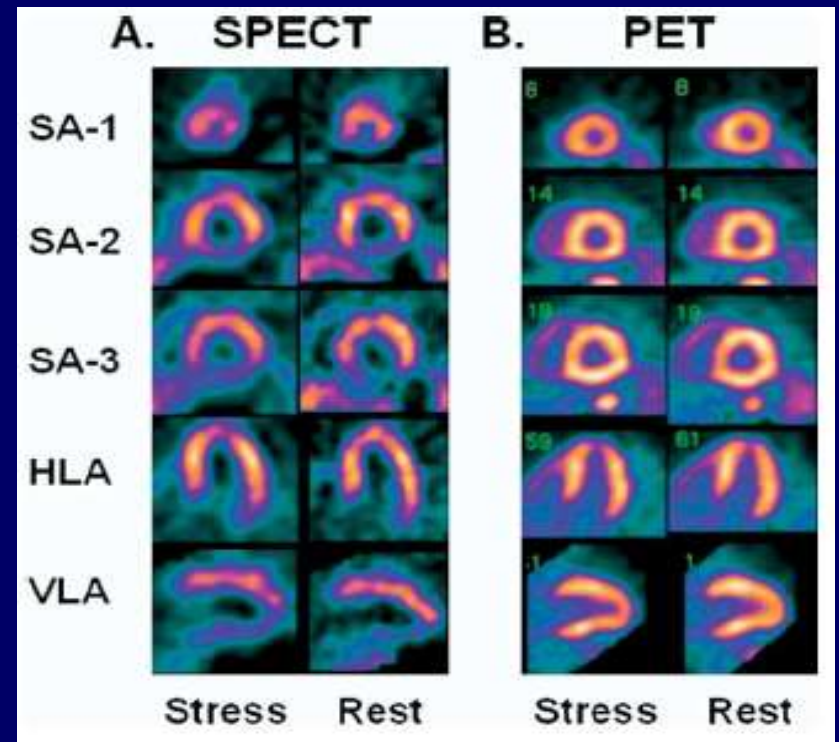


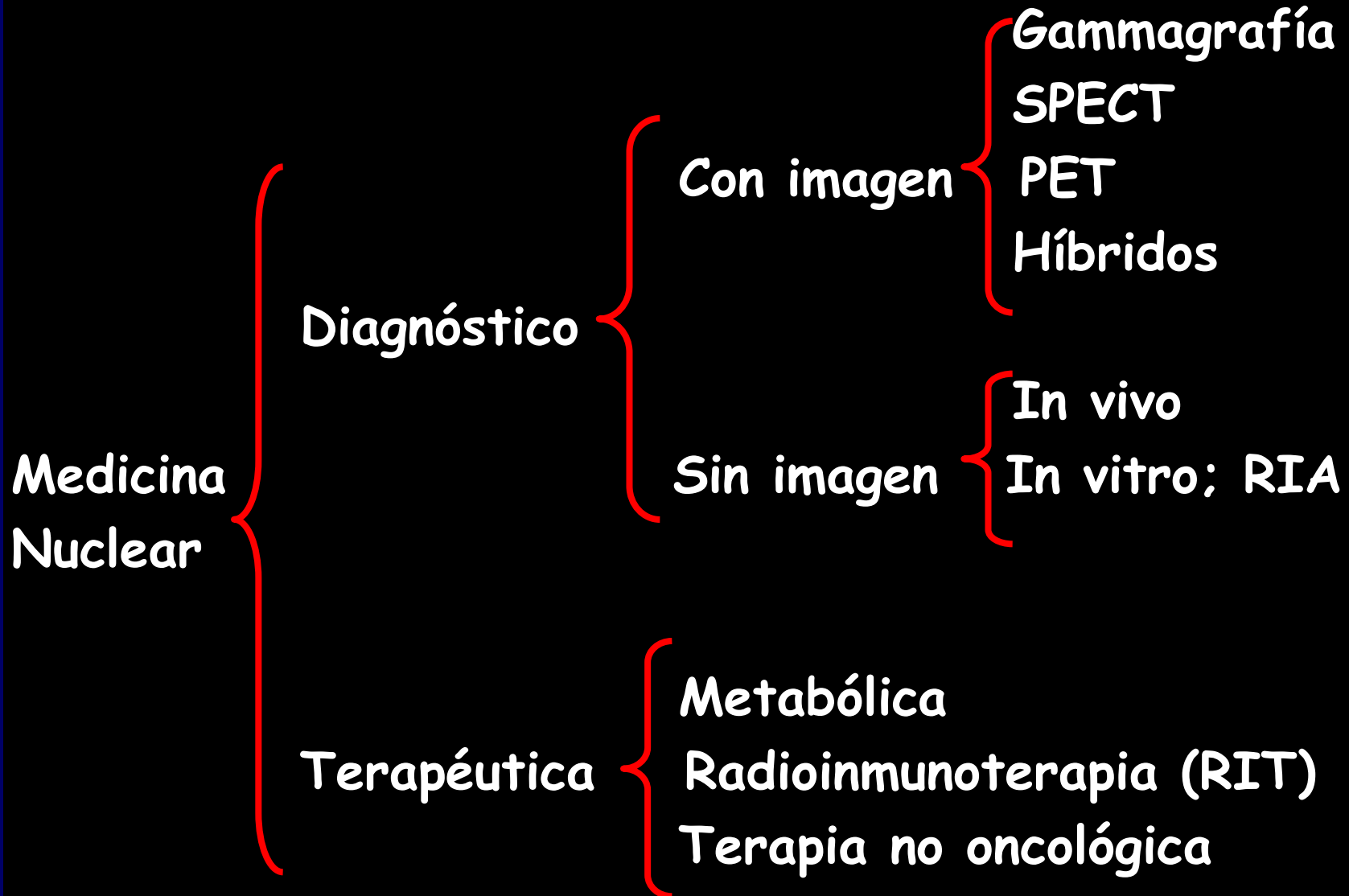
MEDICINA NUCLEAR



DEFINICION

“ Especialidad médica que emplea radionúclidos, incorporándolos o relacionándolos, in vivo o in vitro, con alguna función orgánica, metabólica y celular con fines diagnósticos, terapéuticos o de investigación”

CAMPOS DE LA MEDICINA NUCLEAR



BASES TECNICAS

✓ **INSTRUMENTACION**

✓ **RADIOFARMACIA**

VENTAJAS

- ✓ No es invasiva
- ✓ Es funcional
- ✓ No produce molestias
- ✓ Bajo nivel radiación
- ✓ Rapidez entrega información

INDICACIONES

- ✓ Oncología Nuclear: PET y no PET
- ✓ Cardiología Nuclear
- ✓ Endocrinología Nuclear
- ✓ Neuropsiquiatría
- ✓ Nefrourología Nuclear

INDICACIONES

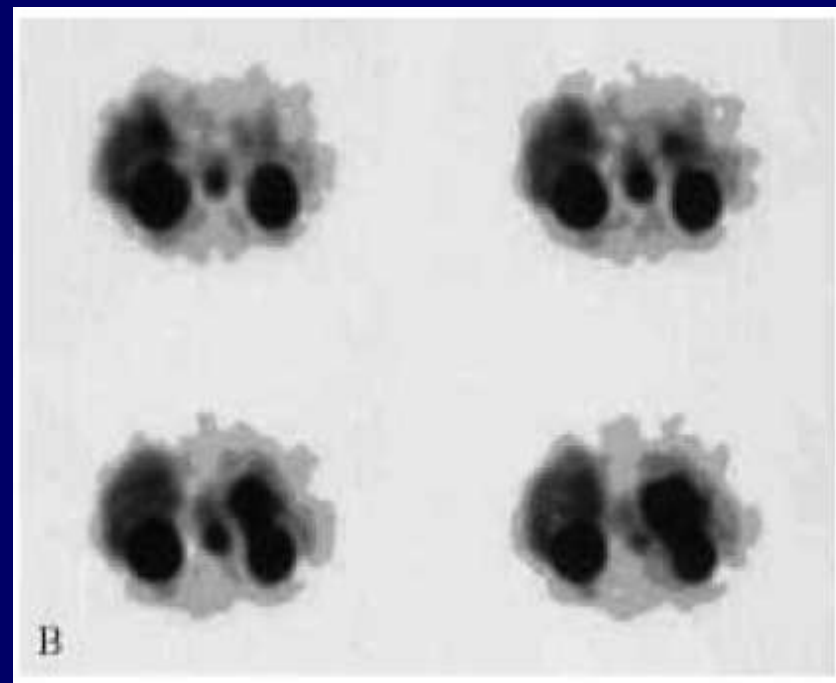
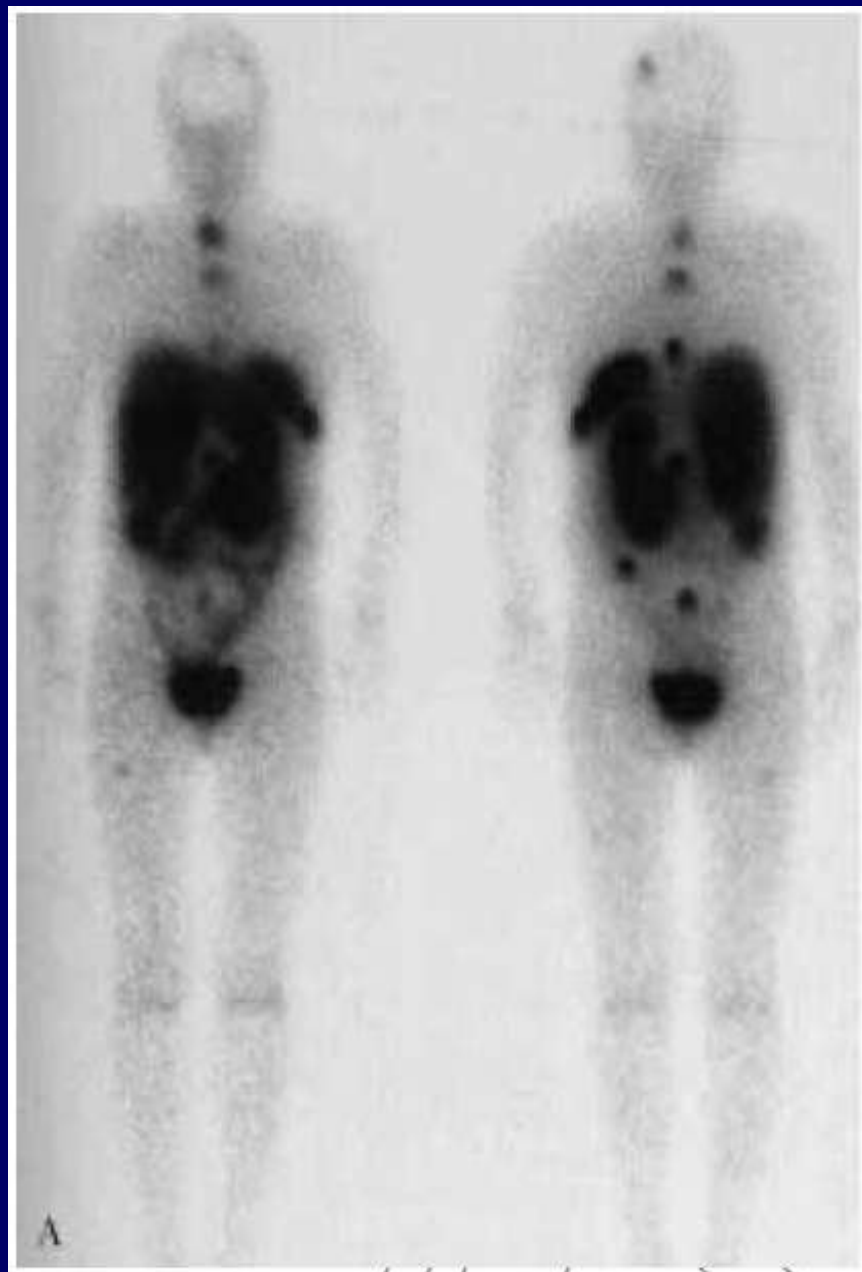
- ✓ Pediatría Nuclear
- ✓ Infección e inflamación
- ✓ Pulmonar
- ✓ Gastrointestinal/hepatobiliar
- ✓ Linfocistigrafía

