

This is a teaching exercise based on the material used in :

Tondeur M, Piepsz A, Ham H, De Palma D, Roca I.
Interobserver variability in reporting on renal drainage
obtained during Tc-99m MAG3 renography. A wide collaborative study
Eur J Nucl Med Mol Imaging. 2008 Mar;35(3):644-54

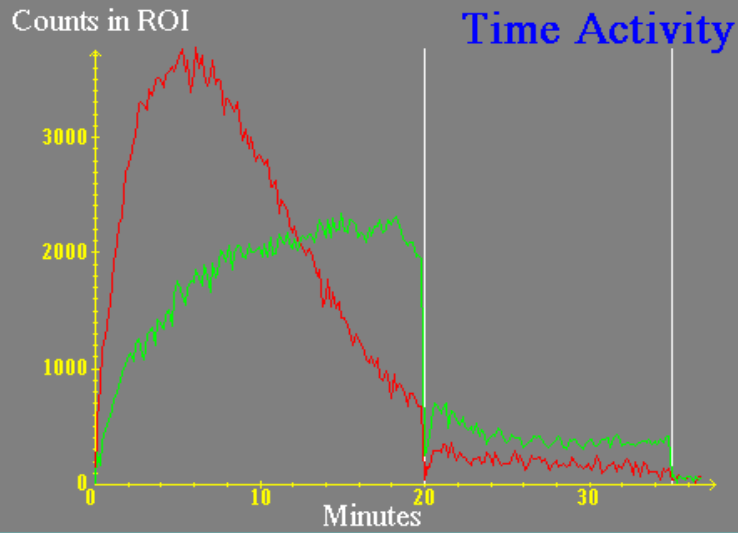
Compare your own interpretation of renal drainage to the interpretation
of 57 independent observers

- * 23 Tc-99m MAG3 renograms
- * Give your own interpretation on renal drainage
- * Possible answers :
 - good or almost good drainage
 - partial drainage
 - poor or no drainage
- * **Attention please !!! : the question is NOT « obstruction » or « no obstruction »**

The slide following each MAG3 study
summarizes the answers of the 57 observers.

Data available for each case

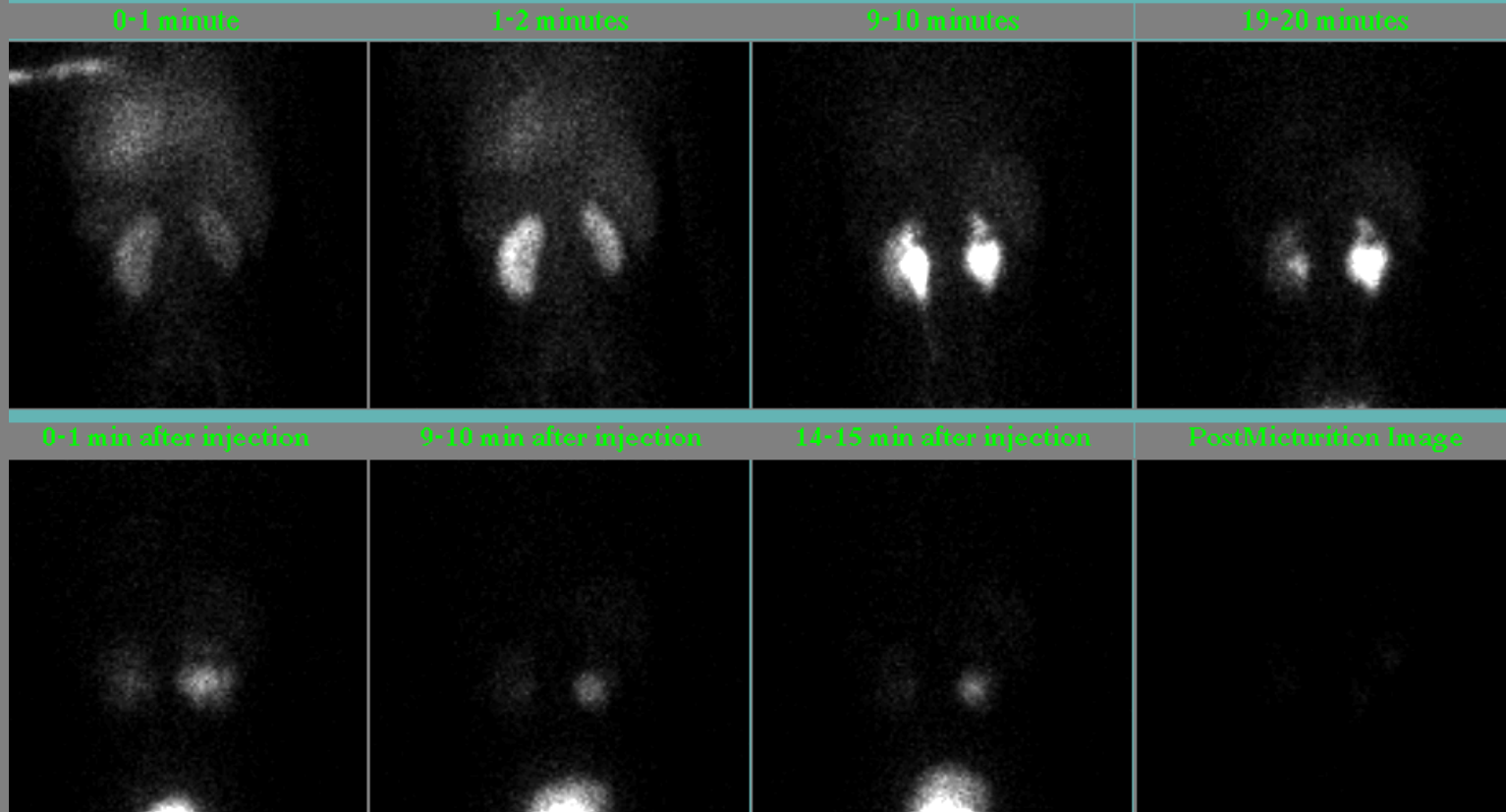
- sequential images, including postmicturition images
- curves : F+20 or F0 renograms
- residual postmict activity visible on the curves
- One or two white vertical lines are separating the different phases of the studies : basic renogram or F0 test; F+20 test; posmicturition activity
- quantitative parameters :
 - * Tmax of the renogram
 - * Output Efficiency, at 20 min and after micturition.
 - * NORA, at 20 min and after micturition.

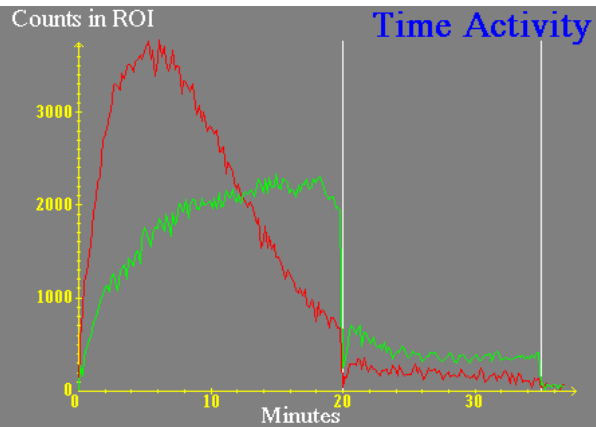


Relative Function	Left	Right
DRF (Area)	72 %	28 %
DRF (Patlak)	70 %	30 %
Transit Parameter		
Tmax (minutes)	6.2	15.0
OE 20 min.	93 %	58 %
OE 35 min.	99 %	93 %
OE PM	99 %	99 %
NORA		
NORA 20 min.	0.34	2.44
NORA 35 min.	0.05	0.47
NORA PM	0.03	0.07

CASE 1

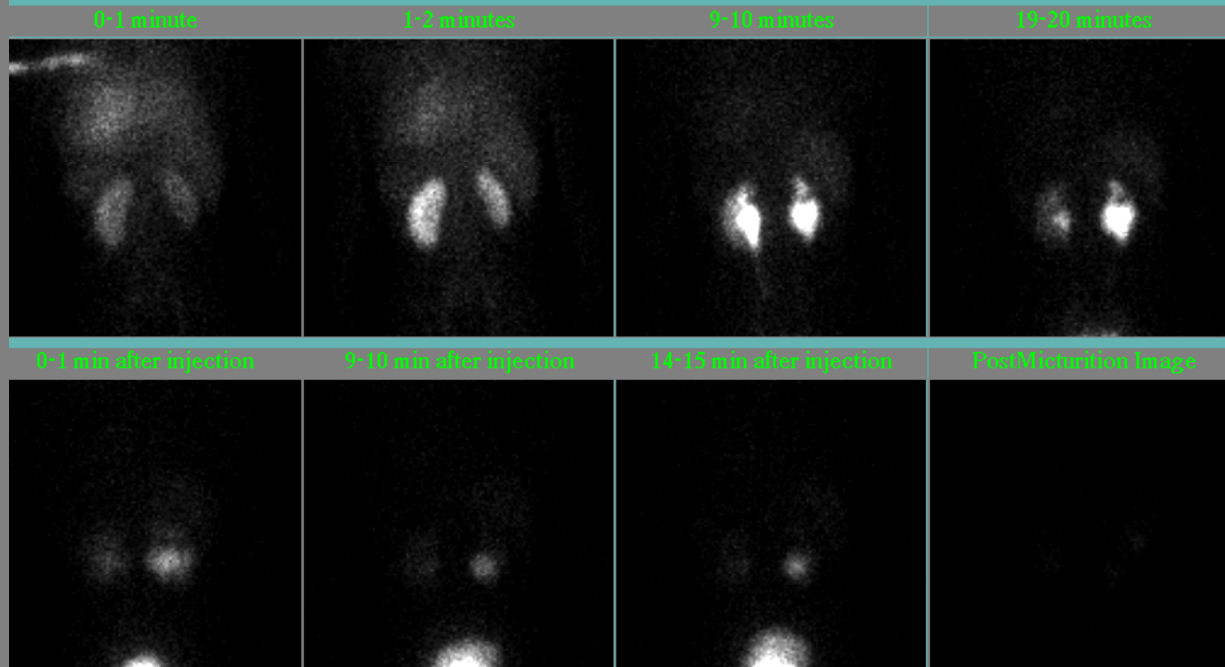
F +20 test



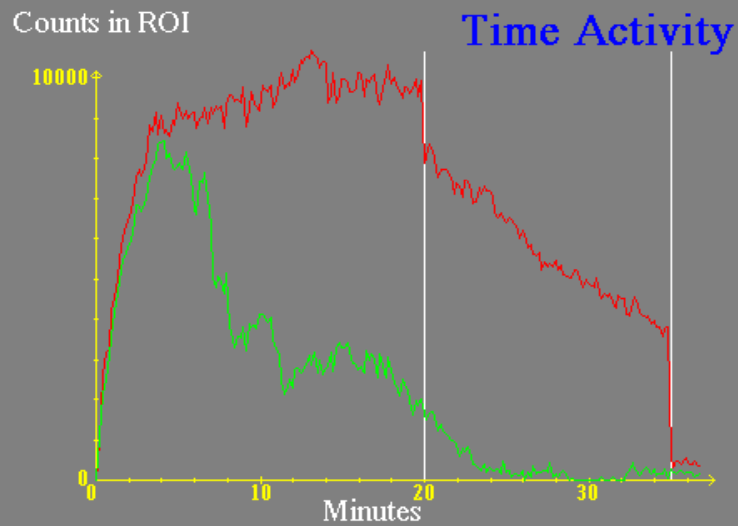


Relative Function	Left	Right
DRF (Area)	72 %	28 %
DRF (Patlak)	70 %	30 %
Transit Parameter		
Tmax (minutes)	6.2	15.0
OE 20 min.	93 %	58 %
OE 35 min.	99 %	93 %
OE PM	99 %	99 %
NORA 20 min.	0.34	2.44
NORA 35 min.	0.05	0.47
NORA PM	0.03	0.07

CASE 1 F +20 test



	left	right
Good or almost good drainage	100.0	73.7
Partial drainage	0.0	26.3
Poor or no drainage	0.0	0.0



Relative Function	Left	Right
DRF (Area)	53 %	47 %
DRF (Patlak)	52 %	48 %
Transit Parameter		
Tmax (minutes)	13.2	4.2
OE 20 min.	60 %	92 %
OE 35 min.	87 %	100 %
OE PM	99 %	99 %
NORA 20 min.	1.85	0.41
NORA 35 min.	0.72	0.04
NORA PM	0.08	0.04

CASE 2

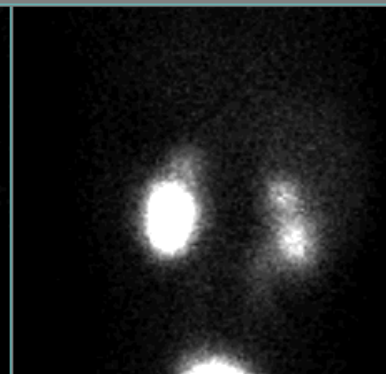
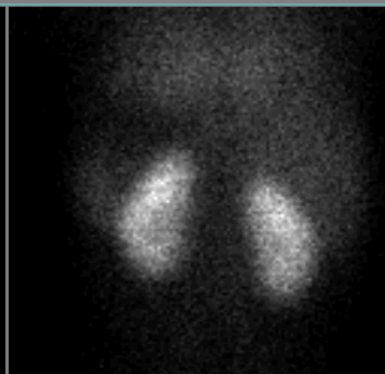
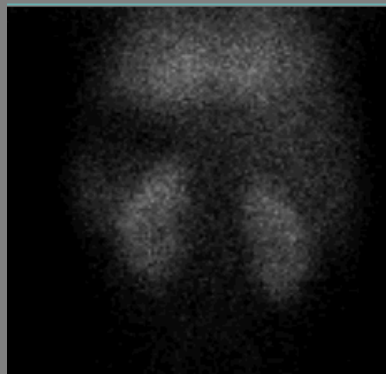
F+20 test

0-1 minute

1-2 minutes

9-10 minutes

19-20 minutes

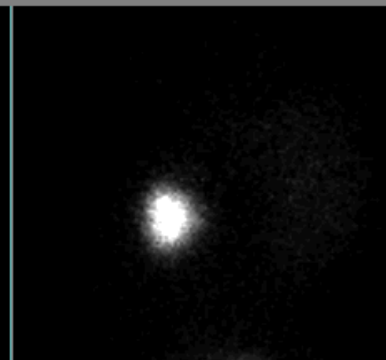
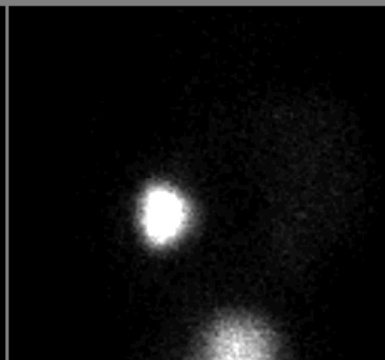


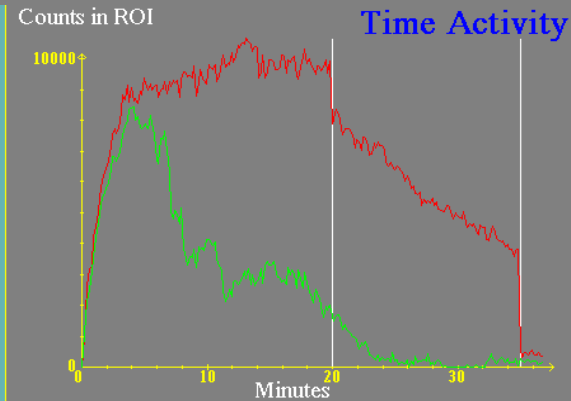
0-1 min after injection

9-10 min after injection

14-15 min after injection

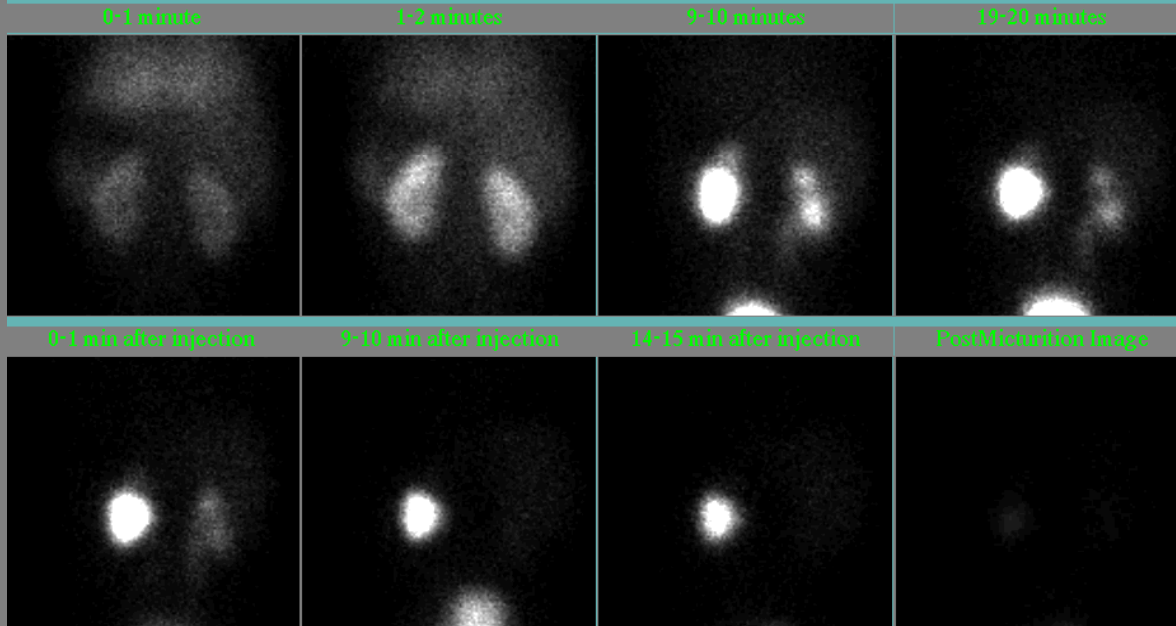
PostMicturition Image



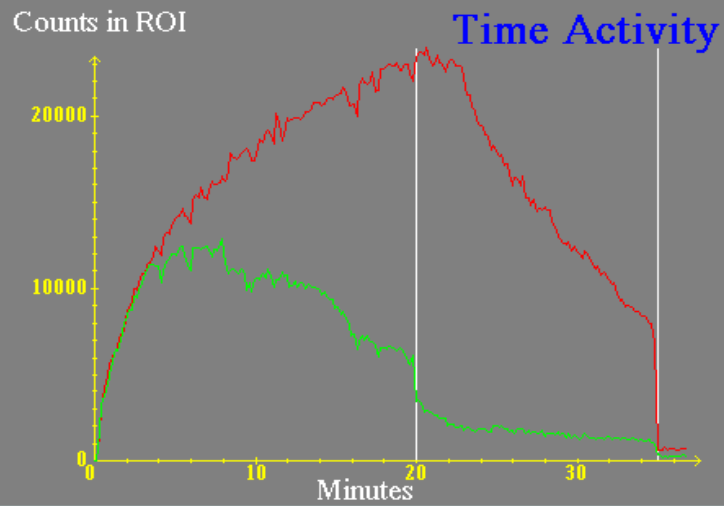


Relative Function	Left	Right
DRF (Area)	53 %	47 %
DRF (Patlak)	52 %	48 %
Transit Parameter		
Tmax (minutes)	13.2	4.2
OE 20 min.	60 %	92 %
OE 35 min.	87 %	100 %
OE PM	99 %	99 %
NORA 20 min.	1.85	0.41
NORA 35 min.	0.72	0.04
NORA PM	0.08	0.04

CASE 2 F+20 test



	left	right
Good or almost good drainage	51.8	100.0
Partial drainage	44.6	0.0
Poor or no drainage	3.6	0.0



Relative Function	Left	Right
DRF (Area)	51 %	49 %
DRF (Patlak)	46 %	54 %
Transit Parameter		
Tmax (minutes)	20.0	8.0
OE 20 min.	5 %	76 %
OE 35 min.	98 %	99 %
OE PM	97 %	99 %
NORA		
NORA 20 min.	3.41	0.96
NORA 35 min.	1.21	0.18
NORA PM	0.11	0.05

