



5TH YEAR NUCLEAR MEDICINE LECTURE

PANEL

GENERAL	THYROID	LUNG	CARDIAC	BONE	MISCELLANEOUS
Q1	Q6	Q11	Q16	Q21	Q26
Q2	Q7	Q12	Q17	Q22	Q27
Q3	Q8	Q13	Q18	Q23	Q28
Q4	Q9	Q14	Q19	Q24	Q29
Q5	Q10	Q15	Q20	Q25	Q30

GENERAL · Q1

What is the half-life of ^{99}Tc ?

BACK TO PANEL

→ 6 hrs

GENERAL · Q2

What is the parent isotope of ^{99}Tc ?

BACK TO PANEL

Mo - 99

GENERAL · Q3

Why does FDG accumulate within malignant cells?

BACK TO PANEL

because of their high rate of glucose metabolism

GENERAL · Q4

What is the half-life of ^{131}I ?

BACK TO PANEL

8 days

GENERAL · Q5

Name a commonly used positron-emitting substance in PET scans?

BACK TO PANEL

Radioactive fluorine
most important → radioactive
oxygen, radioactive carbon,
radioactive nitrogen and gallium.

THYROID - Q6

57.4%

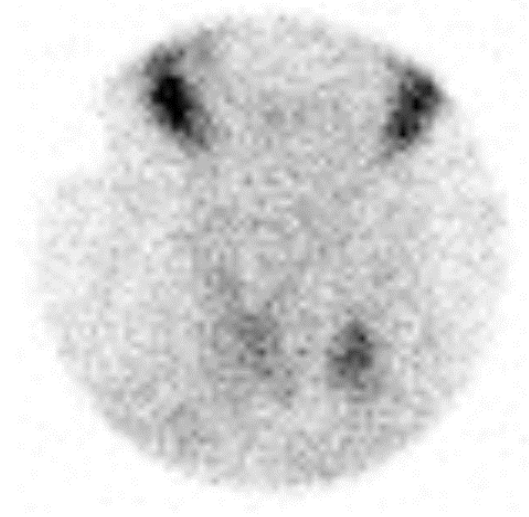


BACK TO PANEL

Graves

THYROID - Q7

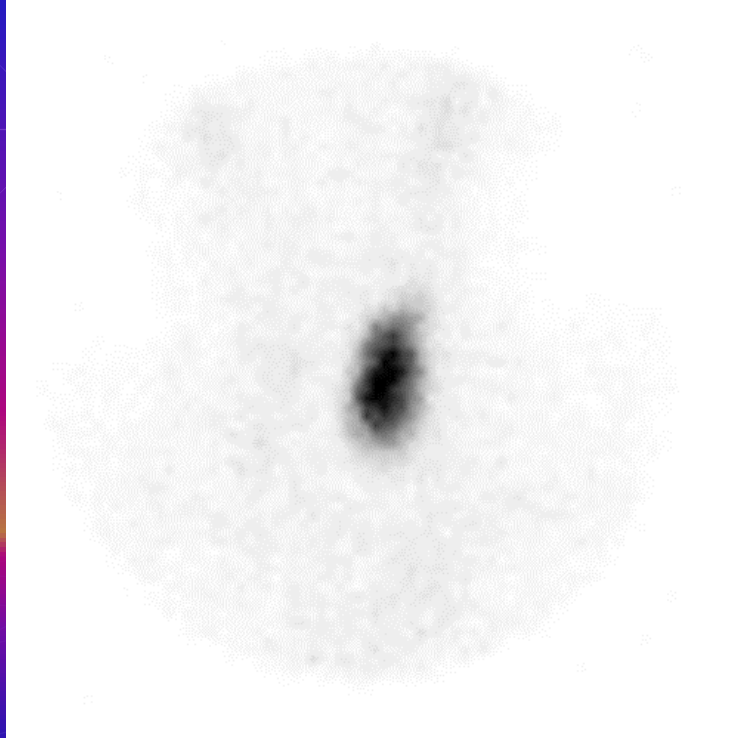
0.4%



BACK TO PANEL

Subacute thyroiditis

