KALC 2022 Korean Association for Lung Cancer International Conference
November 10-11, 2022 | Lotte Hotel World, Seoul, Korea

Nature course of screening detected pure ground-glass nodules

Bo-Guen, Kim[1], Sun Hye Shin[1], Byeong-Ho Jeong[1], Kyungjong Lee[1], Hojoong Kim[1], **Sang-Won, Um**[1]

[1]Division of Pulmonary and Critical Care Medicine, Department of Medicine, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Republic of Korea

Background & Aim

- Early detection of lung cancer through screening with **LDCT** is a promising strategy for improving the detection rate of lung cancer and reducing the associated mortality

- The **widespread use of LDCT** for **screening** has also led to an increased detection of pulmonary nodules, with a significant proportion of **sub-solid nodules**.

Background & Aim

- We have reported a natural course of **122** screening detected pure ground-glass nodules (GGNs) in 2013 and the **frequency of growth** was **9.8% per-nodule** basis during a **median follow-up duration of 59 months**.

- We aimed **to report further changes of pure GGNs** after the initial evaluation.

Chang et al., CHEST, 2013

Methods

- Single center retrospective cohort study
- Reviewed data on cases in which **pure GGNs** were detected among patients who underwent screening low-dose CT scans
- Between **June 1997** and **September 2006**

