

History of Breast Surgery

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Halsted Mastectomy

- Radical Mastectomy
- Introduced in 1882 by William Halsted.
- Was the removal of the breast, fascia, chest muscle and axillary nodes.
- At this time was felt necessary to remove all cancerous cells to prevent a local recurrence.



Conservative Breast Surgery

Geofferey Keynes, a World

War I surgeon, was one of the first advocates of conservative surgery.

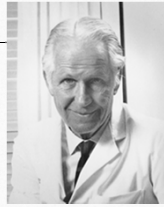
- His studies of combining lesser surgeries with radiation therapy were equally comparable to that of Halsted's.
- It would take many years for him to convince the medical community that less could be better. At least 50 years.
- Lumpectomy was an insult to other breast surgeons. They disagreed with Keynes.
- 1887-1982



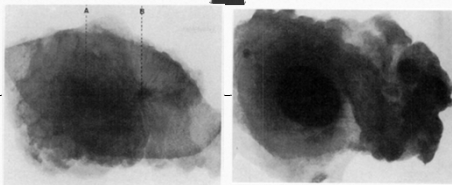
2 – Step Procedure

George Crile, Jr

- Son of a famous surgeon
- 1907-1992 advocated separating diagnostic biopsy from operative treatment of cancer of the breast.




- 1913
 - German surgeon Albert Salomon radiographed 3000 mastectomy specimens
 - Demonstrated spread to axillary lymph nodes
 - Compared high-infiltrating carcinoma and circumscribed carcinoma
 - Sent to a concentration camp during WWII
 - Moved to Holland following WWII
- 1927
 - Otto Kleinschmidt mentioned it in his surgical textbook
- 1930
 - Stanford Warren (Rochester Memorial Hospital, NY Radiologist describes new "fine-grain" technique for in vivo mammography
 - 119 pts who subsequently underwent surgery



A: Nipple B: Cancer Cancer Axillary nodal metastasis

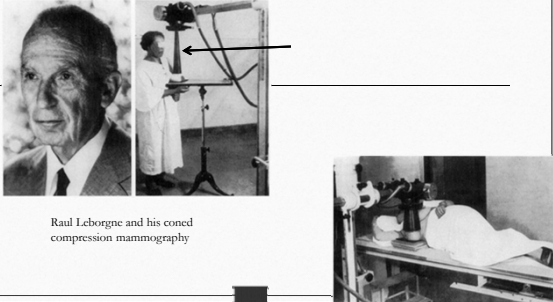
Radiographs of breast tissue created by Salomon



Stafford Warren and his "fine grain" technique (circa 1939)

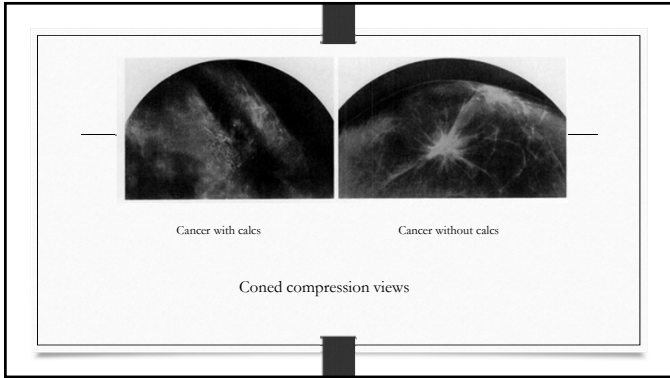
A black and white photograph of Stafford Warren, an older man with glasses, wearing a suit and tie. To his right is a close-up image of a mammogram showing fine grain texture.

- 1930's-1950's
 - Jacob Gershon-Cohen published extensively on mammographic-pathologic correlation
- 1949
 - Raul Leborgne reports finding microcalcifications in breast cancer
 - Used coned, compression mammography
- 1951
 - Leborgne compares benign and malignant calcifications



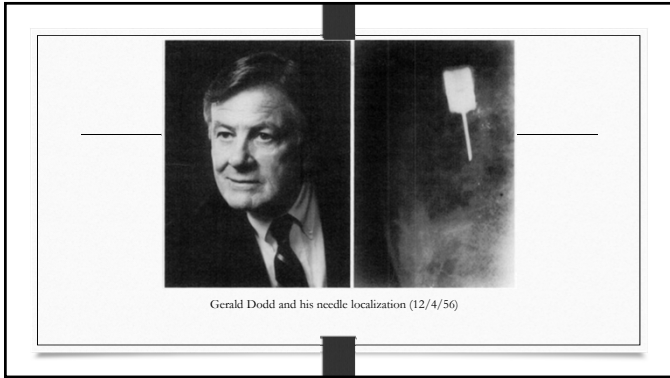
Raul Leborgne and his coned compression mammography

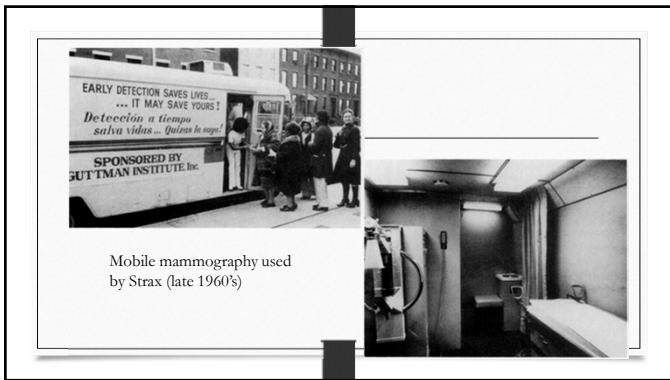
A composite image featuring a portrait of Raul Leborgne on the left. In the center, a photograph shows him operating a large, vintage mammography machine. On the right, a smaller photograph shows a patient lying on a table, being prepared for a mammogram.



