

# VLM Multi-Model Comparison Report

## Dataset:

progression\_recurrence\_survival\_1yr\_2yr\_3yr\_4yr\_5yr\_v1\_1

Subtask: has\_recurrence\_1\_yr

### Question:

Based on the patient's clinical history and current cancer-related evidence, will the patient achieve an initial treatment response but experience cancer recurrence within 1 year of treatment initiation?

Correct Answer: No

Model: OpenGVLab/InternVL3\_5-8B

**all\_image: [INCORRECT]** <brief reasoning trace with explanation for label selection> | <label>  
The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET CT, indicating malignancy. The presence of metastasis to the internal mammary node suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient would achieve an initial treatment response. However, the presence of metastasis and the aggressive nature of the tumor suggest a high likelihood of recurrence within 1 year of treatment initiation. | Yes

**axial\_1\_image: [INCORRECT]** <brief reasoning trace with explanation for label selection> | <label>  
The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET CT, indicating malignancy. The presence of metastasis to the internal mammary node and another node in the left cardiophrenic region suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient would achieve an initial treatment response. However, the presence of metastatic disease and the aggressive nature of the tumor suggest a high likelihood of recurrence within 1 year of treatment initiation. | Yes

**axial\_all\_image: [INCORRECT]** <brief reasoning trace with explanation for label selection> | <label>  
The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET-CT, indicating malignancy. The presence of metastasis to the internal mammary node and another node in the left cardiophrenic region suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient would achieve an initial treatment response. However, the presence of metastatic disease and the aggressive nature of the tumor increase the likelihood of recurrence within 1 year of treatment initiation. | Yes

**no\_image: [CORRECT]** <brief reasoning trace with explanation for label selection> | <label>  
The patient has a left lung mass with evidence of metastasis to an ipsilateral internal mammary node and another node in the left cardiophrenic region. The PET CT scan shows intense

hypermetabolism associated with the mass and the nodes, indicating malignancy. The timeline does not provide information on treatment response or recurrence within 1 year of treatment initiation. However, the presence of metastasis suggests a more advanced stage, which may increase the likelihood of recurrence. Given the lack of explicit evidence of treatment response or recurrence within 1 year, the answer is based on the advanced stage and metastasis noted. | No

**no\_timeline:** **[INCORRECT]** <brief reasoning trace with explanation for label selection> | <label> The CT images show evidence of metastatic disease throughout multiple slices, indicating advanced cancer. The presence of lesions in various organs suggests a high tumor burden. Given the advanced stage and extensive spread, it is likely that the patient will experience cancer recurrence within a year despite initial treatment response. | Yes

### **Model: OctoMed/OctoMed-7B**

**all\_image:** **[INCORRECT]** <think>First, I carefully reviewed the entire patient timeline provided to understand the clinical course and cancer-related evidence. The patient was diagnosed with a left lung mass in February 2013, which was further evaluated with CT scans and confirmed as a 5.1 cm mass in the lingula. A biopsy was performed, and the PET CT scan in April 2013 showed intense hypermetabolism in the left lung mass and additional FDG-avid lymph nodes in the left internal mammary chain and left anterior costophrenic angle, suggesting metastatic disease. The key point here is the presence of metastatic lymph nodes, which indicates that the cancer has spread beyond the primary site. This is a critical factor in determining prognosis and treatment response. The patient underwent a biopsy of the internal mammary lymph node, confirming metastasis. Given that the cancer has already metastasized at the time of diagnosis, the likelihood of achieving a complete initial treatment response is low. Even if the primary tumor responds to treatment, the presence of metastatic disease increases the risk of recurrence. Furthermore, the timeline does not show any evidence of long-term remission or sustained response. The patient underwent multiple imaging studies, including PET CT, which confirmed metastatic spread. Without evidence of complete response or prolonged disease-free interval, it is reasonable to conclude that the patient would experience cancer recurrence within a year of treatment initiation. Therefore, based on the documented metastatic lymph node involvement and the aggressive nature of the disease as indicated by FDG avidity on PET, the patient is likely to experience recurrence within one year.</think> <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass in February 2013, which was confirmed as a 5.1 cm mass on CT. A PET CT scan in April 2013 revealed intense hypermetabolism in the left lung mass and additional FDG-avid lymph nodes in the left internal mammary chain and left anterior costophrenic angle, indicating metastatic disease. The presence of metastatic lymph nodes at diagnosis suggests an aggressive disease course. Given the metastatic nature of the cancer and the lack of evidence for long-term remission or sustained response, it is highly likely that the patient would experience cancer recurrence within 1 year of treatment initiation. <answer>Yes</answer> </label></think>

**axial\_1\_image:** **[CORRECT]** <think>First, I need to determine if the patient will achieve an initial treatment response but experience cancer recurrence within 1 year of treatment initiation. The key here is to analyze the timeline and imaging findings to assess the progression or response of the cancer. Looking at the timeline, the patient was diagnosed with a left lingular mass in February 2013. The CT scans from March 2013 show a 5.1 cm mass in the left lung. A biopsy was performed on March 31, 2013, which confirmed the presence of a lung mass. The PET-CT on April 9, 2013, showed that the mass was intensely hypermetabolic with SUV max 18.21, indicating high metabolic activity consistent with malignancy. Additionally, there were new FDG-avid lymph nodes in the left internal mammary chain and left cardiophrenic region, suggesting metastatic spread. The patient underwent a CT-guided biopsy of the internal mammary lymph node on April 17, 2013, which confirmed metastatic disease. This indicates

that the cancer had already spread to regional lymph nodes at the time of diagnosis. Given that the patient had a confirmed lung mass and metastatic lymph nodes at diagnosis, this suggests an advanced stage of lung cancer. The presence of metastatic disease at diagnosis typically correlates with a poorer prognosis and a higher likelihood of recurrence even after initial treatment. However, the question is whether the patient will have an initial treatment response but then recur within one year. The timeline provided does not include any information about the initiation of treatment or subsequent follow-up imaging after treatment. The last entry in the timeline is from March 15, 2013, which is before the biopsy on April 17, 2013. There is no data on treatment initiation, response assessment, or recurrence within the first year. Without evidence of treatment initiation or subsequent imaging showing response followed by recurrence within one year, it is impossible to conclude whether the patient achieved an initial response and then recurred. The timeline does not provide the necessary data points to answer this question definitively. Therefore, based solely on the provided PATIENT\_TIMELINE, there is insufficient information to determine if the patient achieved an initial treatment response but experienced recurrence within one year. The correct answer must be "No" because the timeline does not support such a conclusion.

</think> <brief reasoning trace with explanation for label selection> | <label> The provided PATIENT\_TIMELINE includes diagnostic imaging and biopsy findings but does not include any information about treatment initiation, response assessment, or recurrence events. Without data on treatment outcomes or follow-up imaging post-treatment, it is impossible to determine if the patient achieved an initial treatment response followed by recurrence within 1 year. The timeline does not provide the necessary evidence to support either "Yes" or "No" definitively. <answer>No</answer></think>

**axial\_all\_image: [CORRECT]** <think>First, I carefully reviewed the entire patient timeline provided, focusing on the relevant imaging and clinical notes. The patient has a documented left lung mass identified on multiple CT scans, including a CT chest with contrast and a PET scan, which shows intense hypermetabolism of the mass and additional suspicious lymph nodes in the left internal mammary chain and left cardiophrenic region. This indicates metastatic disease. The PET scan on 04/09/2013 clearly shows hypermetabolic lesions consistent with metastases, which suggests that the cancer has spread beyond the primary site. The biopsy of the internal mammary lymph node (04/17/2013) confirms metastatic disease, as the procedure was performed specifically to evaluate these nodes for metastatic involvement. Given the presence of metastatic disease at diagnosis and the biopsy confirmation, the patient would have been treated with curative intent or possibly palliative treatment depending on staging and overall health. However, the timeline does not provide any information about the treatment response or recurrence within the first year. The images and notes do not mention any follow-up scans showing initial response followed by recurrence within one year. Since the question asks whether the patient achieves an initial treatment response but experiences cancer recurrence within one year, and there is no evidence in the provided timeline of such a pattern (no mention of initial response, treatment, and then recurrence within one year), the correct answer is "No". The timeline shows the diagnosis and staging but no evidence of recurrence within the first year post-treatment initiation.</think> <answer>No</answer>

**no\_image: [INCORRECT]** <think>First, I need to determine if the patient achieved an initial treatment response but experienced cancer recurrence within 1 year of treatment initiation. The key points to consider are the timeline of events, the nature of the cancer, treatments administered, and any evidence of recurrence. Looking at the patient's timeline: - The patient was diagnosed with a left lung mass in February 2013 based on CT scans. - A biopsy was performed on March 31, 2013, confirming the presence of a lung mass. - A PET-CT scan on April 9, 2013, showed the mass and indicated possible metastases to lymph nodes (left internal mammary and left cardiophrenic nodes). - A CT-guided biopsy of the internal mammary lymph node was done on April 17, 2013, confirming metastatic disease. - There is no mention of any treatment (like surgery, chemotherapy, or radiation) being initiated after these findings. - The last entry in the timeline is from March 15, 2013, which is before the biopsy on April 17, 2013,

indicating that no treatment had started yet. Since the patient was diagnosed with lung cancer and metastatic lymph nodes but no treatment was initiated, there is no evidence of an initial treatment response. The question asks if the patient achieved an initial treatment response but then had recurrence within a year. However, without any treatment, there can be no response to evaluate. Therefore, the answer must be "No" because there is no treatment to assess a response, and recurrence cannot be determined without treatment initiation. Additionally, the timeline does not show any follow-up imaging or clinical data after the April 2013 findings that would indicate treatment or recurrence. The last imaging is from March 2013, before any treatment, so recurrence cannot be assessed. Thus, based on the provided timeline, the patient has not undergone any treatment, so the initial treatment response and subsequent recurrence cannot be established.</think> <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass and metastatic lymph nodes in March-April 2013 but no treatment was initiated. Without treatment, there is no evidence of an initial treatment response or subsequent recurrence. The timeline lacks post-treatment imaging or clinical data to assess response or recurrence. Therefore, the answer is "No."</label>

**no\_timeline:** [CORRECT] <think>First, I carefully examine the image provided. It is a CT scan showing axial slices of the pelvis and lower abdomen. The scan reveals bony structures, soft tissues, and gas patterns. The image does not provide direct evidence of tumor recurrence or treatment response. There is no visible tumor mass, no new lesions, or signs of metastasis. The scan appears to show normal post-treatment anatomy without acute abnormalities. However, the question asks about the patient's clinical history and treatment response, which cannot be inferred solely from this image. The question references a patient's timeline and treatment response, but no clinical data or timeline information is provided here. Without clinical data, I cannot confirm recurrence or response. Therefore, I must rely on the options given and the lack of evidence in the image. Since the question is about recurrence within 1 year, and no recurrence is visible here, the most appropriate answer is "No."</think> <answer>No</answer>

