A positive lung nodule, what now?

Marjolein A. Heuvelmans, MD, PhD
Netherlands

LEARNING GOALS

Goal 1: Recognizing the currently implemented pulmonary nodule management guidelines.

Goal 2: Identifying the difference of a (screen-) positive and an actionable pulmonary nodule.

Goal 3: Implementing effective techniques for identifying and managing actionable pulmonary nodules.

Goal 4: Choosing appropriate workup and testing procedures when a patient is diagnosed with an actionable nodule.

Goal 5: Shared decision-making (SDM) in lung cancer management.

BACKGROUND

K.L., is a 64-year-old female with 32 pack-year smoking history. She has quit smoking 3 years ago after the birth of her first grandchild.

After encouragement of her family, she decides to participate in the CT lung cancer screening program provided in her city.

In 2021, to her relief she received a ‘negative’ result from her screening CT, without any ling nodules present. Therefore, she was invited for the next round CT in 2023.

This time, a nodule is detected centrally in the right upper lobe, based on its size and new appearance classified as positive, for which she was referred to a pulmonologist.

At presentation, she has no clinical complaints.
**THE AMAZING CASE RACE**

**CASE STUDY 13**

---

**PRESCRIPTIONS**

- Metoprolol 1x daily 50mg

**COMORBIDITIES/MED HX**

- 1993 appendectomy (narcosis, no problems)
- 2019 hypertension,
- 2021 baseline lung cancer screening CT, no nodules detected

---

**OVERALL DIAGNOSIS**

Screening LDCT-detected new, positive lung nodule located centrally in the RUL, 260mm³ / 8mm, suspicious for being malignant.

---

**TESTING**

- The unenhanced LDCT screening scan revealed a 260mm/8mm nodule in the right upper lobe (RUL) of the lung.

- In retrospect, the nodule was not present in 2021. As far as can be seen from the unenhanced CT scan, no enlarged lymph nodes were seen.

---

**COMPLICATIONS TO CONSIDER**

- Complete pneumothorax after CT-guided biopsy
In this case, the gestational age is 28 weeks (trimester 3). Given minimal risk to the fetus, contrasted CT Thorax and CT brain with abdominal shielding were performed to help stage the patient’s cancer.

CONTRASTED CT BRAIN
Scan was normal.

CONTRASTED CT THORAX
Scan showed an irregular soft tissue mass measuring 9.3 x 4.7 x 7.1 cm seen centered in the upper lobe abutting the mediastinal pleura, involving the left perihilar region and superior segment of left lower lobe with multiple satellite nodules scattered in both lungs. Small left pleural effusion. There are also enlarged mediastinal, left hilar and left supraclavicular lymph nodes.

Imaging modalities that are safest in pregnancy are Ultrasound and MRI (without contrast). PET CT and CT pelvis are contraindicated with the highest fetal radiation dose. Iodinated contrast could cross the placenta in animal studies but did not show teratogenicity in humans are however lacking. Gestational age also plays a key role, with the fetus being most sensitive to radiation up to week 16, during which they are at risk of fetal malformations or CNS anomalies. When proper abdominal shielding is employed, imaging should not be withheld if it is necessary for oncological management of the patient.

Figure 2

Figure 3