- 1960
 - Robert Egan describes high mill amperage-low kilovoltage technique that was easily reproducible
 - Widespread use of mammography is attributed to his work
- 1963
 - Nationwide mammography study in US
 - True positive rate of 79%
 - Egan's technique could be learned by others
 - Reproducible and of high quality
 - Differentiate between benign and malignant disease
 - Can be used for screening

- 1963
 - First needle localization (no wire)
 - Gerald Dodd (Jefferson Medical College, PA)
- 1963-1966
 - Phillip Strax, Louis Venet and Sam Shapiro
 - Health Insurance Plan (HIP) of NY
 - First randomized controlled trial of mammographic screening
 - Mortality was reduced by almost 1/3 through 18 years of follow up
- Late 1960's
 - Strax developed first mobile mammography unit

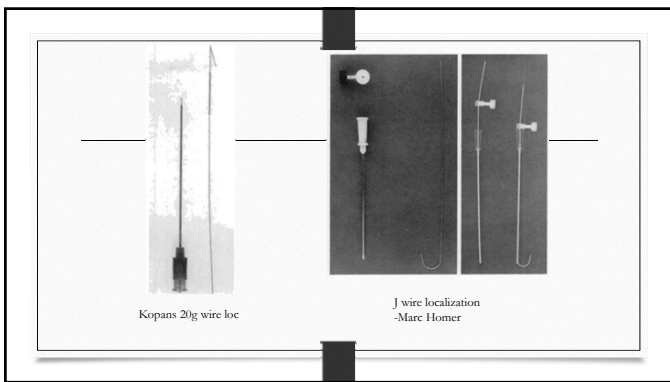




- 1964
 - John Wolfe begins to develop xeromammography
- 1966
 - Xerox becomes involved
- 1965
 - Charles Gros and CGR Company develop the Senographe
 - First dedicated mammography unit
- 1971
 - First commercial xeromammography unit becomes available

- 1971
 - Martin and Gallagher were first to recognize a "new density" as a sign of cancer

- 1977
 - Sickles, Doi, and Genant describe the utility of magnification views
- 1976
 - Frank, Hall, and Steer describe the hookwire localization technique
- 1980
 - Kopans and DeLuca describe the wire localization technique we use today
 - Spring hookwire system




- 1985
 - Swedish two-county breast cancer screening trial
 - Laszlo Tabar and colleagues
 - 134,867 women ages 40-74

 - Began in 1977
 - Single view mammogram
 - 40-49 year olds: screened every 24 months
 - 50-74 year olds: screened every 33 months
 - Data
 - By 1984
 - 31% mortality reduction
 - 25% reduction in advanced breast cancer (stage 2 or greater)
 - By end of 1989
 - Same


- 2001
 - Tabar (Cancer 2001; 91: 1724-31)
- 29 year follow up
- Compared data from
 - 1968-1977: No screening
 - 1978-1987: Swedish two county screening trial
 - 1988-1996: all 40-69 yo women in the two counties were invited to screening
- 63% reduction in mortality from screening

Breast Surgery



Breast cancer in ancient Egypt

- The first mention of cancer of any kind was a case of breast cancer documented in Egypt around 1600 BC. The Edwin Smith Papyrus, an ancient text found in 1860 in an Egyptian tomb, described eight cases of tumors or ulcers of the breast. The first doctors attempting to treat breast cancer using this method wrote of the mysterious disease: "There is no treatment!"



- French surgeon Jean Louis Petit and later Scottish surgeon Benjamin Bell were the first to surgically remove lymph nodes, breast tissue and chest muscle as a treatment for the disease. This method was the first successful treatment of breast cancer.



The first mastectomy

- Surgeon William Stewart Halsted began performing and perfecting mastectomies around 1882. Halsted's mastectomies were invasive, requiring the removal of both breasts, lymph nodes and underlying muscle. The radical procedure was deemed necessary to prevent the cancer from recurring, but often left its patients with long-term pain and disability.



Better surgery, better outcomes

- By the 1970s, researchers began to develop the lumpectomy—a more limited surgical option that removes only the cancerous tumor and any surrounding tissue affected by the tumor. By 1985, research found that a lumpectomy followed by radiation treatment gave women a chance of survival equal to the considerably more invasive mastectomy

[Breastcancer.org](#), [HealthCentral.com](#), [History of Breast Cancer](#), [About.com](#), [Origins and early development of the case-controlled study](#), [History of Epidemiologic Method and Concepts](#)