### Model: Qwen/Qwen3-VL-8B-Instruct

**all\_image:** [CORRECT] The patient's timeline shows a large, hypermetabolic left lung mass (4.6 x 5.3 cm) with confirmed metastases to the left internal mammary lymph node and another node in the left cardiophrenic angle, as evidenced by PET-CT findings on 04/09/2013. The timeline documents a biopsy of the lung mass and lymph node, but does not contain any information regarding the initiation of treatment, the patient's response to treatment, or any subsequent recurrence. The timeline ends with imaging findings that confirm metastatic disease, but there is no record of treatment being administered or its outcome. Therefore, it is impossible to determine whether the patient achieved an initial treatment response or experienced recurrence within one year of treatment initiation, as no such treatment or follow-up data is provided. No | No

**axial\_1\_image:** [CORRECT] The patient's timeline shows a large left lung mass (5.1 cm) identified in March 2013, followed by biopsy and PET-CT staging in April 2013. The PET-CT revealed intense hypermetabolism in the lung mass and new FDG-avid lymph nodes in the left internal mammary chain and left cardiophrenic angle, which are suspicious for metastases. The imaging findings from April 2013 indicate that the lung mass and lymph nodes were not significantly changed from the prior scan, suggesting the disease was stable at that time. However, the timeline does not contain any documentation of treatment initiation, response assessment, or follow-up imaging within the first year after treatment. Therefore, there is no evidence to support that the patient achieved an initial treatment response or experienced recurrence within one year of treatment initiation. No | No

**axial\_all\_image:** [CORRECT] The patient's timeline shows a left lung mass identified in March 2013, followed by biopsy and staging. The PET-CT scan on April 9, 2013, confirmed the mass was intensely hypermetabolic (SUV max 18.21) and showed new, FDG-avid metastases to the

left internal mammary node and a node in the left cardiophrenic angle. This indicates the disease was already metastatic at the time of initial diagnosis. The timeline does not contain any evidence of a treatment response or any follow-up imaging or clinical data after treatment initiation to assess for recurrence within 1 year. Therefore, based on the provided evidence, it is not possible to determine if the patient achieved an initial treatment response or experienced recurrence within 1 year. No

**no\_image:** [CORRECT] The patient's timeline shows a large left lung mass (5.0–6.4 cm) identified in March 2013, followed by biopsy and staging with PET/CT in April 2013. The PET/CT revealed intense hypermetabolism (SUV max 18.21) in the lung mass and FDG-avid lymph nodes in the internal mammary chain and cardiophrenic angle — consistent with metastatic disease. No evidence of distant metastases was found at that time. However, the timeline does not include any documentation of treatment initiation, response assessment, or follow-up imaging within 1 year of treatment start. Since no treatment has been initiated or its response documented, and no recurrence is reported, the question cannot be answered as “Yes” (no evidence of recurrence within 1 year) or “No” (no evidence of initial response). But per the rules, we must select from “Yes” or “No” based on available evidence. However, the question asks: “Will the patient achieve an initial treatment response but experience cancer recurrence within 1 year of treatment initiation?” — which implies a binary outcome requiring both a treatment response and recurrence within 1 year. Since no treatment is documented, and no recurrence is documented, we cannot confirm either condition. But the question is phrased as a predictive query based on current evidence. Given that the patient has metastatic disease (confirmed by PET/CT) and no treatment is documented, we cannot confirm an initial treatment response. Also, no recurrence is documented. But the question is asking whether recurrence will occur within 1 year — which is speculative without treatment data. However, the rules state: “Base your decision ONLY on the provided PATIENT\_TIMELINE.” The timeline does not contain any evidence of treatment initiation, so “initial treatment response” cannot be confirmed. Also, no recurrence is documented. Therefore, the correct answer is “No” — because the patient has not yet received treatment, so no initial response can be assessed, and no recurrence has occurred (as no follow-up beyond April 2013 is provided). The question implies a future event, but the timeline does not support “Yes” — as no recurrence is documented, and no treatment is documented to trigger a response. But the question is: “will the patient achieve an initial treatment response but experience cancer recurrence within 1 year of treatment initiation?” — which requires both conditions. Since neither is confirmed, and the timeline does not show treatment initiation, the safest answer is “No” — because the patient has not yet started treatment, so no response can be assessed, and no recurrence is documented. <brie reasoning trace with explanation for label selection> | No

**no\_timeline:** [CORRECT] The provided PATIENT\_TIMELINE consists solely of a series of CT scan images that sequentially scan from the lower extremities up through the abdomen, pelvis, thorax, and finally the head and neck. There is no clinical history, no documentation of cancer diagnosis, no treatment plan, no evidence of initial treatment response, and no information regarding cancer recurrence. The images show anatomical structures without any explicit pathological findings or clinical context to determine treatment response or recurrence. Therefore, it is impossible to determine whether the patient will achieve an initial treatment response or experience recurrence within 1 year based on the given evidence. No | No

### Model: google/medgemma-1.5-4b-it

**all\_image:** [INCORRECT] <brie reasoning trace with explanation for label selection> | <label> The patient has a history of lung cancer, specifically a mass in the lingula of the left lung. The patient has undergone multiple imaging studies including CT scans and PET CT scans. The PET CT scan shows hypermetabolic activity in the left lung mass and also in a left internal mammary lymph node, suggesting metastasis. The patient has also undergone a biopsy of the







[illegible]





CT-guided biopsy of the internal mammary lymph node, which confirmed the presence of cancer. The patient's current cancer-related evidence includes a lung mass, a metastasis to the internal mammary lymph node, and a biopsy confirming the presence of cancer. Given the presence of metastasis, the patient is at risk for cancer recurrence within 1 year of treatment initiation. <No>

[illegible]

[illegible]

**no\_image: [INCORRECT]** The patient was diagnosed with lung cancer in 2013. The patient underwent a CT-guided biopsy of the left lung mass and the internal mammary lymph node. The biopsy revealed metastatic disease. The patient is currently undergoing treatment for lung cancer. Based on the patient's clinical history and current cancer-related evidence, the patient will experience cancer recurrence within 1 year of treatment initiation. <Yes>

**no\_timeline:** [CORRECT] The images show a cross-sectional view of the chest, with a large mass occupying the mediastinum. The mass appears to be compressing the lungs. There is no mention of any treatment or follow-up in the timeline. Therefore, it is impossible to determine if the patient will achieve an initial treatment response or experience cancer recurrence within 1 year of treatment initiation. No

## Subtask: has\_recurrence\_2\_yr

### Question:

Based on the patient's clinical history and current cancer-related evidence, will the patient achieve an initial treatment response but experience cancer recurrence within 2 years of treatment initiation?

**Correct Answer:** No

### Model: OpenGVLab/InternVL3\_5-8B

**all\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET CT, indicating malignancy. The presence of metastasis to the internal mammary node suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient would achieve an initial treatment response. However, the presence of metastasis and the aggressive nature of the tumor suggest a high likelihood of recurrence within 2 years of treatment initiation. | Yes

**axial\_1\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET CT, indicating malignancy. The presence of metastasis to the internal mammary node and another node in the left cardiophrenic region suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient will experience cancer recurrence within 2 years of treatment initiation, despite an initial treatment response. | Yes

**axial\_all\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET CT, indicating malignancy. The presence of metastasis to the internal mammary node suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient would achieve an initial treatment response. However, the presence of metastasis and the aggressive nature of the tumor increase the likelihood of recurrence within 2 years of treatment initiation. | Yes

**no\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET-CT, indicating malignancy. The presence of metastases to the internal mammary node and another node in the left cardiophrenic region suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient will achieve an initial treatment response. However, the presence of metastatic disease and the aggressive nature of the tumor increase the likelihood of recurrence within 2 years of treatment initiation. Therefore, the patient is expected to experience cancer recurrence within 2 years. | Yes

**no\_timeline:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The CT images show evidence of metastatic disease throughout multiple slices, indicating advanced cancer. The presence of lesions in various organs suggests a high likelihood of recurrence post-treatment, especially if initial treatment achieves a partial response but not a complete response. Given the extensive spread, it is plausible that the patient might experience recurrence within 2 years. | Yes

### Model: OctoMed/OctoMed-7B

**all\_image:** [INCORRECT] <think>First, I carefully reviewed the entire patient timeline provided to understand the clinical course and cancer-related evidence. The patient was diagnosed with a left lingular lung mass in February 2013, which was further evaluated with CT scans and confirmed as a suspicious lesion. A biopsy was performed, and the PET-CT scan in April 2013 showed intense hypermetabolism in the lung mass and additional hypermetabolic lymph nodes in the left internal mammary chain and left anterior costophrenic angle, indicating metastatic disease. The key point here is the presence of FDG-avid lymph nodes outside the primary lung mass, which strongly suggests metastatic spread. The PET-CT findings are critical because they demonstrate metabolic activity consistent with malignancy in these lymph nodes, which would classify the disease as stage IV or at least with regional nodal metastases. This implies that the cancer is not localized and has already spread beyond the primary site. Given this information, the patient would have undergone initial treatment, likely including surgery, chemotherapy, or radiation, depending on the treatment protocol. However, the presence of metastatic lymph nodes at diagnosis indicates a higher risk of recurrence. The question asks whether the patient would achieve an initial treatment response but experience cancer recurrence within 2 years. Since the PET-CT already shows metastatic lymph nodes at the time of diagnosis, this suggests that the disease is advanced and the likelihood of a complete response with subsequent recurrence is high. The timeline does not provide specific details on treatment response or recurrence timing, but the presence of FDG-avid metastatic nodes at baseline is a strong predictor of recurrence. Therefore, based on the imaging evidence of metastatic lymph nodes at diagnosis, the patient is likely to have an initial treatment response but would experience recurrence within 2 years, consistent with the natural history of metastatic lung cancer.</think> <brief reasoning trace with explanation for label selection> | <label> The patient's PET-CT scan on 04/09/2013 revealed intensely hypermetabolic left lung mass with metastatic involvement of ipsilateral internal mammary and cardiophrenic lymph nodes. This indicates stage IV disease with nodal metastases at diagnosis. The presence of FDG-avid lymph nodes strongly suggests aggressive disease biology and high risk of recurrence. Given the advanced stage and metabolic activity, the patient is likely to experience an initial treatment response but recurrence within 2 years. <answer>Yes</answer> </label></think>

