SLMANA

Scientific Session – III

November 12th, 2011

Sri Lanka Medical Association – North America

2011 – Continuing Medical Education Program

November 12th, 2012

New York Hilton, New York USA

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SLMANA EAST CHARITY BALL ANNUAL GENERAL MEETING & SCIENTIFIC SESSIONS ON NOVEMBER 12TH, 2011

NEW YORK HILTON AND TOWERS
1335 Avenue of The Americas New York, NY

Unicondylar Knee Arthroplasty for Unicompartmental Osteoarthritis of the Knee

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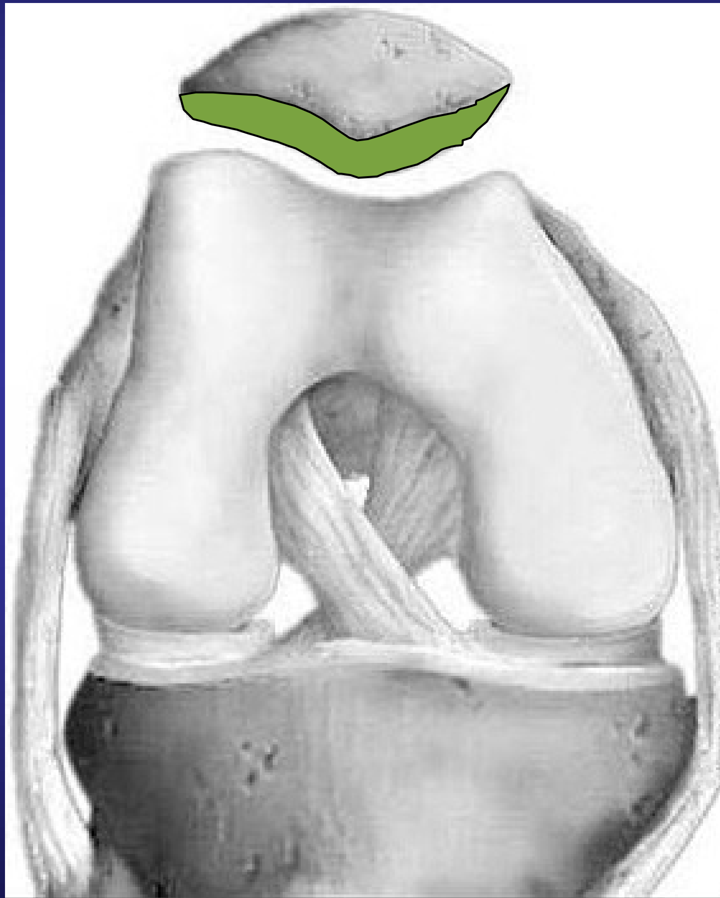
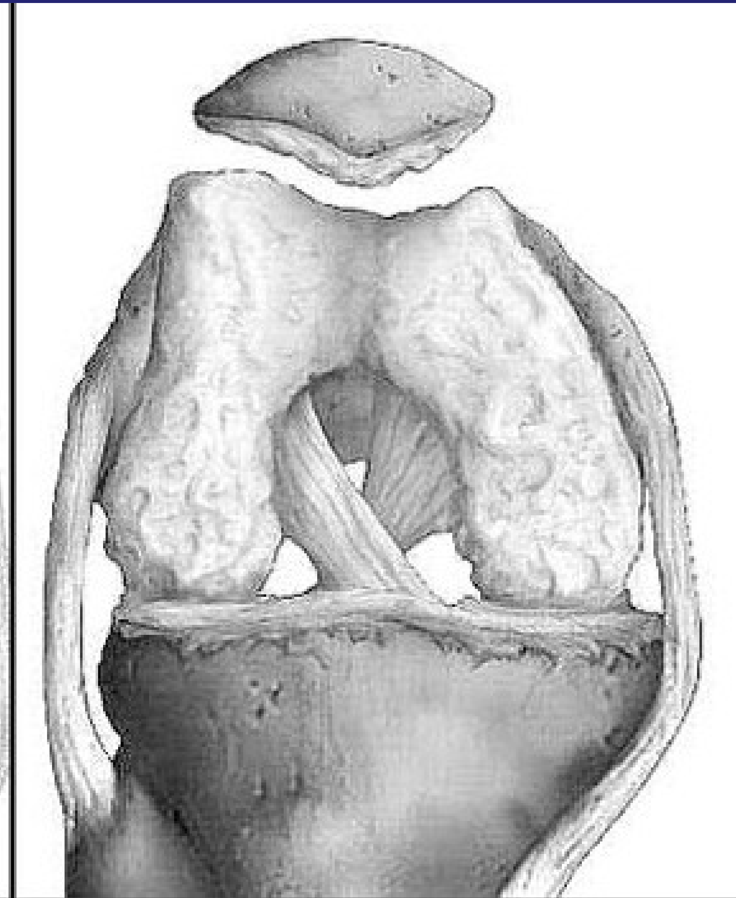
www.nycsportsmed.com