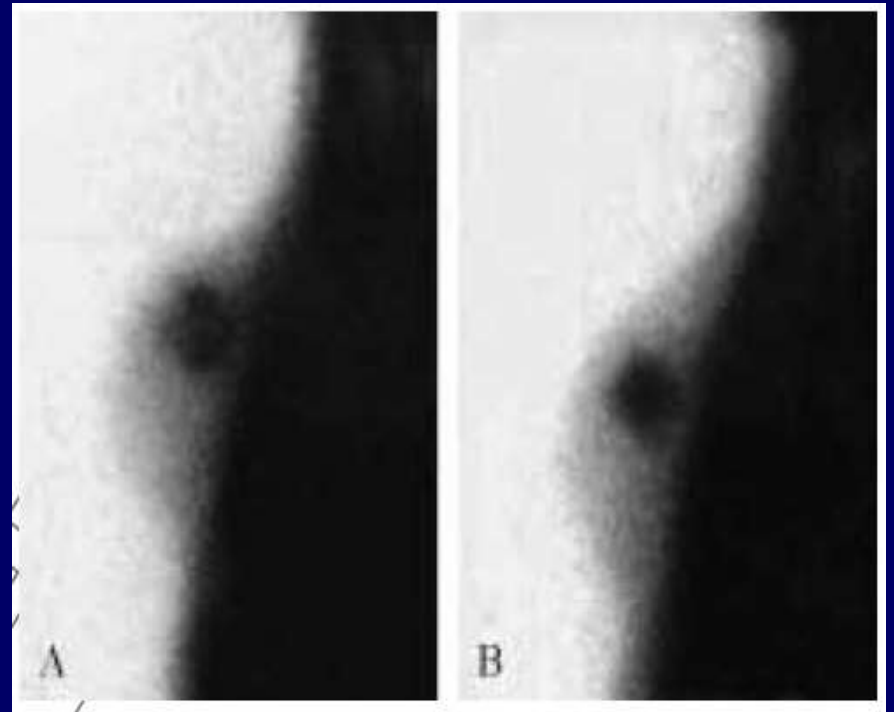
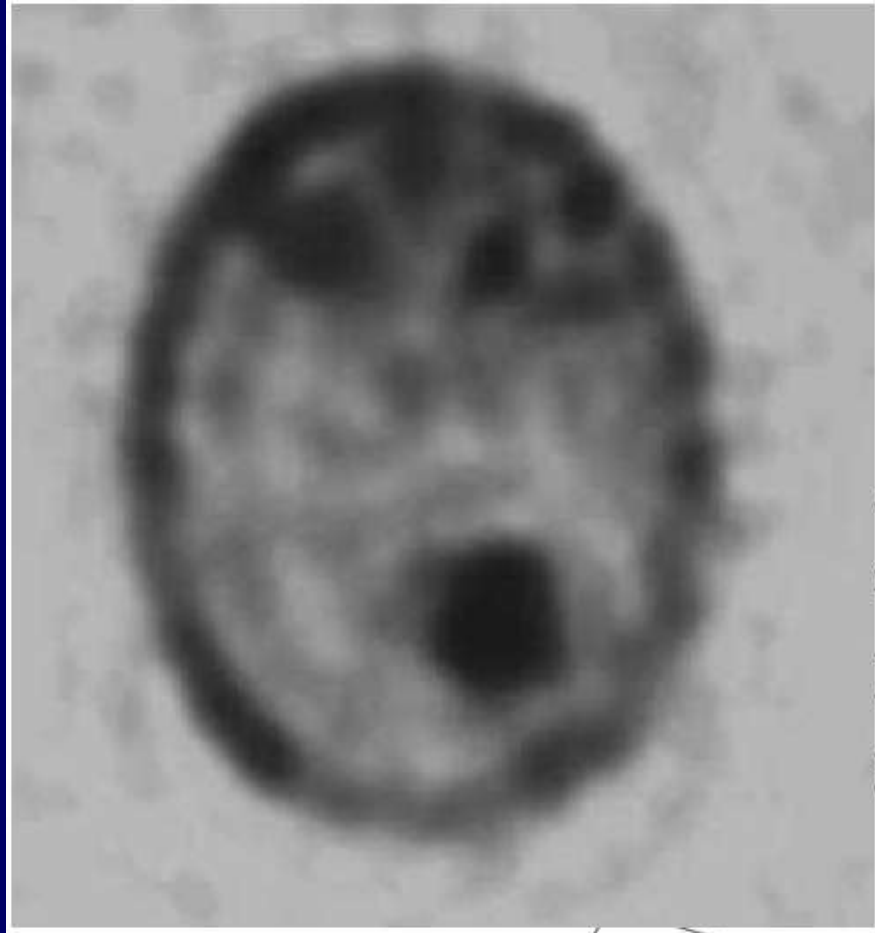
INDICACIONES

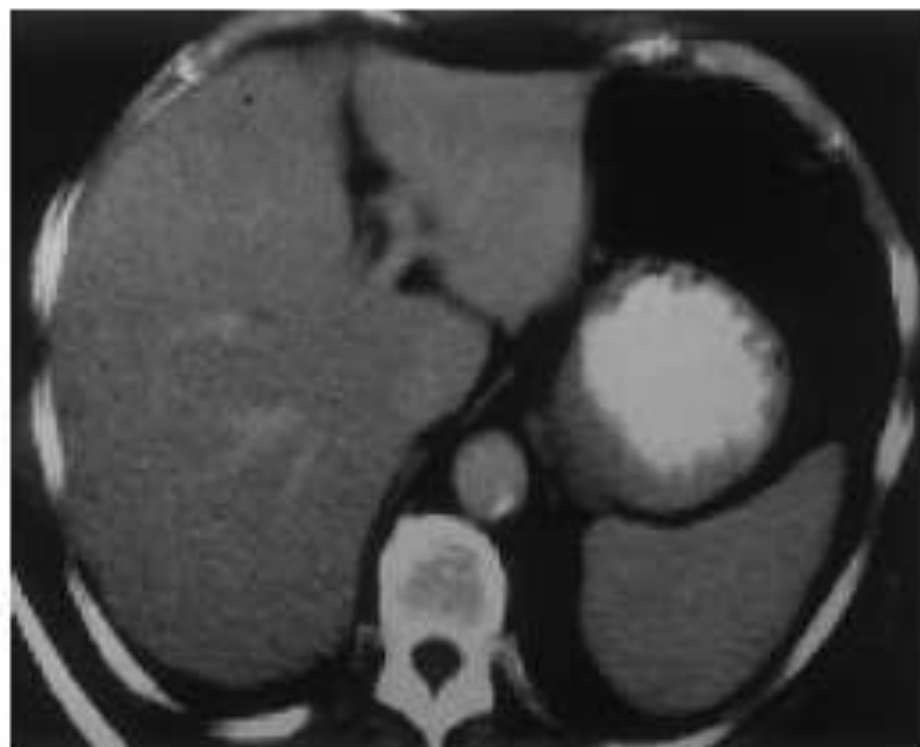
- ✓ Osteoarticular
- ✓ Vascular Periférico
- ✓ Hematología
- ✓ Emergencias
- ✓ Cirugía radioguiada

ONCOLOGIA NUCLEAR

- ✓ Diagnóstico y pronóstico
- ✓ Planificar tratamiento
- ✓ Monitorear tratamiento
- ✓ Viabilidad tumoral
- ✓ Hipoxia, angiogénesis y apoptosis

