time of annual repeat CT, median pack-years of smoking was 40.2 (IQR: 27.5-53.8); 35 (46.1%) were men and 41 (54.0%) women. Size, shape, margin, and emphysema and fibrosis within a 10.0mm radius of the CP-NCNs were significant predictors of malignancy status. The median diameter of the 55 solid benign CP-NCNs was significantly smaller than of the 21 solid malignant CP-NCNs (4.2 mm vs. 11.0 mm, p < .001). Emphysema and fibrosis within a 10.0 mm radius of the CP-NCN was significant as malignant CP-NCNs more frequently had emphysema [17 (81.0%) vs. 21 (38.2%), p=.003] and fibrosis [4 (19.0%) vs. 2 (3.6%), p=.045]. CP-NCN shape, irrespective of size and margin, were significantly different between benign and malignant CP-NCNs (p=.02). Triangular shape was only seen in benign CP-NCNs (12.7% (7 of 55) vs. 0.0% (0 of 21). LOS shape in 29.1% (16 of 55) benign CP-NCNs vs. 4.8% (1 of 21) malignant ones. All CP-NCNs < 10.0 mm in average diameter with triangular or LOS shapes and smooth margins were benign after a median follow-up of 6.6 years. None of the 21 malignant CP-NCNs of any size had triangular or LOS shapes and smooth margins when they were first identified on annual repeat screening round. Intra- and interobserver agreement for triangular or LOS shaped CP-NCNs with smooth margins were almost perfect based on the B-statistic. **Conclusion:** we found that new CP-NCNs <10.0 mm with triangular, lentiform, oval or semi-circular shape and smooth margin on annual repeat rounds were all benign. Thus, for these CP-NCNs, whether identified on annual or baseline screenings, the next annual screening is recommended rather than having more immediate work-up. New CP-NCNs not meeting these criteria should continue to have more immediate follow-up as per protocol for all noncalcified nodules found on annual screenings. **Keywords:** Lung cancer annual repeat screening, New costal pleura-attached noncalcified nodules, Malignancy

FP13.03

The Impact of the COVID-19 Pandemic on Lung Cancer Screening Programs in the United States

J. King,¹ A. Criswell,² R. Mohon,² L. Fine³ ¹Science & Research, Go2 Foundation for Lung Cancer, Washington/DC/US, ²Excellence inScreening and Care, Go2 Foundation for Lung Cancer, Washington/DC/US, ³Excellence in Screening and Care, Go2 Foundation for Lung Cancer, San Carlos/CA/US

Introduction: Multiple studies have reported a decreased rate of cancer diagnoses across the United States during the COVID-19 pandemic. This study examined data from a national network of lung cancer screening centers to understand the effects of the pandemic on screening programs. **Methods:** Lung cancer screening programs in the GO2 Foundation Centers of Excellence in Lung Cancer Screening network were surveyed between 7/16/2020 and 9/16/2020 to understand the impact of the COVID-19 pandemic on screening availability, programmatic workflow, and patient recruitment. **Results:** A total of 116 out of 346 (33.5%) lung cancer screening programs responded to the survey, comprising 423 out of 749 (56.5%) distinct screening sites in the network. 65% were community hospitals, 25% academic hospitals or affiliated teaching programs, and 7% hospital outpatient imaging programs. Collectively, the programs performed lung cancer screening by low-dose computed tomography on 125,190 patients in 2019. The median number of patients screened per program in 2019 was 726. Eighty five percent of the programs reported going on hiatus at some point in 2020 during the COVID-19 pandemic, of which all reported a duration of at least 5 weeks, and 22% reported at least 10 weeks. Screening programs also reported decreased patient volume during the pandemic with 56% reporting moderate to significant decreases in volume of new patients and 44% reporting moderate to significant decreases in existing patients (Table 1).

Table 1. Change in patient screening volume during the COVID-19 pandemic compared to pre-COVID-19.

Change in Screening Volume	New Patients	Existing Patients
Significant Decrease	36%	24%
Moderate Decrease	20%	20%
Slight Decrease	22%	29%
No Change	10%	18%
Slight Increase	9%	3%
Moderate Increase	1%	3%
Significant Increase	1%	2%

Nearly all programs (91%) reported that their program infrastructure and capacity was back to pre-COVID levels. Half had incorporated telemedicine for shared decision-making visits and 44% for smoking cessation. The top three barriers cited for restoring screening volume were all patient-related: patient concerns about safety of healthcare facility (82%), increased financial barriers for patients (economic hardship/loss of insurance) (51%), and difficulty re-engaging with patients about screening (31%). **Conclusion:** The COVID-19 pandemic significantly affected lung cancer screening programs with most requiring a hiatus of five or more weeks. Screening programs reported notable decreases in patient volumes compared to pre-pandemic levels and are facing patient-related barriers to resumption of pre-COVID screening volumes. Previous network data demonstrated that lung cancer screening produces a significant stage shift to ~50% Stage I diagnoses (Copeland et al., J Oncol Pract, 2019). Consequently, the reduction in screening volumes is likely to result in more late-stage lung cancer diagnoses in the future. **Keywords:** lung cancer screening, Early detection, covid-19

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CHECK Lung Protocol: CT Lung Cancer Screening is Useful to Adjunct Comorbid Diseases Diagnosis

P.A. Schulze,¹ J. De Mattos,² C.E. Escovar,³ M. Zereu,³ A. Rubin,³ S. Camargo,³ T. Mohammed,⁴ N. Verma,⁴ F. Torres,⁵B. Hochhegger⁶ ¹School of Medicine, Pontifical Catholic University of Rio Grande Do Sul, Porto Alegre/BR, ²Postgraduate Program in Pathology, Federal University of Health Sciences of Porto Alegre, Porto Alegre/BR,