Osteoarthritis of the Knee

- Knee osteoarthritis is a leading cause of disability in the United States
- In 2005, approximately 9 million American adults were diagnosed with knee osteoarthritis
- Total Knee Arthroplasty (TKA) is the most common surgical solution for advanced OA of the knee

What is Osteoarthritis of the Knee?


Normal, smooth articular cartilage in knee joint.


Osteoarthritis in articular cartilage in knee joint.

Evaluating a Patient with Knee Pain

- History
  - Age
  - Activity level
  - Pain pattern
    - With activity
    - Nocturnal pain
    - Walk tolerance
- Physical Exam
  - Deformity
  - Range of motion
  - Locus of pain
- Standing X-Rays
  - AP, Tunnel, Lateral, and Merchant views

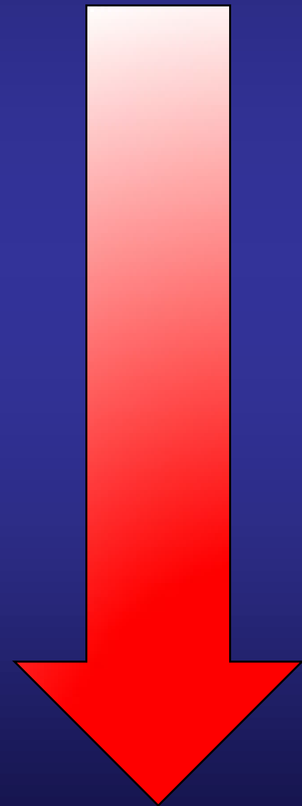
Treatment Options for OA of the Knee

- Activity modification
- Physical Therapy
- Weight control
- NSAID

- Cortisone or viscosupplementary injection

- Knee arthroscopy
- Joint replacement

Less Invasive



More Invasive

Primary Care Physician’s Initial Treatment

- Counsel patient
  - Weight control
  - Modify activities
- NSAIDS
- Enroll in PT
- Referral to specialist
  - If no response to initial treatment

Orthopedist Evaluation and Treatment

- Accurate Diagnosis
  - OA vs. RA
- Physical exam
  - Deformity
    - Fixed or correctable
- X-Rays
  - Angular deformity quantified
  - Assess how if single or multi-compartment
- Indicate for
  - Continued conservative care
  - Surgery
    - TKA
    - UKA

Indications for Surgery

- Failure of conservative care
- Refractory pain
  - Nocturnal pain
- Severe limitations in walk tolerance
- Limitations in lifestyle
- Weight gain
- Other health issues arise or worsen
  - HTN
  - DM
  - Heart Disease

Total Knee Arthroplasty

Pros

- **Proven track record**
- **21year survival = 90%**
- **Reliable pain relief**
- **High acceptance by patients**