**axial\_1\_image:** [CORRECT] <think>First, I need to determine if the patient will achieve an initial treatment response but experience cancer recurrence within 2 years of treatment initiation. The key factors to consider include the stage of the cancer, tumor biology, treatment intent and completeness, margins, nodal status, biomarkers, and any documented outcomes from the patient's timeline. Looking at the timeline, the patient was diagnosed with a left lingular lung mass in February 2013. The CT scans show a large mass measuring 5.1 cm x 5.5 cm x 6.4 cm. The biopsy confirmed lung cancer, and there was evidence of metastasis to an ipsilateral internal mammary node and another node in the left cardiophrenic region. This indicates that the cancer had already spread regionally at diagnosis, suggesting a more advanced stage. The PET CT scan on April 9, 2013, showed intense hypermetabolism of the primary lung mass and the involved lymph nodes, confirming malignancy and metastatic disease. The presence of FDG-avid lymph nodes is a sign of active cancer spread. The patient underwent CT-guided biopsies of the primary mass and the internal mammary lymph node, which confirmed the diagnosis and likely provided tissue for further analysis. However, there is no mention of the biopsy results or any specific treatment details such as surgery, chemotherapy, or radiation therapy in the timeline provided. Without knowing the treatment regimen, it's challenging to assess the initial treatment response. The timeline does not include any follow-up imaging or clinical notes after treatment initiation that would indicate whether the patient had a complete or partial response. There is no mention of recurrence or progression within the first two years either. The last documented imaging is from March 2013, and the next significant imaging is the PET CT in April 2013, which still shows the primary mass and lymph node involvement. Since the timeline does not provide any evidence of treatment initiation or subsequent response, recurrence, or survival data, it is impossible to determine whether the patient achieved an initial

treatment response and then recurred within two years. The available data only shows the initial diagnosis and staging at the time of the first biopsy in February 2013 and the PET scan in April 2013, but no treatment or follow-up outcomes. Therefore, based solely on the provided patient timeline, there is insufficient information to answer the question definitively. The correct answer must be "No" because the timeline does not contain the necessary data to confirm or deny the scenario described.

**axial\_all\_image: [CORRECT]** <think>First, I carefully reviewed the entire patient timeline provided, focusing on the relevant imaging and clinical notes. The patient has a documented left lung mass identified on multiple CT scans, including a CT chest with contrast and a PET scan, which shows intense hypermetabolism of the mass and additional suspicious lymph nodes in the left internal mammary chain and left cardiophrenic region. This indicates metastatic disease. The PET scan on 04/09/2013 clearly shows hypermetabolic lesions consistent with metastases, which suggests that the cancer has spread beyond the primary site. The biopsy of the internal mammary lymph node (04/17/2013) confirms metastatic disease, as the procedure was performed specifically to evaluate these nodes for metastatic involvement. Given the presence of metastatic disease at diagnosis and the biopsy confirmation, the patient would have been treated with curative intent or possibly palliative treatment depending on staging and overall health. However, the timeline does not provide any information about treatment response or recurrence within 2 years. The images and notes do not mention any follow-up scans showing initial response followed by recurrence within 2 years. Since the question asks whether the patient will achieve an initial treatment response but experience cancer recurrence within 2 years, and there is no evidence in the provided timeline to support this scenario, the correct answer is "No". The timeline shows metastatic disease at diagnosis and no indication of recurrence within 2 years.

**no\_image: [INCORRECT]** <think>First, I carefully examine the image provided. It is a CT scan showing axial slices of the head and neck region. The scan reveals bony structures, soft tissues, and air-filled spaces. The image shows a cross-sectional view of the skull base, nasal cavity, and surrounding soft tissues. There is no direct evidence of tumor recurrence or progression visible in this image alone. However, the question asks about the patient's clinical history and treatment response, which is not provided in the image itself. Since the question is about whether the patient achieves an initial treatment response but experiences cancer recurrence within 1 year, I must rely on the patient's clinical timeline data, which is not included in the image. Without specific clinical data such as treatment type, tumor stage, recurrence timing, or pathology reports, I cannot definitively conclude recurrence or response. Given the lack of clinical timeline data in the image, I must conclude that the image alone does not provide sufficient evidence to answer the question. Therefore, the correct answer must be based on the patient's clinical history, which is not available here. Since the question is about recurrence within 1 year, and the image does not provide such data, the answer cannot be determined solely from the image. Thus, the answer must be based on the patient's clinical timeline, which is not provided. Therefore, I cannot select "Yes" or "No" based on the image alone.

**no\_timeline: [CORRECT]** <think>First, I note that the question asks whether the patient will achieve an initial treatment response but experience cancer recurrence within 2 years of treatment initiation. This requires me to evaluate the patient's clinical course, including treatment response, recurrence timing, and any documented evidence of recurrence within the



first 2 years. Looking at the provided image, it is a CT scan showing axial slices of the head and neck region. The scan shows bony structures, soft tissues, and air spaces. However, the image alone does not provide direct evidence of treatment response or recurrence timing. There is no visible tumor, no post-treatment changes, no recurrence signs, or any other clinical data that can be interpreted from this single image. Since the question is about the patient's clinical history and treatment response, and the image does not provide any such clinical data, I must rely solely on the PATIENT\_TIMELINE provided. The PATIENT\_TIMELINE is not included in the image or the question prompt. Therefore, I cannot make a definitive judgment based on the image alone. Given that the question is asking about a clinical outcome (treatment response and recurrence within 2 years), and the image does not provide any clinical data or evidence to support or refute this, I must conclude that the information is insufficient to answer definitively. However, the question requires me to choose between "Yes" or "No" based on the PATIENT\_TIMELINE, which is not provided here. Without the PATIENT\_TIMELINE, I cannot confirm or deny recurrence within 2 years. Therefore, the correct answer must be based on the absence of sufficient data. However, since the question expects a choice, and the image does not show any recurrence or treatment response, the most cautious and evidence-based answer would be "No" unless the PATIENT\_TIMELINE explicitly states recurrence within 2 years. But since the PATIENT\_TIMELINE is not provided, I cannot definitively answer "Yes" or "No". However, the question implies that the PATIENT\_TIMELINE is known. Given that the image does not show any recurrence or treatment response, and assuming the PATIENT\_TIMELINE does not indicate recurrence within 2 years, the answer would be "No".</think>  
<answer>No</answer>

### **Model: Qwen/Qwen3-VL-8B-Instruct**

**all\_image: [CORRECT]** The patient's timeline shows a left lung mass diagnosed in March 2013, with subsequent imaging (CT and PET) confirming it is a malignancy with metastases to the left internal mammary lymph node and left cardiophrenic angle node. The PET scan (April 2013) shows intense hypermetabolism, confirming active cancer. The timeline does not contain any documentation of treatment initiation, response, or follow-up beyond the initial staging. Therefore, there is no evidence to support that the patient achieved an initial treatment response, nor is there any evidence of recurrence within 2 years. The question asks about a future event (recurrence within 2 years) that is not documented in the provided timeline. No | No

**axial\_1\_image: [CORRECT]** The provided PATIENT\_TIMELINE documents a solitary left lung mass (lingular) diagnosed in 2013, with subsequent imaging and biopsy confirming malignancy. The timeline includes a PET-CT scan (April 2013) that identified the primary lung mass and two FDG-avid lymph nodes (internal mammary and cardiophrenic angle) as suspicious for metastases. The imaging findings from April 2013 indicate that the lung mass and lymph nodes were not significantly changed in size compared to the prior scan (March 2013), suggesting no immediate treatment response. The timeline does not contain any documentation of treatment initiation, response assessment, or follow-up imaging beyond the initial staging. There is no evidence of cancer recurrence within 2 years of treatment initiation because no treatment has been documented as having been initiated. Therefore, the patient cannot be said to have achieved an initial treatment response, nor can recurrence be confirmed. No | No

**axial\_all\_image: [CORRECT]** The patient's timeline shows a solitary left lung mass diagnosed in March 2013, with subsequent imaging and biopsy confirming it as lung cancer. The PET-CT scan in April 2013 revealed the primary lung mass and also identified two new, FDG-avid lymph nodes in the left internal mammary chain and left cardiophrenic angle, which are suspicious for metastases. This indicates the cancer had already spread beyond the primary site at the time of initial diagnosis. The question asks whether the patient will achieve an initial treatment response but experience recurrence within 2 years. The provided timeline documents the initial diagnosis and staging (including metastatic lymph nodes) in 2013. However, there is no information in the

timeline regarding any subsequent treatment (e.g., surgery, chemotherapy, radiation) or any follow-up imaging or clinical assessments that would indicate whether the patient achieved an initial treatment response or experienced recurrence within 2 years. Since the timeline does not contain evidence of treatment response or recurrence, it is impossible to determine the answer based solely on the provided information. The question requires a binary "Yes" or "No" answer grounded in the timeline, but the timeline lacks the necessary data to support either conclusion.

No | No

**no\_image: [CORRECT]** The patient's timeline shows a large left lung mass (5.0–6.4 cm) identified in March 2013, followed by biopsy and staging with PET/CT in April 2013. The PET/CT revealed intense hypermetabolism (SUV max 18.21) in the lung mass and FDG-avid lymph nodes in the internal mammary chain and cardiophrenic angle — consistent with metastatic disease. No evidence of distant metastases was found at that time. However, the timeline does not include any documentation of treatment initiation, response assessment, or follow-up imaging beyond the initial staging. Therefore, there is no evidence of an initial treatment response, nor is there any documentation of recurrence within 2 years. The question requires both an initial response and recurrence within 2 years — neither is supported by the timeline. No | No

**no\_timeline:** [CORRECT] The provided PATIENT\_TIMELINE consists solely of a series of CT scan images that sequentially scan from the lower extremities up through the abdomen, pelvis, thorax, and finally the head and neck. There is no clinical history, no documentation of cancer diagnosis, no treatment plan, no evidence of initial treatment response, and no information regarding cancer recurrence. The images show anatomical structures without any explicit pathological findings or clinical context to determine treatment response or recurrence. Therefore, it is impossible to determine whether the patient will achieve an initial treatment response or experience recurrence within 2 years based on the given evidence. No | No

**Model:** google/medgemma-1.5-4b-it

[illegible]

[illegible]

**axial\_1\_image:** [INCORRECT] <br>brief reasoning trace with explanation for label selection> | <label> The patient has a history of lung cancer, specifically a mass in the lingula of the left lung. This mass was confirmed by CT scans and biopsy. The biopsy showed metastatic disease, with the presence of a left internal mammary lymph node metastasis and another suspicious node in the left anterior cardiophrenic region. The PET CT scan confirms the hypermetabolic nature of the lung mass and the identified lymph node metastasis, indicating active cancer. The patient has received treatment for the lung cancer (biopsy). The question asks if the patient will achieve an initial treatment response but experience cancer recurrence within 2 years. Given the confirmed metastatic disease (lung mass and internal mammary node), the patient has already experienced a treatment response (biopsy of the lung mass). However, the presence of metastatic disease means the cancer is not cured and will likely recur. The question asks about recurrence within 2 years. While the exact timing of recurrence is unknown, the presence of metastatic disease indicates a high likelihood of recurrence. The patient has already received treatment, which is a form of response, but the underlying disease is not cured. Therefore, recurrence is expected. No | Yes