CASE 3

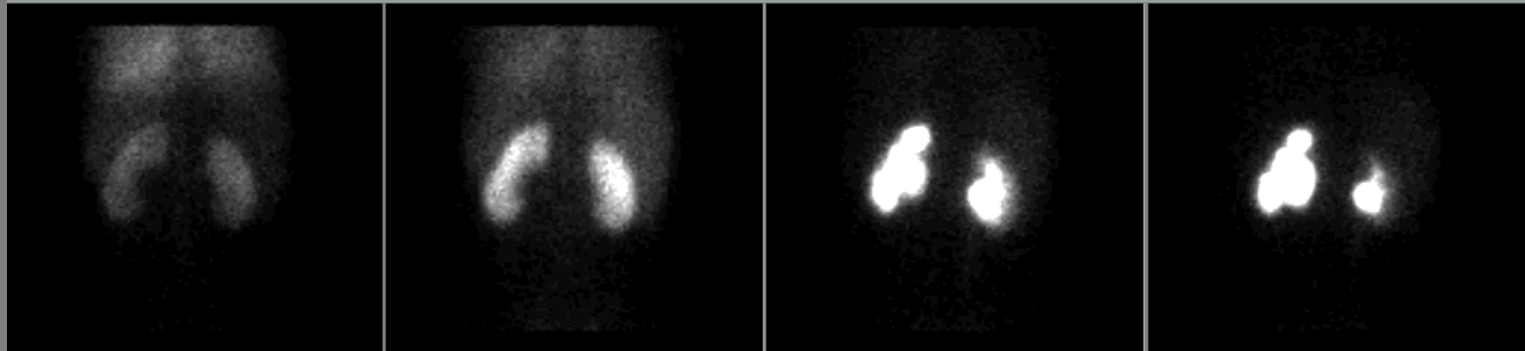
F+20 test

0-1 minute

1-2 minutes

9-10 minutes

19-20 minutes

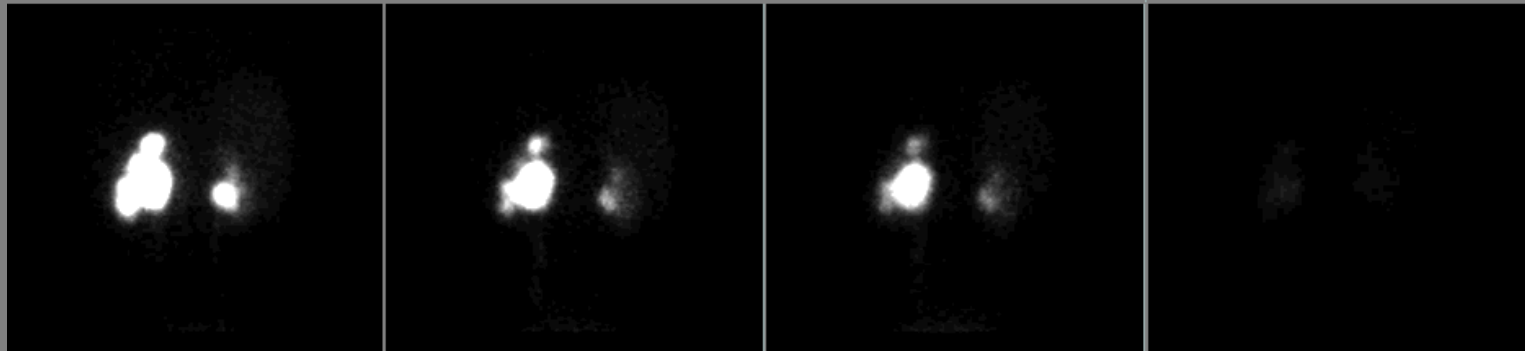


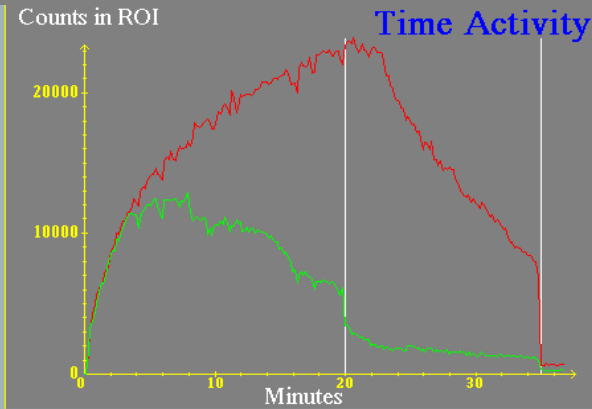
0-1 min after injection

9-10 min after injection

14-15 min after injection

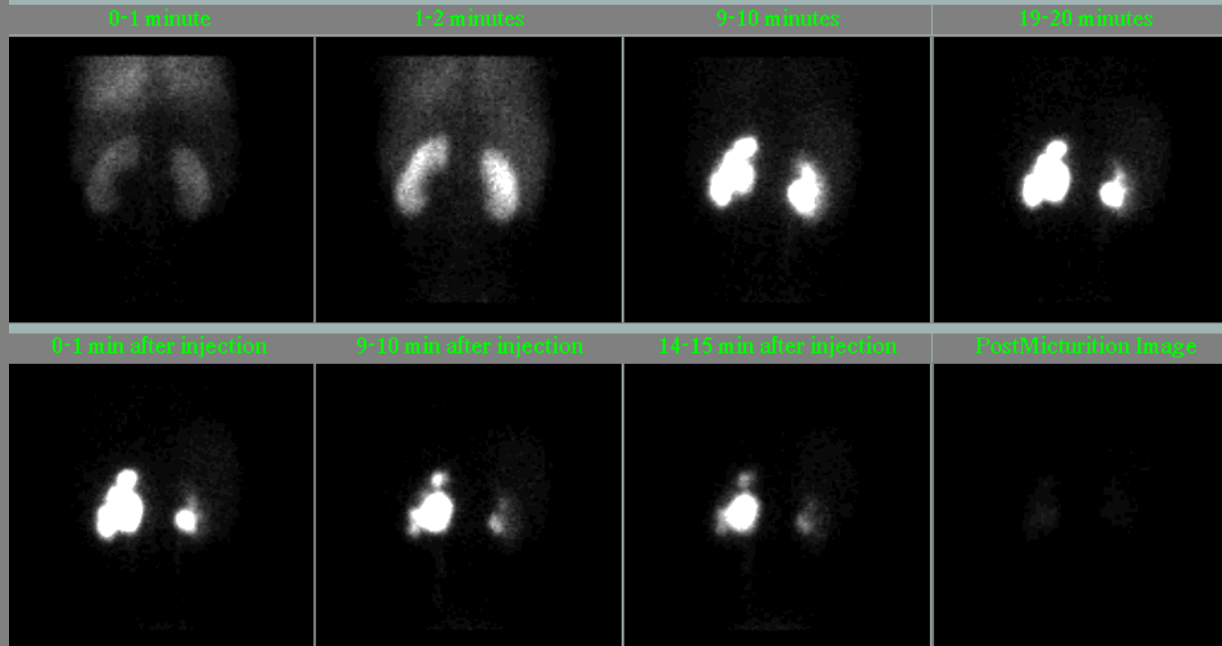
PostMicturition Image



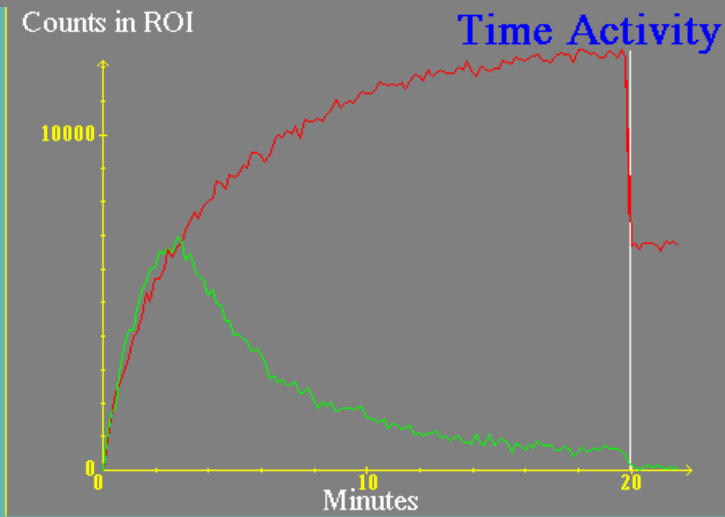


Relative Function	Left	Right
DRF (Area)	51 %	49 %
DRF (Patlak)	46 %	54 %
Transit Parameter		
Tmax (minutes)	20.0	8.0
OE 20 min.	5 %	76 %
OE 35 min.	98 %	99 %
OE PM	97 %	99 %
NORA 20 min.	3.41	0.96
NORA 35 min.	1.21	0.18
NORA PM	0.11	0.05

CASE 3 F+20 test



	left	right
Good or almost good drainage	57.1	98.2
Partial drainage	41.1	1.8
Poor or no drainage	1.8	0.0



Relative Function	Left	Right
DRF (Area)	47 %	53 %
DRF (Patlak)	47 %	53 %
Transit Parameter		
Tmax (minutes)	19.7	2.8
OE 20 min.	44 %	97 %
OE PM	70 %	99 %
NORA 20 min.	2.81	0.13
NORA PM	1.53	0.02

CASE 4

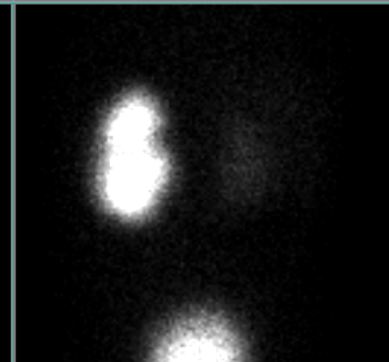
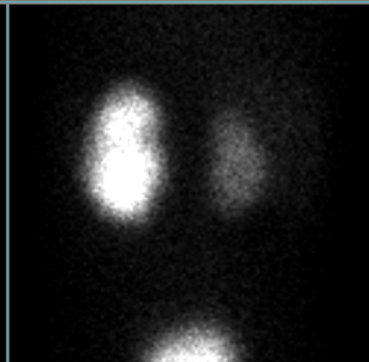
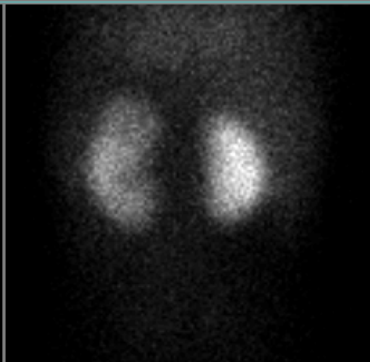
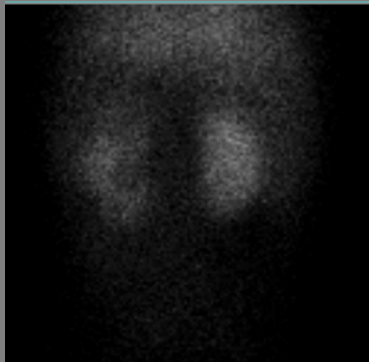
F0 test

0-1 minute

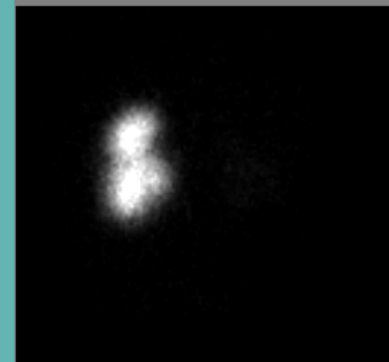
1-2 minutes

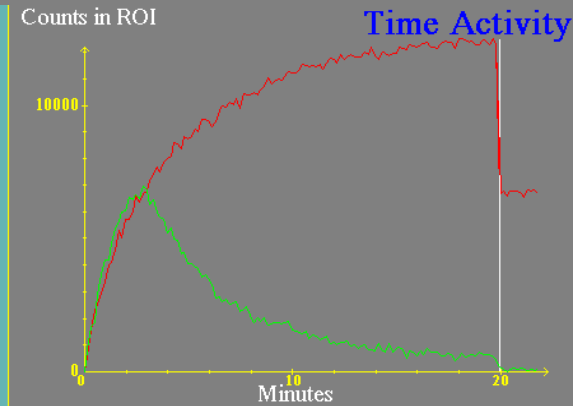
9-10 minutes

19-20 minutes



PostMicturition Image





Relative Function	Left	Right
DRF (Area)	47 %	53 %
DRF (Patlak)	47 %	53 %
Transit Parameter		
Tmax (minutes)	19.7	2.8
OE 20 min.	44 %	97 %
OE PM	70 %	99 %
NORA 20 min.	2.81	0.13
NORA PM	1.53	0.02

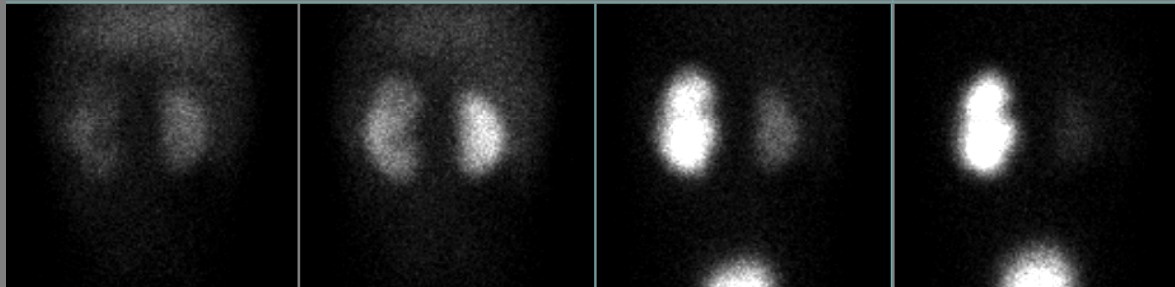
CASE 4 F0 test

0-1 minute

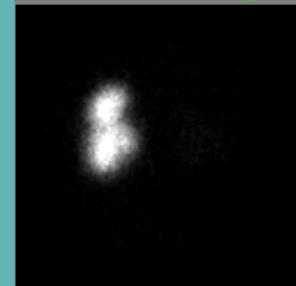
1-2 minutes

9-10 minutes

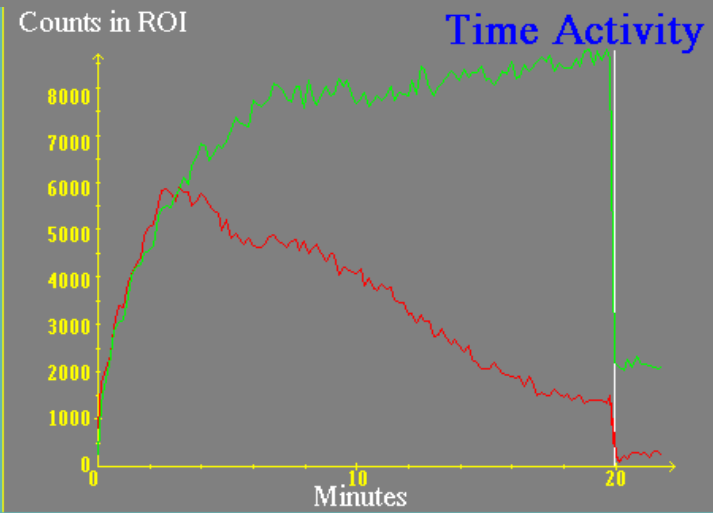
19-20 minutes



PostMicturition Image



	left	right
Good or almost good drainage	1.8	100.0
Partial drainage	43.9	0.0
Poor or no drainage	54.4	0.0



Relative Function	Left	Right
DRF (Area)	51 %	49 %
DRF (Patlak)	50 %	50 %
Transit Parameter		
Tmax (minutes)	3.2	19.0
OE 20 min.	91 %	49 %
OE PM	98 %	88 %
NORA 20 min.	0.34	2.20
NORA PM	0.07	0.54

CASE 5

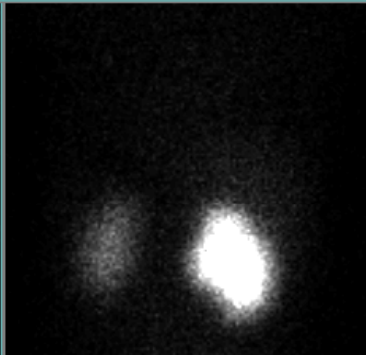
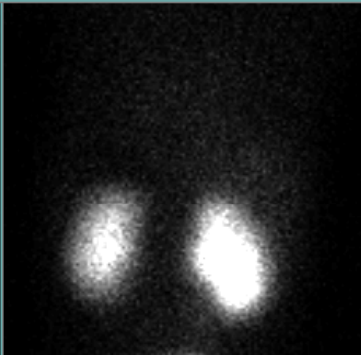
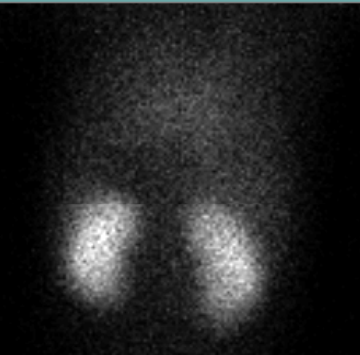
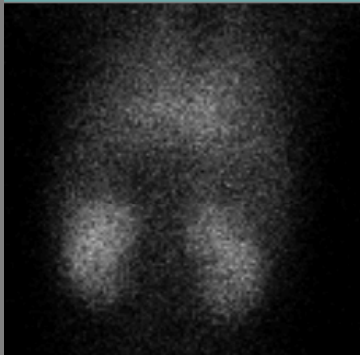
F0 test

0-1 minute

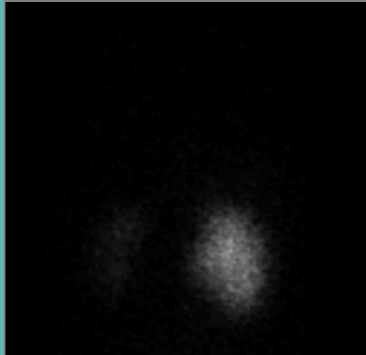
1-2 minutes

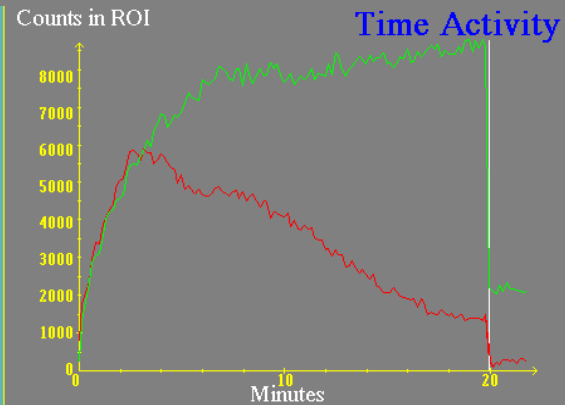
9-10 minutes

19-20 minutes



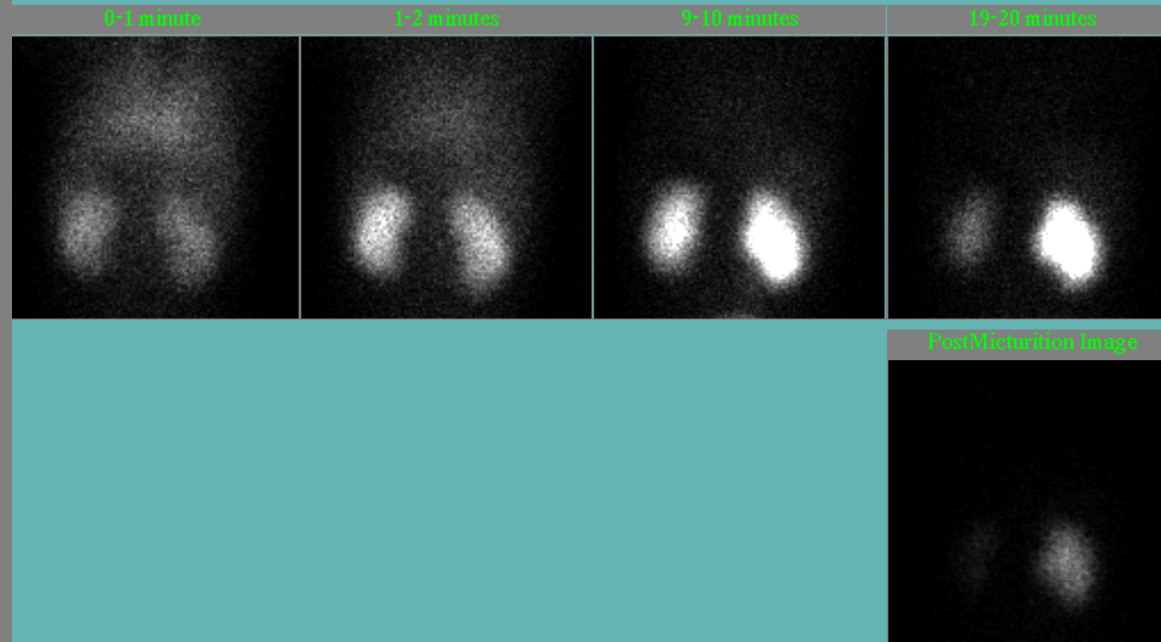
PostMicturition Image



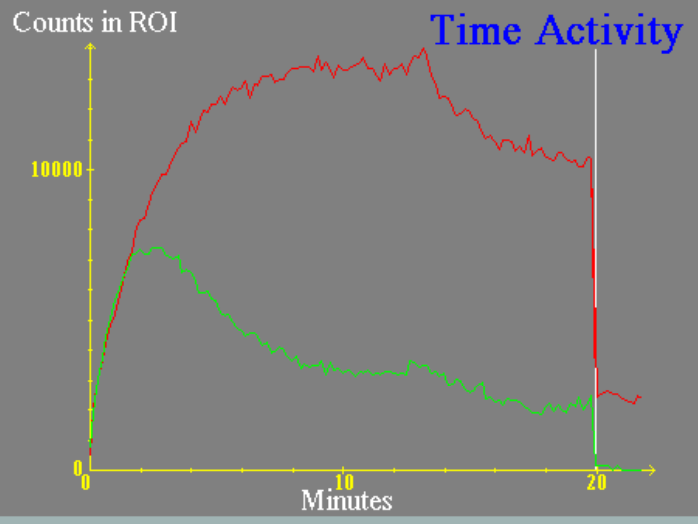


Relative Function	Left	Right
DRF (Area)	51 %	49 %
DRF (Patlak)	50 %	50 %
Transit Parameter		
Tmax (minutes)	3.2	19.0
OE 20 min.	91 %	49 %
OE PM	98 %	88 %
NORA 20 min.	0.34	2.20
NORA PM	0.07	0.54

