

Lung VCAR clinical case study

Lung VCAR confirms nodule growth

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History

A 70-year-old ex-smoker with a history of a lung mass (Figure 1) biopsied (Figure 2) followed by a left upper lobectomy was shown to have a small nodule in his left upper lobe. The patient was keen to avoid further surgery or intervention if possible, and a policy of a follow-up scan to assess growth was agreed.

Exam protocol

	Exam 1	Exam 2	Exam 3
Slice thickness	.625mm	1.25mm	1.25mm
MA	200	180	180
KV	120	120	120
Algorithm	Bone	Detail	Detail
DFOV	40cm	40cm	40cm
Scanner	GE LightSpeed®	GE LightSpeed	GE LightSpeed

Case findings

The nodule visually appeared identical on the follow-up scan, but the definite growth measured using GE Lung VCAR™ enabled the radiologist to confidently recommend biopsy. Without software analysis, further scans would have been required to demonstrate growth. This might have led to a delay in lesion resection.



Figure 1
Left upper lobe mass



Figure 2
Biopsy

Exam 1

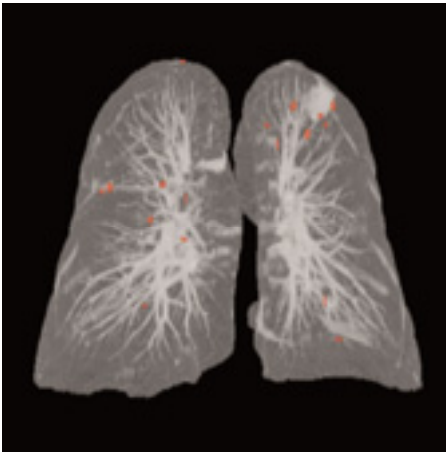


Figure 3a
Exam 1 - mapping

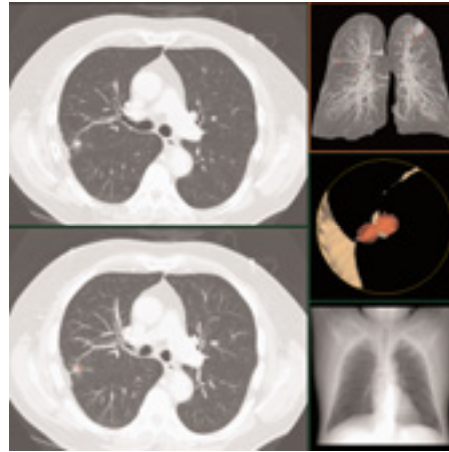


Figure 3b
Exam 1 - review

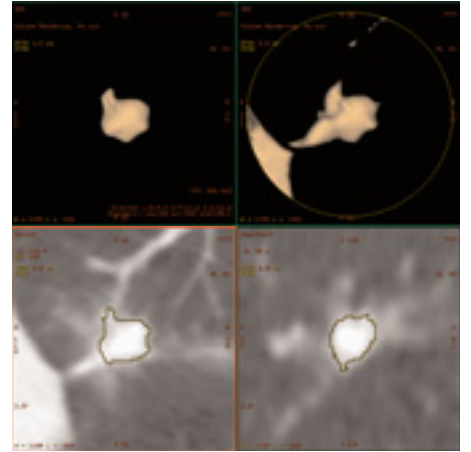


Figure 3d
Exam 1 - analysis

Exam 2

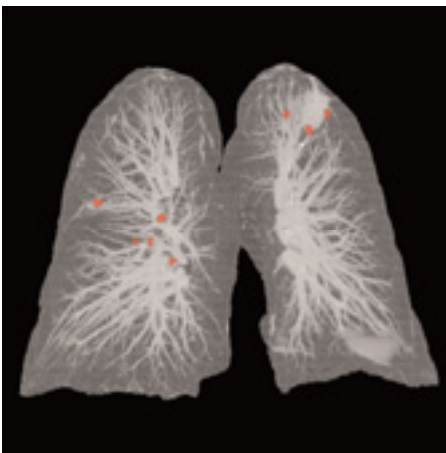


Figure 4a
Exam 2 - mapping

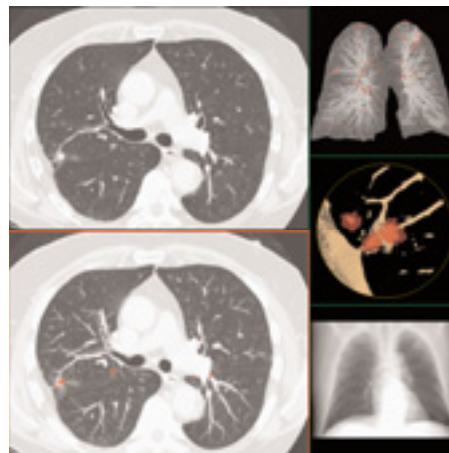


Figure 4b
Exam 2 - review

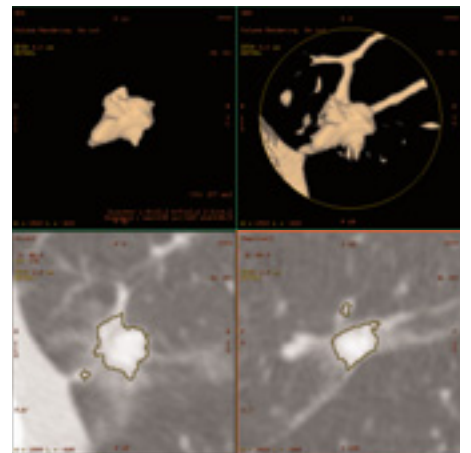


Figure 4d
Exam 2 - analysis

Exam 3

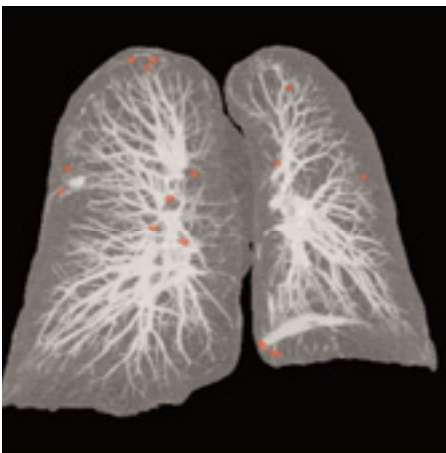


Figure 5a
Exam 3 - mapping

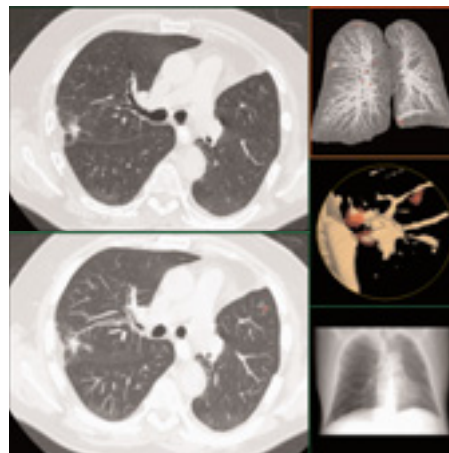


Figure 5b
Exam 3 - review

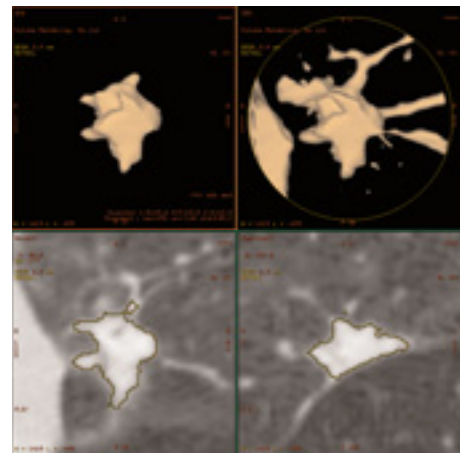


Figure 5d
Exam 3 - analysis



Figure 3c
Exam 1 – review axial