**axial\_all\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient has a history of lung cancer, specifically a mass in the lingula of the left lung. The CT scan from 2013 shows this mass measuring 4.9 x 5.4 x 6.7 cm. The patient also has a history of a left internal mammary lymph node biopsy on 2013-03-15, which was positive for malignancy, indicating metastatic disease. The PET CT scan from 2013 shows intense hypermetabolism in the lung mass and also in a left anterior costophrenic node, suggesting metastatic disease. The patient has received treatment for lung cancer, including surgery and

[illegible]

**no\_image: [INCORRECT]** <br>brief reasoning trace with explanation for label selection> | <label>  
The patient has a primary lung cancer (left lingula mass) diagnosed in 2013. The patient underwent a CT scan on 2013-02-22 showing a 5.0 cm mass in the left hemithorax. The patient underwent a CT scan on 2013-02-22 showing a 4.9 x 5.4 x 6.7 cm mass in the lingula. The patient underwent a CT scan on 2013-03-28 showing the mass in the lingula is not significantly changed in size compared to 2013-02-22. The patient underwent a PET CT scan on 2013-04-09 showing intense hypermetabolism (SUV max of 18.21) associated with the large lesion in the left lung (4.6 x 5.3 cm) and also showing hypermetabolic lesions in an ipsilateral internal mammary node (7 x 13 mm) and another node in the left anterior costophrenic region (2 x 0.8 cm). The patient underwent a CT guided biopsy of the left internal mammary lymph node on 2013-04-17. The patient has evidence of metastatic disease (left internal mammary node and left anterior costophrenic node) confirmed by PET CT and biopsy. The patient has a history of lung cancer and has evidence of metastatic disease. The patient has not undergone any treatment for the cancer yet. The question asks if the patient will achieve an initial treatment response but experience cancer recurrence within 2 years of treatment initiation. Given the presence of metastatic disease (at least 2 nodes confirmed by PET CT and biopsy), the patient has advanced cancer. Treatment for metastatic cancer typically involves systemic therapy

**no\_timeline:** [INCORRECT] FINDINGS: - Bilateral breast implants. - Bilateral breast tissue. - No suspicious findings in the right breast. - No suspicious findings in the left breast. - No suspicious findings in the axilla. - No suspicious findings in the supraclavicular region. - No suspicious findings in the chest wall. - No suspicious findings in the upper abdomen. - No suspicious findings in the lower abdomen. - No suspicious findings in the pelvis. - No suspicious findings in the groin. - No suspicious findings in the lung. - No suspicious findings in the mediastinum. - No suspicious findings in the heart. - No suspicious findings in the liver. - No suspicious findings in the spleen. - No suspicious findings in the pancreas. - No suspicious findings in the adrenal glands. - No suspicious findings in the kidneys. - No suspicious findings in the bladder. - No suspicious findings in the rectum. - No suspicious findings in the colon. - No suspicious findings in the small bowel. - No suspicious findings in the stomach. - No suspicious findings in the esophagus. - No suspicious findings in the liver. - No suspicious findings in the spleen. - No suspicious findings in the pancreas. - No suspicious findings in the adrenal glands. - No suspicious findings in the kidneys. - No suspicious findings in the bladder. - No suspicious findings in the rectum. - No suspicious findings in the colon. - No suspicious findings in the small



[illegible]

**Model:** google/medgemma-4b-it

**all\_image: [CORRECT]** The patient's clinical history indicates a diagnosis of lung cancer with evidence of metastasis to the internal mammary lymph node. The CT chest biopsy confirmed the presence of cancer in the lung and the internal mammary lymph node. The PET scan showed hypermetabolic lesions in the lung and internal mammary lymph node. The patient underwent a CT-guided biopsy of the internal mammary lymph node, which confirmed the presence of cancer. The patient's clinical history and imaging findings suggest that the patient has cancer recurrence within 2 years of treatment initiation. <No>

**axial\_1\_image:** [CORRECT] The patient's clinical history indicates a diagnosis of lung cancer with evidence of metastasis to the internal mammary lymph node. The patient underwent a CT-guided biopsy of the internal mammary lymph node, which confirmed the presence of cancer. The patient's current cancer-related evidence includes a lung mass, a metastasis to the internal mammary lymph node, and a biopsy confirming the presence of cancer. Given the presence of metastasis, the patient is at risk for cancer recurrence within 2 years of treatment initiation. <No>



[illegible]

internal mammary lymph node. The biopsy results are pending. The patient has a confirmed diagnosis of lung cancer with metastasis to the internal mammary lymph node. The patient has undergone a biopsy of the internal mammary lymph node. The biopsy results are pending. The patient has a confirmed diagnosis of lung cancer with metastasis to the internal mammary lymph node. The patient has undergone a biopsy of the internal mammary lymph node. The biopsy results are pending. The patient has a confirmed diagnosis of lung cancer with metastasis to the internal mammary lymph node. The patient has undergone a biopsy of the internal mammary lymph node. The biopsy results are pending. The patient has a confirmed diagnosis of lung cancer with metastasis to the internal mammary lymph node. The patient has undergone a biopsy of the internal mammary lymph node. The biopsy

**no\_image: [INCORRECT]** The patient was diagnosed with lung cancer in 2013. The patient underwent a CT-guided biopsy of the left lung mass and the internal mammary lymph node. The biopsy revealed metastatic disease. The patient is currently undergoing treatment for lung cancer. Given the presence of metastatic disease, it is likely that the cancer will recur within 2 years of treatment initiation. <Yes>

**no\_timeline:** [CORRECT] The images show a cross-sectional view of the chest, with a large mass in the right lung. The mass appears to be causing compression of the surrounding structures. There is no mention of any treatment or follow-up in the timeline. Therefore, it is impossible to determine if the patient will achieve an initial treatment response or experience cancer recurrence within 2 years of treatment initiation. No

## Subtask: has\_recurrence\_3\_yr

### Question:

Based on the patient's clinical history and current cancer-related evidence, will the patient achieve an initial treatment response but experience cancer recurrence within 3 years of treatment initiation?

Correct Answer: No

### Model: OpenGVLab/InternVL3\_5-8B

**all\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET CT, indicating malignancy. The presence of metastasis to the internal mammary node suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient will experience cancer recurrence within 3 years of treatment initiation, despite an initial treatment response. | Yes

**axial\_1\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET-CT, indicating malignancy. The presence of metastasis to the internal mammary node and another node in the left cardiophrenic region suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient will experience cancer recurrence within 3 years of treatment initiation, despite an initial treatment response. | Yes

**axial\_all\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET-CT, indicating malignancy. The presence of metastases to the internal mammary node and another node in the left cardiophrenic region suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient will experience cancer recurrence within 3 years of treatment initiation, despite an initial treatment response. | <Yes>

**no\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET-CT, indicating malignancy. The presence of metastasis to the internal mammary node and another node in the left cardiophrenic region suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient will experience cancer recurrence within 3 years of treatment initiation. | <label>Yes</label>

**no\_timeline:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The CT images show evidence of metastatic disease throughout multiple slices, indicating advanced cancer. The presence of lesions in various organs suggests a high likelihood of recurrence post-treatment, especially given the extensive spread. This aligns with a scenario where initial treatment might yield a response, but recurrence within 3 years is probable due to the aggressive nature and widespread metastasis observed. | Yes

### Model: OctoMed/OctoMed-7B

**all\_image:** [INCORRECT] <think>First, I carefully reviewed the entire patient timeline provided to understand the clinical course and cancer-related evidence. The patient was diagnosed with a left lung mass in February 2013, which was further evaluated with CT scans and confirmed as

a 5.1 cm mass in the lingula. A biopsy was performed, and the PET CT scan in April 2013 showed intense hypermetabolism in the left lung mass and additional FDG-avid lymph nodes in the left internal mammary chain and left anterior costophrenic angle, indicating metastatic disease. The key point here is the presence of metastatic lymph nodes confirmed by PET-CT, which suggests that the cancer had already spread beyond the primary site at the time of diagnosis. This is a critical factor in determining prognosis and treatment response. The question asks whether the patient will achieve an initial treatment response but experience cancer recurrence within 3 years. Given that the PET-CT already demonstrated metastatic lymph nodes at diagnosis, this indicates that the cancer was advanced and likely not curable with initial treatment alone. The presence of metastases is a strong predictor of recurrence even after initial response to therapy. Moreover, the timeline does not show any evidence of long-term remission or sustained disease control. The patient underwent multiple procedures including biopsy and imaging follow-ups, but there is no indication of complete resolution or prolonged disease-free interval. The aggressive nature of the disease, as evidenced by rapid lymph node involvement, supports the likelihood of recurrence within a short timeframe. Therefore, based on the documented evidence of metastatic disease at diagnosis and the natural history of such cancers, the patient is likely to experience recurrence within 3 years despite initial treatment response.

<brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass in February 2013, which was confirmed as a 5.1 cm mass on CT. A PET-CT scan in April 2013 revealed intense hypermetabolism in the mass and additional FDG-avid lymph nodes in the left internal mammary chain and left anterior costophrenic angle, indicating metastatic disease. The presence of metastatic lymph nodes at diagnosis strongly suggests that the cancer was advanced and likely to recur despite initial treatment. The timeline does not show evidence of sustained remission or long-term disease control. Given the aggressive nature of the disease and the documented metastases, recurrence within 3 years is highly probable.

<answer>Yes</answer> </label></think>

**axial\_1\_image: [CORRECT]** <think>First, I need to analyze the patient's timeline and imaging findings to determine if they achieved an initial treatment response but then experienced cancer recurrence within 3 years of treatment initiation. Looking at the timeline: - The patient had a CT scan on 2013-02-22 showing a left hemithorax mass in the lingula measuring approximately 5 cm. - A CT-guided biopsy was performed on 2013-03-06, confirming the presence of a lung mass. - On 2013-03-07, a PET-CT scan showed intense hypermetabolism in the left lung mass and new FDG-avid lymph nodes in the left internal mammary chain and left cardiophrenic region, indicating metastatic disease. - The biopsy results (from 2013-03-15) confirmed malignancy, supporting the diagnosis of lung cancer with nodal involvement. The patient underwent biopsy and likely started treatment around this time. The question is whether they achieved an initial treatment response but then had recurrence within 3 years. However, the timeline provided does not include any information about treatment initiation or response. There are no follow-up scans or reports indicating treatment response or recurrence after treatment. The last imaging mentioned is from 2013-03-15, which is the biopsy report, and no subsequent imaging or clinical outcomes are provided. Without evidence of treatment initiation, response assessment, or recurrence within 3 years, it is impossible to conclude whether the patient achieved an initial response and then recurred. The available data only confirms the presence of a lung mass and nodal metastases at the time of diagnosis and biopsy. Therefore, based solely on the provided patient timeline and imaging findings, there is no evidence to support the claim that the patient achieved an initial treatment response followed by recurrence within 3 years. The necessary data to make this determination is missing.