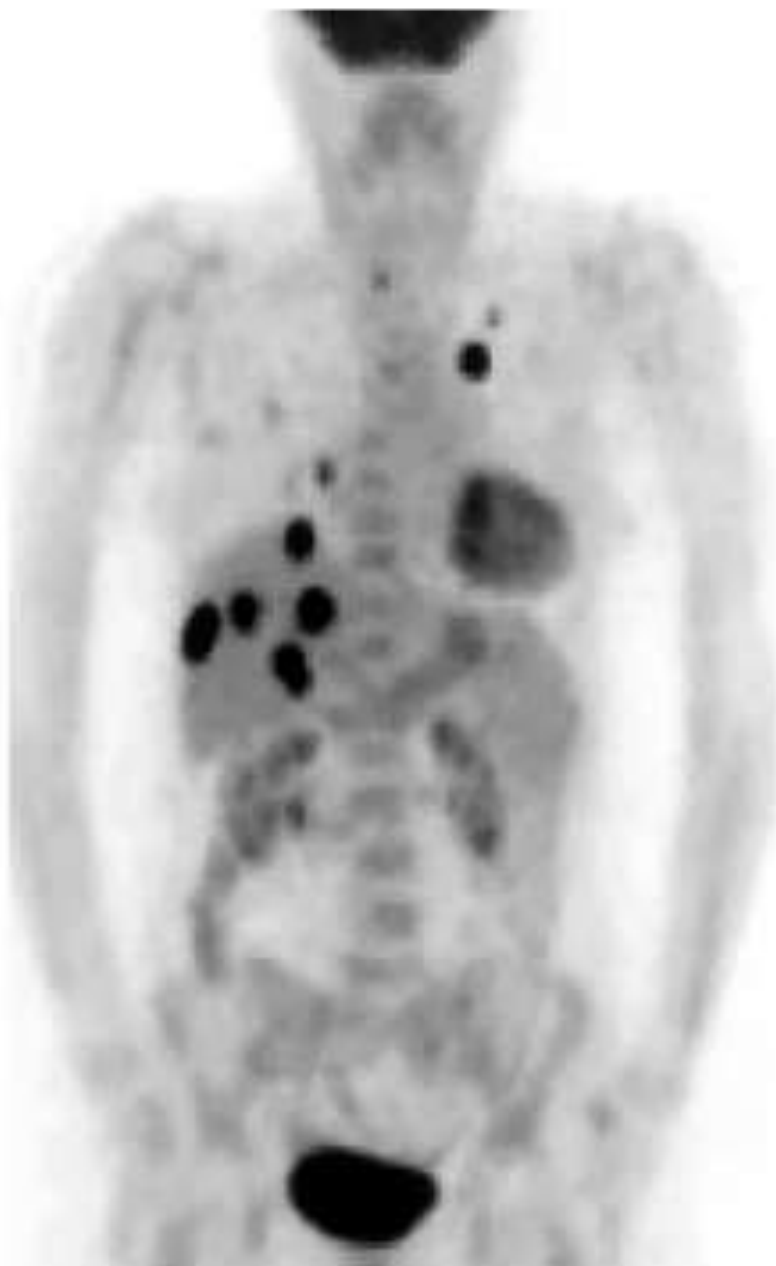






a.

Figure 20. Primary rectal melanoma in a 68-year-old woman. CT and FDG PET were performed to evaluate the extent of disease. (a) CT scan shows no evidence of metastases. (CT was performed to study the abdomen and pelvis only.) (b) Coronal FDG PET image obtained within 2 weeks of the CT study shows multiple hepatic and bilateral lung metastases.



**before
chemoradiotherapy**



**after
chemoradiotherapy**



CARDIOLOGIA NUCLEAR

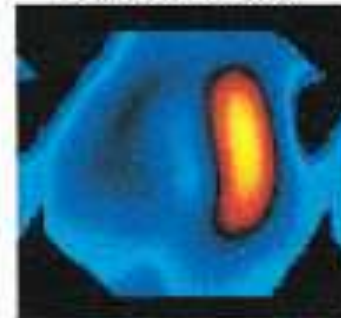
- ✓ Diagnóstico CAD
- ✓ Pronóstico y estratificación de riesgo
- ✓ Viabilidad miocárdica
- ✓ Función ventricular
- ✓ Aterosclerosis, apoptosis, etc

Short axis

Vertical axis

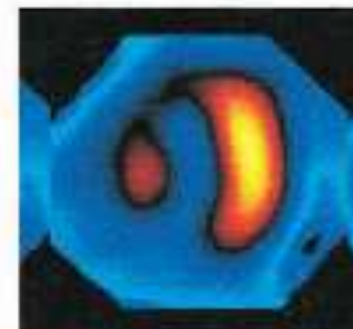
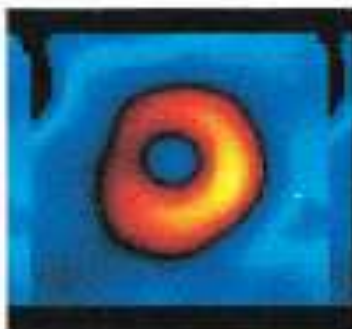
Horizontal axis

Stress

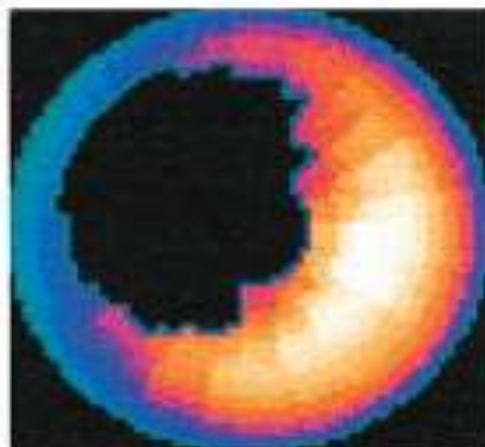


LVEF = 48%
EDV = 91 ml
ESV = 47 ml

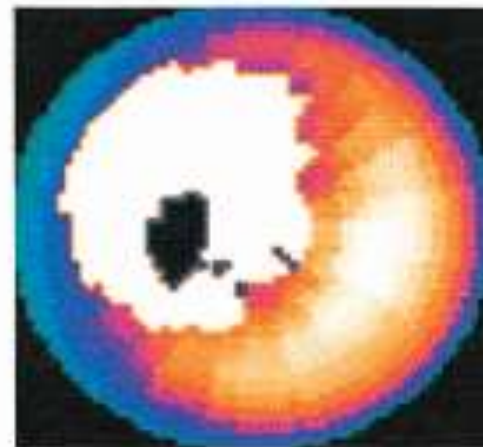
Rest



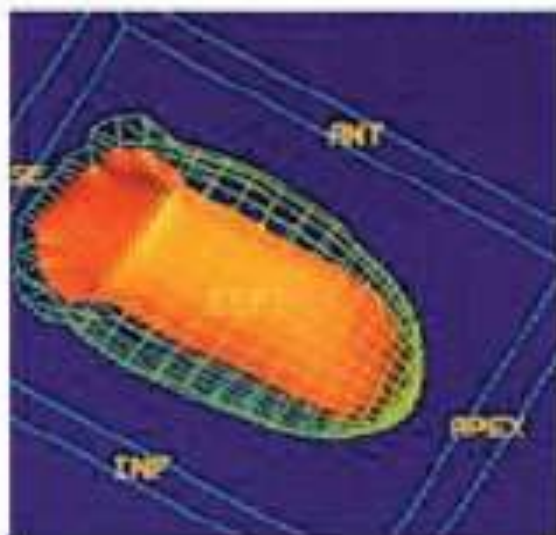
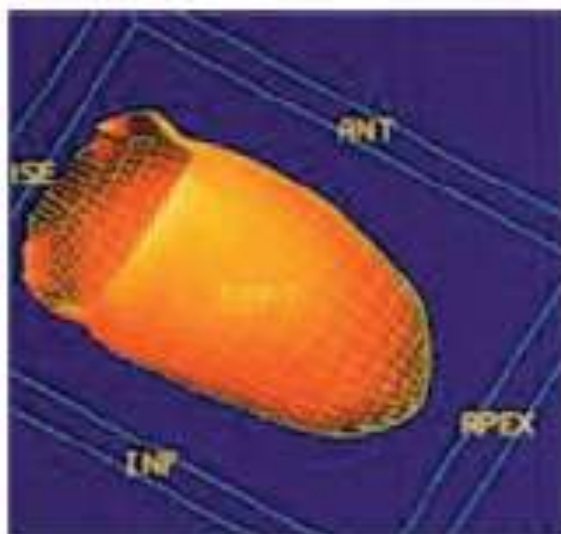
LVEF = 53%
EDV = 60 ml
ESV = 28 ml



Stress

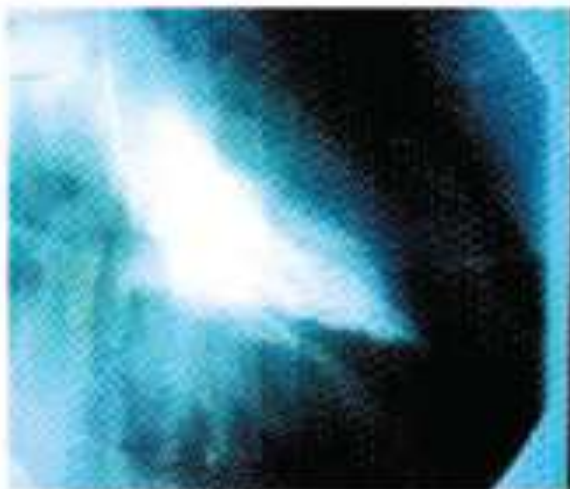
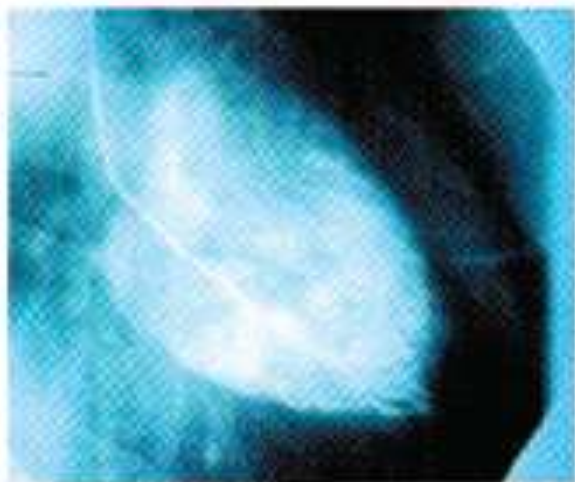