THYROID - Q8

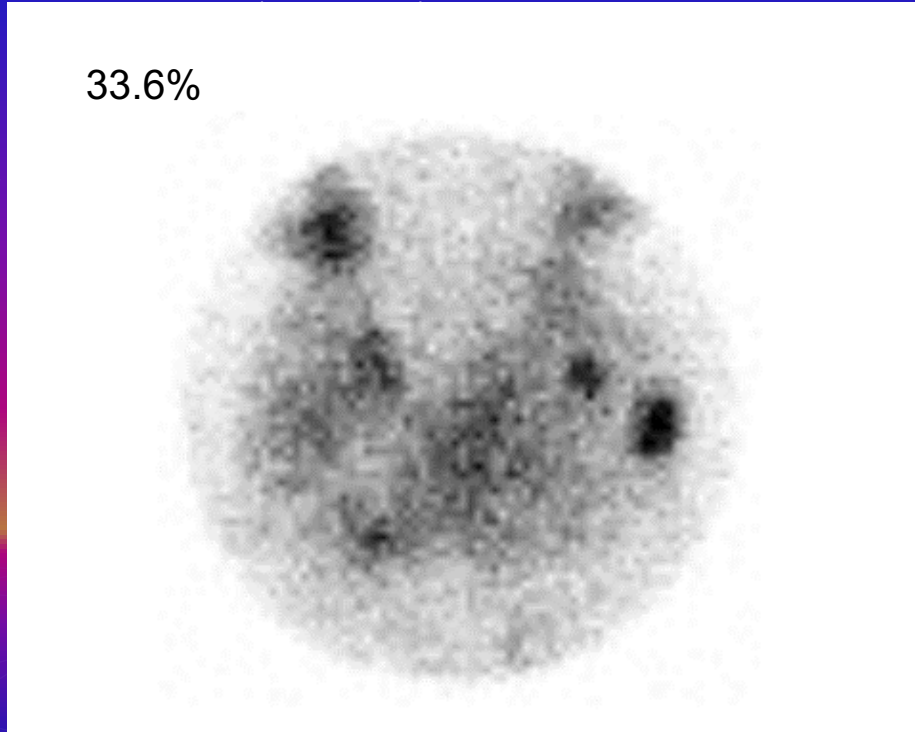


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Large toxic nodule

THYROID - Q9

33.6%



BACK TO PANEL

MNG
or
ANG

THYROID · Q10

True or False

Radioactive Iodine has an important role in the treatment of medullary thyroid cancer

False

Although thyroid follicular cells have the cellular mechanism to absorb iodine, medullary thyroid cancer does not arise from this type of thyroid cell. Medullary thyroid cancers are derived from the parafollicular C cell which does not possess the iodine symporter receptor or the ability to produce thyroid hormone. Therefore, radioactive iodine therapy is not useful for the treatment of medullary thyroid cancer. Similarly, if medullary thyroid cancer spreads to distant sites, it cannot be found by iodine scanning the way that distant spread from papillary or follicular cancer can sometimes be visualized.

[BACK TO PANEL](#)