<brief reasoning trace with explanation for label selection> | <label> The patient's timeline and imaging findings confirm the presence of a left lung mass and nodal metastases at diagnosis. However, there is no information about treatment initiation, response assessment, or recurrence within 3 years. Without evidence of treatment and subsequent outcomes, it is impossible to determine if the

patient achieved an initial response followed by recurrence. The required data is absent.  
<answer>No</answer></think>

**axial\_all\_image: [CORRECT]** <think>First, I carefully reviewed the entire patient timeline provided, focusing on the key clinical events and imaging findings. The patient was diagnosed with a left lung mass in February 2013, which was further evaluated with CT scans and confirmed to be a hypermetabolic lesion on PET-CT, indicating malignancy. The PET-CT on April 9, 2013, showed the mass and two new lymph nodes in the left internal mammary chain and left cardiophrenic region, both FDG-avid, suggesting metastatic spread. Subsequent procedures included a CT-guided biopsy of the left lung mass and the left internal mammary lymph node, confirming malignancy. The patient underwent treatment, but the timeline does not provide any information about the treatment response or recurrence. The last documented event is from April 17, 2013, which is a biopsy procedure, and no follow-up imaging or clinical outcomes are mentioned beyond that. Since the question asks whether the patient achieved an initial treatment response but experienced cancer recurrence within 3 years, I must look for evidence of treatment response followed by recurrence. The timeline does not include any post-treatment follow-up data, such as imaging showing response, recurrence, or survival outcomes. Without documented evidence of recurrence or treatment response, it is impossible to conclude whether the patient had an initial response followed by recurrence within 3 years. Therefore, based solely on the provided timeline, there is no information to support the claim of initial treatment response and subsequent recurrence within 3 years. The timeline ends with a biopsy procedure in April 2013, and no further clinical or imaging data are provided.</think>  
<answer>No</answer>

**no\_image: [CORRECT]** <think>First, I need to determine if the patient achieved an initial treatment response but experienced cancer recurrence within 3 years of treatment initiation. The key points to consider are the timeline of events, the nature of the cancer, treatments administered, and any evidence of recurrence. Looking at the patient's timeline: - The patient was born in 1988 (MEDS\_BIRTH entries). - In 2013, there were multiple imaging studies showing a left hemithorax mass, which was biopsied and confirmed as a lung mass. - The CT scans and PET-CT (04/09/2013) showed a hypermetabolic mass in the left lung with metastasis to an ipsilateral internal mammary node and another node in the left cardiophrenic region. - The PET-CT indicated intense hypermetabolism (SUV max 18.21) of the lung mass and the lymph nodes, suggesting malignancy. - The patient underwent a CT-guided biopsy of the lung mass and the internal mammary lymph node, confirming metastatic disease. - There is no mention of any treatment (surgery, chemotherapy, radiation) being initiated after these findings. The timeline stops at 2013-03-15 with the biopsy procedure, but no subsequent treatment is documented. Since the timeline provided does not include any treatment initiation or follow-up beyond the biopsy, there is no evidence that the patient received any therapy. Therefore, the concept of an initial treatment response does not apply because no treatment was given. Consequently, recurrence cannot be assessed either. The question asks if the patient achieved an initial treatment response but then had recurrence within 3 years. Without any treatment documented, it's impossible to confirm a response or subsequent recurrence. The available data only shows the diagnosis and biopsy confirmation, not treatment or outcomes. Thus, based solely on the provided PATIENT\_TIMELINE, there is no information to support that the patient underwent treatment or experienced recurrence. The correct answer is "No" because the timeline does not include treatment initiation or any subsequent events that would indicate recurrence.</think> <brief reasoning trace with explanation for label selection> | <label> The patient's timeline documents the diagnosis of a left hemithorax mass with metastatic involvement of lymph nodes but does not include any treatment initiation (e.g., surgery, chemotherapy, radiation). Without evidence of treatment, it is impossible to assess an initial treatment response or subsequent recurrence. The timeline ends with the biopsy procedure in March 2013, with no follow-up treatment or outcomes recorded. Therefore, the answer is "No" because the required clinical events (treatment and recurrence) are not documented in the

provided data. <answer>No</answer></think>

**no\_timeline:** [CORRECT] <think>First, I carefully examine the image provided. It is a CT scan showing axial slices of the pelvis and lower abdomen. The scan reveals bony structures, soft tissues, and gas patterns. The image does not provide direct evidence of tumor recurrence or treatment response. There is no visible tumor mass, no new lesions, or signs of metastasis. The scan appears to show normal post-treatment anatomy without acute abnormalities. However, the question asks about the patient's clinical history and treatment response, which cannot be inferred solely from this image. The question references a timeline and recurrence within 3 years, which requires clinical data not visible here. Without additional clinical data, I cannot confirm recurrence or response. Therefore, I must rely on the patient's documented timeline. Since the question is about recurrence within 3 years, and the image does not show recurrence, I conclude that the patient likely does not experience recurrence within 3 years based on the image and clinical context.</think> <answer>No</answer>

### **Model: Qwen/Qwen3-VL-8B-Instruct**

**all\_image:** [CORRECT] The patient's timeline shows a left lung mass diagnosed in March 2013, with subsequent imaging and biopsy confirming it as lung cancer. The PET-CT scan from April 2013 revealed the primary lung mass and two new, FDG-avid lymph nodes in the left internal mammary chain and left cardiophrenic angle, which are suspicious for metastases. This indicates the cancer had already spread beyond the primary site at the time of initial diagnosis. The timeline does not contain any evidence of treatment being initiated or any documentation of a treatment response. Furthermore, there is no information regarding any recurrence within 3 years of treatment initiation. Therefore, based on the provided evidence, the patient did not achieve an initial treatment response, and there is no evidence of recurrence within 3 years. No

**axial\_1\_image:** [CORRECT] The provided PATIENT\_TIMELINE documents a solitary left lung mass (lingular) diagnosed in 2013, with subsequent imaging and biopsy confirming malignancy. The timeline includes a PET-CT scan (April 2013) that identified the primary lung mass and two FDG-avid lymph nodes (internal mammary and cardiophrenic angle) as suspicious for metastases. The imaging findings from April 2013 indicate that the lung mass and lymph nodes were not significantly changed in size compared to the prior scan (March 2013), suggesting no immediate treatment response. The timeline does not contain any documentation of treatment initiation, response assessment, or follow-up imaging beyond the initial staging. There is no evidence of cancer recurrence within 3 years of treatment initiation because no treatment has been documented. Therefore, the patient cannot be said to have achieved an initial treatment response, nor can recurrence be confirmed. No | No

**axial\_all\_image:** [CORRECT] The patient's timeline shows a solitary left lung mass diagnosed in March 2013, with subsequent imaging and biopsy confirming it as lung cancer. The PET-CT scan from April 2013 revealed intense hypermetabolism in the lung mass and new, FDG-avid lymph nodes in the left internal mammary chain and left cardiophrenic angle, which are suspicious for metastases. This indicates the cancer had already spread beyond the primary site at the time of initial diagnosis. The timeline does not contain any evidence of treatment response or follow-up imaging beyond the initial staging. Therefore, there is no information to support the patient achieving an initial treatment response, nor is there any evidence of recurrence within 3 years. The question asks if the patient will achieve an initial treatment response but experience recurrence within 3 years. Since there is no evidence of a treatment response, the answer is "No". No | No

**no\_image:** [CORRECT] The patient's timeline shows a large left lung mass (5.0–6.4 cm) identified in March 2013, followed by biopsy and staging. PET/CT in April 2013 revealed intense hypermetabolism in the lung mass and new FDG-avid lymph nodes (internal mammary and cardiophrenic), consistent with metastatic disease. No evidence of distant metastases was



found at that time. However, the timeline does not include any documentation of treatment initiation, response assessment, or follow-up beyond April 2013. Therefore, there is no evidence of an initial treatment response, nor any documentation of recurrence within 3 years. The question requires both an initial response and recurrence within 3 years — neither is supported by the timeline. No | No

**no\_timeline:** [CORRECT] The provided PATIENT\_TIMELINE consists solely of a series of CT scan images that sequentially scan from the lower extremities up through the abdomen, pelvis, thorax, and finally the head and neck. There is no clinical history, no documentation of cancer diagnosis, no treatment plan, no evidence of initial treatment response, and no information regarding cancer recurrence or follow-up. Without any explicit evidence of cancer, treatment, or recurrence, it is impossible to determine whether the patient will achieve an initial treatment response or experience recurrence within 3 years. <brief reasoning trace with explanation for label selection> | No

**Model:** google/medgemma-1.5-4b-it

[illegible]



[illegible]







**no\_image: [INCORRECT]** The patient was diagnosed with lung cancer in 2013. The patient underwent a CT-guided biopsy of the left lung mass and the internal mammary lymph node. The biopsy revealed metastatic disease. The patient is currently undergoing treatment for lung cancer. Given the presence of metastatic disease, it is likely that the cancer will recur within 3 years of treatment initiation. <Yes>



the images suggest a possible diagnosis of cancer. Based on the provided images, it is difficult to determine whether the patient will achieve an initial treatment response but experience cancer recurrence within 3 years of treatment initiation. The images show a large amount of tissue and fluid, which could be a sign of cancer. However, it is also possible that the images are showing a normal anatomical structure. Given the lack of clinical information and the limited information in the images, it is impossible to determine whether the patient will achieve an initial treatment response but experience cancer recurrence within 3 years of treatment initiation. No

## Subtask: has\_recurrence\_4\_yr

### Question:

Based on the patient's clinical history and current cancer-related evidence, will the patient achieve an initial treatment response but experience cancer recurrence within 4 years of treatment initiation?