Rest



**Gated
perfusion
SPECT**

LVEF 58%



Contrast LVG

LVEF 59%

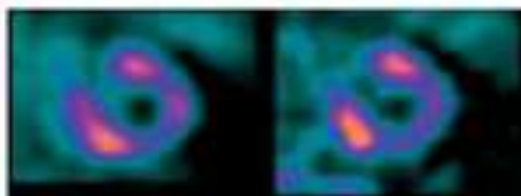
End-diastole

End-systole

A. SPECT

B. PET

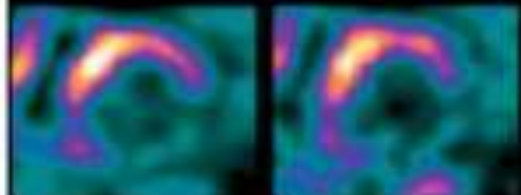
SA-1



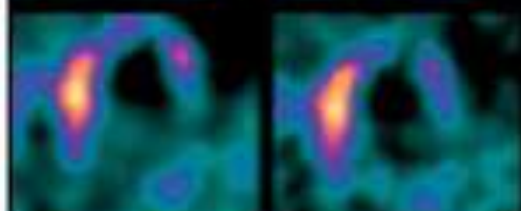
SA-2



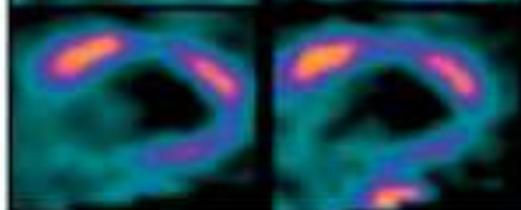
SA-3



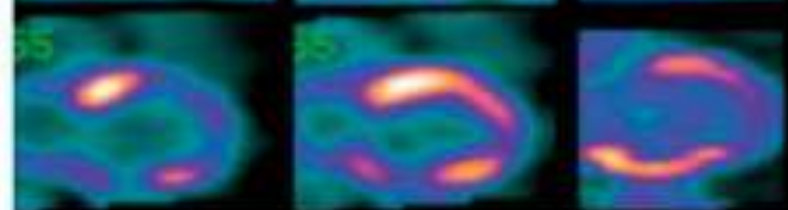
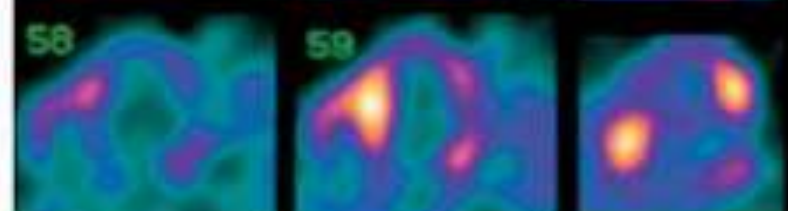
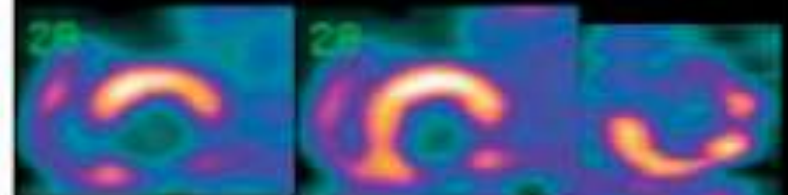
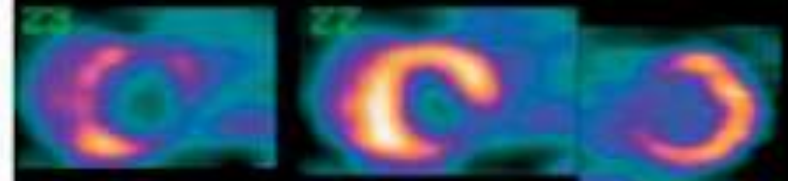
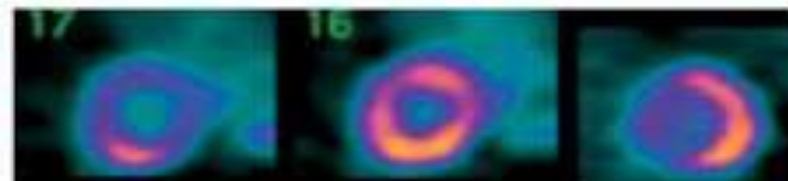
HLA



VLA



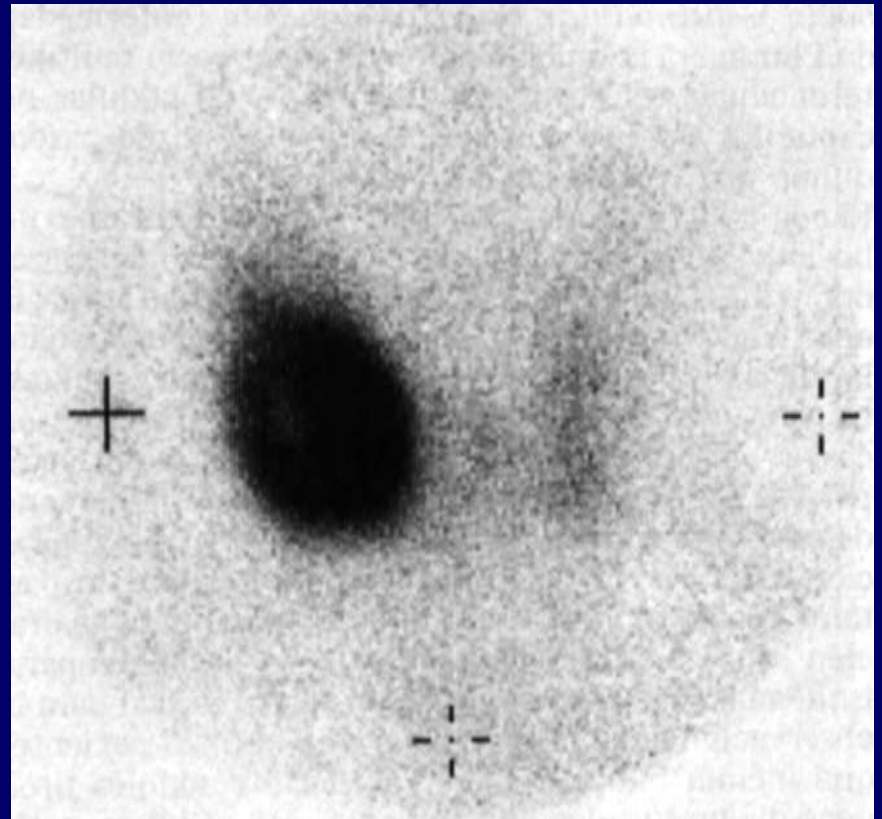
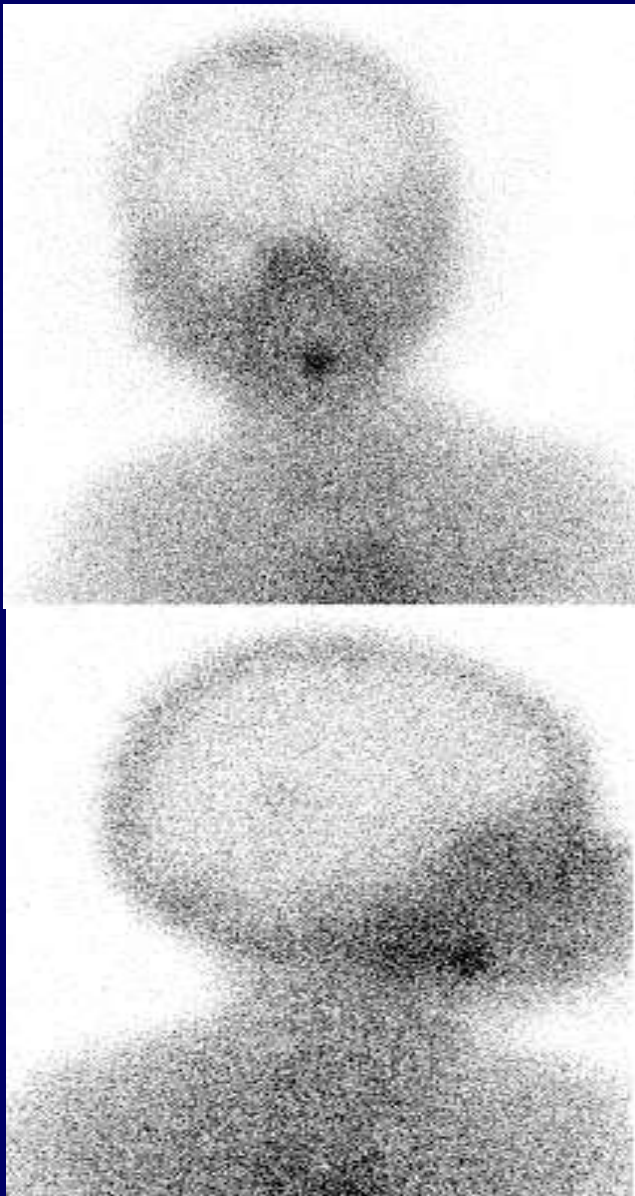
Stress Rest