LUNG - Q11

**Name one radiopharmaceutical
used in lung perfusion scans?**

BACK TO PANEL

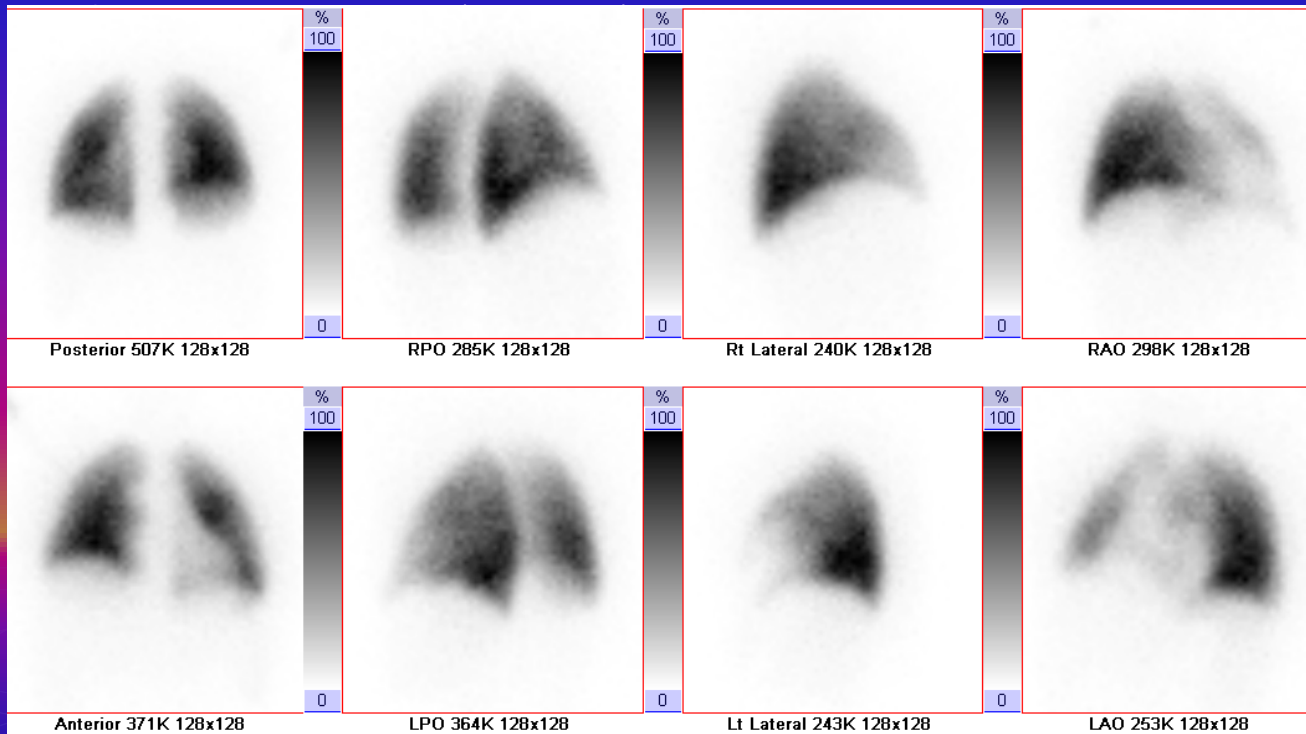
*99mTc - macroaggregated
albumin (MAA).*

LUNG - Q12



[BACK TO PANEL](#)

LUNG - Q13



[BACK TO PANEL](#)

LUNG - Q14

What finding in lung perfusion/ventilation (V/Q) scans is usually indicative of pulmonary embolism?

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mismatch defect

LUNG - Q15

**Name one radiopharmaceutical
used in lung ventilation scans?**

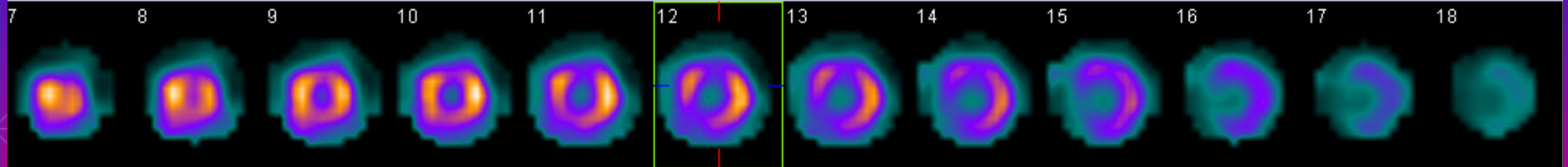
BACK TO PANEL

Tc 99m labeled DTPA
or Xe-133

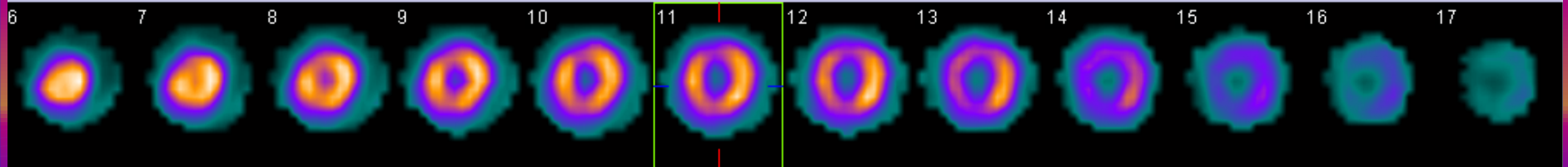
CARDIAC - Q16

Row A - Stress [Recon]