CASE 5 F0 test



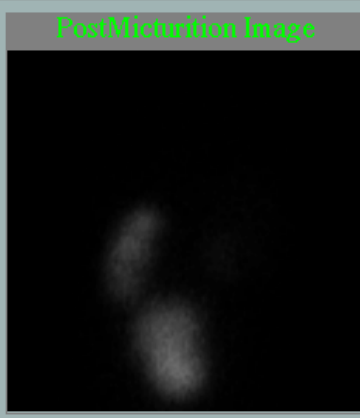
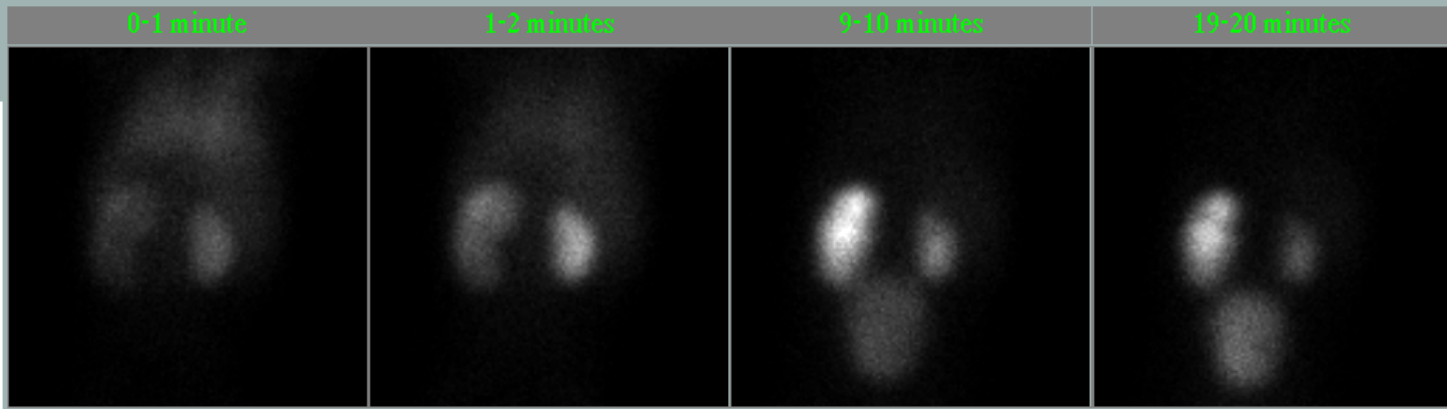
	left	right
Good or almost good drainage	96.5	73.7
Partial drainage	3.5	26.3
Poor or no drainage	0.0	0.0

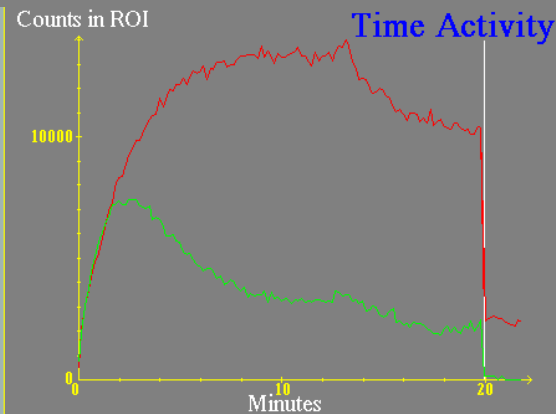


	Left	Right
Relative Function		
DRF (Area)	51 %	49 %
DRF (Patlak)	51 %	49 %
Transit Parameter		
Tmax (minutes)	13.2	2.5
OE 20 min.	65 %	92 %
OE PM	92 %	100 %
NORA 20 min.	1.56	0.35
NORA PM	0.36	0.00

CASE 6

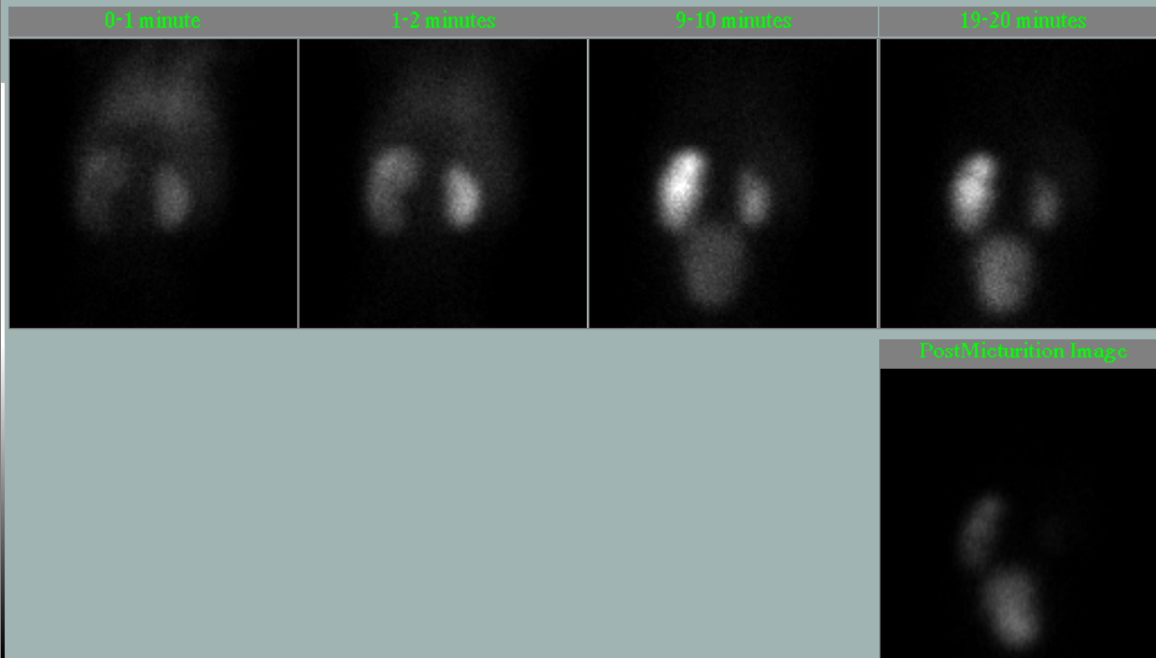
F0 test



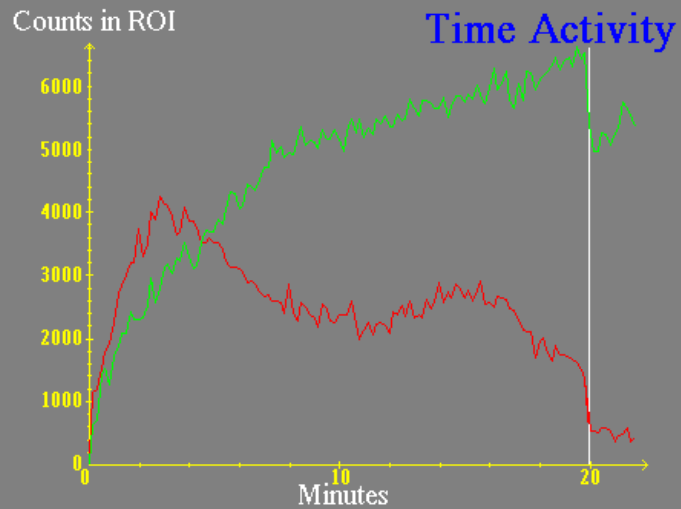


Relative Function	Left	Right
DRF (Area)	51 %	49 %
DRF (Patlak)	51 %	49 %
Transit Parameter		
Tmax (minutes)	13.2	2.5
OE 20 min.	65 %	92 %
OE PM	92 %	100 %
NORA 20 min.	1.56	0.35
NORA PM	0.36	0.00

CASE 6 F0 test



	left	right
Good or almost good drainage	47.4	100.0
Partial drainage	47.4	0.0
Poor or no drainage	5.3	0.0

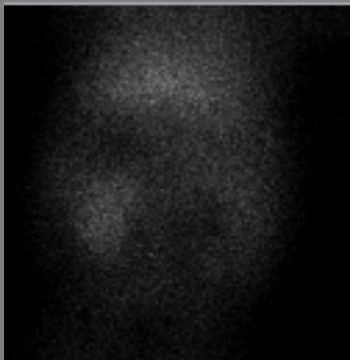


Relative Function	Left	Right
DRF (Area)	59 %	41 %
DRF (Patlak)	57 %	43 %
Transit Parameter		
Tmax (minutes)	2.8	19.5
OE 20 min.	91 %	50 %
OE PM	97 %	60 %
NORA 20 min.	0.56	3.08
NORA PM	0.16	2.62

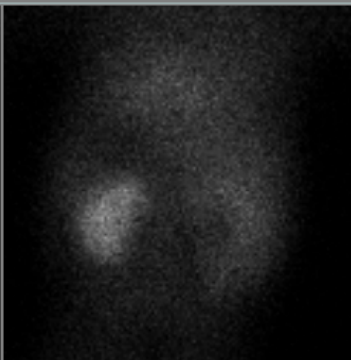
CASE 7

F0 test

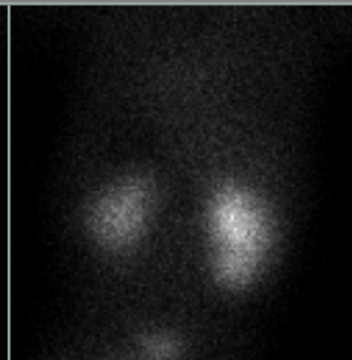
0-1 minute



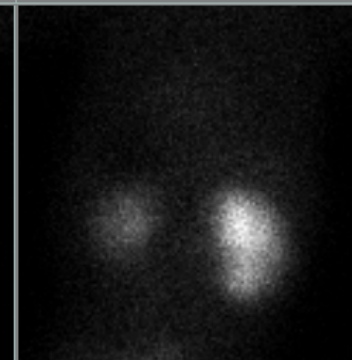
1-2 minutes



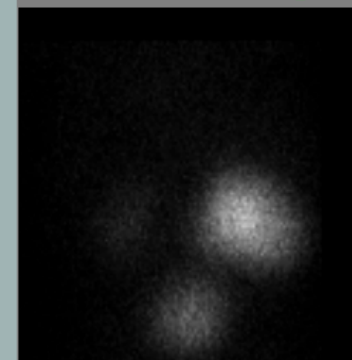
9-10 minutes

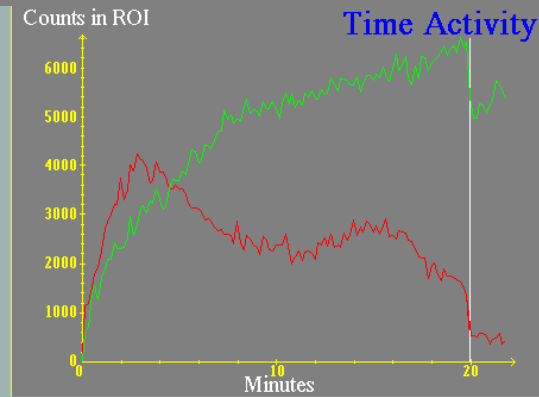


19-20 minutes



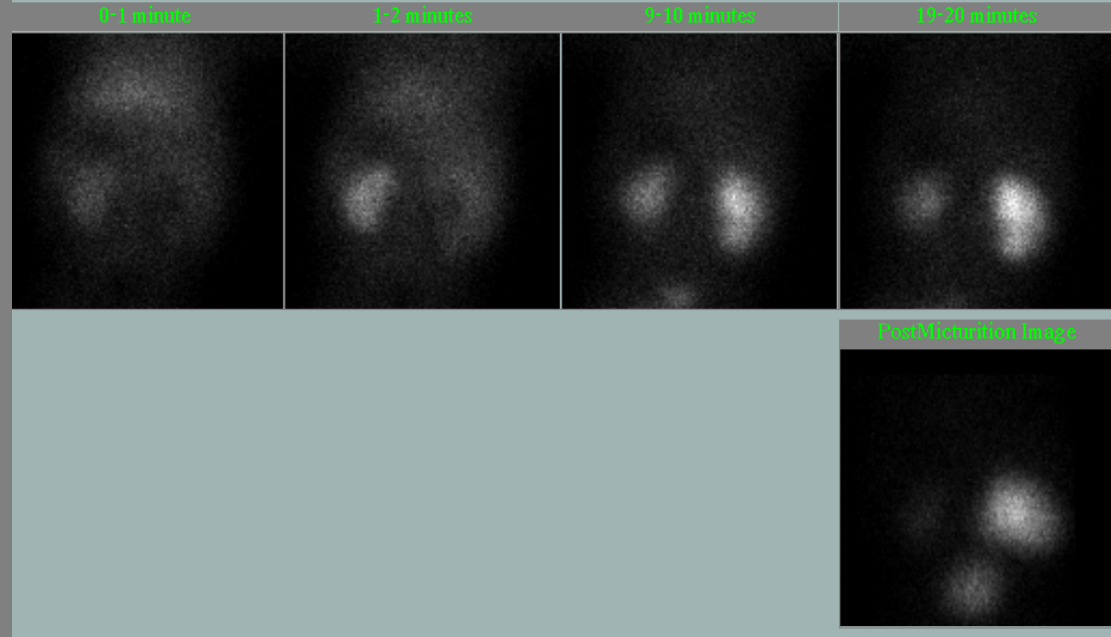
PostMicturition Image



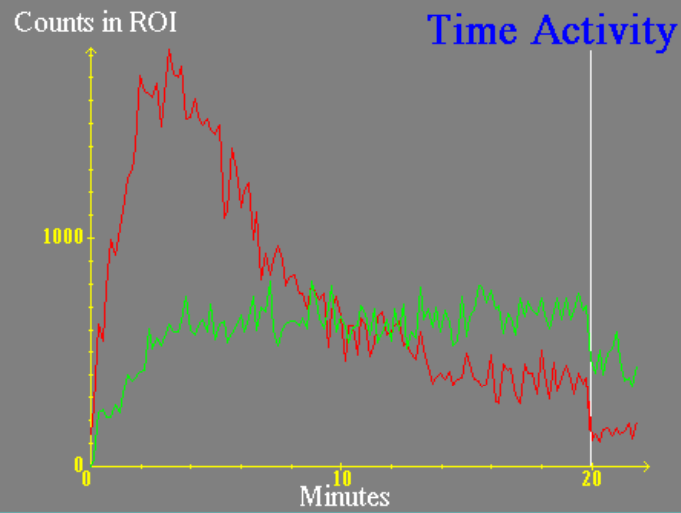


Relative Function	Left	Right
DRF (Area)	59 %	41 %
DRF (Patlak)	57 %	43 %
Transit Parameter		
Tmax (minutes)	2.8	19.5
OE 20 min.	91 %	50 %
OE PM	97 %	60 %
NORA 20 min.	0.56	3.08
NORA PM	0.16	2.62

CASE 7 F0 test



	left	right
Good or almost good drainage	94.7	0.0
Partial drainage	1.8	8.8
Poor or no drainage	3.5	91.2



Relative Function	Left	Right
DRF (Area)	78 %	22 %
DRF (Patlak)	78 %	22 %
Transit Parameter		
Tmax (minutes)	3.2	7.2
OE 20 min.	95 %	65 %
OE PM	97 %	79 %
NORA 20 min.	0.33	2.12
NORA PM	0.14	1.32

CASE 8

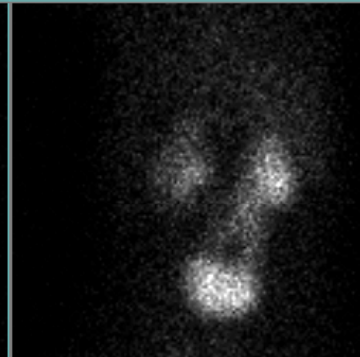
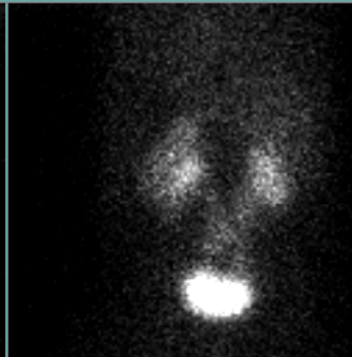
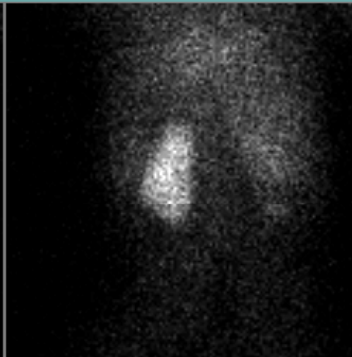
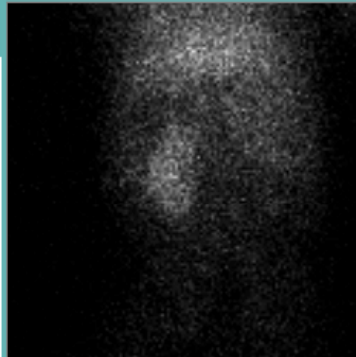
F0 test

0-1 minute

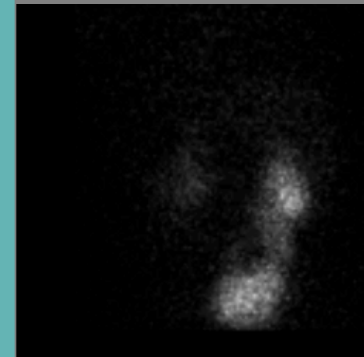
1-2 minutes

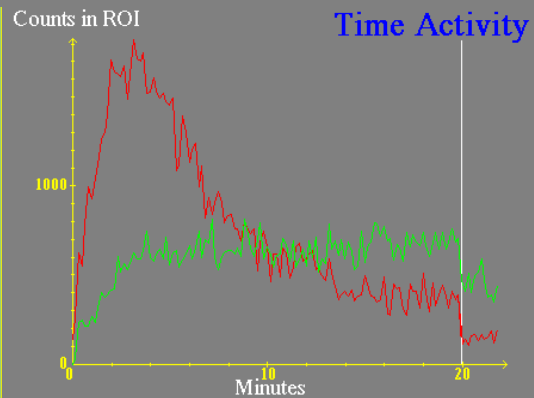
9-10 minutes

19-20 minutes



PostMicturition Image

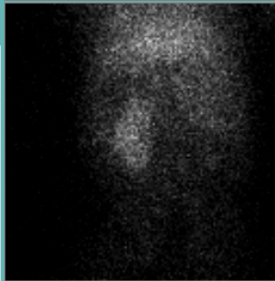




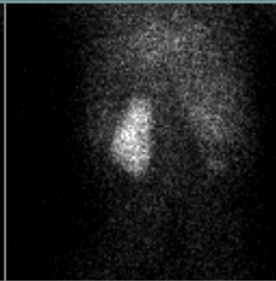
Relative Function	Left	Right
DRF (Area)	78 %	22 %
DRF (Patlak)	78 %	22 %
Transit Parameter		
Tmax (minutes)	3.2	7.2
OE 20 min.	95 %	65 %
OE PM	97 %	79 %
NORA 20 min.	0.33	2.12
NORA PM	0.14	1.32

CASE 8 F0 test

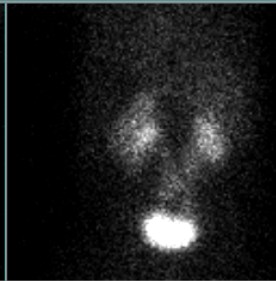
0-1 minute



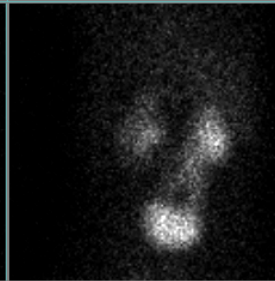
1-2 minutes



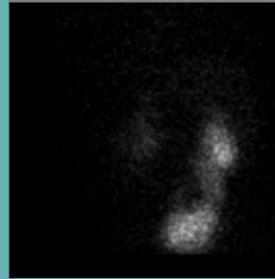
9-10 minutes



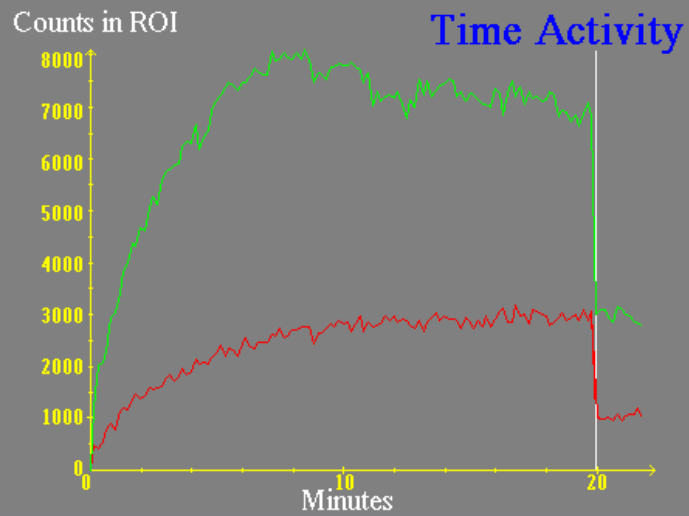
19-20 minutes



PostMicturition Image



	left	right
Good or almost good drainage	100.0	1.8
Partial drainage	0.0	47.4
Poor or no drainage	0.0	50.9