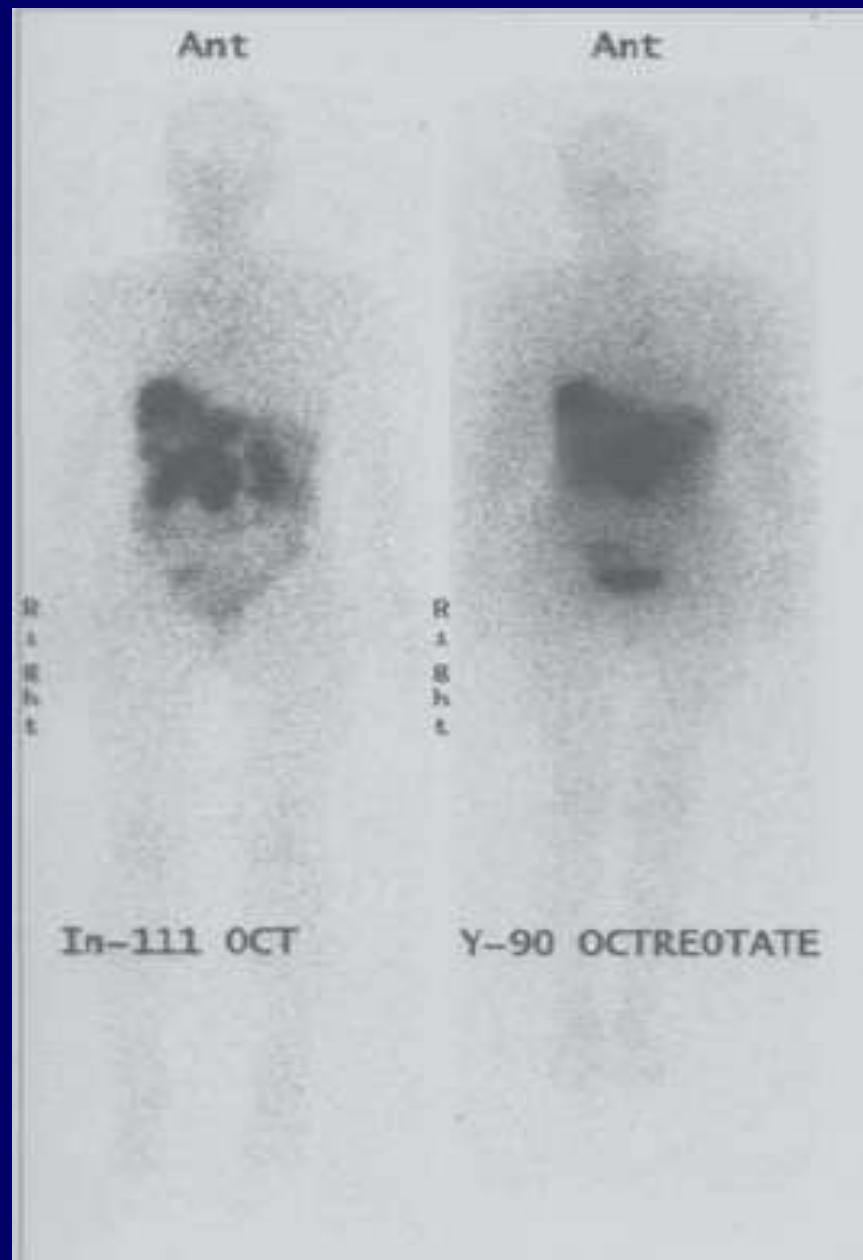
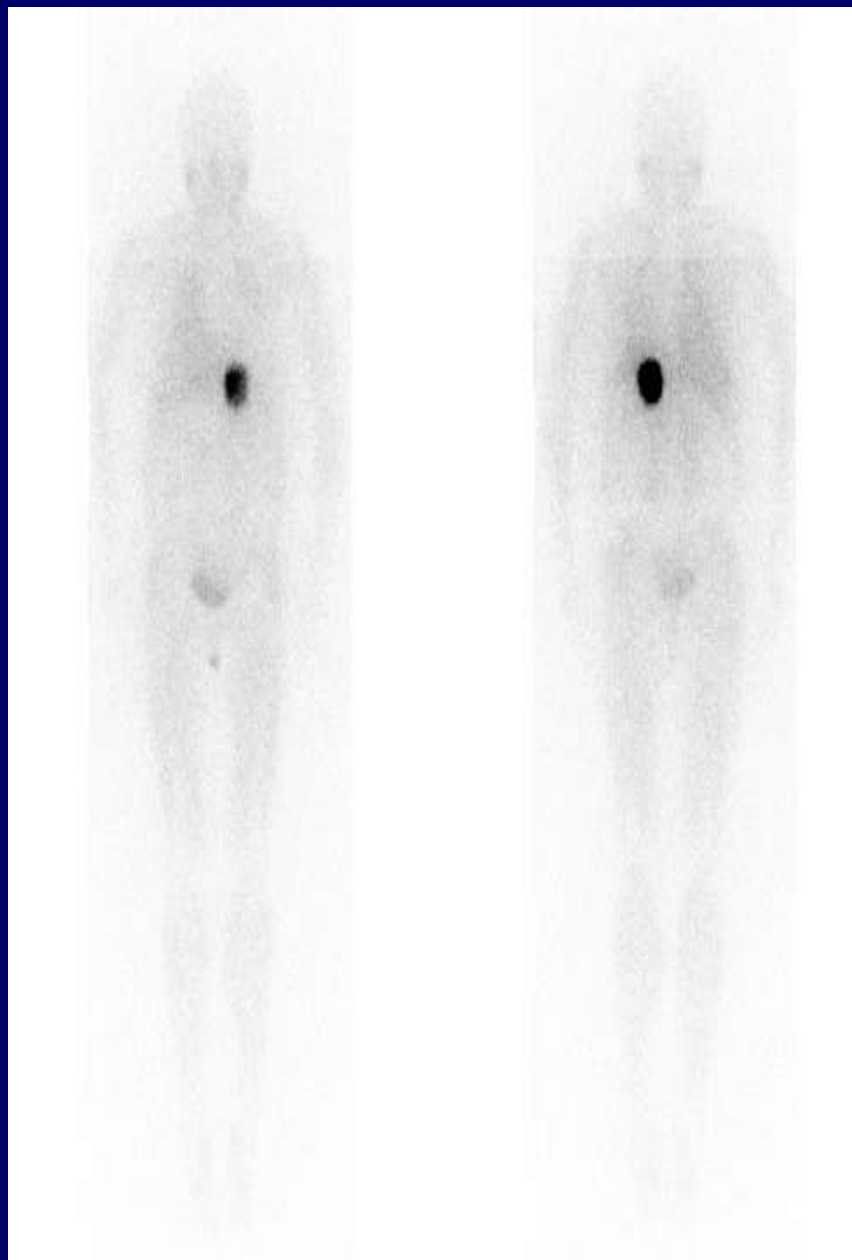


Stress Rest FDG

ENDOCRINOLOGIA NUCLEAR

- ✓ Patología tiroidea
- ✓ Adenoma paratiroideo
- ✓ Tumores neuroendocrinos
- ✓ Adenomas corticales
- ✓ Seguimiento del CDT





NEUROPSIQUIATRIA

- ✓ Enfermedades cerebrovasculares
- ✓ Demencia
- ✓ Epilepsia
- ✓ Desórdenes psiquiátricos
- ✓ Activación y neuroreceptores



Cortical

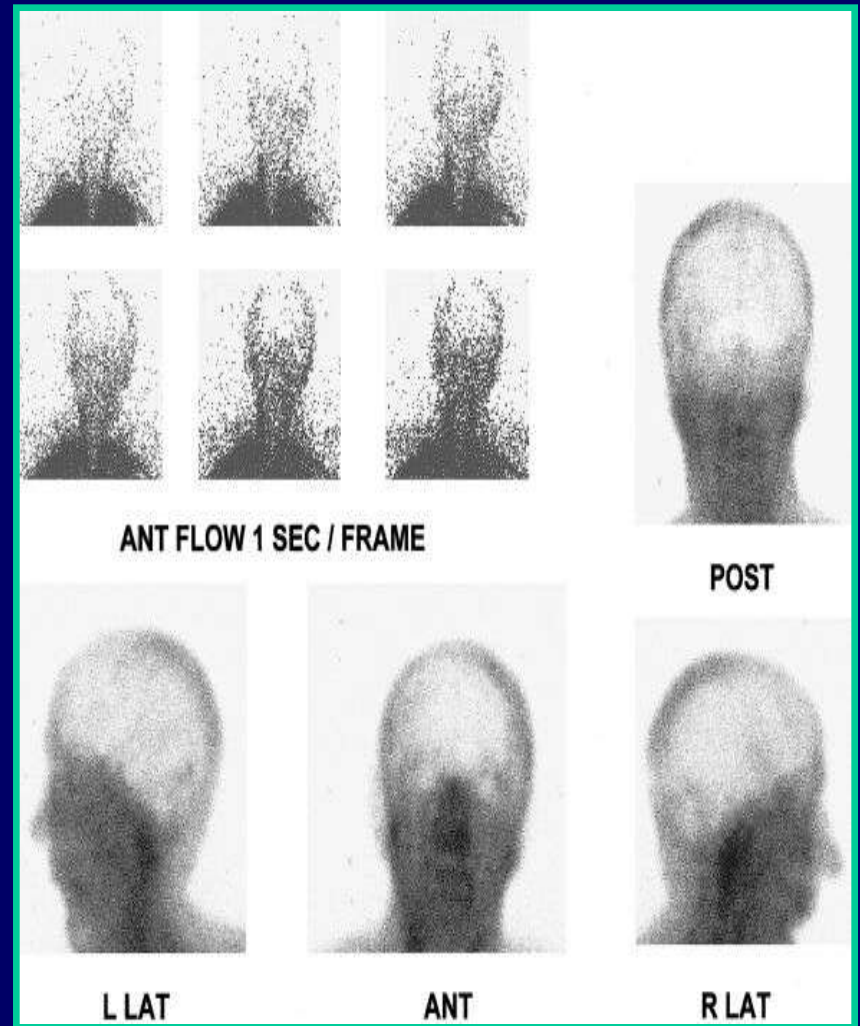
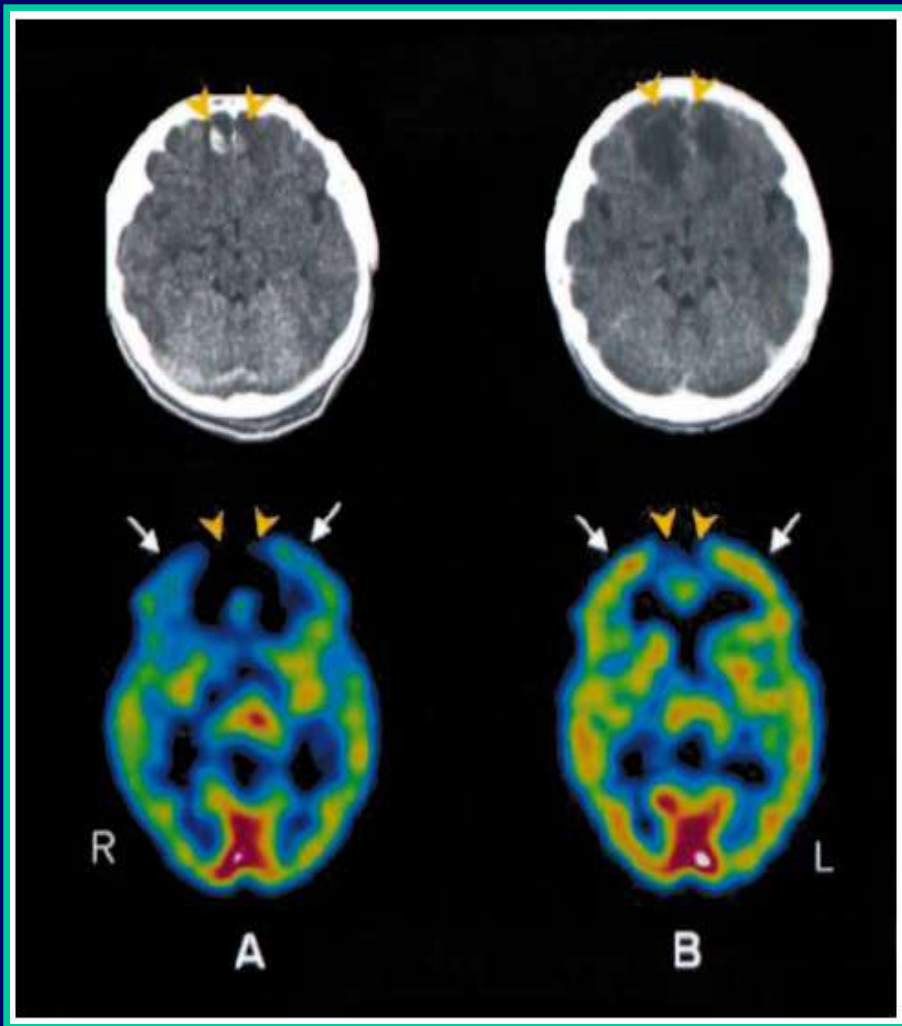