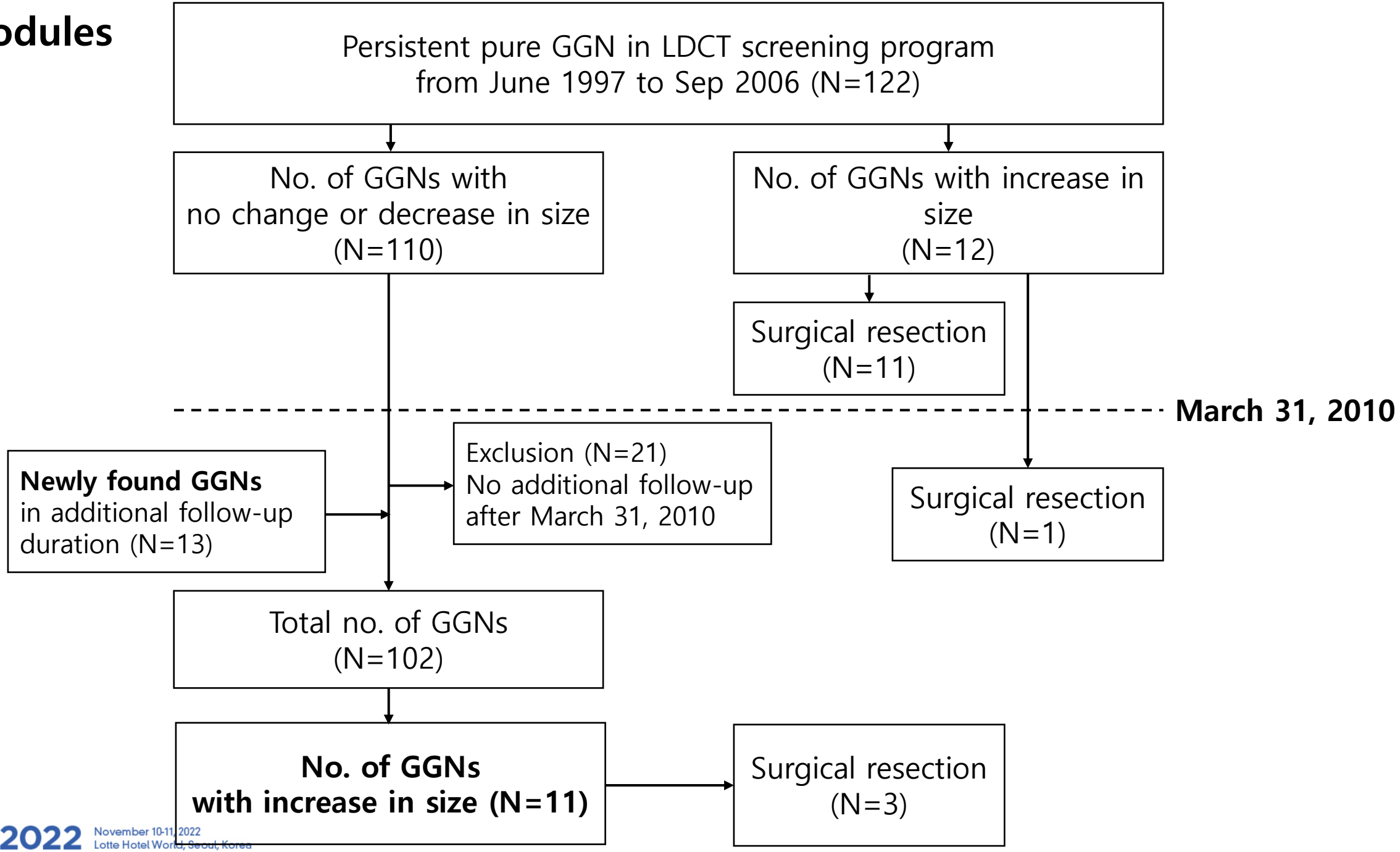
Results

- After the previous evaluation, a total of 102 pure GGNs in 70 patients were further followed up for a **median duration of 177 (IQR 127-211) months**.

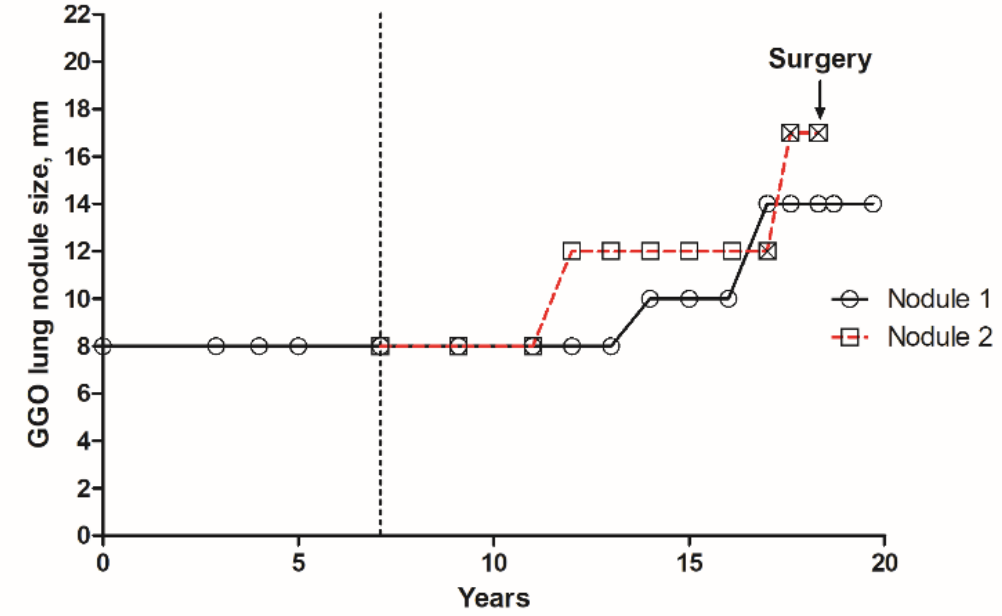
- Ninety GGNs were detected at the first screening CT, and 12 GGNs were newly detected during follow-up.

- Of 102 pure GGNs, **11 increased in size** and the median follow-up period to the first detection of size change was **118 (IQR 96-134) months**.