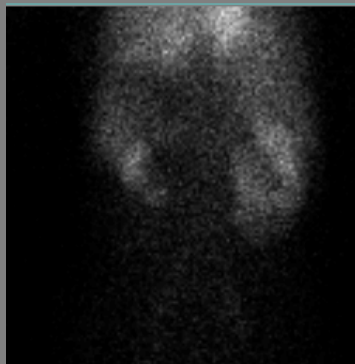


Relative Function	Left	Right
DRF (Area)	24 %	76 %
DRF (Patlak)	25 %	75 %
Transit Parameter		
Tmax (minutes)	16.8	8.5
OE 20 min.	51 %	64 %
OE PM	84 %	85 %
NORA 20 min.	2.51	1.78
NORA PM	0.89	0.77

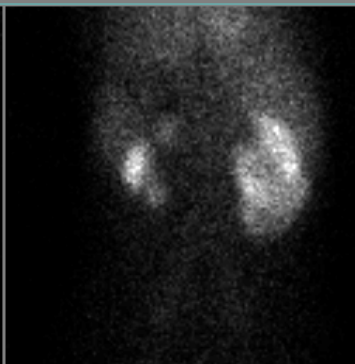
CASE 9

F0 test

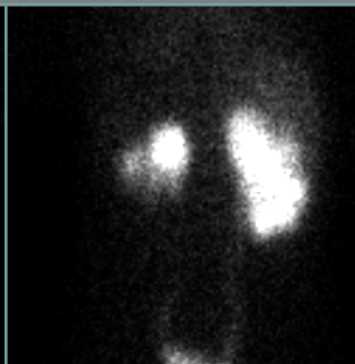
0-1 minute



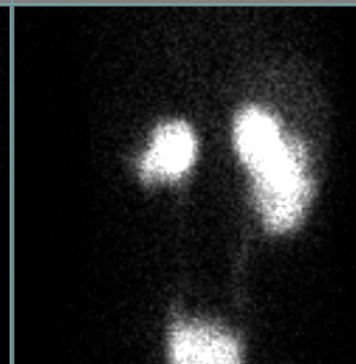
1-2 minutes



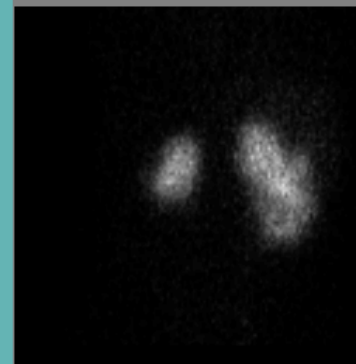
9-10 minutes

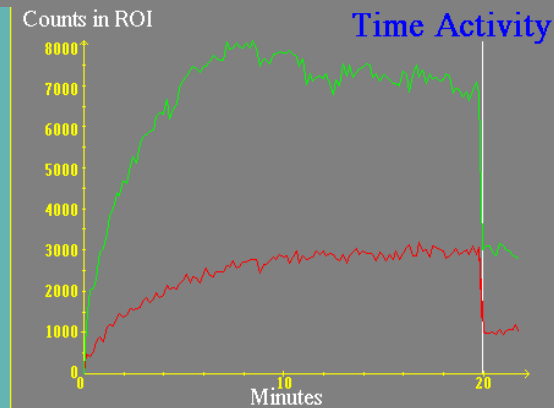


19-20 minutes



PostMicturition Image

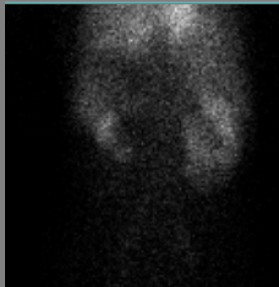




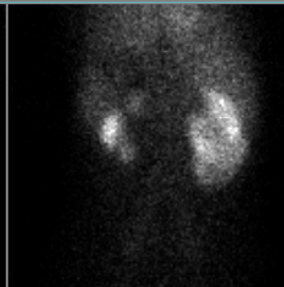
Relative Function	Left	Right
DRF (Area)	24 %	76 %
DRF (Patlak)	25 %	75 %
Transit Parameter		
Tmax (minutes)	16.8	8.5
OE 20 min.	51 %	64 %
OE PM	84 %	85 %
NORA 20 min.	2.51	1.78
NORA PM	0.89	0.77

CASE 9 F0 test

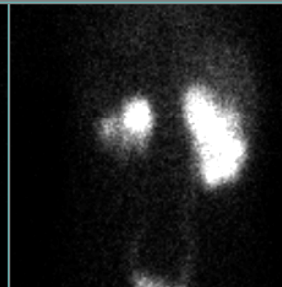
0-1 minute



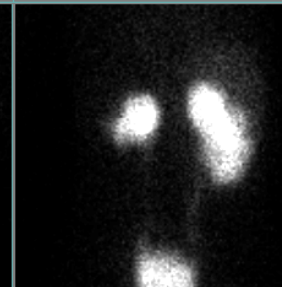
1-2 minutes



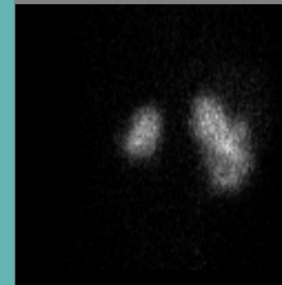
9-10 minutes



19-20 minutes

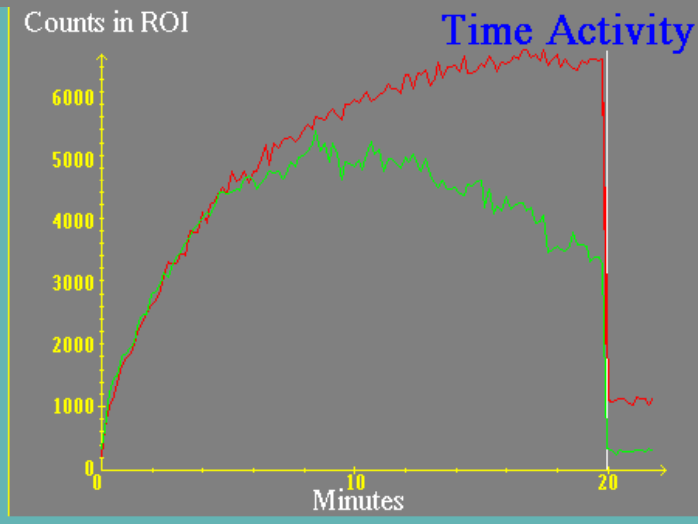


PostMicturition Image



Good or almost good drainage
 Partial drainage
 Poor or no drainage

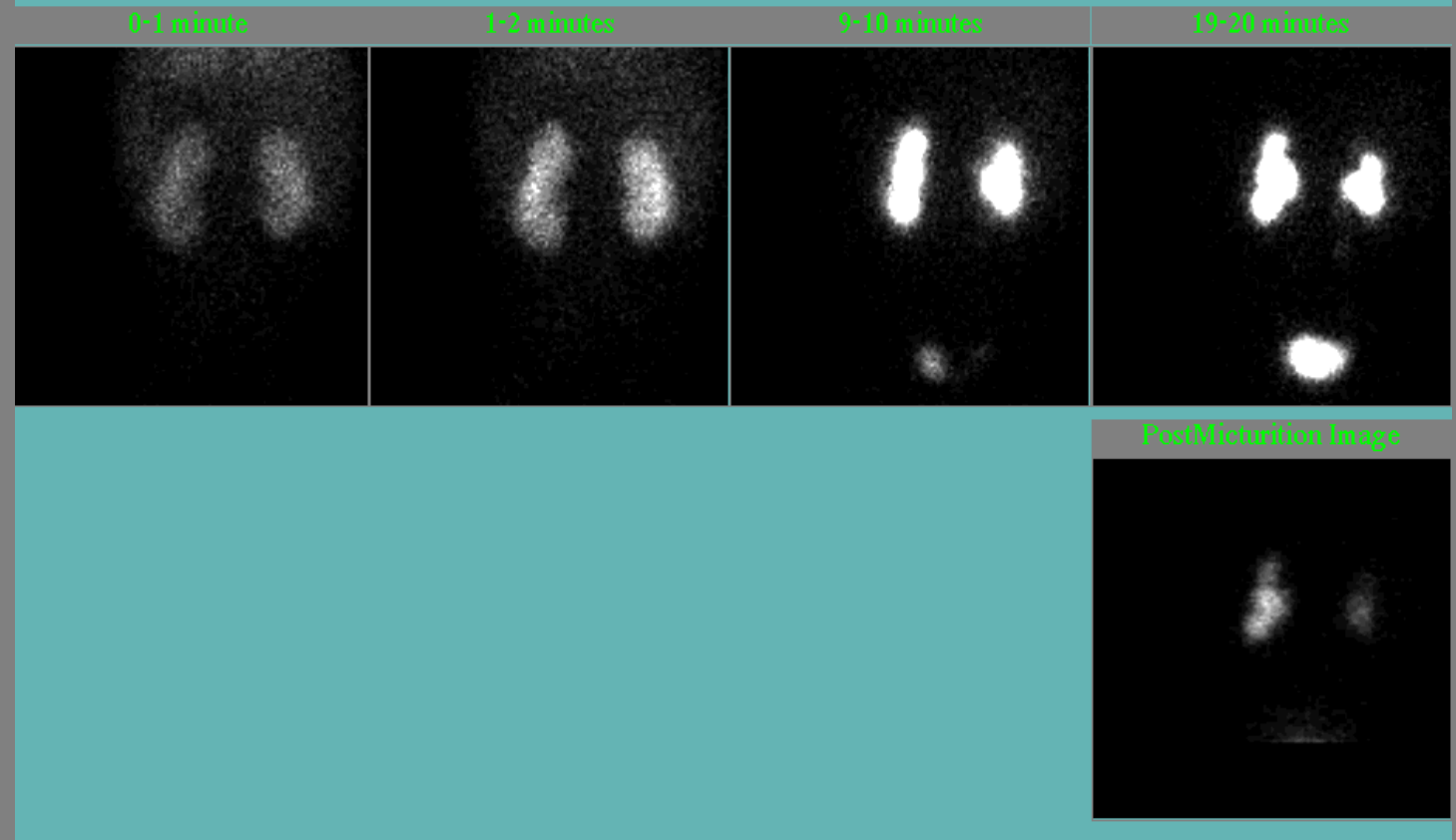
	left	right
Good or almost good drainage	22.8	22.8
Partial drainage	52.6	59.6
Poor or no drainage	24.6	17.5

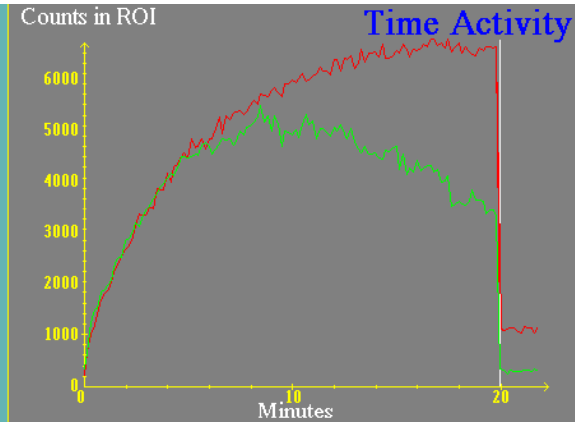


Relative Function	Left	Right
DRF (Area)	49 %	51 %
DRF (Patlak)	51 %	49 %
Transit Parameter		
Tmax (minutes)	17.5	8.5
OE 20 min.	25 %	61 %
OE PM	87 %	96 %
NORA 20 min.	3.04	1.55
NORA PM	0.52	0.15

CASE 10

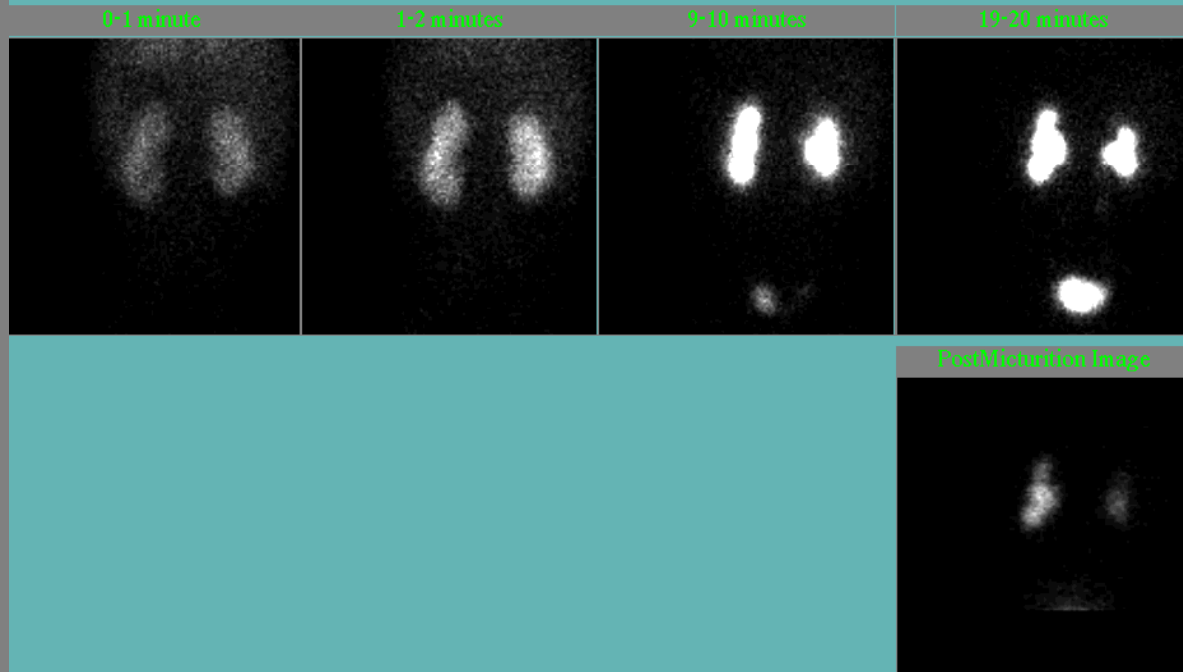
F0 test



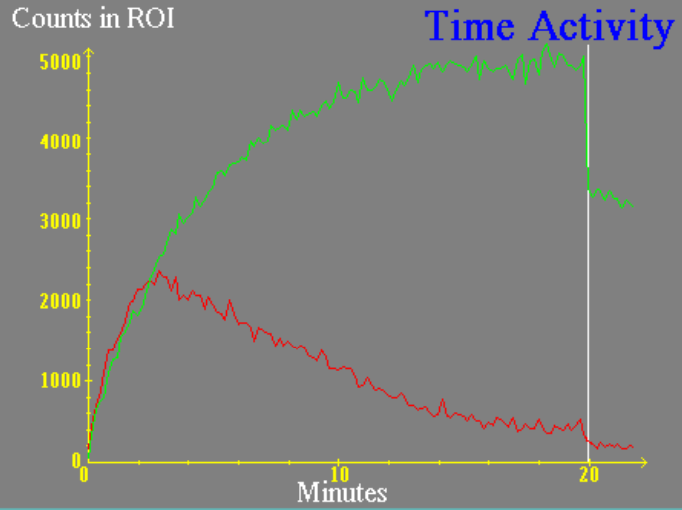


Relative Function	Left	Right
DRF (Area)	49 %	51 %
DRF (Patlak)	51 %	49 %
Transit Parameter		
Tmax (minutes)	17.5	8.5
OE 20 min.	25 %	61 %
OE PM	87 %	96 %
NORA 20 min.	3.04	1.55
NORA PM	0.52	0.15

CASE 10 F0 test



	left	right
Good or almost good drainage	40.4	71.9
Partial drainage	38.6	26.3
Poor or no drainage	21.1	1.8



Relative Function	Left	Right
DRF (Area)	52 %	48 %
DRF (Patlak)	50 %	50 %
Transit Parameter		
Tmax (minutes)	2.8	18.3
OE 20 min.	94 %	29 %
OE PM	98 %	56 %
NORA 20 min.	0.26	3.17
NORA PM	0.12	2.07

CASE 11

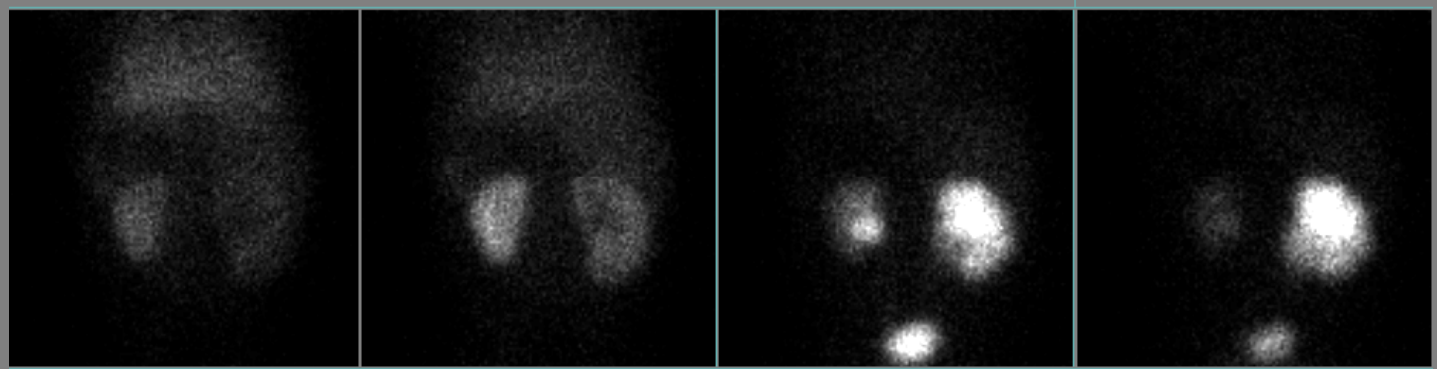
F0 test

0-1 minute

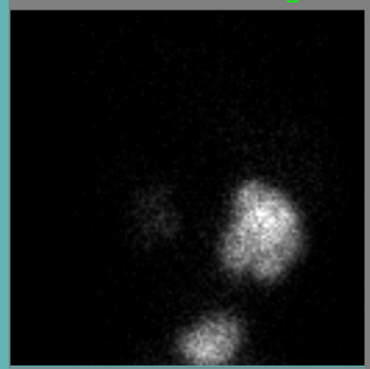
1-2 minutes

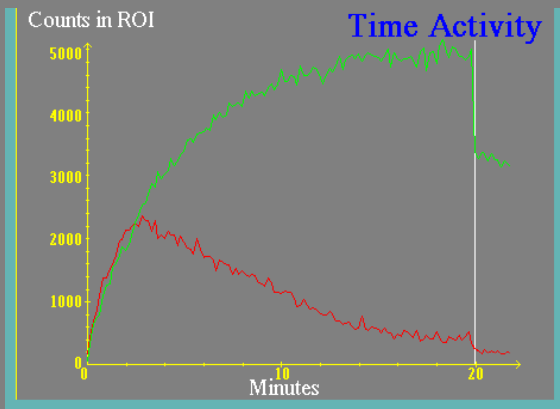
9-10 minutes

19-20 minutes



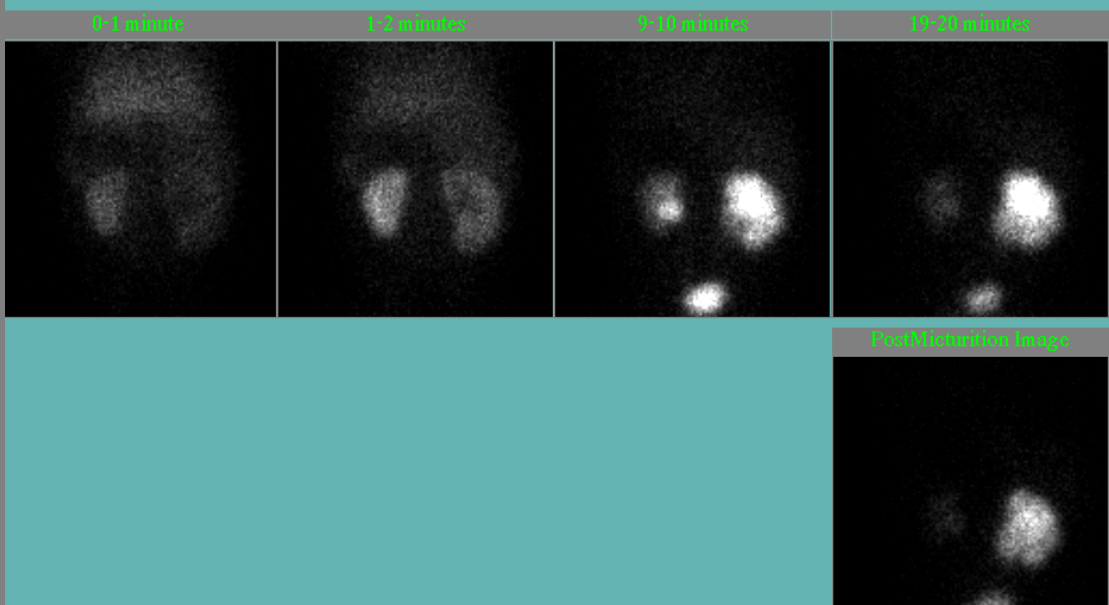
PostMicturition Image





Relative Function	Left	Right
DRF (Area)	52 %	48 %
DRF (Patlak)	50 %	50 %
Transit Parameter		
Tmax (minutes)	2.8	18.3
OE 20 min.	94 %	29 %
OE PM	98 %	56 %
NORA 20 min.	0.26	3.17
NORA PM	0.12	2.07

