Radiopharmaceutical: Tc99m-Sulfur Colloid in egg meal which consists of one whole egg, one piece of toast with butter. (or oatmeal, bread is NOT given) and water.
Dose: 1 mCi
T1/2: 6 hours
Energy: 140 keV
CPT: 78264

Indications:
Clinical indications for a gastric emptying study include, but are not limited to, the following:
1. Gastroparesis
2. Abdominal pain
3. Early satiety
4. Nausea
5. Vomiting
6. Diarrhea

Radiopharmaceutical:
• 1 mCi 99mTc-sulfur colloid in egg meal which consists of one whole egg, one piece of toast with butter. (or oatmeal, bread is NOT given, for patients allergic to eggs) and water.
• Pediatric patients to receive 0.06 mCi/kg of body weight.

Pharmacologic intervention:
• 5 mg Metoclopramide (Reglan) IV at 90 minutes post radioactive meal ingestion. Q.S. to at least 5 mL with 0.9% normal saline to accommodate slow push over 3 to 5 minutes, so as to minimize any adverse reactions.

Patient instruction:
• NPO for at least 6 hours.
• Withhold any gastric medications for 24 to 48 hours (unless physician requests that they be taken).
• Scan time is approximately 2 to 2 ½ hours.
• Upon scheduling, if patient has any pertinent prior studies, please instruct either the patient or the physician's office to make those available for comparison.

Equipment:
1. Philips Skylight (VXUR collimator)
2. Philips Forte (VXUR collimator)
3. Philips Vertex Plus (LEUR collimator)

Procedure:
1. Set intravenous line for injection of intravenous interventional medication(s).
2. Have patient use restroom prior to eating radioactive meal, so that imaging can begin immediately following ingestion.
3. Acquire immediate, dynamic images from 20º LAO projection for 60 seconds/frame for 120 frames.
4. Give IV Reglan at 90 minutes post radioactive meal ingestion (unless contraindicated) if gastric activity still remains. Note any adverse reactions.

Acquisition Parameters:
• VXUR (or LEUR) collimator.
• Matrix 128 x 128.

• Scan 120 frames at 60 seconds/frame.
• Zoom: 1.46

Processing:
1. Left-click on REFRAME.
2. Choose patient study, ensuring accurate patient name and ID, and select PROCEED.
3. Choose the LAO image set.
4. Right-click at top of screen on SELECTION MENU, then right-click on 5. Right-click on SELECTION MENU again and right-click on 5 STANDARD.
5. Verify lack of patient motion by left-clicking on CINE button.
6. If images are suitable, then left click on the 16-view button.
7. Change color to GREY and change intensity to LOG2, then brighten until suitable for interpretation.
8. Pan images to fit the screen.
9. Turn off the image frames.
10. Left-click on PENCIL TOOL to annotate images.
11. Right-click on LOAD DEFAULTS, and choose GASTRIC_PG_1 annotation set.
12. CANCEL annotation tool.
13. Left-click on CAMERA TOOL to snapshot image.
14. Cycle through first 16 images until last images are at top of 16 view screen.
15. Turn on image frames again, and then deselect the images you want to remain on the screen. Brighten highlighted images until they disappear, and turn off frames.
16. Left-click on PENCIL TOOL again.
17. Right-click on LOAD DEFAULTS and select GASTRIC_PG_2.
18. CANCEL annotation tool.
19. Left-click on CAMERA TOOL to snapshot image.
20. Left-click on QUIT.
21. To calculate the gastric emptying time, right-click on the blue screen on Pegasys background. Right-click on USER CUSTOM MENU. Right-click on GASTRIC EMPTYING (MIN).
22. Choose LAO image set.
23. Left-click on CINE in bottom right corner of screen and cycle through images until a suitable image is found. Draw ROI around stomach. Be sure to include any activity in the esophagus.
24. Left-click on PROCEED.
25. Move the green limit lines to the edges of the graph, encompassing the entire curve.
26. Left-click on PROCEED.
27. With CINE tool, find a suitable frame to display with the curve.
28. Left click on PAN tool to move image to appropriate area on display. Left click on PROCEED.
29. Right-click at top of window and then right-click on REFRESH to remove extra ROI that was produced by using PAN tool.
30. Change color to GREY and intensity to LOG2.
31. Left-click on stomach image to remove frame.
32. Left-click on PENCIL TOOL to annotate graph.
33. Right-click on LOAD DEFAULTS and right-click on GE_CURVE.
34. Adjust annotations and brighten composite image for interpretation.
35. CANCEL annotation tool.
36. Right-click on CAMERA TOOL, and then left-click on SNAPSHOT AREA IN A BOX.
37. Hold down middle button at top left corner of curve, and drag down to bottom right area of stomach image. Be sure to cut out the information at the bottom of the window.
38. Left-click on PROCEED.
39. Left-click on EXIT and PROCEED WITHOUT SAVING.

40. Left-click on PAGE 2 in top right corner of menu, then left-click on CAMERA TOOL from same menu. This will create the “double snapshot.”
41. Choose all of the snapshots that were previously created.
42. Pan images to fit screen. Ensure that PATIENT NAME, MR NUMBER, and DATE OF STUDY are at the top of the image.
43. Left-click on CAMERA TOOL to snapshot image again.
44. Do this for all images.
45. When done, left-click on QUIT.
46. Now send double snapshots and LAO raw data set to PACS by right-clicking in the blue background. Right-click on PATIENT UTILITIES. Right-click on DICOM UTILITIES, and then DICOM EXPORT.
47. Choose proper patient and left-click on PROCEED. Then choose the double snapshots and LAO raw data set and left-click on PROCEED.
48. Left-click on START EXPORTING.
49. Type appropriate study data and patient history.
50. Scan appropriate paperwork for study.
51. Put images online in proper order, and with proper intensities.