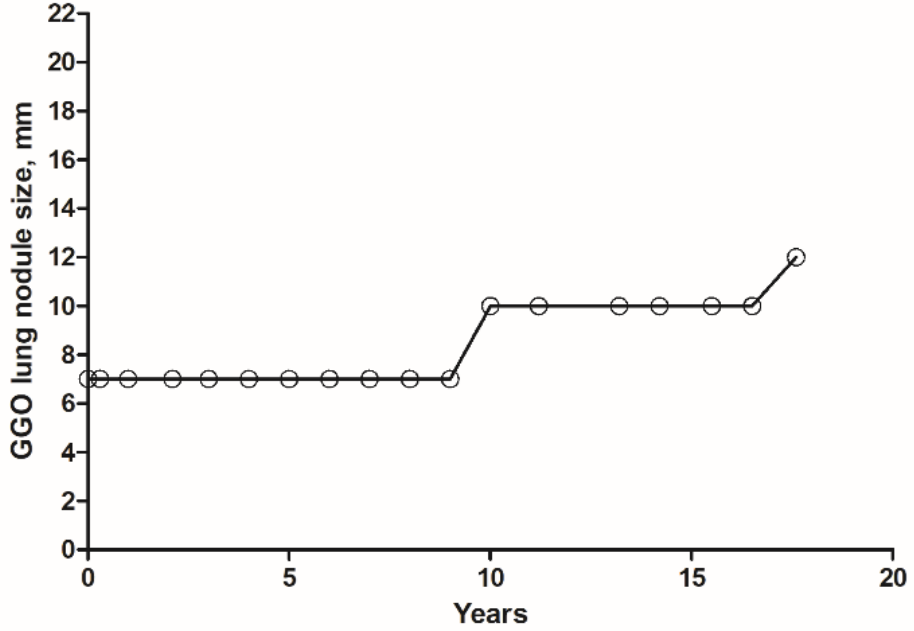
Per nodules


Persistent pure GGN in LDCT screening program
from June 1997 to Sep 2006 (N=122)
No. of GGNs with
no change or decrease in size
(N=110)
No. of GGNs with increase in
size
(N=12)
Surgical resection
(N=11)
March 31, 2010
Exclusion (N=21)
No additional follow-up
after March 31, 2010
Newly found GGNs
in additional follow-up
duration (N=13)
Surgical resection
(N=1)
Total no. of GGNs
(N=102)
No. of GGNs
with increase in size (N=11)
Surgical resection
(N=3)