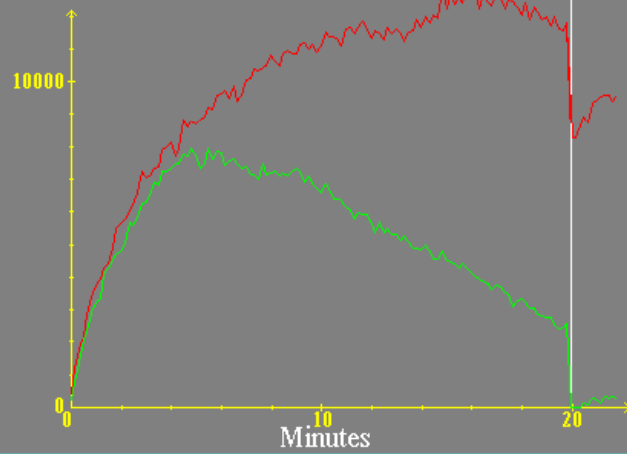
CASE 11 F0 test



	left	right
Good or almost good drainage	98.2	0.0
Partial drainage	1.8	28.1
Poor or no drainage	0.0	71.9

Counts in ROI

Time Activity

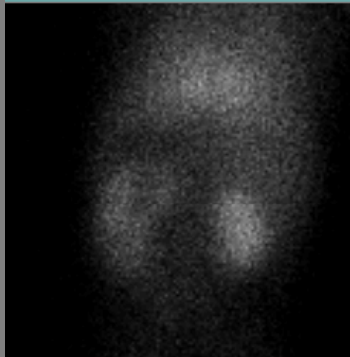


Relative Function	Left	Right
DRF (Area)	53 %	47 %
DRF (Patlak)	52 %	48 %
Transit Parameter		
Tmax (minutes)	14.8	4.8
OE 20 min.	30 %	87 %
OE PM	44 %	98 %
NORA 20 min.	2.63	0.64
NORA PM	2.13	0.07

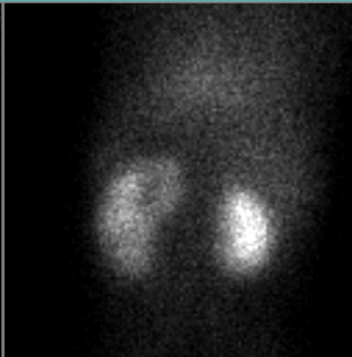
CASE 12

F0 test

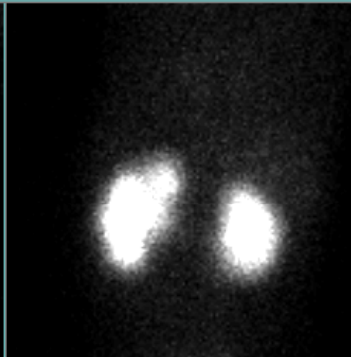
0-1 minute



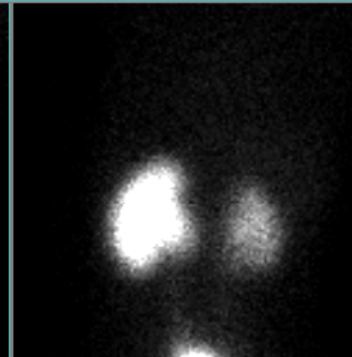
1-2 minutes



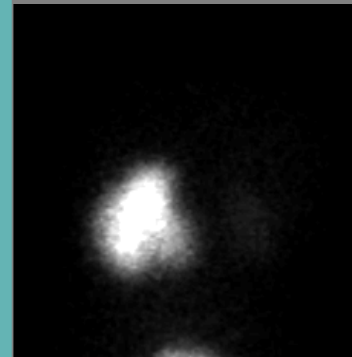
9-10 minutes

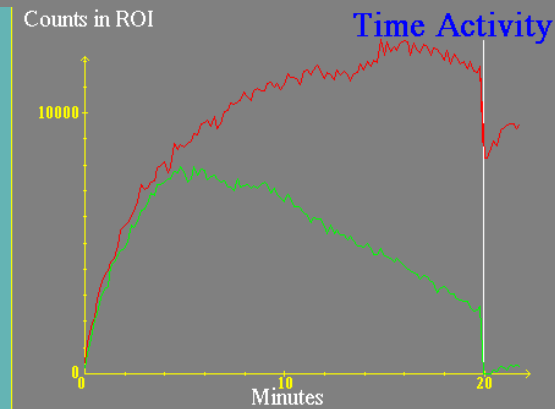


19-20 minutes



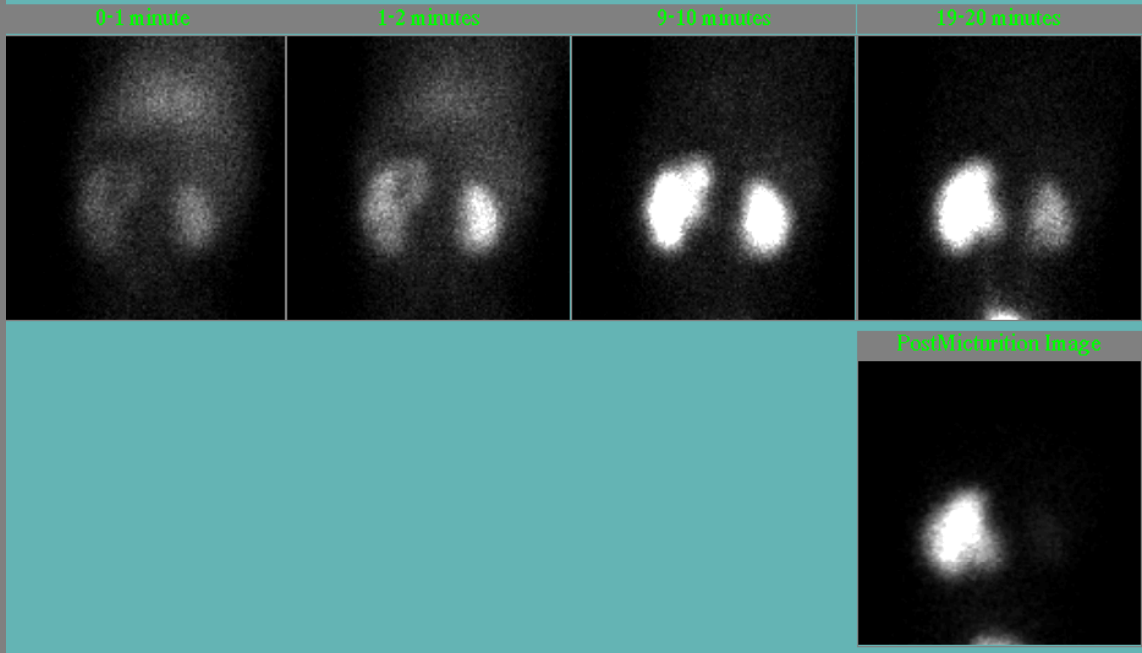
PostMicturition Image



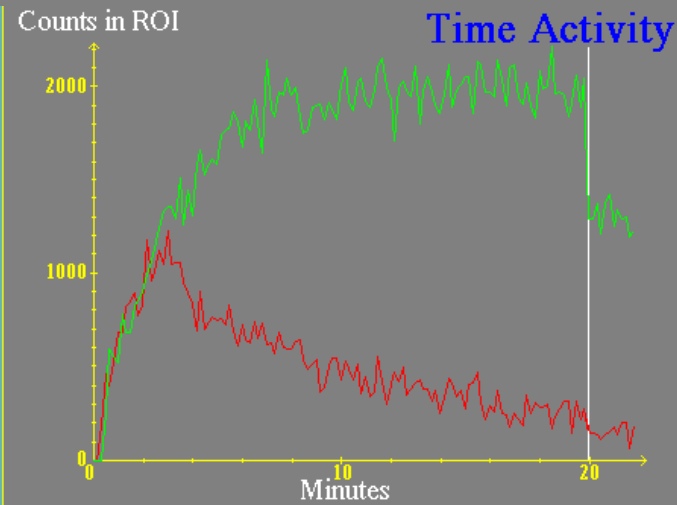


Relative Function	Left	Right
DRF (Area)	53 %	47 %
DRF (Patlak)	52 %	48 %
Transit Parameter		
Tmax (minutes)	14.8	4.8
OE 20 min.	30 %	87 %
OE PM	44 %	98 %
NORA 20 min.	2.63	0.64
NORA PM	2.13	0.07

CASE 12 F0 test



	left	right
Good or almost good drainage	0.0	100.0
Partial drainage	12.	0.0
Poor or no drainage	87.7	0.0



Relative Function	Left	Right
DRF (Area)	51 %	49 %
DRF (Patlak)	58 %	42 %
Transit Parameter		
Tmax (minutes)	3.0	18.5
OE 20 min.	95 %	51 %
OE PM	97 %	70 %
NORA 20 min.	0.34	2.69
NORA PM	0.21	1.75

CASE 13

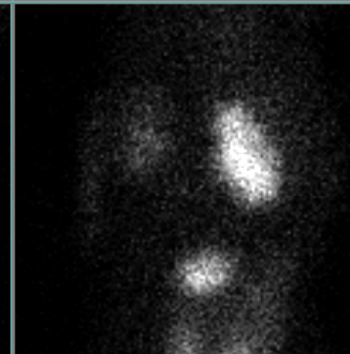
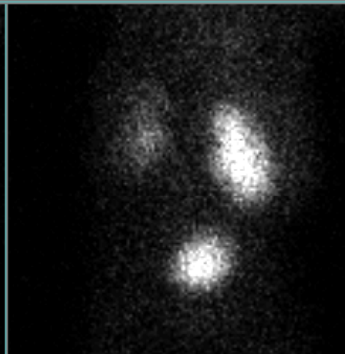
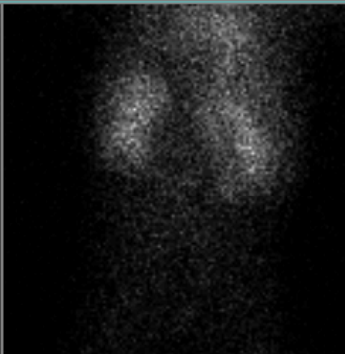
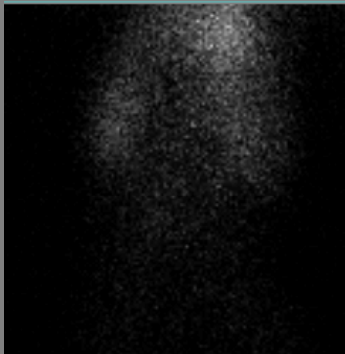
F0 test

0-1 minute

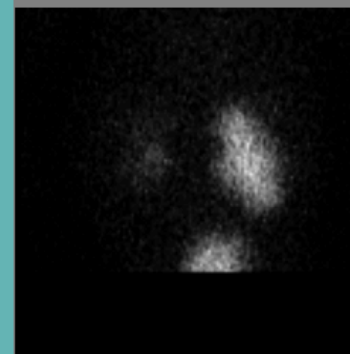
1-2 minutes

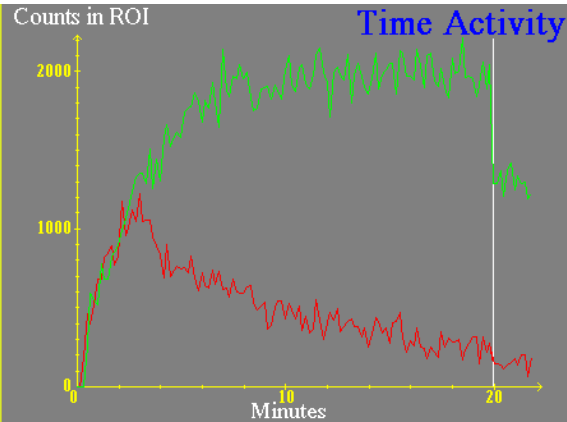
9-10 minutes

19-20 minutes



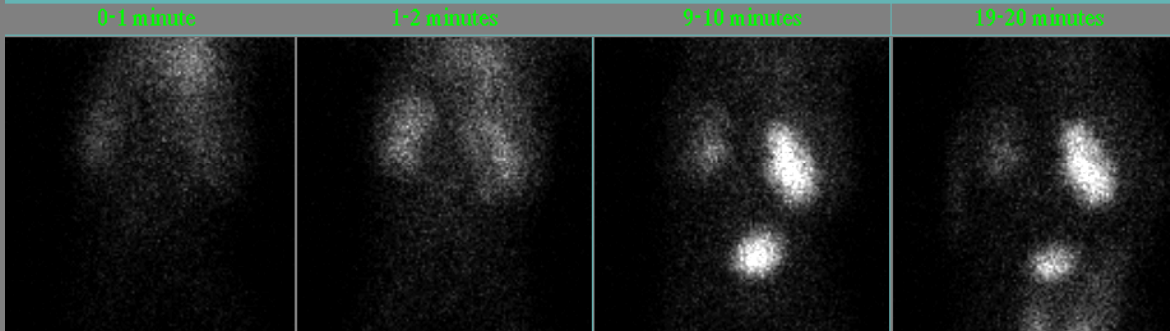
PostMicturition Image



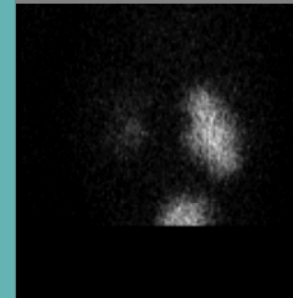


Relative Function	Left	Right
DRF (Area)	51 %	49 %
DRF (Patlak)	58 %	42 %
Transit Parameter		
Tmax (minutes)	3.0	18.5
OE 20 min.	95 %	51 %
OE PM	97 %	70 %
NORA 20 min.	0.34	2.69
NORA PM	0.21	1.75

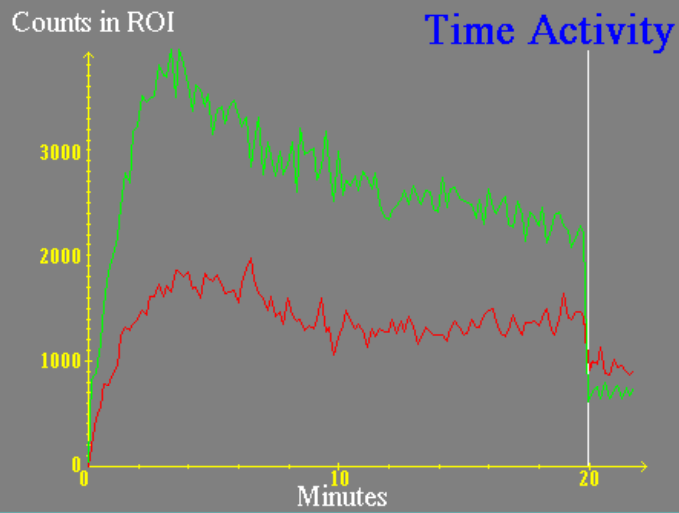
CASE 13 F0 test



PostMicturition Image



	left	right
Good or almost good drainage	100.0	1.8
Partial drainage	0.0	47.4
Poor or no drainage	0.0	50.9



Relative Function	Left	Right
DRF (Area)	31 %	69 %
DRF (Patlak)	30 %	70 %
Transit Parameter		
Tmax (minutes)	6.5	3.3
OE 20 min.	73 %	82 %
OE PM	83 %	94 %
NORA 20 min.	1.25	0.87
NORA PM	0.80	0.28

CASE 14

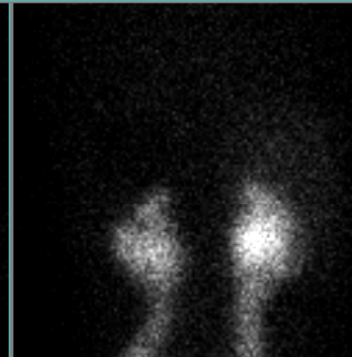
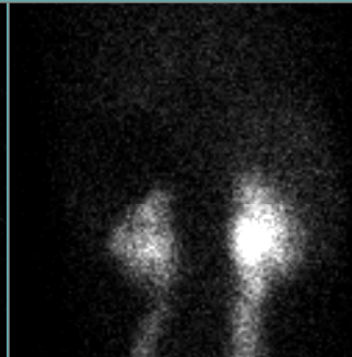
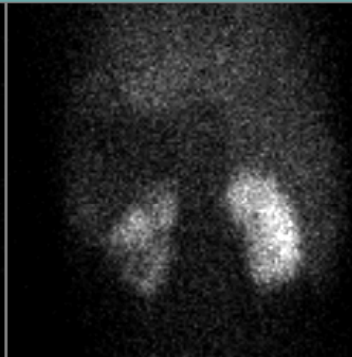
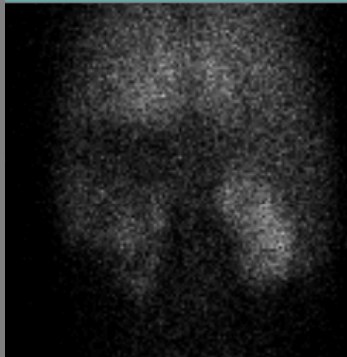
F0 test

0-1 minute

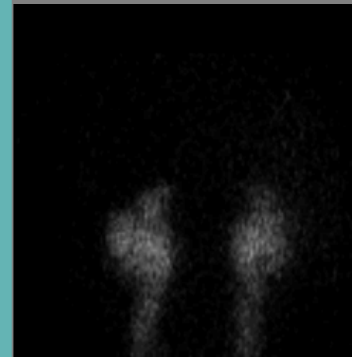
1-2 minutes

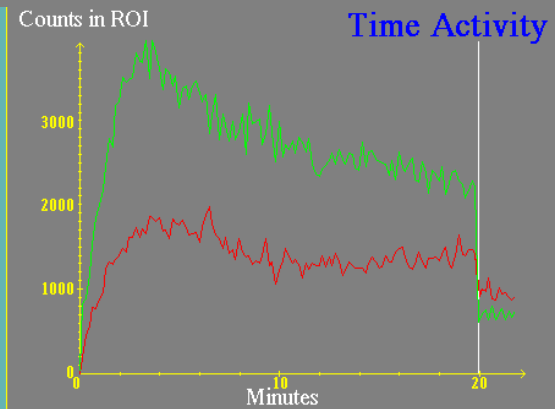
9-10 minutes

19-20 minutes



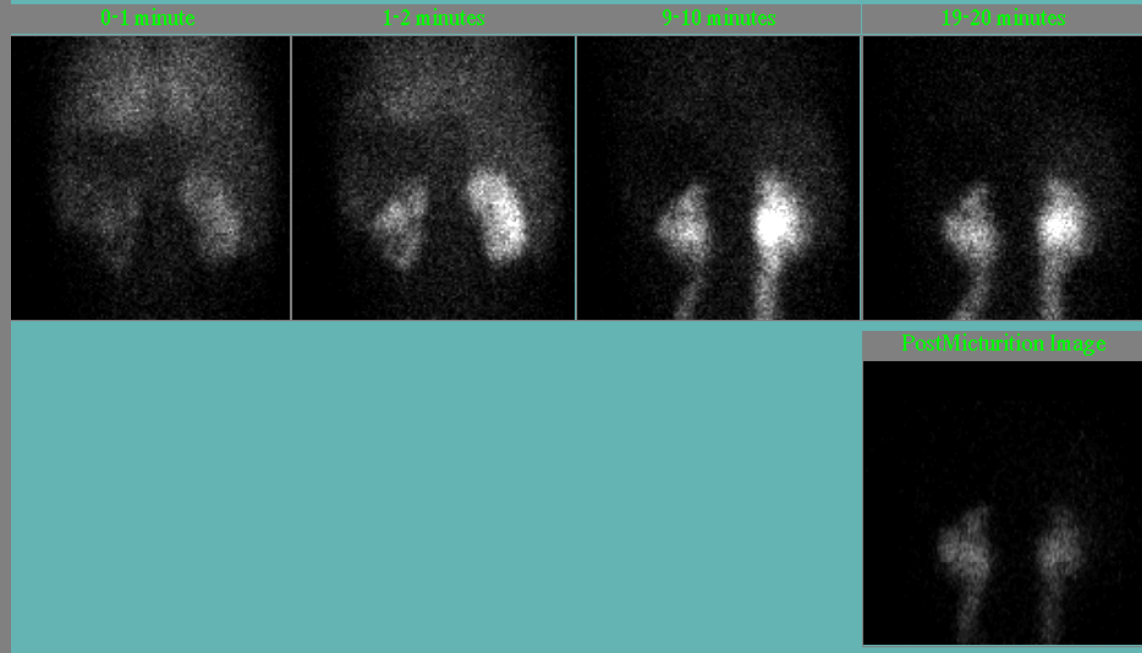
PostMicturition Image



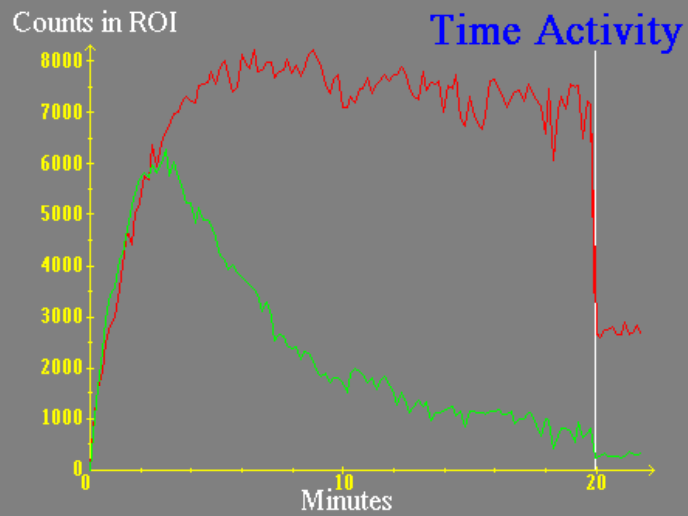


Relative Function	Left	Right
DRF (Area)	31 %	69 %
DRF (Patlak)	30 %	70 %
Transit Parameter		
Tmax (minutes)	6.5	3.3
OE 20 min.	73 %	82 %
OE PM	83 %	94 %
NORA 20 min.	1.25	0.87
NORA PM	0.80	0.28