Subcortical



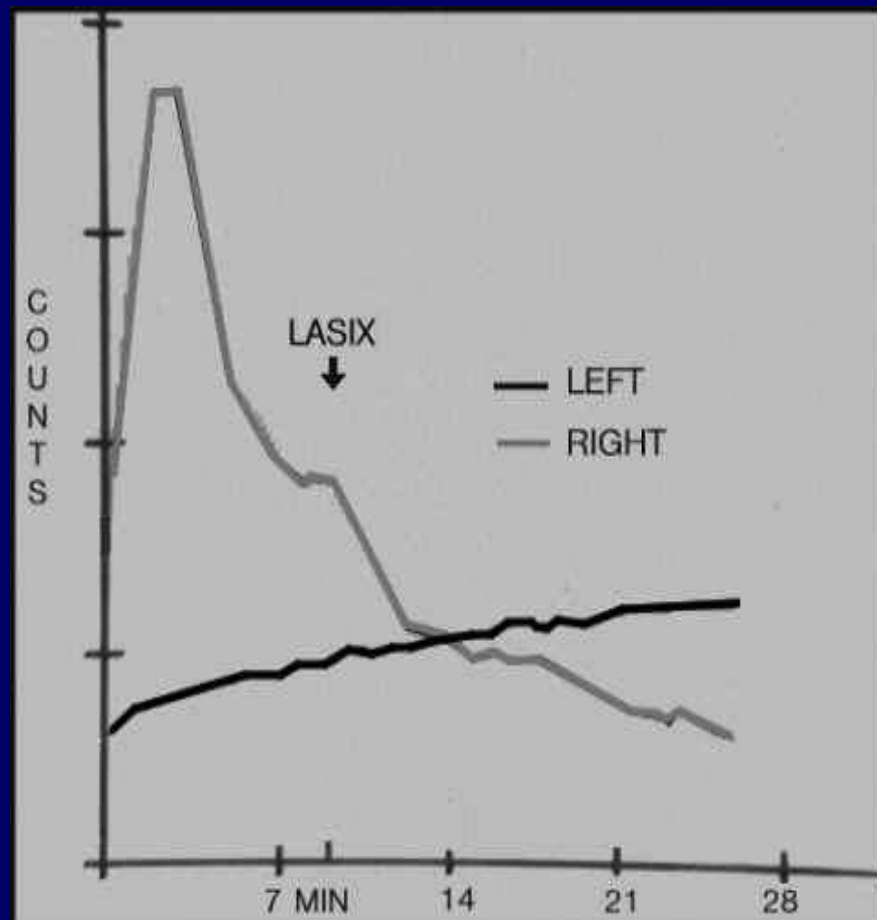
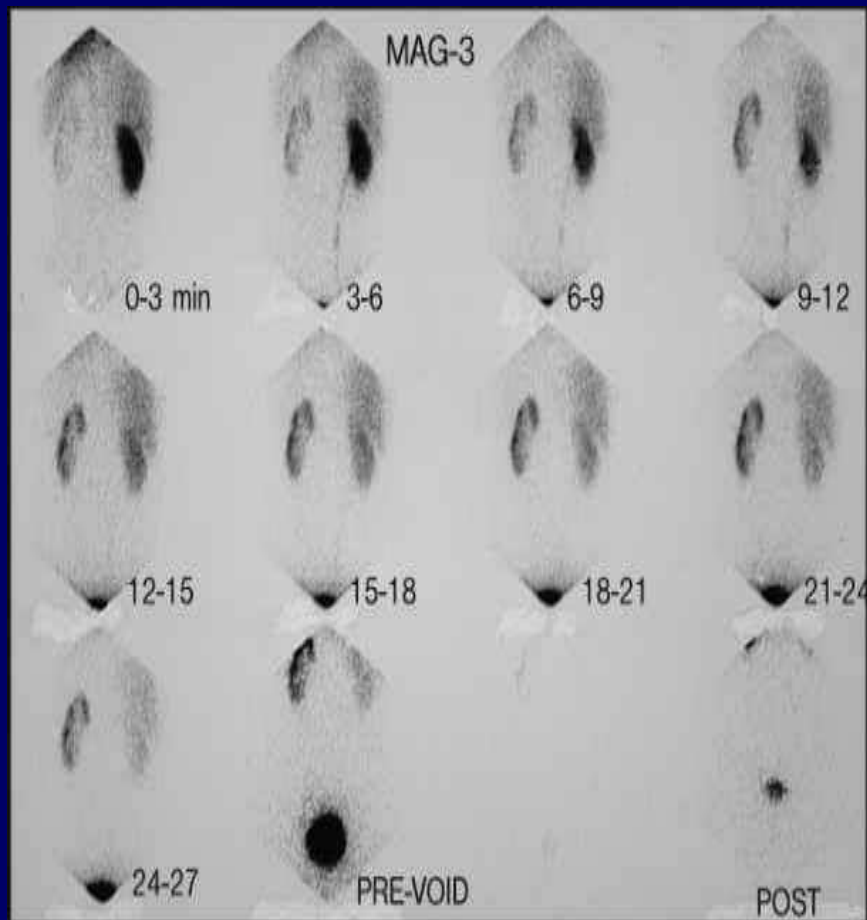
Mixto



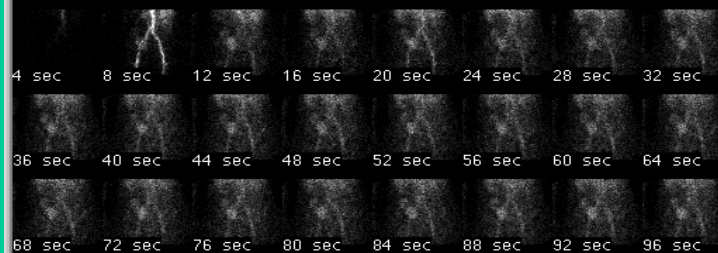


NEFROUROLOGIA NUCLEAR

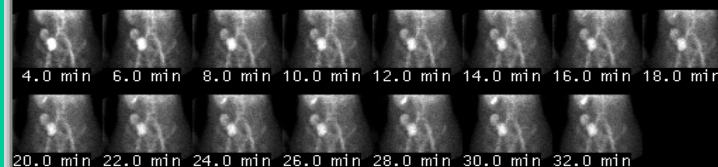
- ✓ Hipertensión renovascular
- ✓ Uropatía obstructiva
- ✓ Pielonefritis aguda
- ✓ Trasplante renal