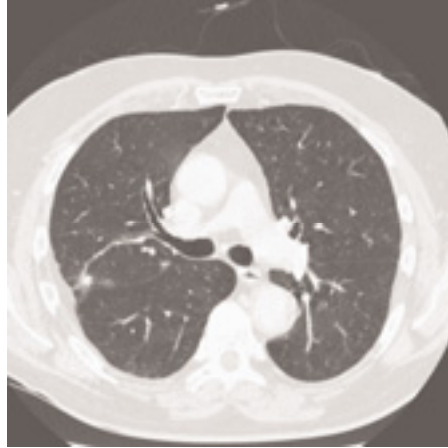


Figure 4c
Exam 2 – review axial



Figure 5c
Exam 3 – review axial

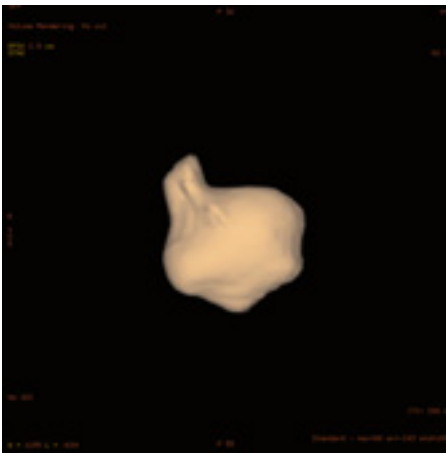


Figure 6a
Exam 1 – segment

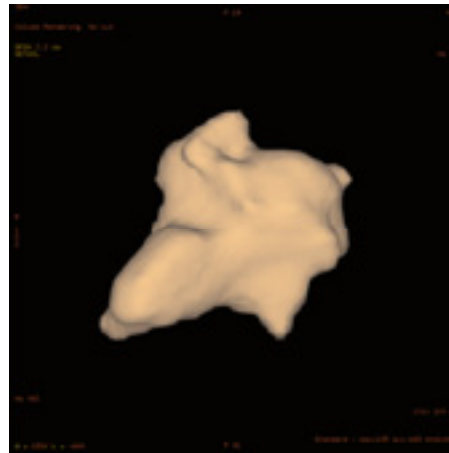


Figure 6b
Exam 2 – segment

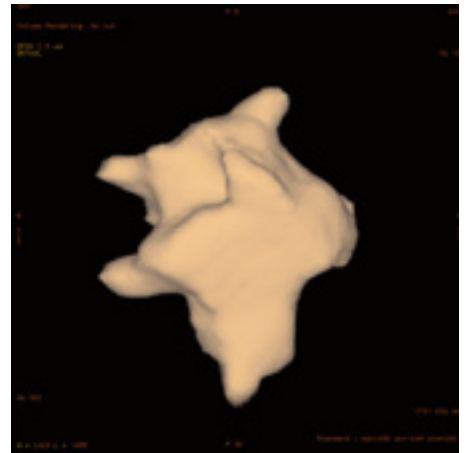


Figure 6c
Exam 3 – segment

Exam date	2002-08-29	2002-10-04	2003-02-11
Slice index	149	191	178
Calcification	No	No	No
Density	Solid	Solid	Solid
Shape	Non-round	Non-round	Non-round
Surface	Spiculated	Spiculated	Spiculated
L-R/A-P/I-S	9.4mm/10.2mm/12.5mm	13.3mm/12.6mm/14.2mm	16.0mm/19.9mm/12.9mm
Volume	285mm ³	376mm ³	621mm ³
Days growth		36 d	166 d
% growth		32%	118%
Doubling time		89 d	147 d



Figure 7a
Post resection AC

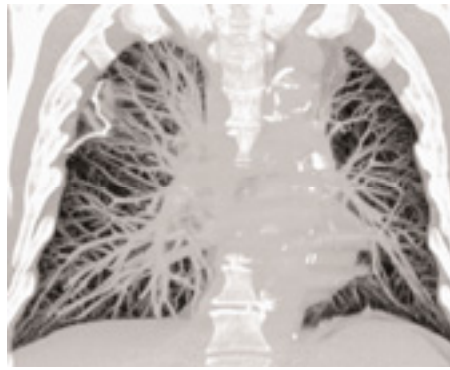


Figure 7b
Post resection MIP



Figure 7c
Post resection MIP axial

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