CASE 14 F0 test



	left	right
Good or almost good drainage	19.3	38.6
Partial drainage	52.6	57.9
Poor or no drainage	28.1	3.5

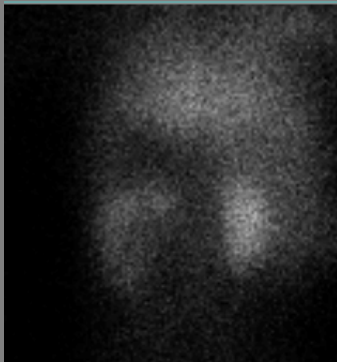


Relative Function	Left	Right
DRF (Area)	48 %	52 %
DRF (Patlak)	49 %	51 %
Transit Parameter		
Tmax (minutes)	8.8	3.0
OE 20 min.	65 %	96 %
OE PM	87 %	98 %
NORA 20 min.	1.76	0.16
NORA PM	0.67	0.07

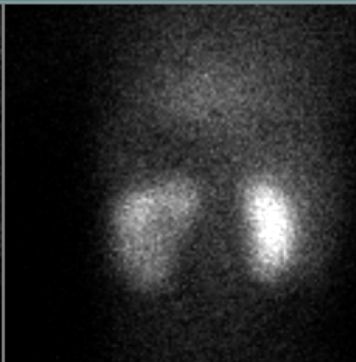
CASE 15

F0 test

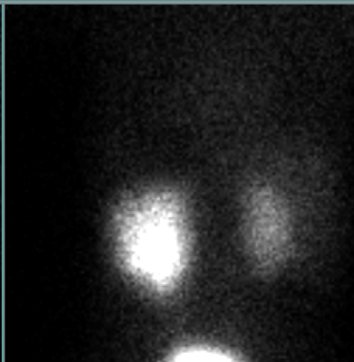
0-1 minute



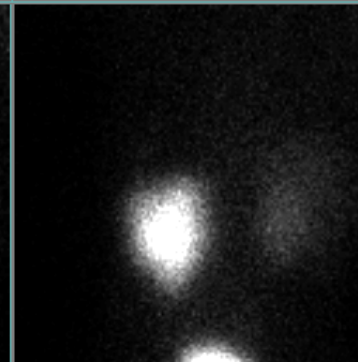
1-2 minutes



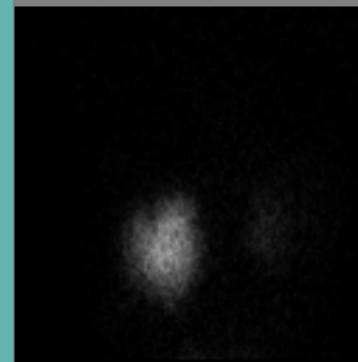
9-10 minutes

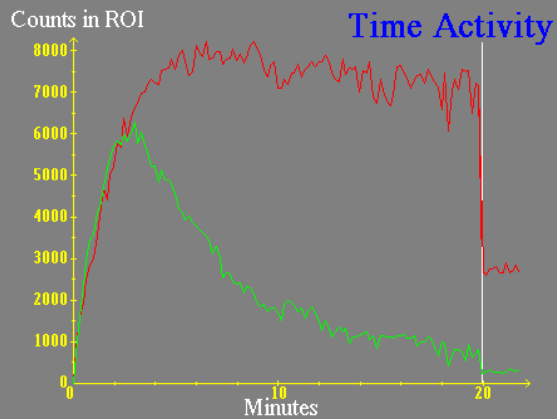


19-20 minutes



PostMicturition Image





Relative Function	Left	Right
DRF (Area)	48 %	52 %
DRF (Patlak)	49 %	51 %
Transit Parameter		
Tmax (minutes)	8.8	3.0
OE 20 min.	65 %	96 %
OE PM	87 %	98 %
NORA 20 min.	1.76	0.16
NORA PM	0.67	0.07

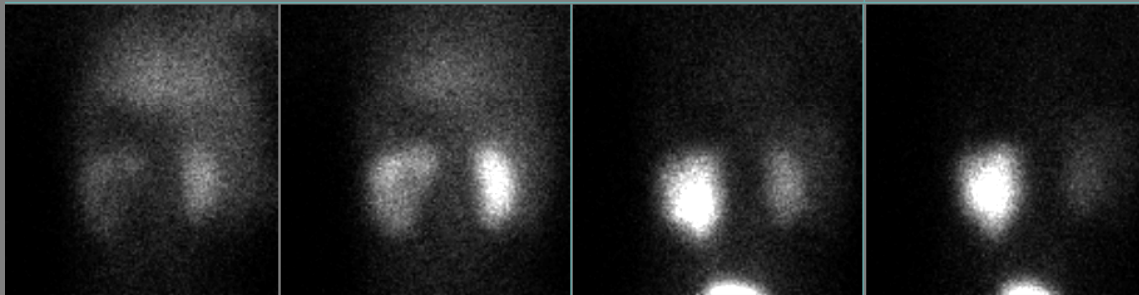
CASE 15 F0 test

0-1 minute

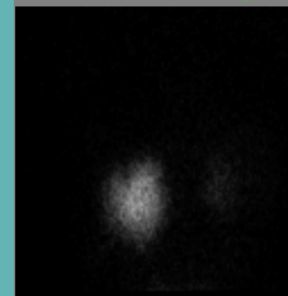
1-2 minutes

9-10 minutes

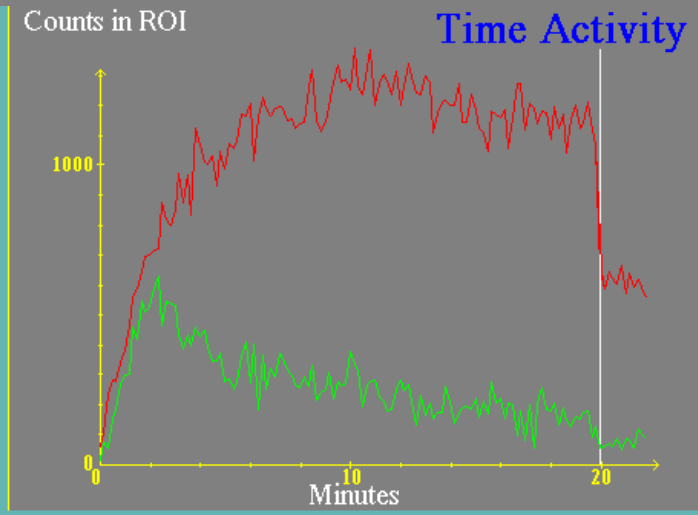
19-20 minutes



PostMicturition Image



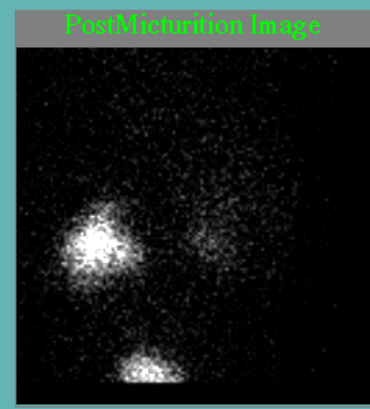
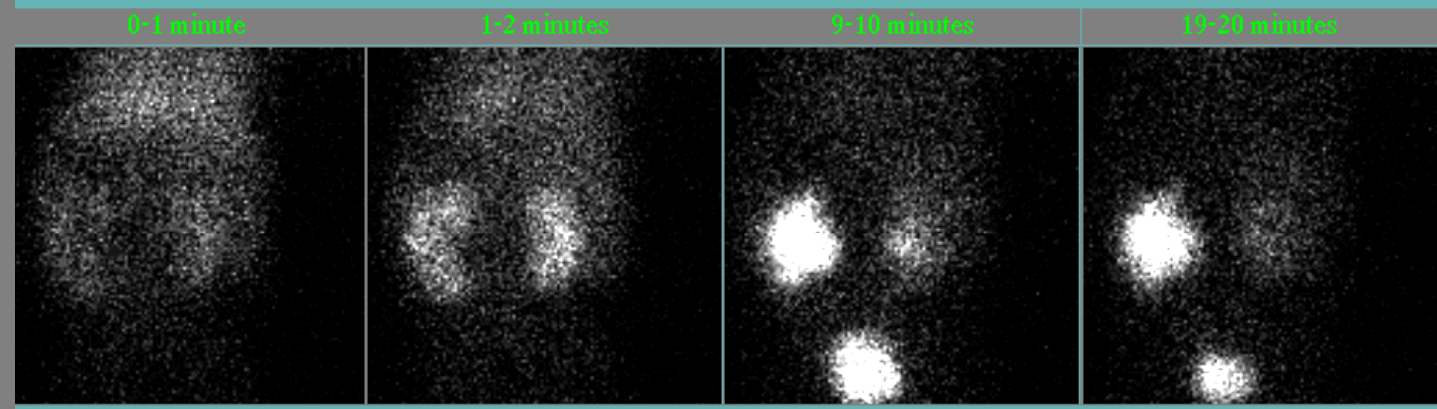
	left	right
Good or almost good drainage	28.1	1.8
Partial drainage	49.1	96.5
Poor or no drainage	22.8	1.8

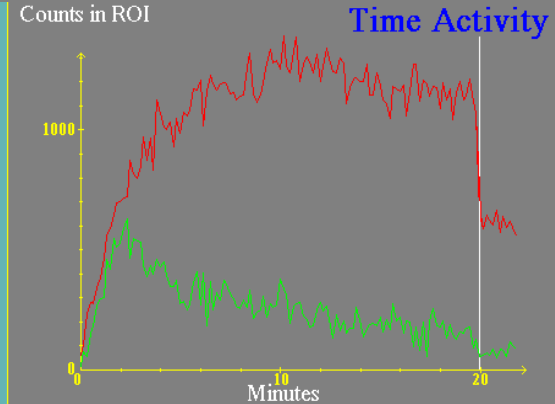


Relative Function	Left	Right
DRF (Area)	57 %	43 %
DRF (Patlak)	58 %	42 %
Transit Parameter		
Tmax (minutes)	10.2	2.3
OE 20 min.	69 %	95 %
OE PM	86 %	97 %
NORA 20 min.	2.05	0.35
NORA PM	1.07	0.21

CASE 16

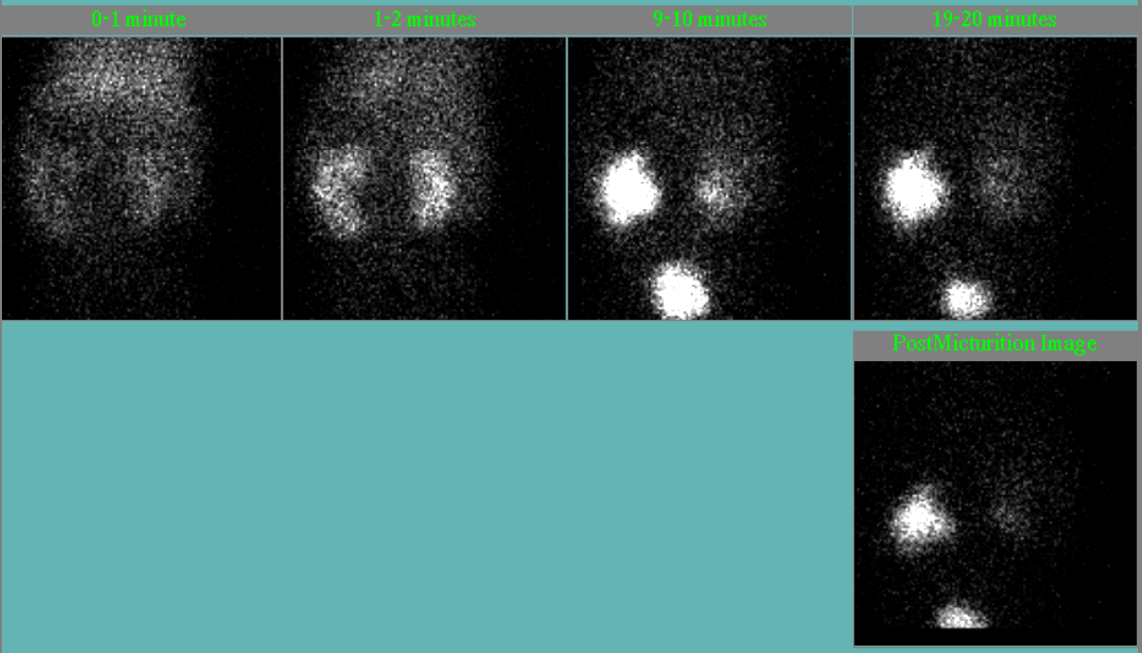
F0 test





Relative Function	Left	Right
DRF (Area)	57 %	43 %
DRF (Patlak)	58 %	42 %
Transit Parameter		
Tmax (minutes)	10.2	2.3
OE 20 min.	69 %	95 %
OE PM	86 %	97 %
NORA 20 min.	2.05	0.35
NORA PM	1.07	0.21

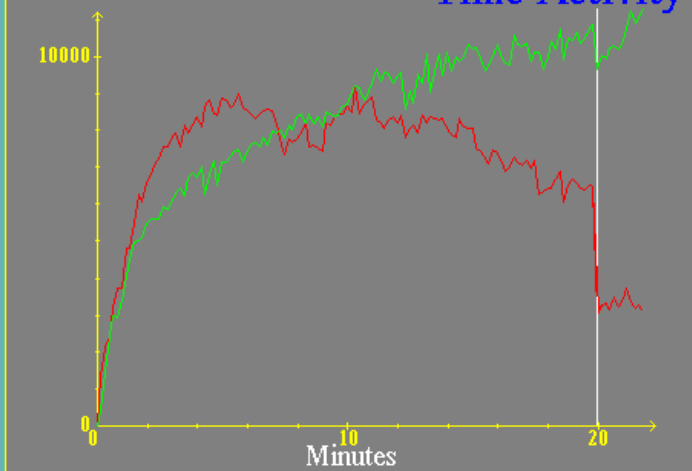
CASE 16 F0 test



	left	right
Good or almost good drainage	7.0	100.0
Partial drainage	61.4	0.0
Poor or no drainage	31.6	0.0

Counts in ROI

Time Activity



Relative Function	Left	Right
DRF (Area)	54 %	46 %
DRF (Patlak)	56 %	44 %
Transit Parameter		
Tmax (minutes)	10.3	20.0
OE 20 min.	76 %	46 %
OE PM	89 %	45 %
NORA 20 min.	1.25	2.34
NORA PM	0.64	2.42

CASE 17

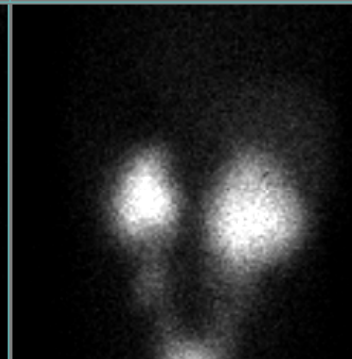
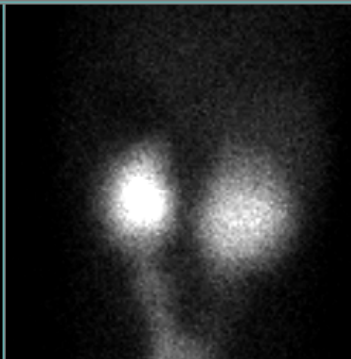
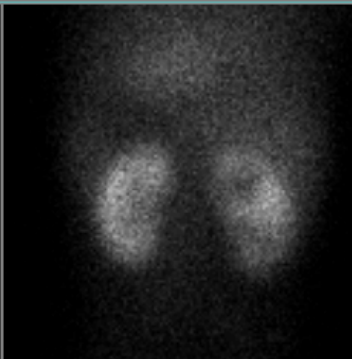
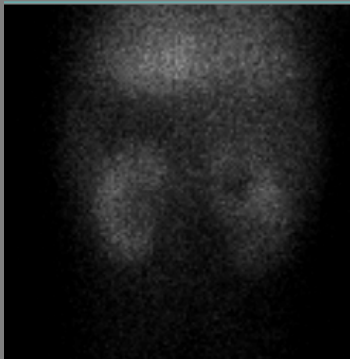
F0 test

0-1 minute

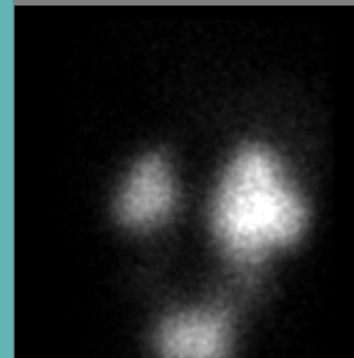
1-2 minutes

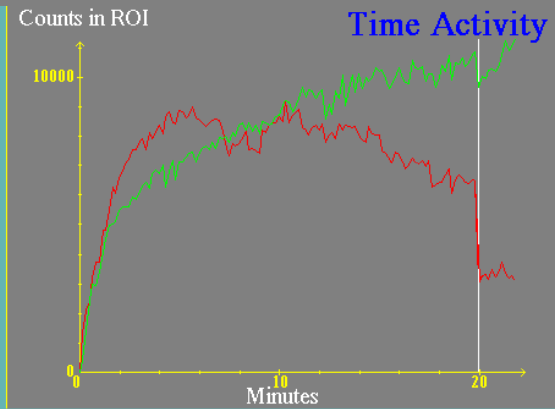
9-10 minutes

19-20 minutes



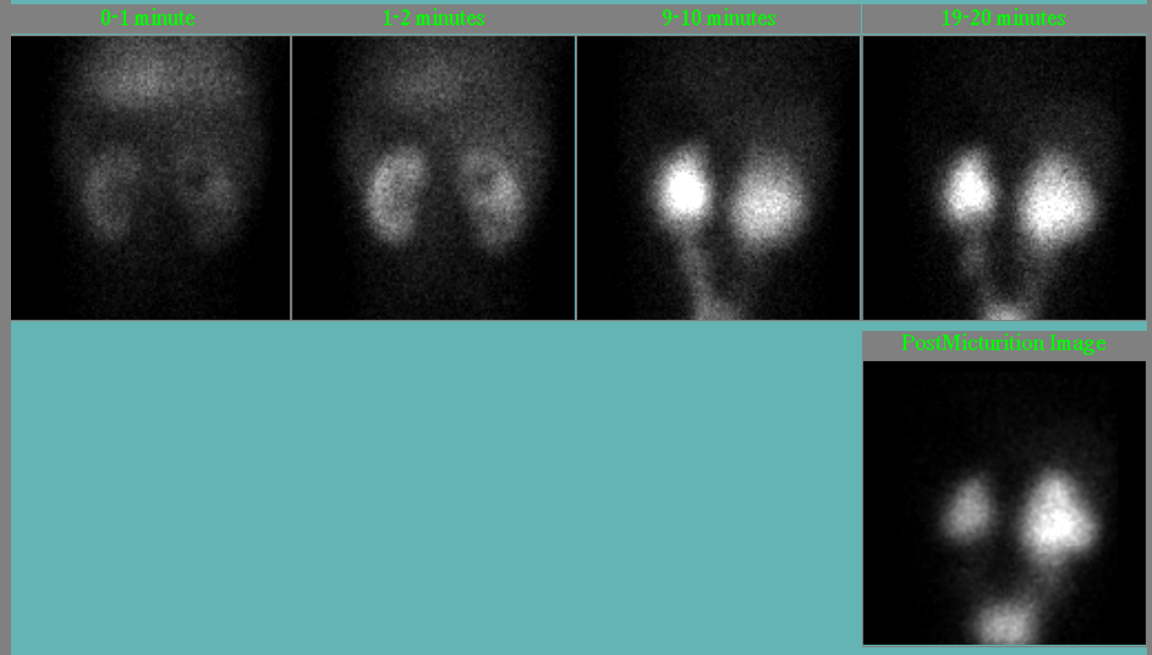
PostMicturition Image



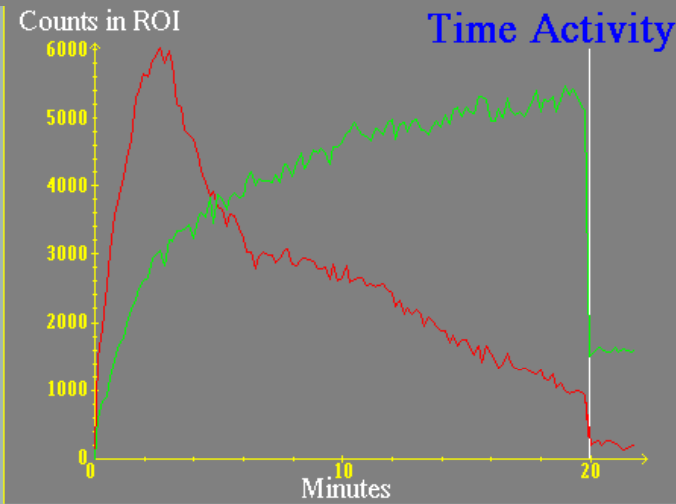


Relative Function	Left	Right
DRF (Area)	54 %	46 %
DRF (Patlak)	56 %	44 %
Transit Parameter		
Tmax (minutes)	10.3	20.0
OE 20 min.	76 %	46 %
OE PM	89 %	45 %
NORA 20 min.	1.25	2.34
NORA PM	0.64	2.42