Perfusion Phase - CANALES MEJIA GLORIS RENAL TX

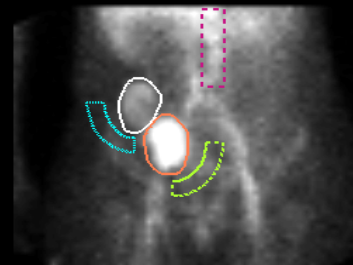


Clearance Phase

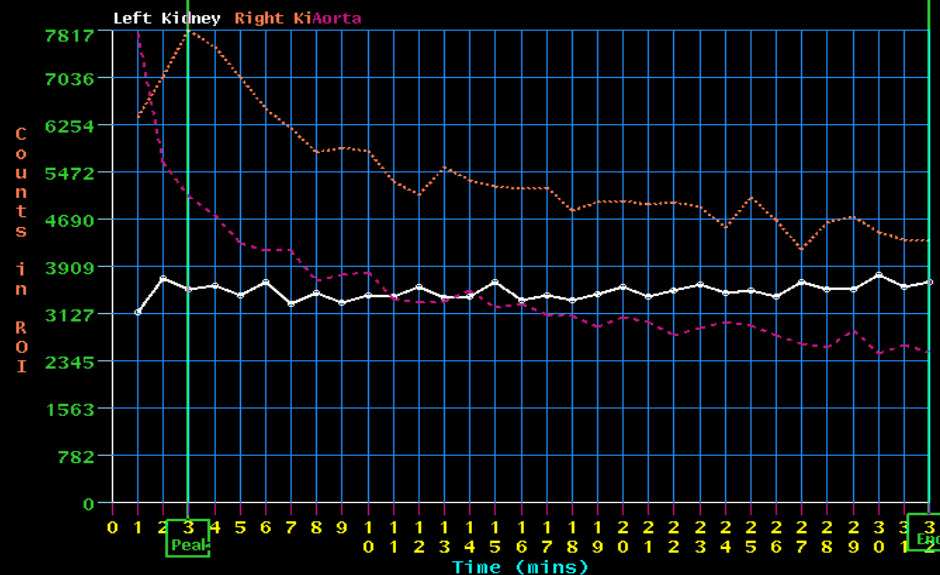
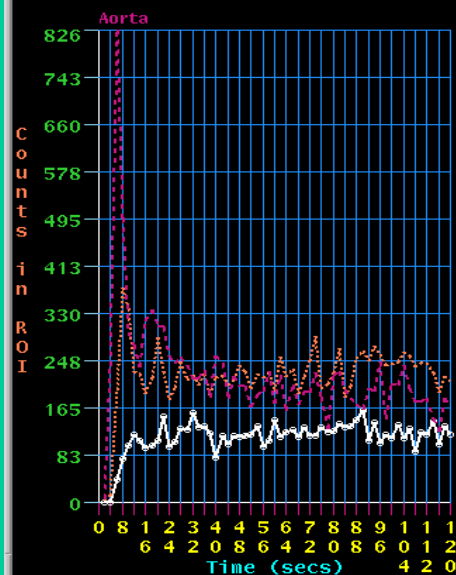


CANALES MEJIA GLORIS RENAL TX Clearance Posterior

KIDNEY	T 1/2	T(peak)	%COUNTS at T(peak)	20/MAX	20/3
Left	not reached	30.0 min	L: 45.7% R: 54.3%	0.96	1.01
Right	not reached	3.0 min	L: 31.1% R: 68.9%	0.64	0.64



61-62 4.0 min



InfoBox for Lightbox 3

CANALES MEJIA GLORIS

ID: RENAL TX

Sex: F

Birth: 13/4/1976

Head First, Supine

Acq: 12/2/2004 18:07:04

Planar, Dynamic

Inj Time: 18:03 Tc-99m

H/L: 6.02 hrs

Heads: 1 Wins: 1

Acq Matrix: 64 x 64

1 Images Max Ct: 283

Collimator: LEUHR-Par

Mag: 1.33 Depth: 16

View Term: 60.00 Seconds

Op ID: EAT File: L4

Image ID: RENAL

Acq ID: Clearance

Organ: Renal

Slice: 7.01 mm

1st Dynamic Frames: 60 2.00 sec/frame

2nd Dynamic Frames: 30 60.00 sec/frame

Win: 81.0% Bas: 0.0%

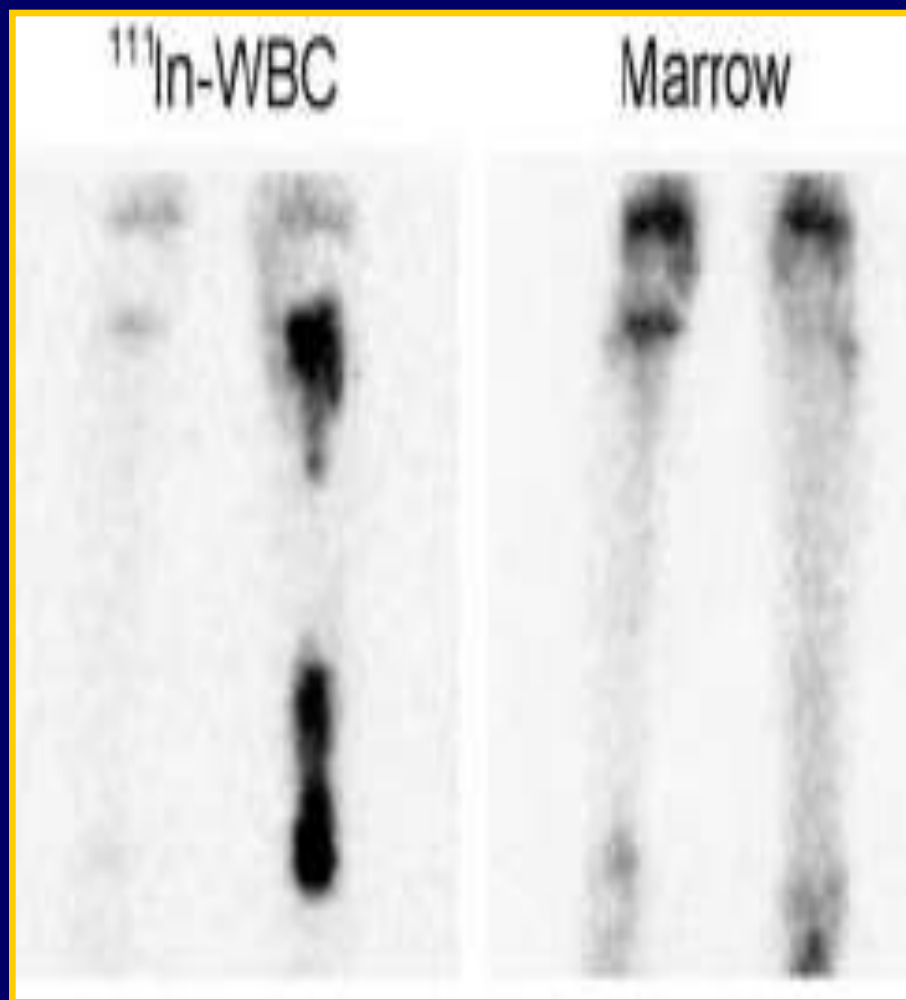
Hospital G. Almenara

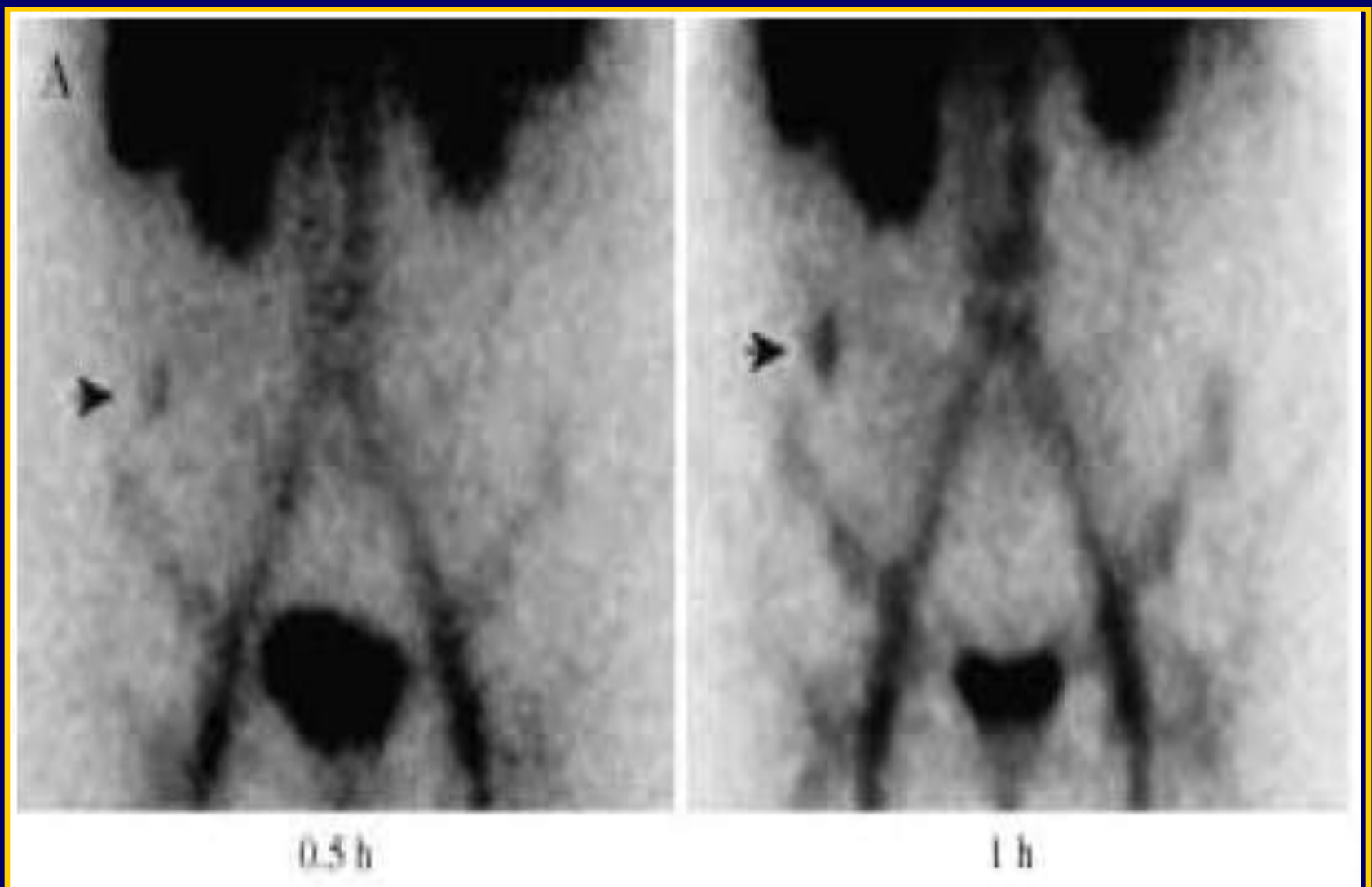
ESSALUD



INFECCION E INFLAMACION

- ✓ Leucocitos marcados
- ✓ Antibióticos marcados
- ✓ Anticuerpos monoclonales
- ✓ Péptidos marcados