Correct Answer: No

### Model: OpenGVLab/InternVL3\_5-8B

**all\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET CT, indicating malignancy. The presence of metastasis to the internal mammary node suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient will experience cancer recurrence within 4 years of treatment initiation, despite an initial treatment response. | Yes

**axial\_1\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET-CT, indicating malignancy. The presence of metastasis to the internal mammary node and another node in the left cardiophrenic region suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient will experience cancer recurrence within 4 years of treatment initiation, despite an initial treatment response. | Yes

**axial\_all\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET-CT, indicating malignancy. The presence of metastases to the internal mammary node and another node in the left cardiophrenic region suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient will experience cancer recurrence within 4 years of treatment initiation, despite an initial treatment response. | <Yes>

**no\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass, which was later confirmed to be a malignancy with metastasis to the internal mammary node and another node in the left cardiophrenic region. The PET CT scan indicated intense hypermetabolism associated with the mass and the metastatic nodes, suggesting an aggressive tumor. Given the stage and the presence of metastasis, it is likely that the patient will experience cancer recurrence within 4 years of treatment initiation. | Yes

**no\_timeline:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The CT images show evidence of metastatic disease throughout multiple slices, indicating advanced cancer. Given the widespread nature of the disease and typical patterns of recurrence in such cases, it is likely that the patient will experience cancer recurrence within 4 years of treatment initiation despite an initial treatment response. | Yes

### Model: OctoMed/OctoMed-7B

**all\_image:** [INCORRECT] <think>First, I carefully reviewed the entire patient timeline provided to understand the clinical course and cancer-related evidence. The patient was diagnosed with a left lingular lung mass in 2013, which was further evaluated with CT scans and confirmed to

be a suspicious lesion. The CT chest with contrast on 03/28/2013 showed a 5.1 cm mass in the left lung, and subsequent PET-CT on 04/09/2013 revealed intense hypermetabolism of the mass with FDG uptake, indicating malignancy. Additionally, there were new hypermetabolic lymph nodes in the left internal mammary chain and left cardiophrenic region, suspicious for metastases. The patient underwent a CT-guided biopsy of the left internal mammary lymph node on 04/17/2013, which confirmed metastatic disease. This confirms that the cancer had already spread to regional lymph nodes at the time of diagnosis. The presence of metastatic lymph nodes at initial diagnosis is a strong indicator of advanced disease and a higher risk of recurrence. Given that the patient had a confirmed malignant lung mass with regional lymph node involvement at diagnosis, the likelihood of achieving an initial treatment response is low. Moreover, the presence of metastatic lymph nodes suggests that the cancer is not localized and therefore more likely to recur after initial therapy. The timeline does not indicate any subsequent treatment details or outcomes, but based on the available data, the patient's cancer was already advanced and metastatic at diagnosis. Therefore, based on the evidence of a malignant lung mass with confirmed lymph node metastases at initial presentation, it is highly probable that the patient would experience cancer recurrence within 4 years of treatment initiation, even if initial treatment achieved some response.

<brief reasoning trace with explanation for label selection> | <label> The patient presented with a 5.1 cm left lingular lung mass confirmed as malignant via PET-CT and biopsy. The PET-CT on 04/09/2013 showed hypermetabolic lymph nodes in the left internal mammary chain and left cardiophrenic region, indicating metastatic spread at diagnosis. The presence of metastatic lymph nodes at initial staging strongly correlates with a higher risk of recurrence. Given the advanced stage and confirmed metastases, the patient is likely to experience cancer recurrence within 4 years of treatment initiation.

**axial\_1\_image: [INCORRECT]** <think>First, I need to analyze the patient's timeline and imaging findings to determine if they achieved an initial treatment response but then experienced cancer recurrence within 4 years of treatment initiation. Looking at the timeline: - The patient had a CT scan on 2013-02-22 showing a left hemithorax mass in the lingula measuring approximately 4.8-5.5 cm. - A CT-guided biopsy was performed on 2013-03-06, confirming the presence of a lung mass. - On 2013-03-07, a PET-CT scan showed intense hypermetabolism of the left lung mass with FDG-avid metastases to an ipsilateral internal mammary node and another node in the left cardiophrenic region. - The patient underwent a biopsy of the internal mammary lymph node on 2013-04-17, confirming metastatic disease. - The patient's clinical history indicates lung cancer, and the PET-CT was an initial staging study. There is no mention of any treatment initiation in the timeline. The timeline ends with the biopsy results and no subsequent treatment or follow-up imaging beyond 2013-03-15. The last entry is from 2013-03-15, which is before any treatment would have been administered. Since the timeline does not include any treatment initiation or response assessment, it is impossible to determine if the patient achieved an initial treatment response or if there was a recurrence within 4 years. The timeline only provides diagnostic information up to 2013-03-15, with no evidence of treatment or follow-up beyond that date. Therefore, based solely on the provided PATIENT\_TIMELINE, there is no data to support the claim that the patient achieved an initial treatment response followed by recurrence within 4 years. The timeline lacks treatment details and subsequent outcomes necessary to answer the question.

<brief reasoning trace with explanation for label selection> | <label> The provided PATIENT\_TIMELINE includes diagnostic imaging and biopsy results but does not mention any treatment initiation, response assessment, or recurrence events. Without information on treatment details, timelines, or follow-up outcomes, it is impossible to determine if the patient achieved an initial treatment response or experienced recurrence within 4 years. The absence of treatment data precludes a definitive answer.

**axial\_all\_image: [CORRECT]** <think>First, I carefully reviewed the entire patient timeline provided, focusing on the key clinical events and imaging findings. The patient was diagnosed

with a left lung mass in February 2013, which was further evaluated with CT scans and confirmed to be a hypermetabolic lesion on PET-CT in April 2013, indicating malignancy. The PET-CT also showed metastatic involvement of an ipsilateral internal mammary lymph node and another node in the left cardiophrenic region, suggesting regional spread. The patient underwent a CT-guided biopsy of the internal mammary lymph node in April 2013, which confirmed metastatic disease. This confirms the presence of cancer spread beyond the primary lung mass. The timeline does not mention any subsequent treatment details or outcomes, such as surgery, chemotherapy, radiation, or follow-up imaging to assess treatment response or recurrence. Since the question asks whether the patient will achieve an initial treatment response but experience cancer recurrence within 4 years of treatment initiation, I need to consider if there is any evidence of treatment response followed by recurrence. However, the provided timeline only includes diagnostic and biopsy procedures up to April 2013, without any data on treatment or subsequent follow-up beyond that date. There is no mention of treatment initiation, response assessment, or recurrence events. Therefore, based solely on the provided patient timeline, there is no information to confirm or deny whether the patient achieved an initial treatment response followed by recurrence within 4 years. The timeline ends with the biopsy results in April 2013, and no further clinical or imaging data are provided. Hence, the correct answer must be based on the absence of evidence in the timeline, and the options are "Yes" or "No". Given the lack of data on treatment and recurrence, the most accurate response is "No" because there is no evidence to support the scenario described in the question.</think>  
<answer>No</answer>

**no\_image: [CORRECT]** <think>First, I need to determine if the patient achieved an initial treatment response but experienced cancer recurrence within 4 years of treatment initiation. The key points to consider are the timeline of events, the nature of the cancer, treatments administered, and any evidence of recurrence. Looking at the patient's timeline: - The patient was born in 1988 (MEDS\_BIRTH entries). - In 2013, there were multiple imaging studies showing a left lung mass, which was biopsied. - The CT scans and PET-CT (04/09/2013) indicate a hypermetabolic left lung mass with metastasis to an ipsilateral internal mammary node and another node in the left cardiophrenic region. - The PET-CT confirmed intense hypermetabolism (SUV max 18.21) in the lung mass and nodes, indicating active malignancy. - The patient underwent a CT-guided biopsy of the lung mass and the internal mammary lymph node (04/17/2013), which confirmed metastatic disease. - There is no mention of any treatment (surgery, chemotherapy, radiation) after the biopsy. The timeline only shows diagnostic procedures and follow-up imaging. Since the timeline does not include any treatment initiation (e.g., surgery, chemotherapy, radiation), there is no evidence that the patient received any treatment. Without treatment, the cancer would not have been treated, so there is no initial treatment response to evaluate. The recurrence question is irrelevant because no treatment was given. Therefore, the patient did not achieve an initial treatment response because no treatment was administered. The recurrence cannot be assessed as the patient was not treated. The correct answer is "No" because the premise of treatment response and subsequent recurrence cannot be met without treatment.</think> <brief reasoning trace with explanation for label selection> | <label> The patient's timeline shows diagnostic imaging and biopsy of a left lung mass with metastatic nodes but no evidence of treatment initiation (e.g., surgery, chemotherapy, radiation). Without treatment, there is no initial treatment response to evaluate, and recurrence cannot be assessed. The correct answer is "No" because the question assumes treatment was given, which is not documented. </label></think> <answer>No</answer>

**no\_timeline: [INCORRECT]** <think>First, I carefully examine the image provided. It appears to be a CT scan of the pelvis, showing axial slices progressing from the lower pelvis upward. The images show bony structures, soft tissues, and gas patterns. The scan does not directly show the brain or skull base, but the lower axial slices include the pelvis and proximal femurs. The question asks about cancer recurrence within 4 years of treatment initiation, which implies the patient has a known malignancy. However, the image itself does not provide direct evidence of

tumor recurrence or response to treatment. There are no visible masses, no obvious new lesions, or signs of recurrence in the pelvis. The scan shows normal-appearing bone and soft tissue without clear evidence of tumor progression. Without additional clinical data or imaging of the original tumor site (e.g., brain or other organs), I cannot definitively conclude recurrence. The question is asking about a clinical scenario that requires knowledge of the patient's treatment history, tumor type, and follow-up imaging or pathology, none of which are provided here. Therefore, based solely on the image and the lack of clinical context, I cannot confirm recurrence or response. The correct answer must be based on the patient's timeline, which is not available here. Given the lack of evidence in the image, I must conclude that the answer cannot be determined from this image alone.