CASE 17 F0 test



	left	right
Good or almost good drainage	19.6	0.0
Partial drainage	75.0	3.5
Poor or no drainage	5.4	96.5

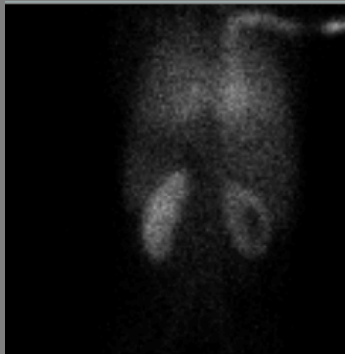


Relative Function	Left	Right
DRF (Area)	69 %	31 %
DRF (Patlak)	67 %	33 %
Transit Parameter		
Tmax (minutes)	2.7	19.0
OE 20 min.	95 %	41 %
OE PM	99 %	83 %
NORA 20 min.	0.21	2.54
NORA PM	0.04	0.77

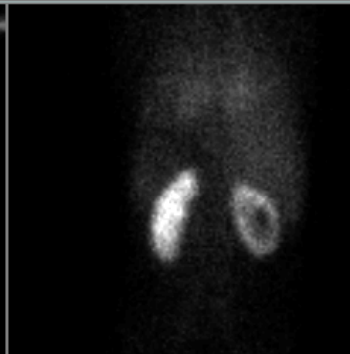
CASE 18

F0 test

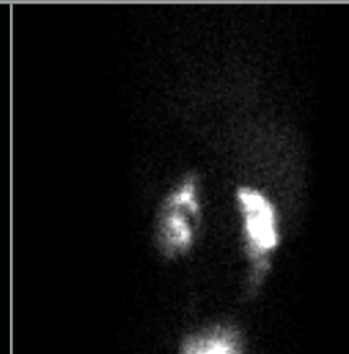
0-1 minute



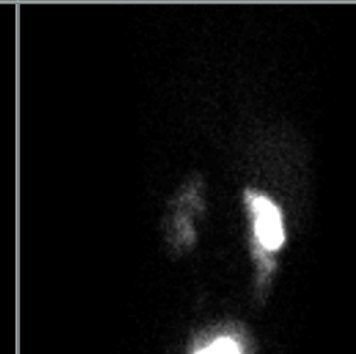
1-2 minutes



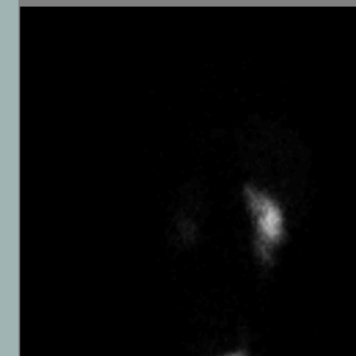
9-10 minutes

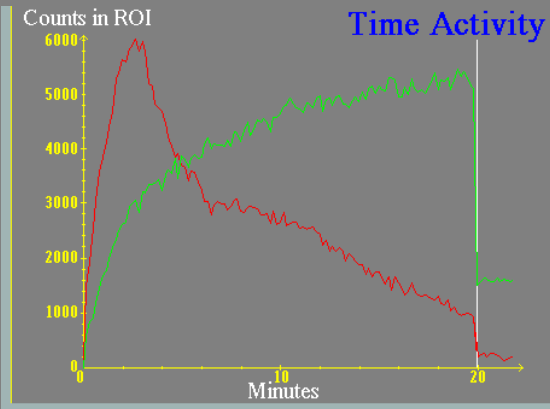


19-20 minutes



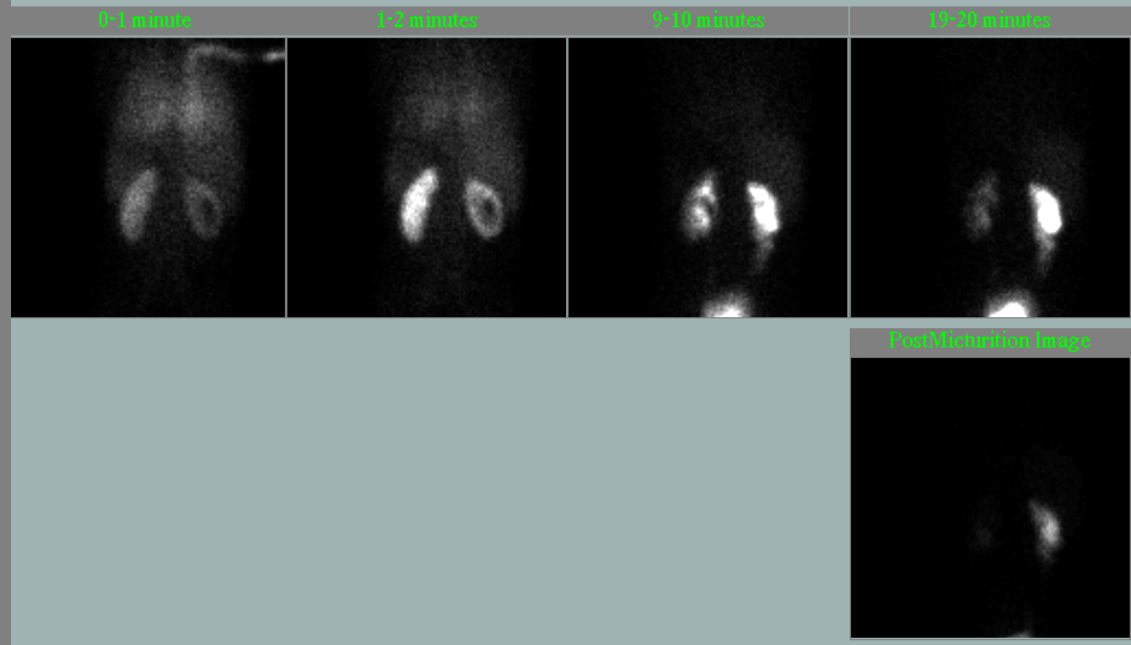
PostMicturition Image





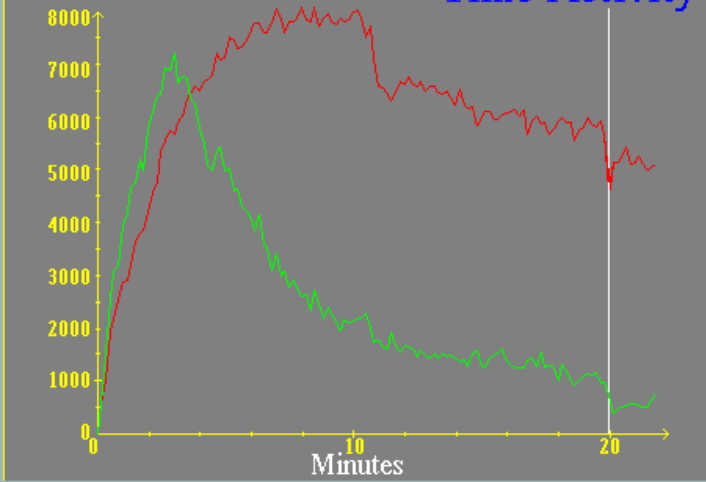
Relative Function	Left	Right
DRF (Area)	69 %	31 %
DRF (Patlak)	67 %	33 %
Transit Parameter		
Tmax (minutes)	2.7	19.0
OE 20 min.	95 %	41 %
OE PM	99 %	83 %
NORA 20 min.	0.21	2.54
NORA PM	0.04	0.77

CASE 18 F0 test



	left	right
Good or almost good drainage	96.5	29.8
Partial drainage	3.5	42.1
Poor or no drainage	0.0	28.1

Counts in ROI **Time Activity**

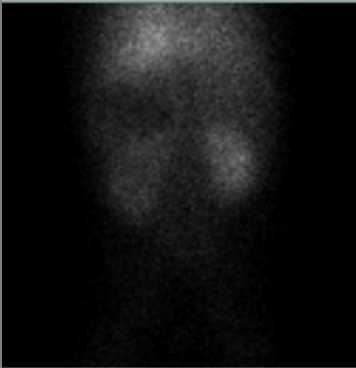


Relative Function	Left	Right
DRF (Area)	42 %	58 %
DRF (Patlak)	45 %	55 %
Transit Parameter		
Tmax (minutes)	8.5	3.0
OE 20 min.	60 %	94 %
OE PM	66 %	96 %
NORA 20 min.	1.72	0.23
NORA PM	1.51	0.13

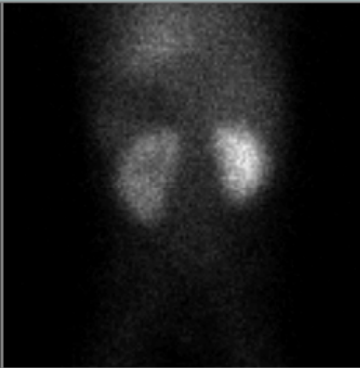
CASE 19

F0 test

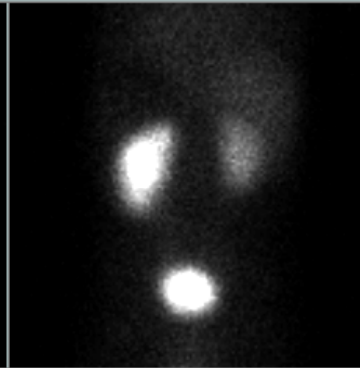
0-1 minute



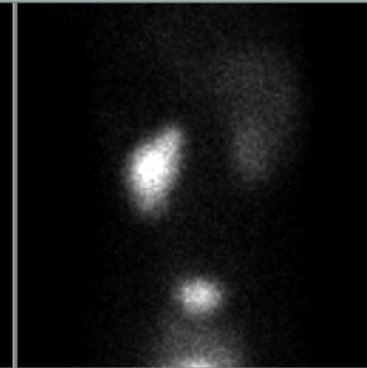
1-2 minutes



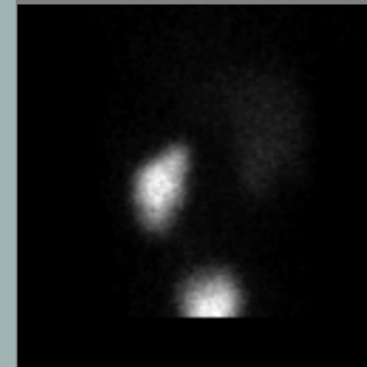
9-10 minutes

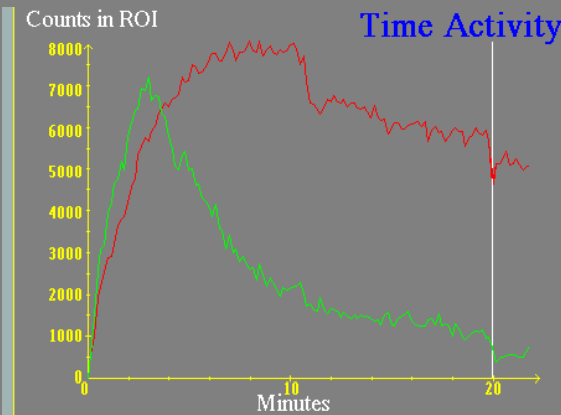


19-20 minutes



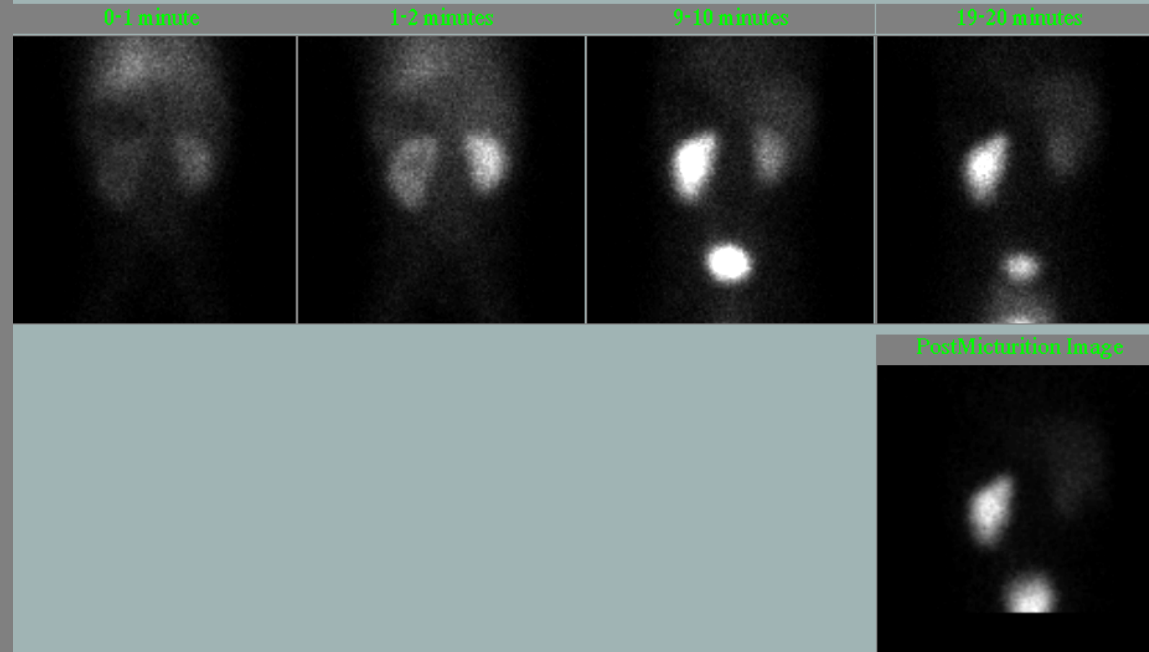
PostMicturition Image



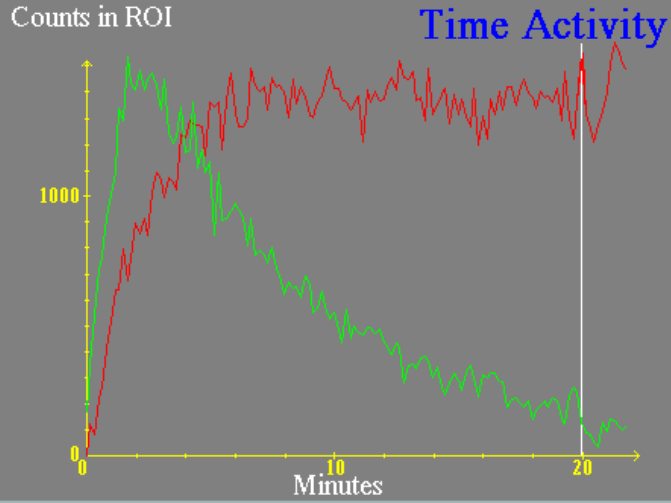


Relative Function	Left	Right
DRF (Area)	42 %	58 %
DRF (Patlak)	45 %	55 %
Transit Parameter		
Tmax (minutes)	8.5	3.0
OE 20 min.	60 %	94 %
OE PM	66 %	96 %
NORA 20 min.	1.72	0.23
NORA PM	1.51	0.13

CASE 19 F0 test



	left	right
Good or almost good drainage	0.0	100.0
Partial drainage	42.1	0.0
Poor or no drainage	57.9	0.0



Relative Function	Left	Right
DRF (Area)	34 %	66 %
DRF (Patlak)	35 %	65 %
Transit Parameter		
Tmax (minutes)	20.0	1.7
OE 20 min.	54 %	97 %
OE PM	51 %	98 %
NORA 20 min.	2.00	0.16
NORA PM	2.24	0.09

CASE 20

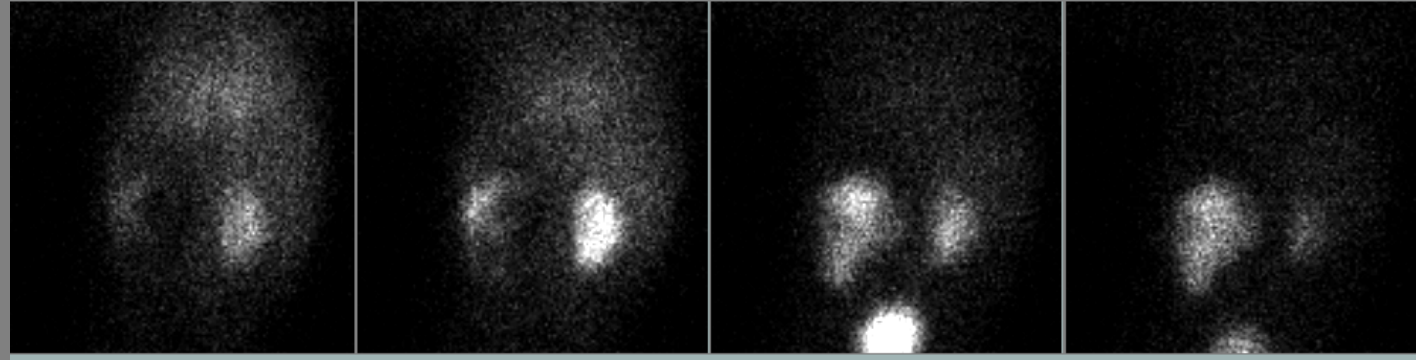
F0 test

0-1 minute

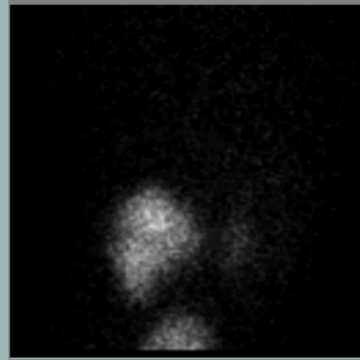
1-2 minutes

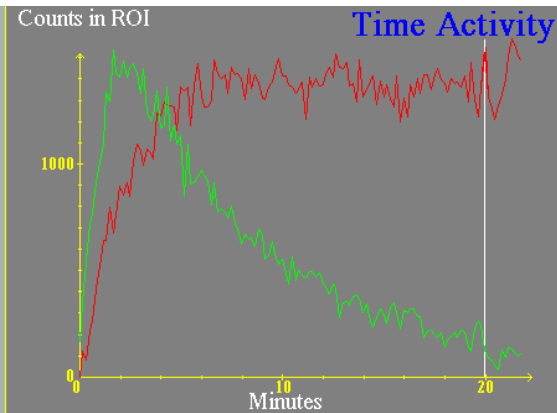
9-10 minutes

19-20 minutes



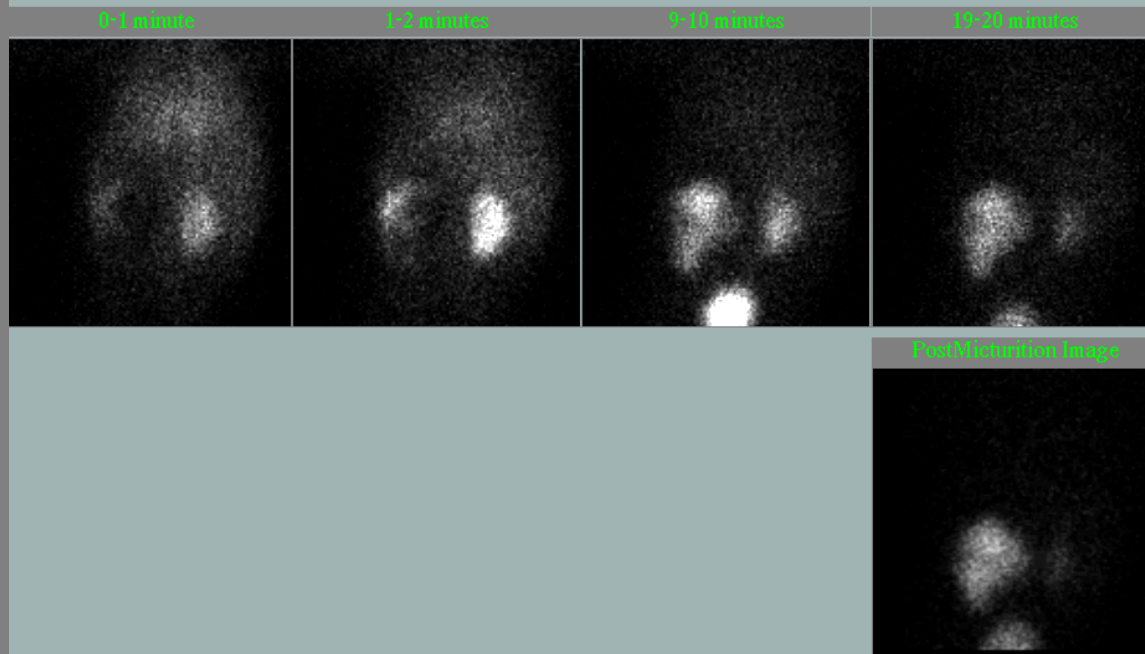
PostMicturition Image



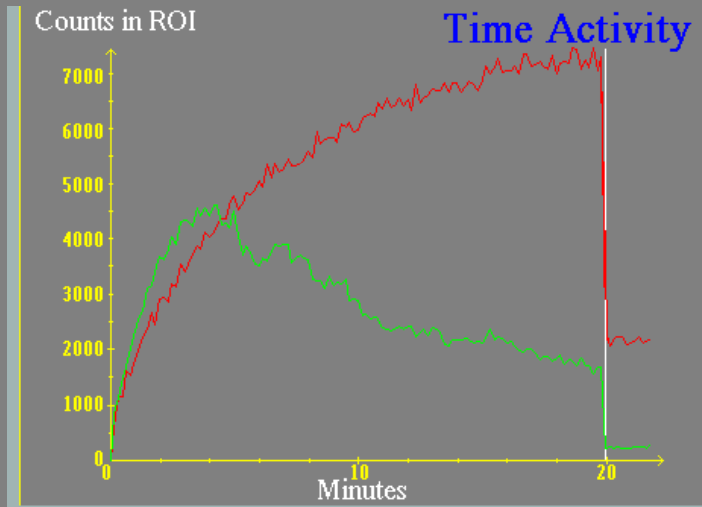


Relative Function	Left	Right
DRF (Area)	34 %	66 %
DRF (Patlak)	35 %	65 %
Transit Parameter		
Tmax (minutes)	20.0	1.7
OE 20 min.	54 %	97 %
OE PM	51 %	98 %
NORA 20 min.	2.00	0.16
NORA PM	2.24	0.09