SA



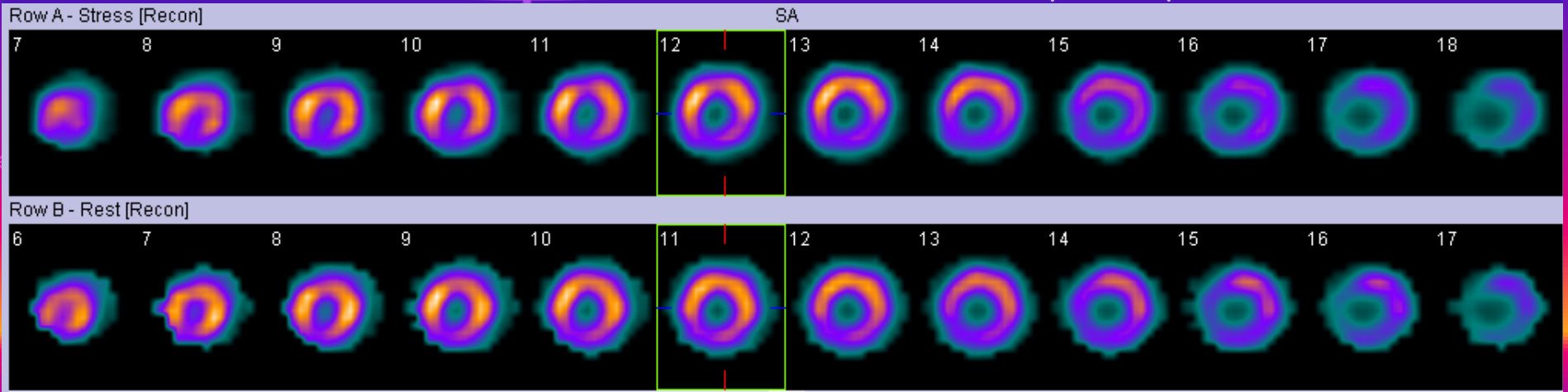
Row B - Rest [Recon]



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Arteries LAD in Peroseptal
RCA ischemia