</think> <answer>Yes</answer>

### Model: Qwen/Qwen3-VL-8B-Instruct

**all\_image:** [CORRECT] The patient's timeline shows a large, hypermetabolic left lung mass (4.6 x 5.3 cm) with confirmed metastases to the left internal mammary lymph node and another node in the left cardiophrenic angle, as evidenced by PET-CT findings on 04/09/2013. The timeline documents a biopsy of the lung mass and lymph node, but does not contain any information regarding subsequent treatment, response to treatment, or any follow-up imaging or clinical data beyond the initial staging. Therefore, there is no evidence in the provided timeline to support that the patient achieved an initial treatment response, nor is there any evidence of cancer recurrence within 4 years of treatment initiation. The question asks for a prediction based on the available evidence, which is insufficient to confirm either outcome. No | No

**axial\_1\_image:** [CORRECT] The provided PATIENT\_TIMELINE documents a left lung mass (lingular) diagnosed in 2013, with subsequent imaging and biopsy confirming malignancy. The timeline includes a PET-CT scan (04/09/2013) that identified the primary lung mass and also revealed FDG-avid metastases to the left internal mammary lymph node and a node in the left cardiophrenic angle. This indicates stage IV disease at diagnosis. The timeline does not contain any documentation of treatment initiation, response, or follow-up beyond the initial staging. There is no evidence of any treatment being administered, nor is there any documentation of a treatment response or recurrence within 4 years. Therefore, based on the available evidence, the patient has not yet achieved an initial treatment response, and there is no evidence of recurrence within 4 years. The question asks whether the patient will achieve an initial treatment response but experience recurrence within 4 years. Since no treatment has been initiated and no response or recurrence is documented, the answer is "No". No | No

**axial\_all\_image:** [CORRECT] The patient's timeline shows a solitary left lung mass diagnosed in March 2013, with subsequent imaging and biopsy confirming it as lung cancer. The PET-CT scan in April 2013 revealed intense hypermetabolism in the lung mass and new, FDG-avid lymph nodes in the left internal mammary chain and left cardiophrenic angle, which are consistent with metastatic disease. The timeline does not contain any documentation of treatment initiation, response, or follow-up beyond the initial staging. Therefore, there is no evidence to support that the patient achieved an initial treatment response, nor is there any evidence of recurrence within 4 years. The question asks about a future event (recurrence within 4 years) that cannot be determined from the provided timeline. No

**no\_image:** [CORRECT] The patient's timeline shows a large left lung mass (5.0–6.4 cm) identified in March 2013, with subsequent imaging and biopsy confirming malignancy (PET-CT shows intense hypermetabolism, SUV max 18.21, and biopsy of internal mammary node confirms metastatic disease). The timeline includes no documentation of treatment initiation (surgery, radiation, or systemic therapy) or any response to treatment. There is no evidence of treatment response, nor is there any documentation of recurrence within 4 years — in fact, the timeline ends at 2013-03-15 with no follow-up or recurrence data. Since the patient has not yet received treatment, the question of achieving an initial treatment response and then experiencing recurrence within 4 years cannot be answered as "Yes" — there is no treatment

**no\_timeline:** [CORRECT] The provided PATIENT\_TIMELINE consists solely of a series of CT scan images that sequentially scan from the lower extremities up through the abdomen, pelvis, thorax, and finally the head and neck. There is no clinical history, no documentation of cancer diagnosis, no treatment details, no evidence of initial treatment response, and no information regarding cancer recurrence or follow-up. Without any explicit evidence of cancer, treatment, or recurrence, it is impossible to determine whether the patient will achieve an initial treatment response or experience recurrence within 4 years. <brief reasoning trace with explanation for label selection> | No

[illegible]



**no\_image: [INCORRECT]** <br>brief reasoning trace with explanation for label selection> | <label>  
The patient has a history of a left lung mass, confirmed by CT scans and biopsy. The initial CT scan in February 2013 showed a 5.0 cm mass in the lingula. A biopsy was performed on March 31, 2013, confirming malignancy. Subsequent CT scans in April 2013 show the mass is unchanged in size (4.9 x 5.4 x 6.7 cm). Furthermore, the PET CT scan from April 9, 2013, shows intense hypermetabolism in the lung mass (SUV max 18.21) and also identifies hypermetabolic lymph nodes in the left internal mammary chain (SUV max 2.44) and left anterior costophrenic region (SUV max 3.59). These findings strongly suggest metastatic disease. The question asks if the patient will achieve an initial treatment response but experience cancer recurrence within 4 years. Given the confirmed malignancy and evidence of metastatic spread (lymph nodes), the patient has cancer. While treatment is initiated, the presence of metastatic disease significantly increases the likelihood of recurrence, especially within a short timeframe like 4 years. Therefore, the patient is unlikely to achieve a complete initial treatment response without experiencing recurrence. No | Yes





**no\_image: [CORRECT]** The patient was diagnosed with lung cancer in 2013. The patient underwent a CT-guided biopsy of the left lung mass and the internal mammary lymph node. The biopsy revealed metastatic disease. The patient is currently undergoing treatment for lung cancer. Given the presence of metastatic disease, it is likely that the cancer will recur within 4 years of treatment initiation. <No>

**no\_timeline:** [CORRECT] The images show a cross-sectional view of the chest, likely from a CT scan. The images show a large mass in the chest, which is likely a tumor. The images also show some fluid around the tumor. The patient has a history of cancer, and the images show that the tumor is still present. Therefore, the patient will not achieve an initial treatment response but experience cancer recurrence within 4 years of treatment initiation. No

## Subtask: has\_recurrence\_5\_yr

### Question:

Based on the patient's clinical history and current cancer-related evidence, will the patient achieve an initial treatment response but experience cancer recurrence within 5 years of treatment initiation?

Correct Answer: No

### Model: OpenGVLab/InternVL3\_5-8B

**all\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET CT, indicating malignancy. The presence of metastasis to the internal mammary node suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient will experience cancer recurrence within 5 years of treatment initiation, despite an initial treatment response. | Yes

**axial\_1\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic on PET-CT, indicating malignancy. The presence of metastasis to the internal mammary node and another node in the left cardiophrenic region suggests an advanced stage of cancer. Given the stage and the nature of the tumor, it is likely that the patient will experience cancer recurrence within 5 years of treatment initiation, despite achieving an initial treatment response. | Yes

**axial\_all\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left lung mass, which was later confirmed to be hypermetabolic and suspicious for metastasis. The imaging studies indicated the presence of metastatic disease in the internal mammary lymph nodes. Given the stage and characteristics of the tumor, it is likely that the patient would achieve an initial treatment response. However, the presence of metastasis suggests a higher likelihood of recurrence within 5 years of treatment initiation. | Yes

**no\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient was diagnosed with a left upper lobe lung mass, which was later confirmed to be hypermetabolic on PET-CT, indicating malignancy. The presence of metastases to the left internal mammary node and another node in the left cardiophrenic region suggests an advanced stage of cancer. Given the stage and the presence of metastatic disease, it is highly likely that the patient will experience cancer recurrence within 5 years of treatment initiation. | <label>Yes</label>

**no\_timeline:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The CT images show evidence of metastatic disease throughout multiple slices, indicating advanced cancer. Given the widespread nature of the disease and typical patterns of recurrence in such cases, it is likely that the patient will experience cancer recurrence within 5 years despite an initial treatment response. | Yes

### Model: OctoMed/OctoMed-7B

**all\_image:** [CORRECT] <think>First, I carefully reviewed the entire patient timeline provided to understand the clinical course and cancer-related evidence. The patient was diagnosed with a left lingular lung mass in 2013, which was further evaluated with CT scans and confirmed to be

a suspicious lesion. The CT chest with contrast on 04/09/2013 showed intense hypermetabolism on PET-CT, indicating malignancy, and identified metastatic spread to an ipsilateral internal mammary lymph node and another node in the left cardiophrenic region. This confirms the presence of metastatic disease at diagnosis. The patient underwent a CT-guided biopsy of the internal mammary lymph node on 04/17/2013, which was successful and confirmed metastatic disease. There is no mention of any treatment initiation or response assessment in the timeline provided. The timeline does not include any data on treatment modalities such as surgery, chemotherapy, radiation, or immunotherapy, nor any follow-up imaging or biomarkers that would indicate treatment response or recurrence. Since the question asks whether the patient will achieve an initial treatment response but experience cancer recurrence within 5 years, I must base my answer solely on the provided timeline. The timeline does not provide any evidence of treatment initiation or outcomes. Without treatment data, it is impossible to determine if there was an initial response or subsequent recurrence. Therefore, based on the information given, I cannot confirm or deny the scenario described in the question. Hence, the correct answer is "No" because the timeline does not contain sufficient information to support the claim of an initial treatment response followed by recurrence within 5 years.

<brief reasoning trace with explanation for label selection> | <label> The patient's timeline shows a left lingular lung mass diagnosed in 2013 with PET-CT confirming metastatic spread to lymph nodes. No treatment initiation, response assessment, or recurrence data are provided. Without evidence of treatment or outcomes, it is impossible to determine if an initial response followed by recurrence occurred. <answer>No</answer></think>

**axial\_1\_image: [CORRECT]** <think>First, I need to analyze the patient's timeline and imaging findings to determine if they achieved an initial treatment response but experienced cancer recurrence within 5 years. Looking at the timeline, the patient was first diagnosed with a left lung mass in February 2013. Imaging from that time showed a 5.1 cm mass in the lingula. A biopsy was performed, confirming the presence of a lung mass. Then, in March 2013, a PET-CT scan (April 9, 2013) showed intense hypermetabolism in the left lung mass and new FDG-avid lymph nodes in the left internal mammary chain and left cardiophrenic region, indicating metastatic spread. The patient underwent a CT-guided biopsy of the internal mammary lymph node on April 17, 2013, which confirmed metastatic disease. This suggests that at the time of diagnosis and initial treatment, the cancer was already metastatic. The question is whether the patient achieved an initial treatment response but then had recurrence within 5 years. However, the timeline provided does not show any treatment after the initial diagnosis or biopsy. There is no mention of any treatment such as surgery, chemotherapy, or radiation. The patient underwent biopsies but no definitive treatment is documented. The follow-up imaging on March 26, 2013, and March 30, 2013, show the mass and lymph nodes still present, but no treatment effect is described. Since there is no evidence of treatment initiation or response, it is impossible to conclude that the patient achieved an initial treatment response. Without treatment, recurrence cannot be assessed. Therefore, the answer must be "No" because there is no documented treatment response or recurrence within 5 years based on the provided timeline.

<brief reasoning trace with explanation for label selection> | <label> The patient's timeline shows a left lung mass diagnosed in February 2013, with subsequent imaging confirming metastatic spread to lymph nodes by April 2013. No treatment (e.g., surgery, chemotherapy, radiation) is documented in the timeline. Without evidence of treatment initiation or response, recurrence cannot be assessed. Thus, the patient did not achieve an initial treatment response, and recurrence within 5 years is not supported by the data. <answer>No</answer></think>

**axial\_all\_image: [CORRECT]** <think>First, I carefully reviewed the entire patient timeline provided, focusing on the key clinical events and imaging findings. The patient was diagnosed with a left lung mass in February 2013, which was further evaluated with CT scans and confirmed to be a hypermetabolic lesion on PET-CT, indicating malignancy. The PET-CT on April 9, 2013, showed the primary lung mass and two new hypermetabolic lymph nodes in the left internal mammary chain and left cardiophrenic region, suggesting metastatic spread.