PULMONAR

- ✓ Diagnóstico y seguimiento de TEP
- ✓ Valoración preoperatoria
- ✓ Síndrome hepatopulmonar

A V-SPECT **B** Q-SPECT



C V-planar **D** Q-planar



Ant

Post

POST

R
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L
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f
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PIXIE Info Box

ORMENO DONAYRE PAUL

ID: PULMON

Acq: 18/11/2004

08:16:41

Whole Body

Tc-99m

Acq Matrix: 256 x 1024

Collimator: LEUHR-Par

Mag: 1.18

Op ID: JLA File: R3

Image ID: Raw Data

Acq ID: WholeBody

Organ: Bone UB

Slice: 1.98 mm

Len: 99 cm 0.00 cm/sec

Win: 30.0% Bas: 0.0%

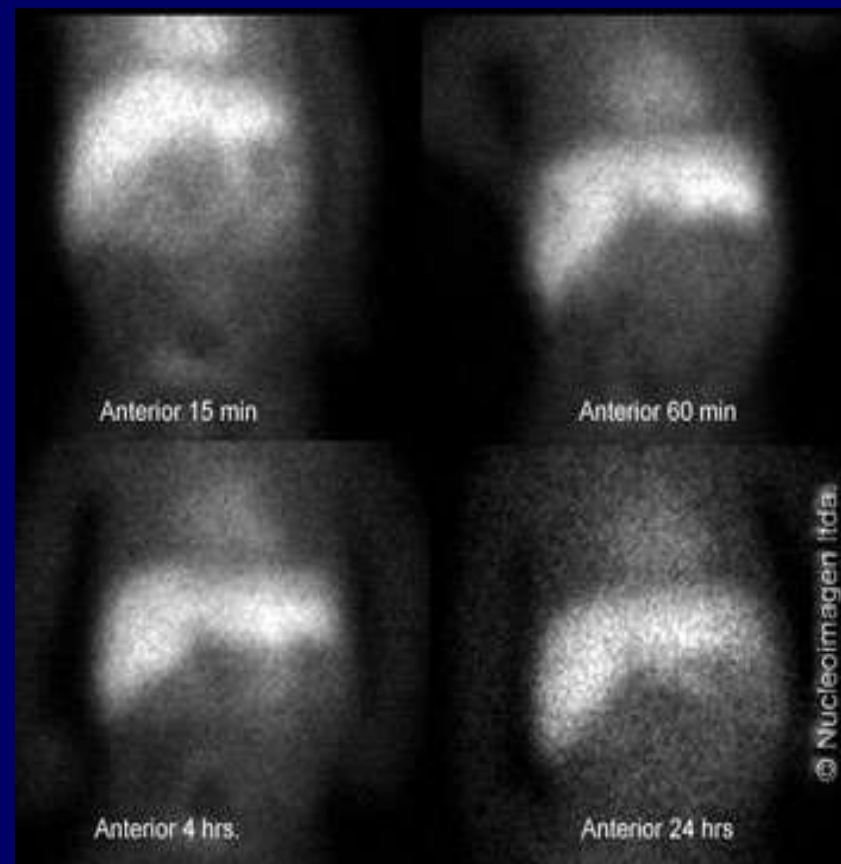
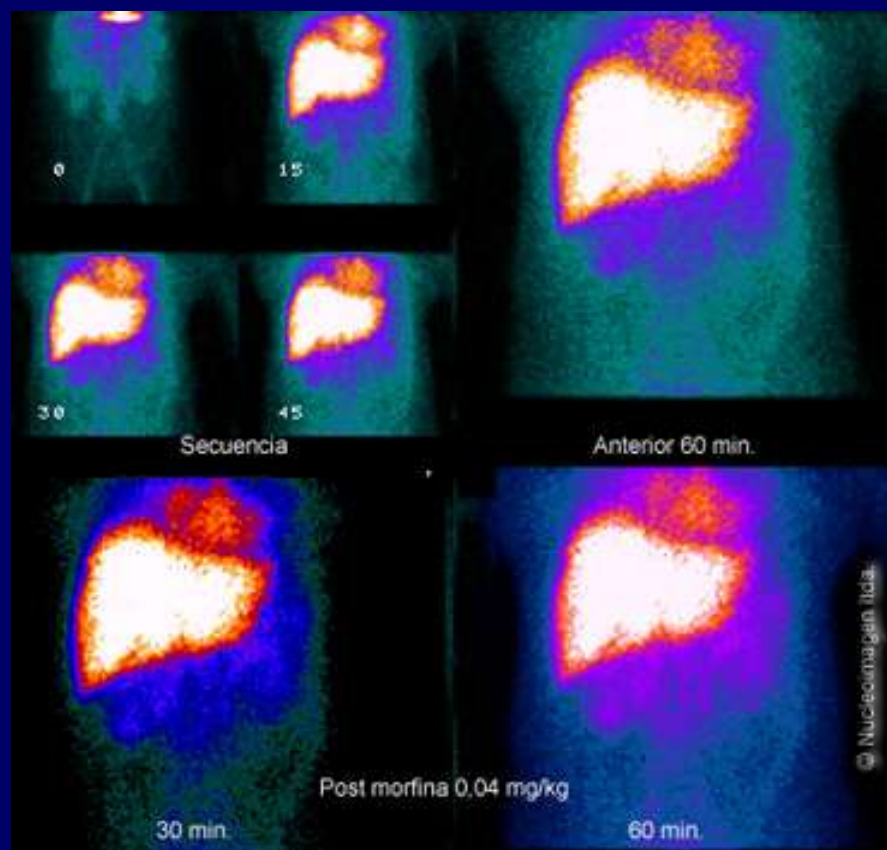
Hospital G. Almenara

ESSALUD

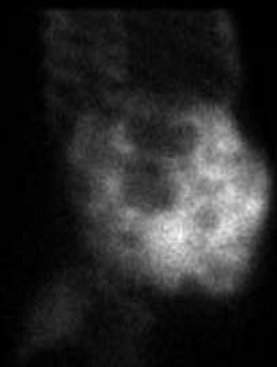


PICKER
NUCLEAR MEDICINE DIVISION

Done

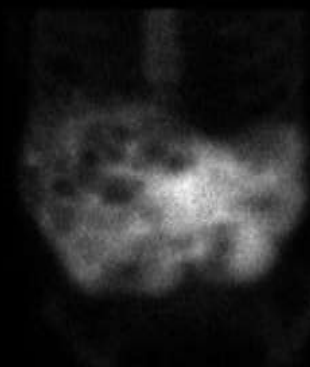


Planar



LAT DER

Planar



ANTERIOR

HIGADO

Planar



LAT IZQ

Planar



POSTERIOR

PIXIE Info Box

PAT DENEGRI MARIA

ID: HIGADO

Acq: 4/12/2003

16:40:15

Planar

Tc-99m

Acq Matrix: 256 x 256

Collimator: LEUHR-Par

Mag: 1.00

Op ID: EAT File: R1

Image ID: Raw Data

Acq ID: Planar

Slice: 2.33 mm

Win:100.0% Bas: 0.0%

Hospital G. Almenara

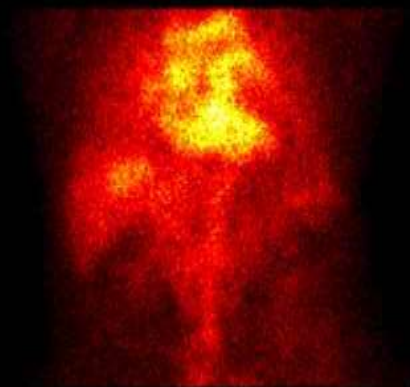
ESSALUD



PICKER
NUCLEAR MEDICINE DIVISION

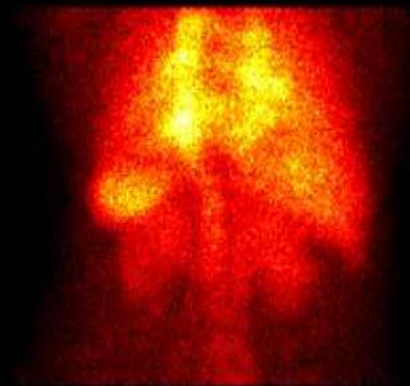
Done

Planar



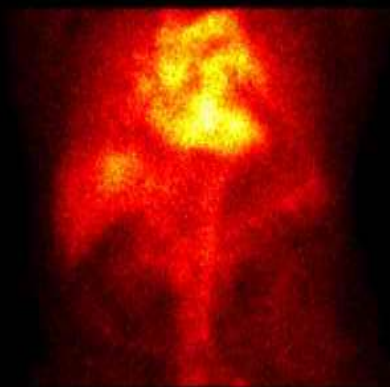
CONTROL 2 HORAS

Planar



CONTROL 4 HORAS

Planar



PIXIE Info Box

ZUAZO BENSA BLANCA

ID: POOL SANGUINEO

Acq: 14/1/2004

14:19:34

Planar

Tc-99m

Acq Matrix: 256 x 256

Collimator: LEUHR-Par

Mag: 1.00

Op ID: YCS File: R4

Image ID: Raw Data

Acq ID: Planar

Slice: 2.33 mm

Win: 91.0% Bos: 0.0%

Hospital C. Almenara

ESSALUD

 **PICKER**
NUCLEAR MEDICINE DIVISION

Done

