No disclosures

#38 Contrast Enhanced Spectral Mammography (CESM)

WHAT...Is CESM???
It is a mammogram requiring an intravenous injection of an iodine contrast agent. The images displayed is the standard view showing tissue density and a contrast-enhanced image in the exact same position with the background signal subtracted out.

Slide courtesy of GE
How Does CESM Work???
When an exposure is made, two images are created per view using a high energy beam and a low energy beam (Spectral Imaging).

Why Is CESM performed?
It is performed as an adjunct to an inclusive mammogram or ultrasound exam. Using an iodine contrast agent, CESM highlights the suspicious area that exhibit increased vascularity.

IS IT REIMBURSED??
YES!!
CPT/HCPCS CODE-G0204
DIAGNOSTIC MAMMOGRAM PRODUCING DIRECT DIGITAL IMAGE BILATERAL ALL VIEWS
CPT/HCPCS CODE-G0206
CPT -96374 INJECTOR
ONLY AS AN ADJUNCT TEST TO AN ABNORMAL MAMMOGRAM ULTRASOUND
HOW TO INCORPORATE CESM INTO YOUR BREAST CENTER

- **STEP 1**
  - CONTACT YOUR IS DEPARTMENT
  - CONTACT YOUR BILLING/SCHEDULING DEPARTMENT
  - CONTACT YOUR RS (MAGVIEW,MRS, PENRAD)VENDOR
  - BUILD AND REVIEW YOUR TRANSCRIPTION TEMPLATE
  - BUILD AND REVIEW YOUR CHARGES
  - DECIDE IF YOU ARE GOING TO USE YOUR LAB OR PERFORM THE CREATININE TEST YOURSELF
  - (POINT OF CARE DEVICE)

STEP 2

- **ASSESS YOUR ROOM**
- ROOM MUST BE LARGE ENOUGH FOR IV CHAIR, INJECTOR, MAMMO EQUIPMENT, MAYO STAND, ROLLING STOOL, PERSONNEL PERFORMING EXAM... AND THE PATIENT.
**STEP 3**

- Train your staff, arrange for applications of CESM and injector on same day
- Designate which day, the times, who schedules.
- Interview the patient
- Schedule your patient

**Step 4**

- Appointment day
- Appointment time is 1 hour
- Allows enough time for IV insertion
- Imaging is 7 minutes
Our Protocol

• Patient is scheduled for one hour appointment
• Nurses interview and screen patient prior to appointment
• Patient arrives 15 minutes early for check in
• Patient is brought back and gowned in dressing area
• Nurse collects patient and brings to CESM room
• Nurse inserts IV
• We allow 45 minutes for IV insertion, and a minimum of 4 attempts
• Technologist loads injector
• Technologist retrieves Radiologist once IV has been inserted
• Technologist and Nurse coordinate injection time
• Wait two minutes and begin imaging
• Start with affected side CC first, then unaffected side CC
• ML or MLO will determined by Radiologist, start with affected side
• Exam is completed
• Remove IV
• Patient is given results before leaving.
If patient has an abnormal screening mammogram,

The patient is called back and scheduled for US first,
If US is abnormal we perform CESM on same day,
Do additional views after the CESM.
Cannot do Magnification views in CESM mode
Cannot do implants
Stereotactic vacuum assisted core biopsy
Pathology - Left Breast Invasive ductal carcinoma
60 year old female hx of Left breast cancer, mass in Right breast

Left Breast CC

Right Breast MLO
Right Breast US guided vacuum assisted core biopsy-pathology - FCB, Fibrosis
64 year old female
Right breast thickening at 9 o'clock with yellow
nipple discharge
Right Breast
CC

Left Breast
CC

Right Breast
MLO
Right breast Stereotactic vacuum assisted core bx-
pathology: DCIS right breast
Calcifications

71 year of female hx right breast cancer dx, pre-surgical CESM, calcifications left breast

Right Breast MLO
Stereotactic vacuum assisted core biopsy performed
Pathology: fibrocystic changes, Pseudoangiomatous
Stromal Hyperplasia

Asymmetry:
47 patients had CESM performed for asymmetry
11 patients their CESM test was positive, proceeded to biopsy
2 patients were positive for breast cancer
9 patients were negative
28 of those patients given birads 3
7 of those patients given birads 2
1 of those patients were given birads 1

Masses

15 patients had CESM for masses
6 patients their CESM test was positive, proceeded to biopsy
5 patients were positive for breast cancer
1 patient was negative
7 patients were given a birads 3
2 patients were given a birads 2
Calcifications

8 patients had CESM for calcifications
3 patients their CESM test was positive, proceeded to biopsy
2 patients were positive for breast cancer
1 patient was negative

3 patients were given birads 3
2 patients were given birads 2

8 MONTHS
70 CESM exams performed
9 Cancers detected

How CESM has helped us....

Patients who have Asymmetry or Architectural distortion, a negative CESM allows us to place into short term follow up.

Patients who have multiple masses on US, the CESM test helps in determining the dominate mass to biopsy or a negative CESM allows us to place into short term follow up.

Patients who have calcifications, the CESM test helped determine which patients went to biopsy and made us feel comfortable with those who went to short term follow up.

Two patients diagnosed with breast cancer from outside facilities had CESM test prior to surgery. The test found cancer in the contra lateral breast and was helpful with pre-surgical planning in both.
Why CESM???

- Option for patients who have dense breast with an inconclusive work up
- Patients who have had US, and they have multiple complex masses
- Reduces unnecessary biopsies and increased anxiety
- Option for patients who cannot have a MRI, physical limitation, or insurance issues
- No cross training needed
- Correlation is within the same modality and easy to reproduce.
- It’s affordable
- Results are immediate
- Patient feedback has been positive...