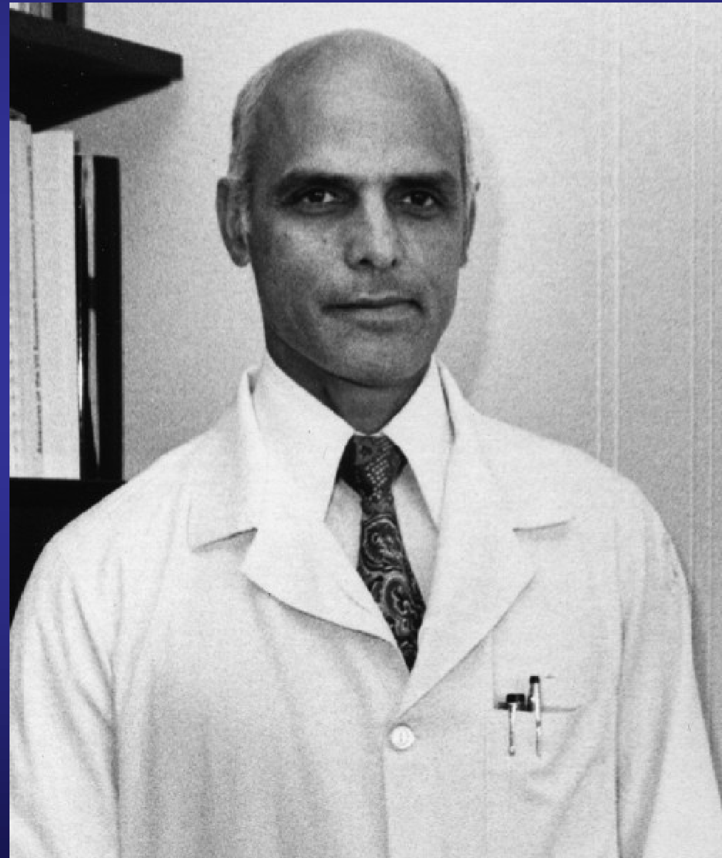
Cons

- **Invasive surgery**
- **Decreased knee ROM**
- **Inability to return to some activities**
- **3 to 4 day hospital stay**
- **Complications**
  - **DVT, PE, Fat embolism**
  - **MI**

Unicondylar Knee Arthroplasty

- Track record of longevity
- Improved knee range of motion
- Less invasive
- Outpatient to overnight hospital stay
- Return to most activities possible
- Slightly lower risk of major complications
- Bearing surfaces and wear characteristics

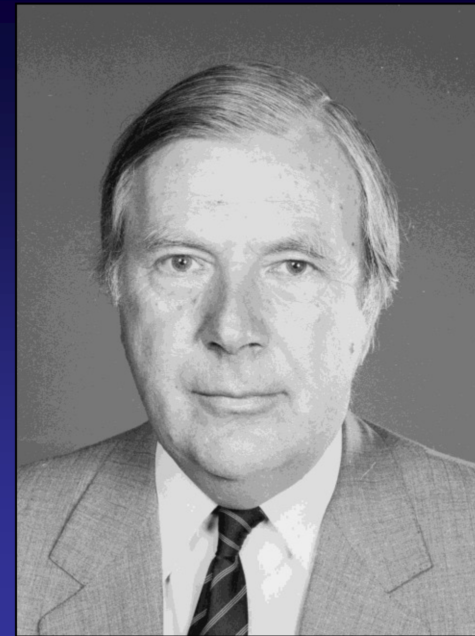
Historical Perspective of the Development of TKA