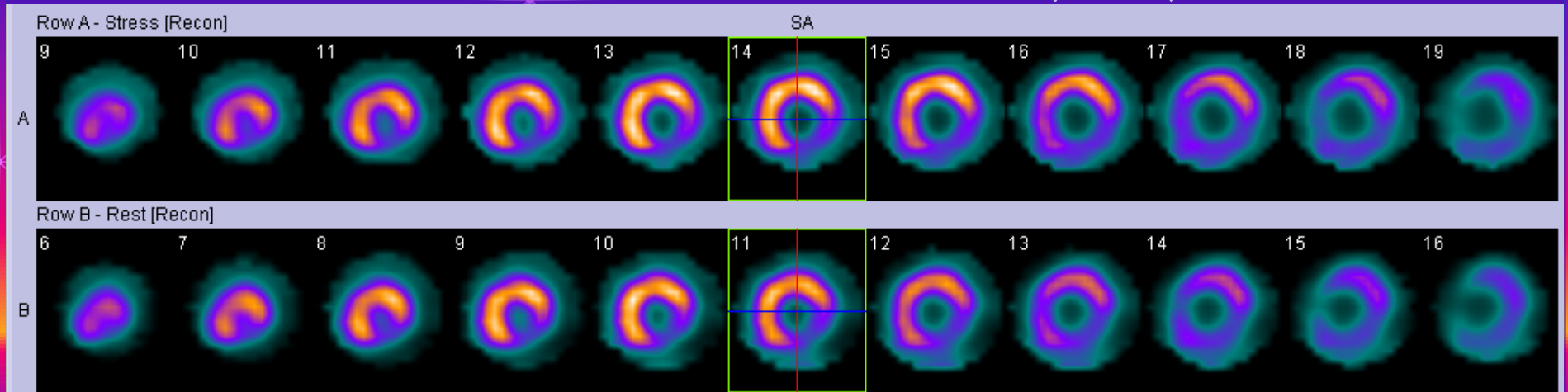
CARDIAC - Q17



BACK TO PANEL

RCA interoseptal infarction

CARDIAC - Q18



BACK TO PANEL

circumflex coronary artery
interoblique infarction

CARDIAC · Q19

**Name one radiopharmaceutical
used in myocardial perfusion
imaging?**

*Tc 99m tetrofosmin,
sestamibi, & thallium
(analogue of potassium).*

BACK TO PANEL

CARDIAC · Q20

Name two methods of inducing stress in myocardial perfusion images

BACK TO PANEL

*Exercise and medication
(Adenosine, Dobutamine,
Dipyridamole).*

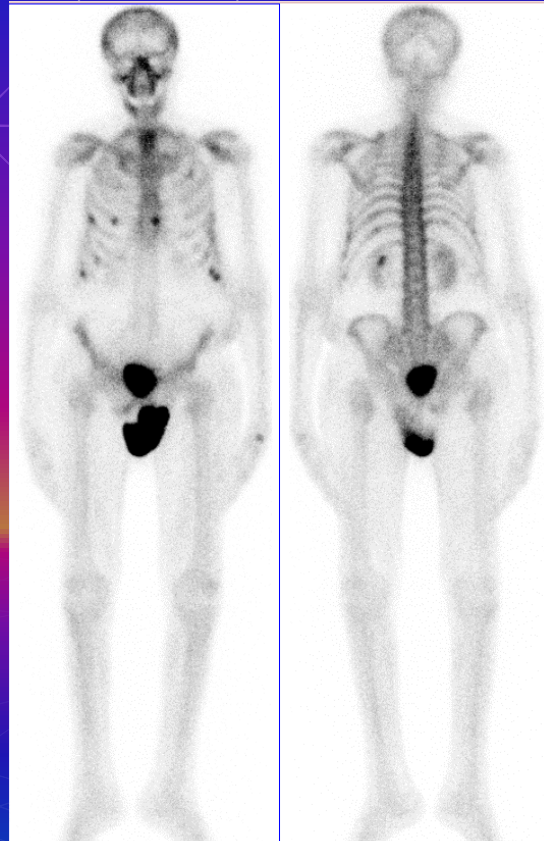
BONE - Q21

**Name one radiopharmaceutical
used in bone scintigraphy?**

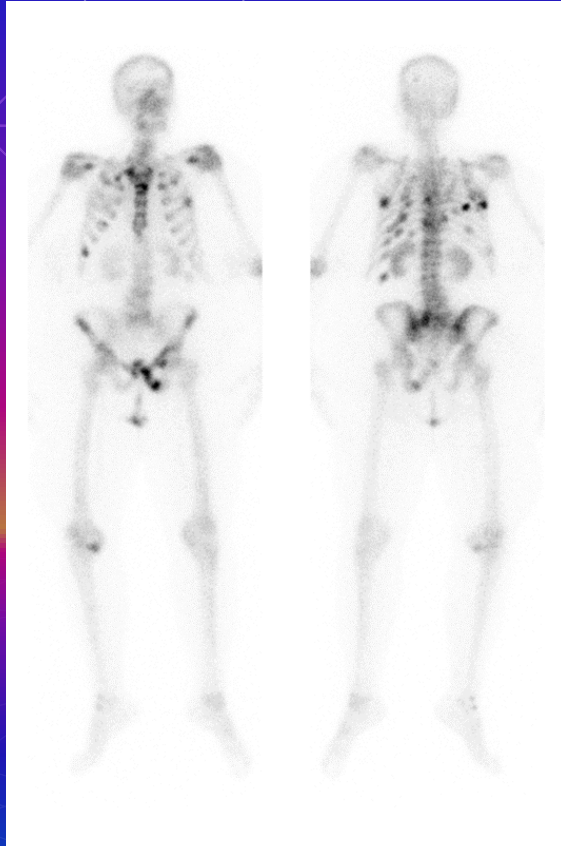
MDP
HEDP
HMOP

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BONE - Q22



BONE - Q23



BONE - Q24

True or False

Bone scintigraphy is highly sensitive for the detection of all types of bone metastases

False, only osteoblastic

BACK TO PANEL

BONE - Q25

True or False

**PET scan has higher sensitivity in
detection of Multiple Myeloma
than bone scintigraphy**

BACK TO PANEL

*True, because it is usually
osteolytic*

MISC - Q26

What type of renal scintigraphy is most useful in detecting cortical scars?

BACK TO PANEL

DMSA

MISC - Q27

True or False

**PET/CT is useful in evaluating
response to treatment in the
middle of chemotherapy for
lymphoma**

BACK TO PANEL

True

MISC - Q28

What does SPECT stand for?

BACK TO PANEL

Single photon emission
computer tomography

MISC - Q29

**What type of scintigraphy is used
for diagnosing acalculous
cholecystitis ?**

BACK TO PANEL

HIDA

MISC - Q30

**What type of renal scintigraphy is
useful for detecting PUJ
stenosis?**

BACK TO PANEL

MAG3, D