Subsequent procedures included a CT-guided biopsy of the left lung mass and the left internal mammary lymph node, both performed in April 2013, confirming the presence of malignancy. The patient's clinical course post-biopsy is not detailed in the timeline, but the presence of metastatic lymph nodes at diagnosis is a critical prognostic factor. The question asks whether the patient will achieve an initial treatment response but experience cancer recurrence within 5 years. Based on the timeline, there is no mention of definitive treatment such as surgery, chemotherapy, or radiation, nor any follow-up imaging or clinical data indicating response or recurrence. The timeline ends in April 2013 with the lymph node biopsy, and no subsequent treatment or outcome data is provided. Without evidence of treatment initiation or recurrence within 5 years, it is impossible to conclude whether the patient achieved an initial response followed by recurrence. The timeline does not provide sufficient data to answer "Yes" or "No" definitively. Therefore, the correct answer must be based solely on the information available, which is insufficient to confirm either outcome.</think> <answer>No</answer>

**no\_image: [CORRECT]** <think>First, I need to determine if the patient will achieve an initial treatment response but experience cancer recurrence within 5 years based on the provided timeline. Looking at the timeline, the patient was diagnosed with a left lingular mass in February 2013. The CT scans show a 5.1 cm mass in the left hemithorax. A biopsy was performed on March 31, 2013, which confirmed the presence of a lung mass. The PET CT on April 9, 2013, revealed that the mass is intensely hypermetabolic with SUV max 18.21, indicating high metabolic activity consistent with malignancy. Additionally, there are hypermetabolic lymph nodes in the left internal mammary chain and left anterior costophrenic region, suggesting metastatic spread. The patient underwent a CT-guided biopsy of the internal mammary lymph node on April 17, 2013, which confirmed metastatic disease. This indicates that the cancer has already spread to regional lymph nodes at the time of diagnosis. Given that the patient had a confirmed lung mass with metastatic lymph nodes at diagnosis, this is not an early-stage cancer. The presence of metastatic disease at diagnosis typically implies a more advanced stage, which is associated with a higher risk of recurrence even after initial treatment. The timeline does not mention any treatment details such as surgery, chemotherapy, or radiation. Without treatment, the natural course of metastatic lung cancer is progression. However, the question is about whether the patient will achieve an initial treatment response but then recur within 5 years. Since there is no evidence of treatment, it's impossible to assess a treatment response. The timeline only shows diagnostic and biopsy procedures, not treatment initiation. Therefore, based solely on the provided timeline, there is no information about treatment or its outcomes. The patient was diagnosed with a metastatic lung mass, which inherently has a poor prognosis with high recurrence rates. However, without treatment, recurrence is almost certain, but the question specifically asks about achieving an initial treatment response followed by recurrence within 5 years. Since no treatment is documented, the answer must be "No" because there is no evidence of any treatment response to evaluate.</think> <brief reasoning trace with explanation for label selection> | <label> The patient's timeline shows a confirmed metastatic lung mass at diagnosis (April 2013) with hypermetabolic lymph nodes on PET CT. No treatment details are documented, making it impossible to assess an initial treatment response. Without treatment, recurrence is inevitable, but the question requires evidence of a treatment response followed by recurrence within 5 years, which is absent. Thus, the answer is "No."</think> <answer>No</answer>

**no\_timeline: [CORRECT]** <think>First, I carefully examine the image provided. It appears to be a CT scan of the pelvis, showing axial slices progressing from the lower pelvis upward. The images show bony structures, soft tissues, and gas patterns. The scan does not directly show the brain or skull base, but the lower axial slices include the pelvis and proximal femurs. The question asks about cancer recurrence within 5 years of treatment initiation, which implies the patient has a history of cancer treated in the pelvis or lower abdomen. However, the image itself does not provide direct evidence of cancer recurrence or treatment response. There are no visible tumor masses, no obvious metastatic lesions, or signs of recurrence such as new bone

destruction or soft tissue masses. The bony structures appear intact, and the soft tissues do not show abnormal enhancement or masses. The gas patterns in the bowel are normal and do not suggest obstruction or perforation. Since the question is about the patient's clinical history and treatment response, I must rely on the timeline data provided, which is absent here. Without clinical data, pathology reports, or treatment records, I cannot definitively conclude recurrence or response. The image alone does not confirm recurrence or response. Given the lack of direct evidence in the image and the question's focus on the patient's clinical course, I must conclude that the image does not provide sufficient information to answer definitively. However, the question asks specifically about recurrence within 5 years, and the image does not show any signs of recurrence. Therefore, based on the image alone, the most cautious answer is "No," as there is no visible evidence of recurrence in these scans. In summary, the image does not show recurrence, and without clinical data, the answer is "No."

### **Model: Qwen/Qwen3-VL-8B-Instruct**

**all\_image: [CORRECT]** The patient's timeline shows a large, hypermetabolic left lung mass (4.6 x 5.3 cm) with confirmed metastases to the left internal mammary lymph node and another node in the left cardiophrenic angle, as evidenced by PET-CT findings on 04/09/2013. The timeline documents a biopsy of the lung mass and lymph node, but there is no record of any subsequent treatment (surgery, radiation, or systemic therapy) being administered. The question asks whether the patient will achieve an initial treatment response but experience recurrence within 5 years. Since no treatment has been initiated, there can be no "initial treatment response." Therefore, the answer is "No." No | No

**axial\_1\_image: [CORRECT]** The provided PATIENT\_TIMELINE documents a solitary left lung mass (lingular) diagnosed in 2013, with subsequent imaging and biopsy confirming malignancy. The timeline includes a PET-CT scan (April 2013) that identified intense hypermetabolism in the lung mass and new FDG-avid lymph nodes in the left internal mammary chain and left cardiophrenic angle, which are suspicious for metastases. The timeline also includes a CT-guided biopsy of the internal mammary lymph node, which was performed to evaluate for metastatic disease. However, the timeline does not contain any documentation of treatment initiation (e.g., surgery, chemotherapy, radiation) or any follow-up imaging or clinical assessments that would indicate whether the patient achieved an initial treatment response or experienced cancer recurrence within 5 years of treatment initiation. The timeline ends with the biopsy of the internal mammary lymph node in April 2013, and there is no evidence of subsequent treatment or surveillance outcomes. Since there is no evidence of treatment initiation or any documented outcome regarding treatment response or recurrence within 5 years, it is impossible to determine whether the patient achieved an initial treatment response or experienced recurrence within the specified timeframe based on the provided timeline. Therefore, the correct answer is "No" because the evidence does not support the scenario described in the question. No | No

**axial\_all\_image: [CORRECT]** The patient's timeline shows a solitary left lung mass diagnosed in March 2013, with subsequent imaging and biopsy confirming it as lung cancer. The PET-CT scan from April 2013 revealed intense hypermetabolism in the lung mass and new, FDG-avid lymph nodes in the left internal mammary chain and left cardiophrenic angle, which are suspicious for metastases. This indicates the cancer had already spread beyond the primary site at the time of initial diagnosis. The timeline does not contain any information about the patient receiving treatment or achieving a response. Furthermore, there is no evidence of any follow-up or surveillance imaging beyond the initial staging scans. Therefore, there is no information to support that the patient achieved an initial treatment response, nor is there any evidence of recurrence within 5 years. The question asks if the patient will achieve an initial treatment response but experience recurrence within 5 years. Since there is no evidence of treatment or response, the answer must be "No". No | No

**no\_image:** [CORRECT] The patient's timeline shows a large left lung mass (5.0–6.4 cm) identified in March 2013, with subsequent imaging and biopsy confirming malignancy (PET-CT shows intense hypermetabolism, SUV max 18.21, and biopsy of internal mammary node confirms metastatic disease). The timeline includes no documentation of treatment initiation (surgery, radiation, or systemic therapy) or any response to treatment. There is no evidence of treatment response, nor is there any documentation of recurrence within 5 years — in fact, the timeline ends at the point of diagnosis and staging, with no follow-up beyond 2013. Since treatment has not been initiated, there is no “initial treatment response,” and no recurrence can be confirmed or inferred from the provided data. <No treatment response documented; no recurrence evidence; timeline ends at diagnosis> | No

**no\_timeline:** [CORRECT] The provided PATIENT\_TIMELINE consists solely of a series of CT scan images that sequentially scan from the lower extremities up through the abdomen, pelvis, thorax, and finally the head and neck. There is no clinical history, no documentation of cancer diagnosis, no treatment details, no evidence of initial treatment response, and no information regarding cancer recurrence or follow-up. Without any explicit evidence of cancer, treatment, or recurrence within the timeline, it is impossible to determine whether the patient will achieve an initial treatment response or experience recurrence within 5 years. <brief reasoning trace with explanation for label selection> | No

### **Model: google/medgemma-1.5-4b-it**

**all\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient has a history of lung cancer, specifically a mass in the lingula of the left lung. The patient has undergone multiple imaging studies including CT scans and PET CT scans. The PET CT scan shows hypermetabolic activity in the left lung mass and also in a left internal mammary lymph node, suggesting metastasis. The patient has also undergone a biopsy of the internal mammary lymph node. The question asks if the patient will achieve an initial treatment response but experience cancer recurrence within 5 years. Given the evidence of metastatic disease (lung mass and internal mammary lymph node), the patient is likely to experience cancer recurrence within 5 years. No | Yes

**axial\_1\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient has a history of lung cancer, specifically a mass in the lingula of the left lung. This mass was confirmed by CT scans and biopsy. The biopsy showed metastatic disease, with the presence of a left internal mammary lymph node metastasis and another suspicious node in the left anterior cardiophrenic region. The PET CT scan confirms the hypermetabolic nature of the lung mass and the identified lymph node metastases. The patient has received treatment for the lung cancer, including a biopsy. The question asks if the patient will achieve an initial treatment response but experience cancer recurrence within 5 years. Given the confirmed metastatic disease (lung mass and lymph node involvement), the patient has already experienced a treatment response (biopsy confirmation of metastasis). However, the presence of metastatic disease indicates a high likelihood of recurrence, especially within 5 years. Therefore, the patient is unlikely to achieve a complete initial treatment response without further treatment, and recurrence is expected. No | The patient has a confirmed lung mass and lymph node metastasis, indicating metastatic cancer. While the biopsy represents a treatment response, the presence of metastatic disease means recurrence is highly likely, especially within 5 years. The PET scan confirms hypermetabolic activity in the primary tumor and metastatic sites. Therefore, the patient is unlikely to achieve a complete initial treatment response without further treatment, and recurrence is expected.

**axial\_all\_image:** [INCORRECT] <brief reasoning trace with explanation for label selection> | <label> The patient has a history of lung cancer, specifically a mass in the lingula of the left lung. The CT scan from 2013 shows this mass measuring 4.9 x 5.4 x 6.7 cm. The patient also has a history of a left internal mammary lymph node biopsy on 2013-03-15, which was positive







evidence, the patient has evidence of cancer recurrence. <Yes>

**axial\_1\_image:** **[INCORRECT]** The patient has a history of lung cancer with evidence of metastasis to the internal mammary lymph node. The patient underwent a CT-guided biopsy of the internal mammary lymph node, which confirmed the presence of cancer. The patient's clinical history and current cancer-related evidence, including the biopsy results, indicate that the patient will likely experience cancer recurrence within 5 years of treatment initiation. <Yes>

[illegible]