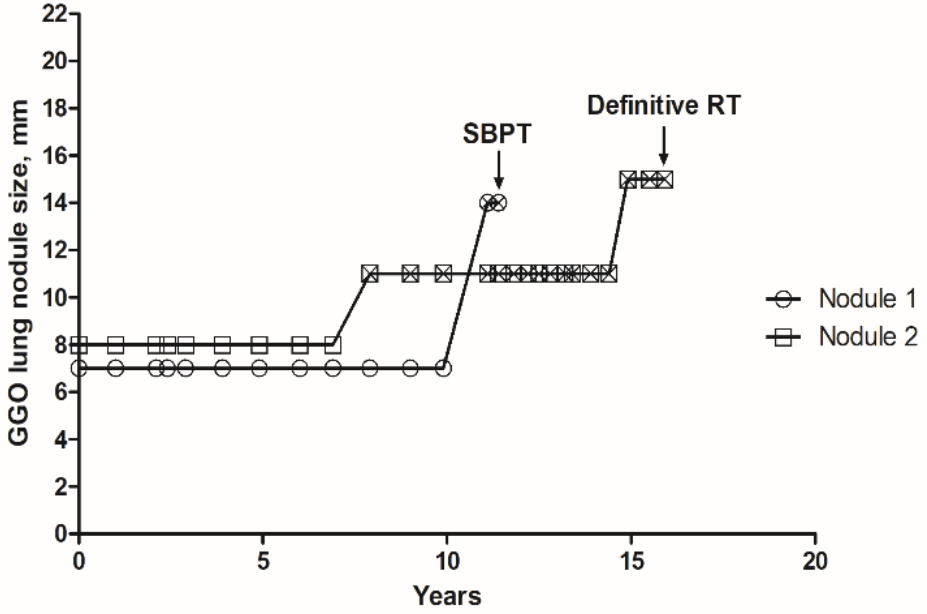
Patient_1



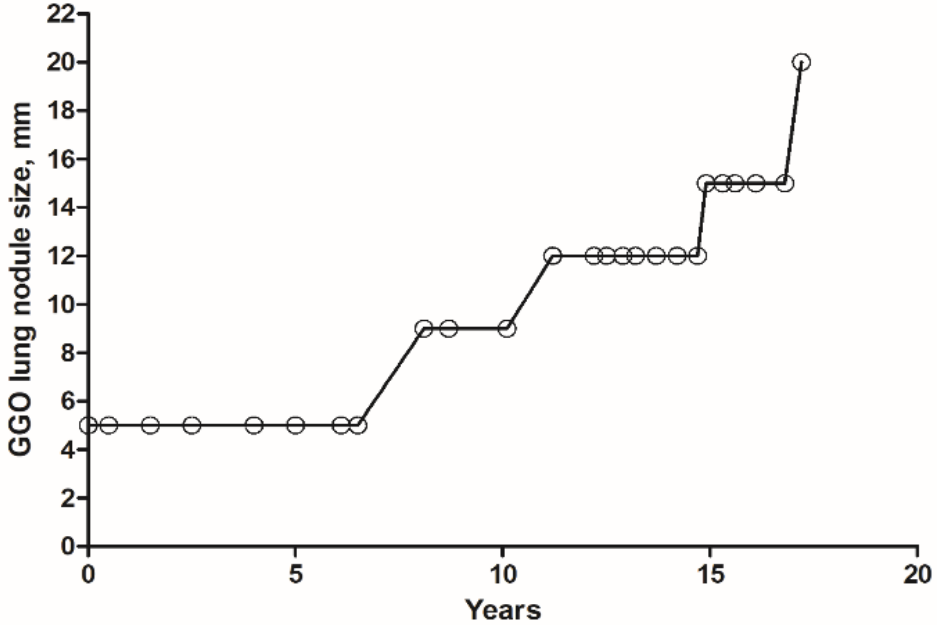
Patient_2



Patient_3



Patient_4



— Underwent surgery & pathologic confirmed adenocarcinoma

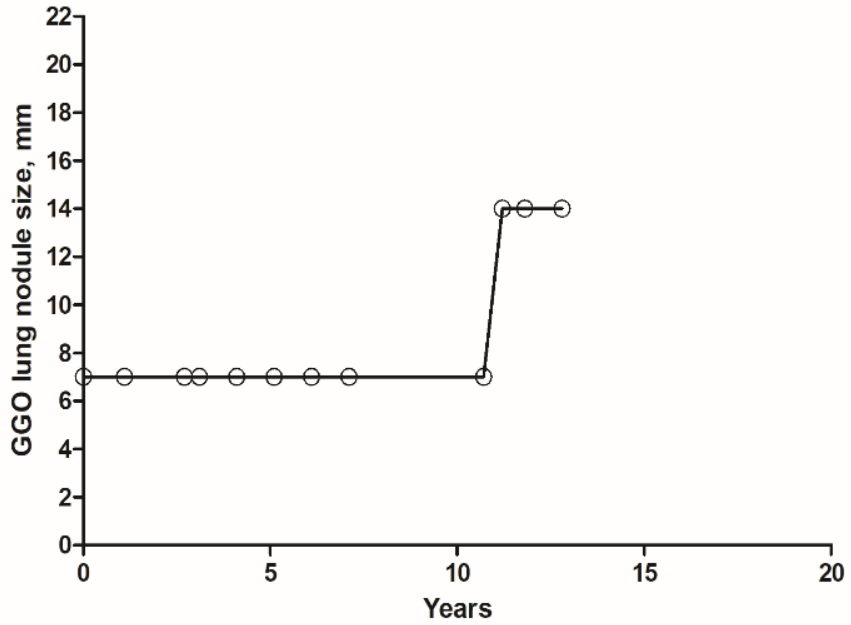
--- Newly detected nodule

— Pre-existing nodule

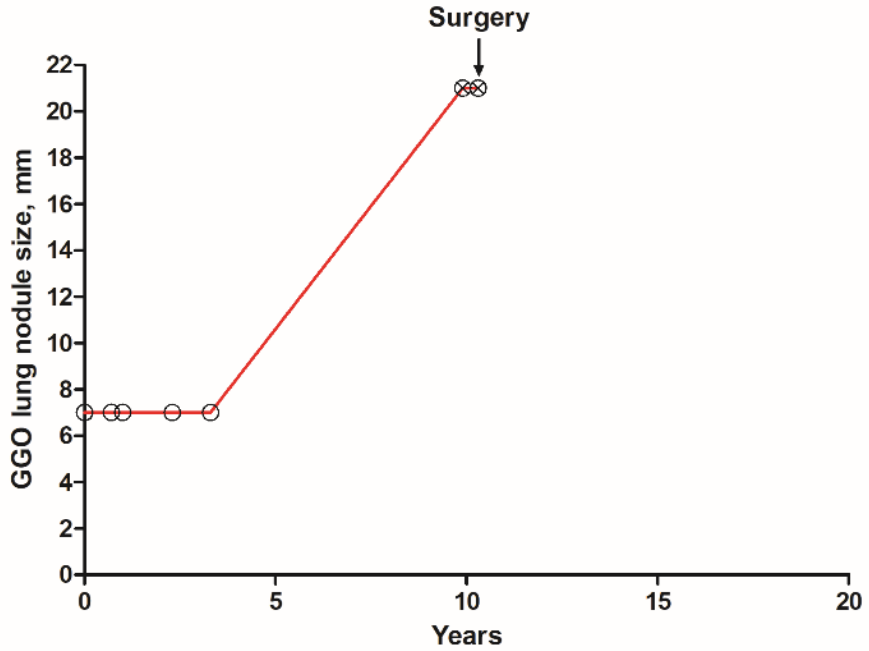
○□ Pure GGN

⊗⊠ Part solid nodule

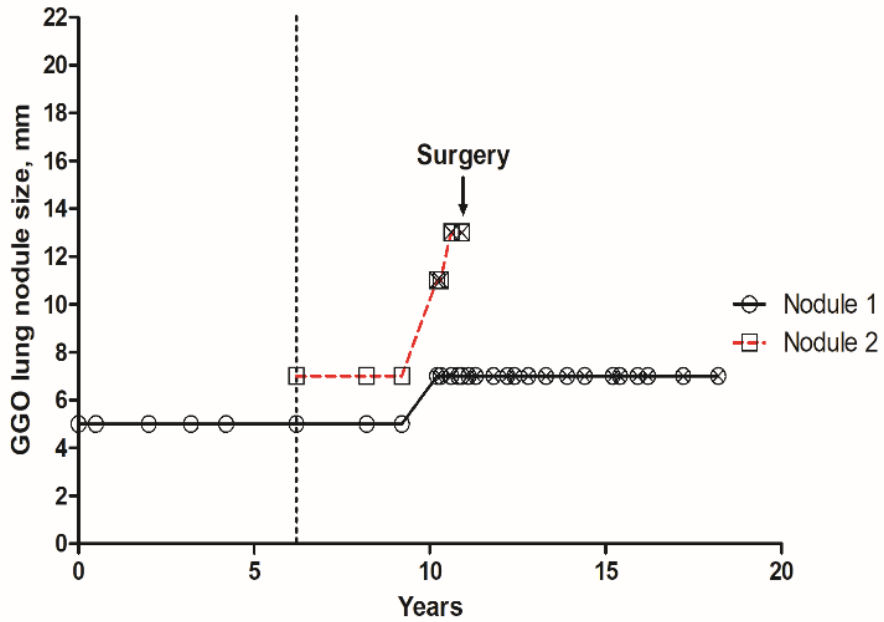
Patient_5



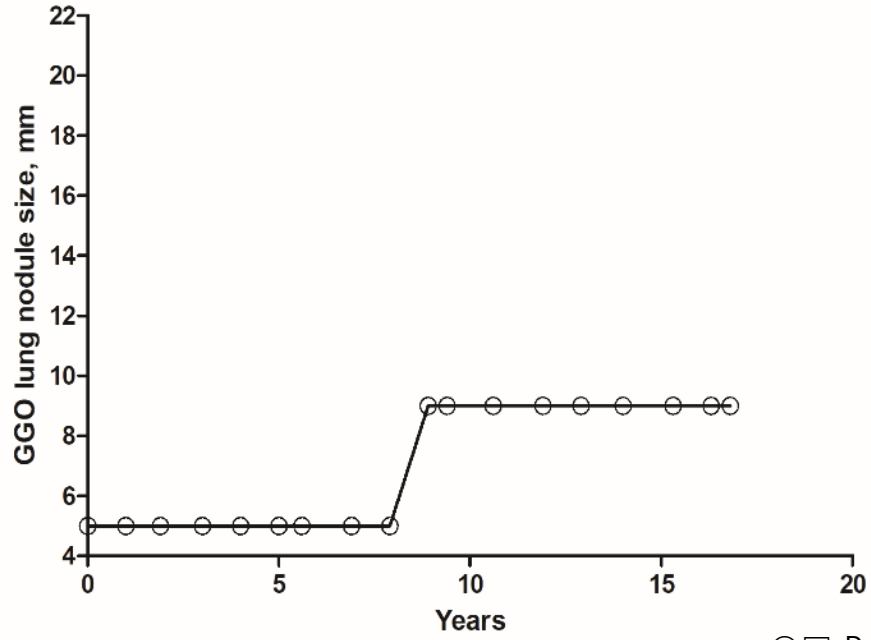
Patient_6



Patient_7



Patient_8



— Underwent surgery & pathologic confirmed adenocarcinoma

--- Newly detected nodule

— Pre-existing nodule

○□ Pure GGN

⊗⊠ Part solid nodule

Results

- Among 11 growing pure GGNs, **nine** were detected at the first screening CT, and **two** were newly detected in the follow-up CT scan.
- **Six of 11 growing GGNs** also showed a change in appearance to **part-solid nodules**.
- **Three GGNs** were histologically confirmed as **adenocarcinoma** by surgery and **two GGNs** were treated by **proton therapy and radiation therapy** without the confirmation of histology.
- **Among** (n = 78) **pure GGNs which were stable for 10 years**, **five (6.4%) increased in size** and **one was histologically confirmed as adenocarcinoma**.

Conclusions

- This study is **the longest-term cohort study** with a **median follow-up duration of 15 years** regarding the natural course of pure GGNs.
- The growth rate pure GGNs after stability of 10 years was **6.4**%.
- We suggest that the screening detected pure GGNs **need to be followed up more than 10 years**, and that it is reasonable to **follow up until the patient can no longer be a candidate for definitive treatment**, as recommended by the current **NCCN guideline for lung cancer screening**.