CASE 20 F0 test



	left	right
Good or almost good drainage	0.0	100.0
Partial drainage	0.0	0.0
Poor or no drainage	100.0	0.0

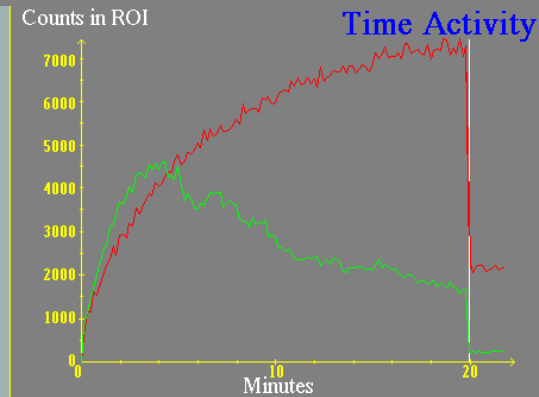


	Left	Right
Relative Function		
DRF (Area)	44 %	56 %
DRF (Patlak)	41 %	59 %
Transit Parameter		
Tmax (minutes)	18.7	4.3
OE 20 min.	36 %	86 %
OE PM	81 %	98 %
NORA 20 min.	3.18	0.59
NORA PM	0.95	0.09

CASE 21

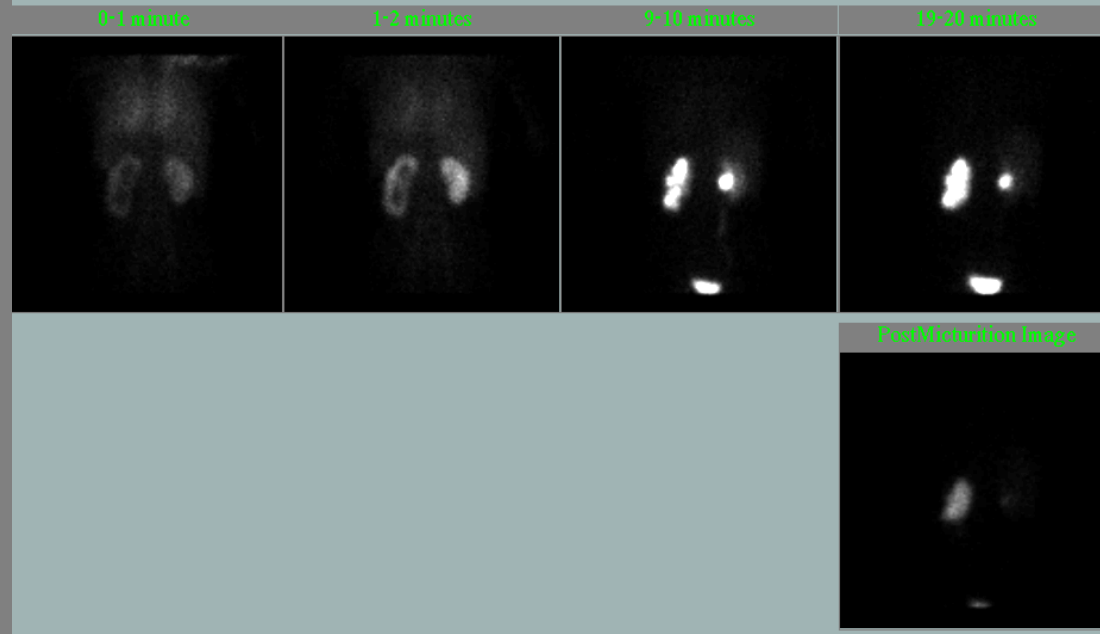
F0 test



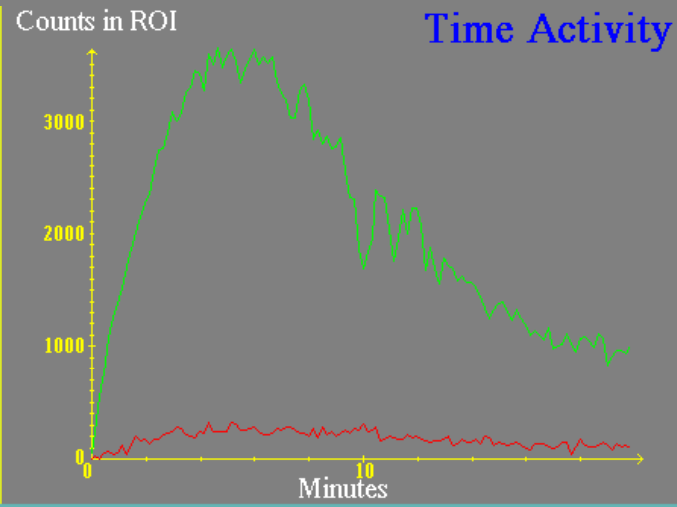


Relative Function	Left	Right
DRF (Area)	44 %	56 %
DRF (Patlak)	41 %	59 %
Transit Parameter		
Tmax (minutes)	18.7	4.3
OE 20 min.	36 %	86 %
OE PM	81 %	98 %
NORA 20 min.	3.18	0.59
NORA PM	0.95	0.09

CASE 21 F0 test

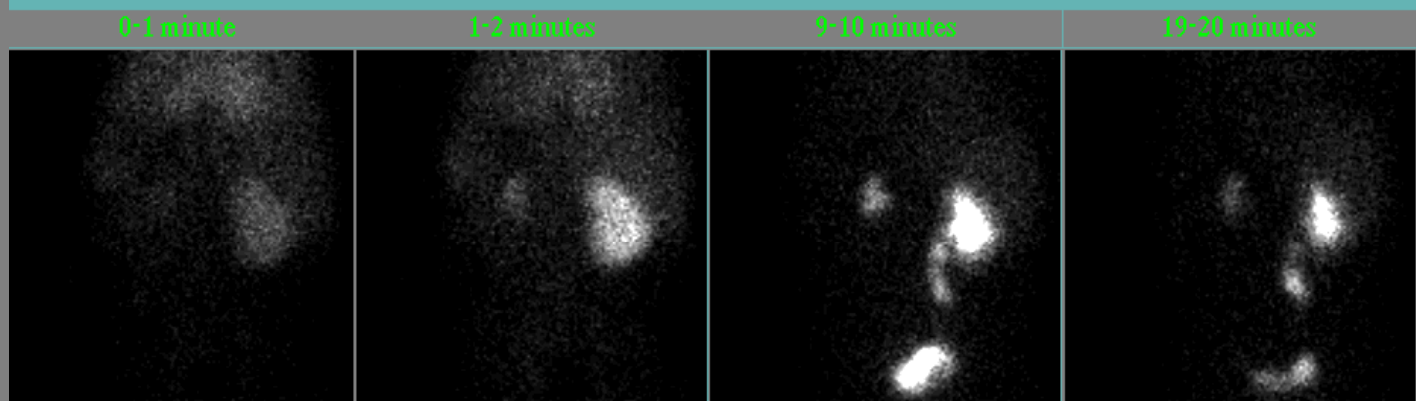


	left	right
Good or almost good drainage	22.8	94.6
Partial drainage	47.4	5.4
Poor or no drainage	29.8	0.0



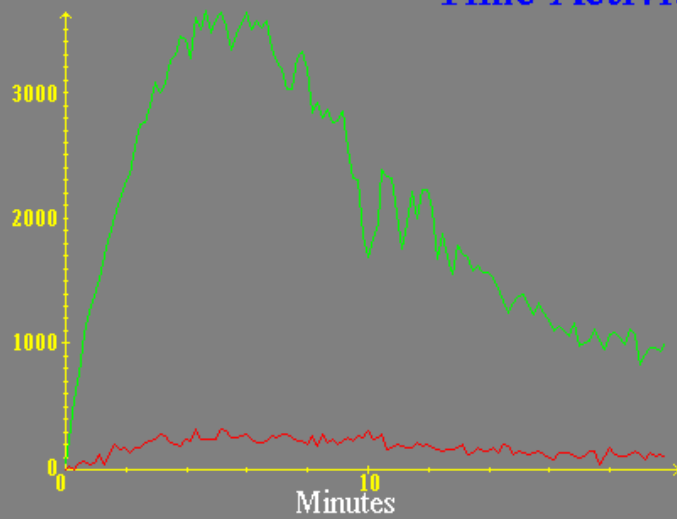
Relative Function	Left	Right
DRF (Area)	6 %	94 %
DRF (Patlak)	8 %	92 %
Transit Parameter		
Tmax (minutes)	5.2	4.7
OE 20 min.	86 %	90 %
NORA 20 min.	0.97	0.53

CASE 22 **no diuretic**



Counts in ROI

Time Activity



Relative Function	Left	Right
DRF (Area)	6 %	94 %
DRF (Patlak)	8 %	92 %
Transit Parameter		
Tmax (minutes)	5.2	4.7
OE 20 min.	86 %	90 %
NORA 20 min.	0.97	0.53

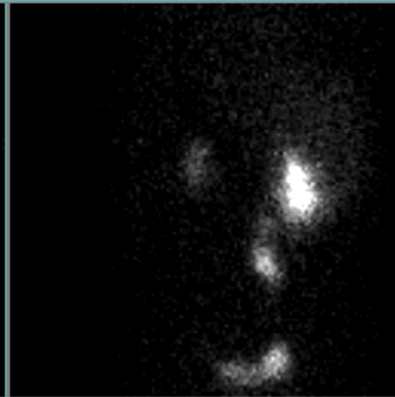
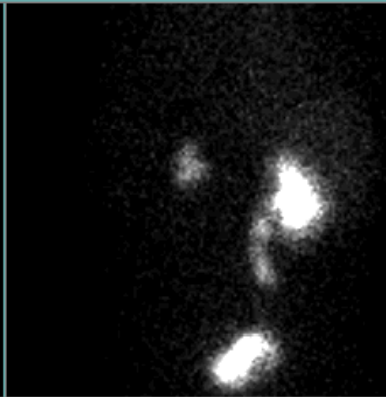
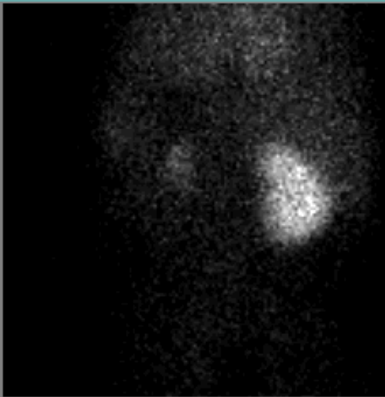
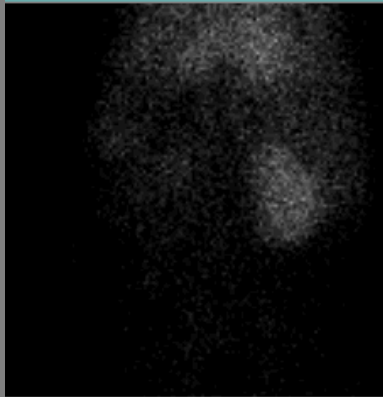
CASE 22 **no diuretic**

0-1 minute

1-2 minutes

9-10 minutes

19-20 minutes



Good or almost good drainage

Partial drainage

Poor or no drainage

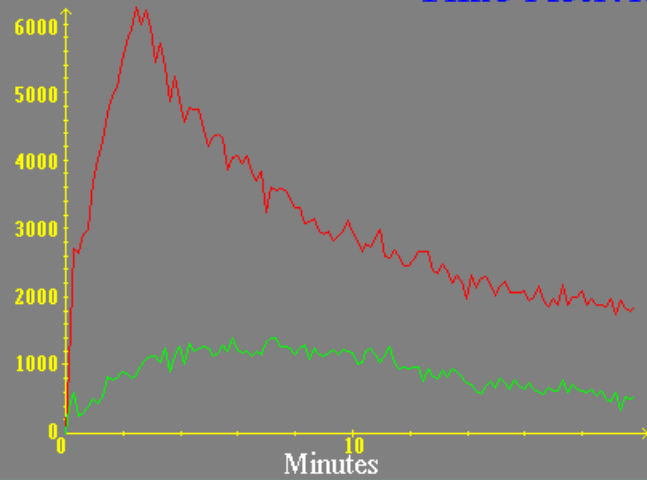
left right

54.5 66.7

16.4 29.8

29.1 3.5

Counts in ROI



Time Activity

Relative Function	Left	Right
DRF (Area)	87 %	13 %
DRF (Patlak)	87 %	13 %
Transit Parameter		
Tmax (minutes)	2.5	7.2
OE 20 min.	93 %	93 %
NORA 20 min.	0.42	0.77

CASE 23

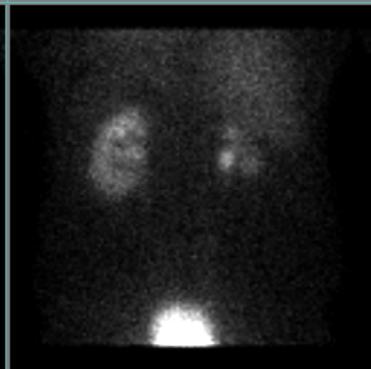
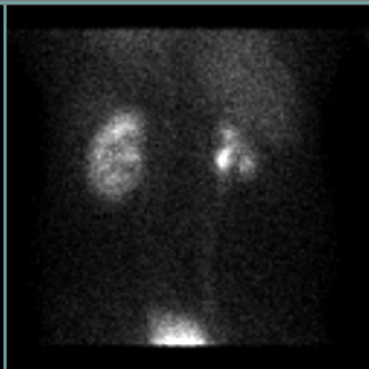
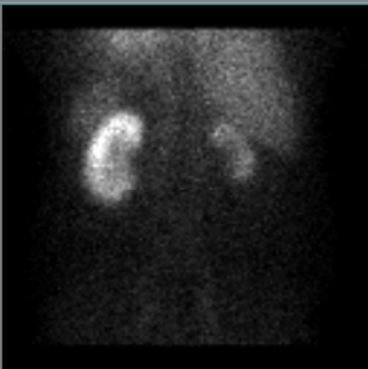
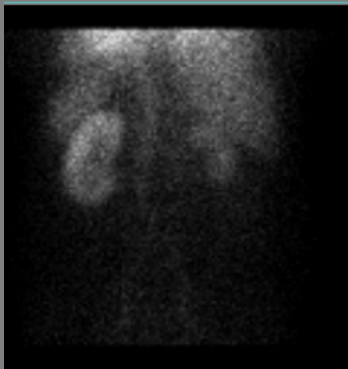
no diuretic

0-1 minute

1-2 minutes

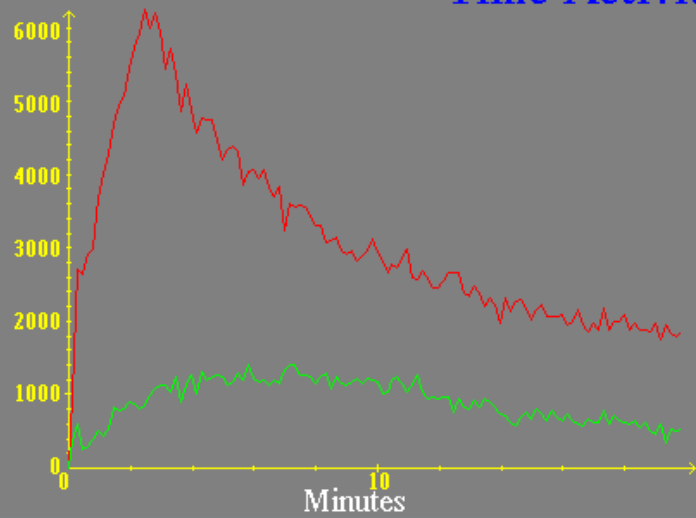
9-10 minutes

19-20 minutes



Counts in ROI

Time Activity



Relative Function	Left	Right
DRF (Area)	87 %	13 %
DRF (Patlak)	87 %	13 %
Transit Parameter		
Tmax (minutes)	2.5	7.2
OE 20 min.	93 %	93 %
NORA 20 min.	0.42	0.77

CASE 23

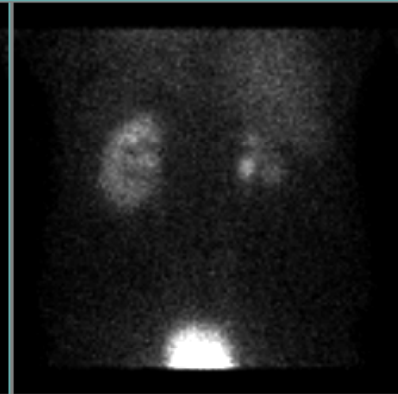
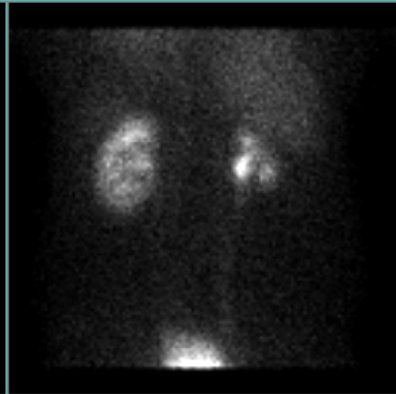
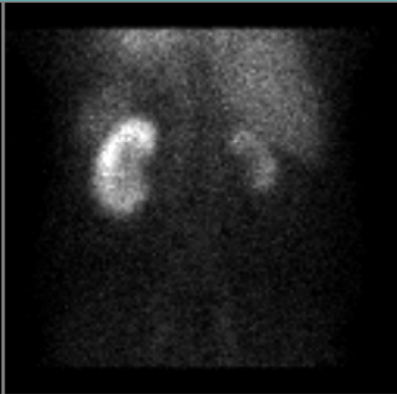
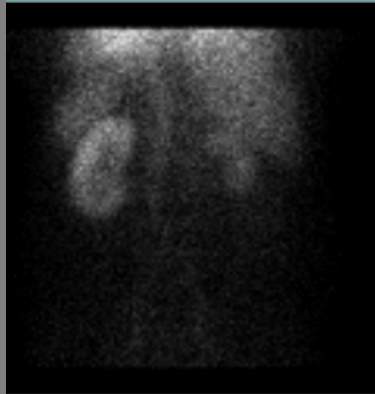
no diuretic

0-1 minute

1-2 minutes

9-10 minutes

19-20 minutes



	left	right
Good or almost good drainage	87.7	63.6
Partial drainage	12.3	27.3
Poor or no drainage	0.0	9.1