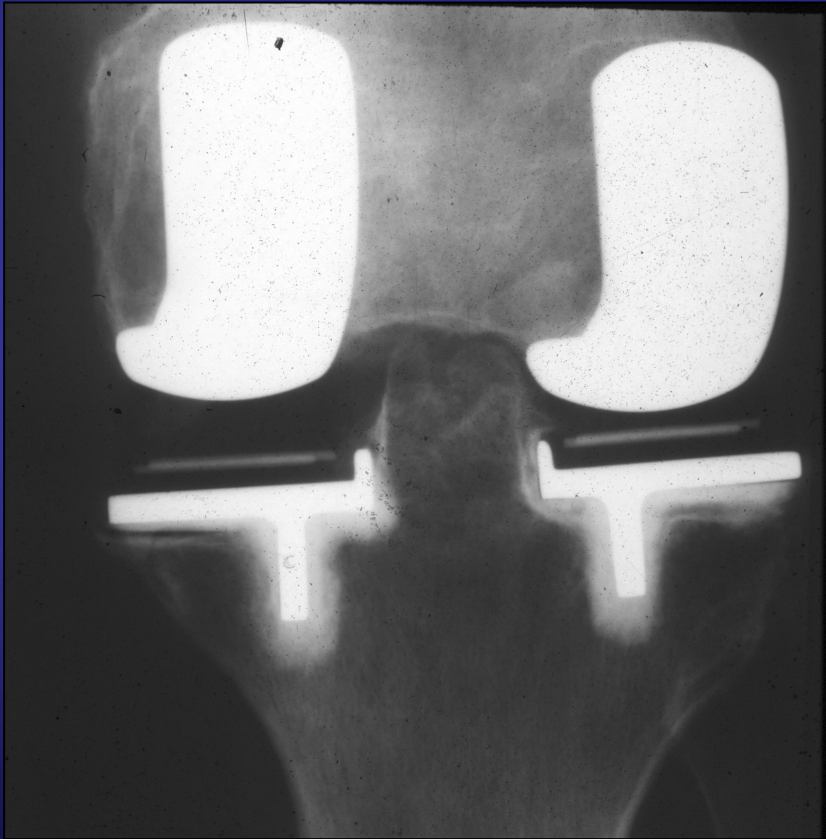


Total Knee Implant

Bicompartmental 1976

Over 300 implanted, saw cuts

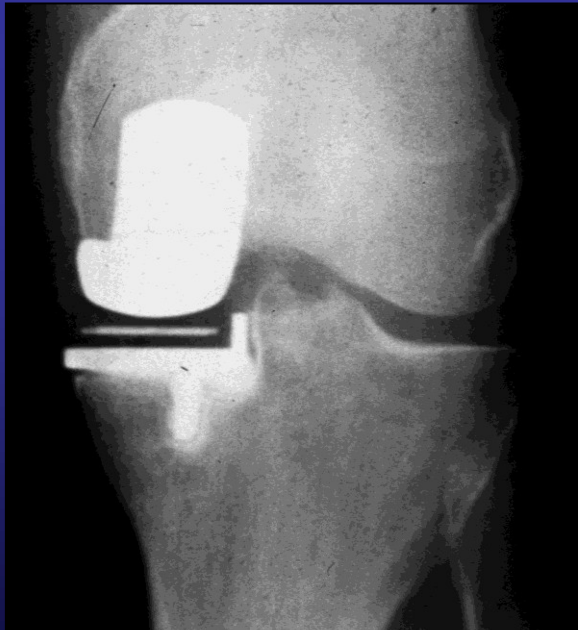


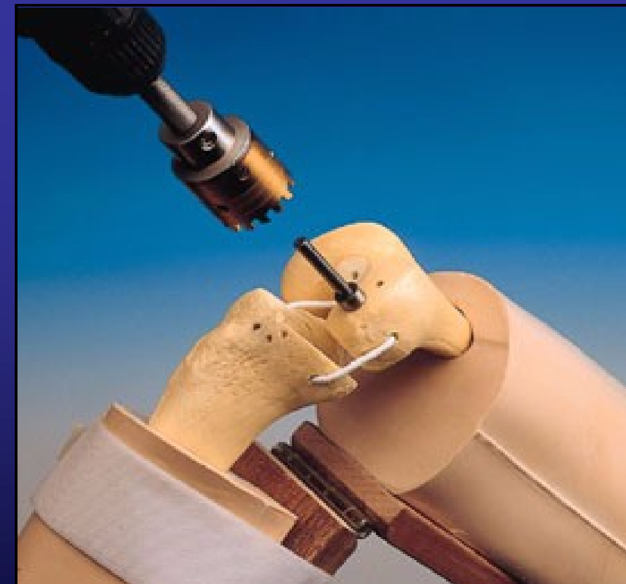


Unicompartmental (Open Approach)

- 1982
- Phase 1

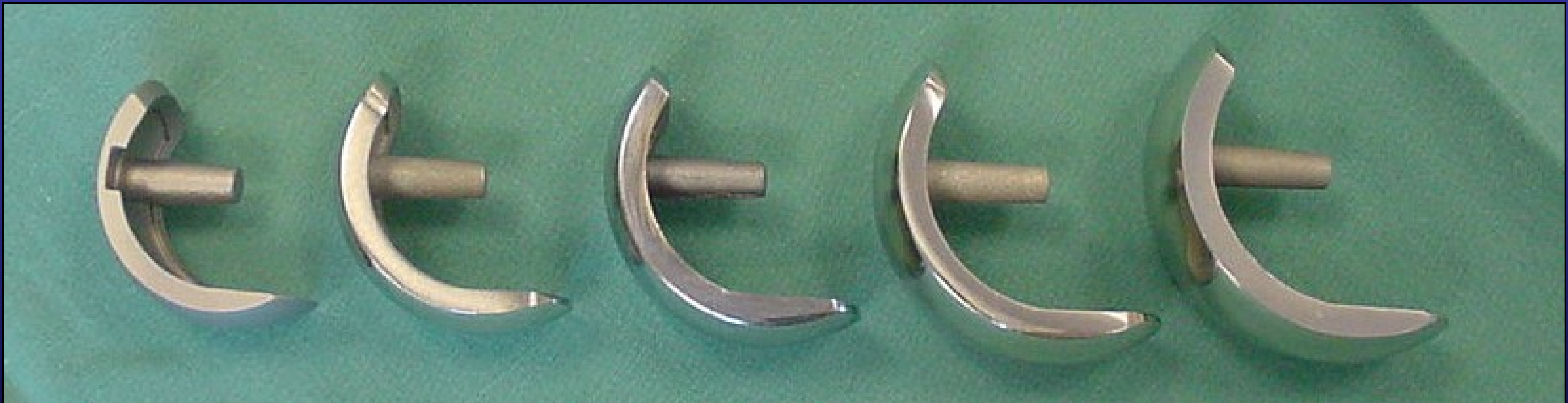
- 1987 – Phase 2
  - Mill for accurate ligament balance
  - Reduced dislocation





Phase 3 – Minimally Invasive Approach 1998

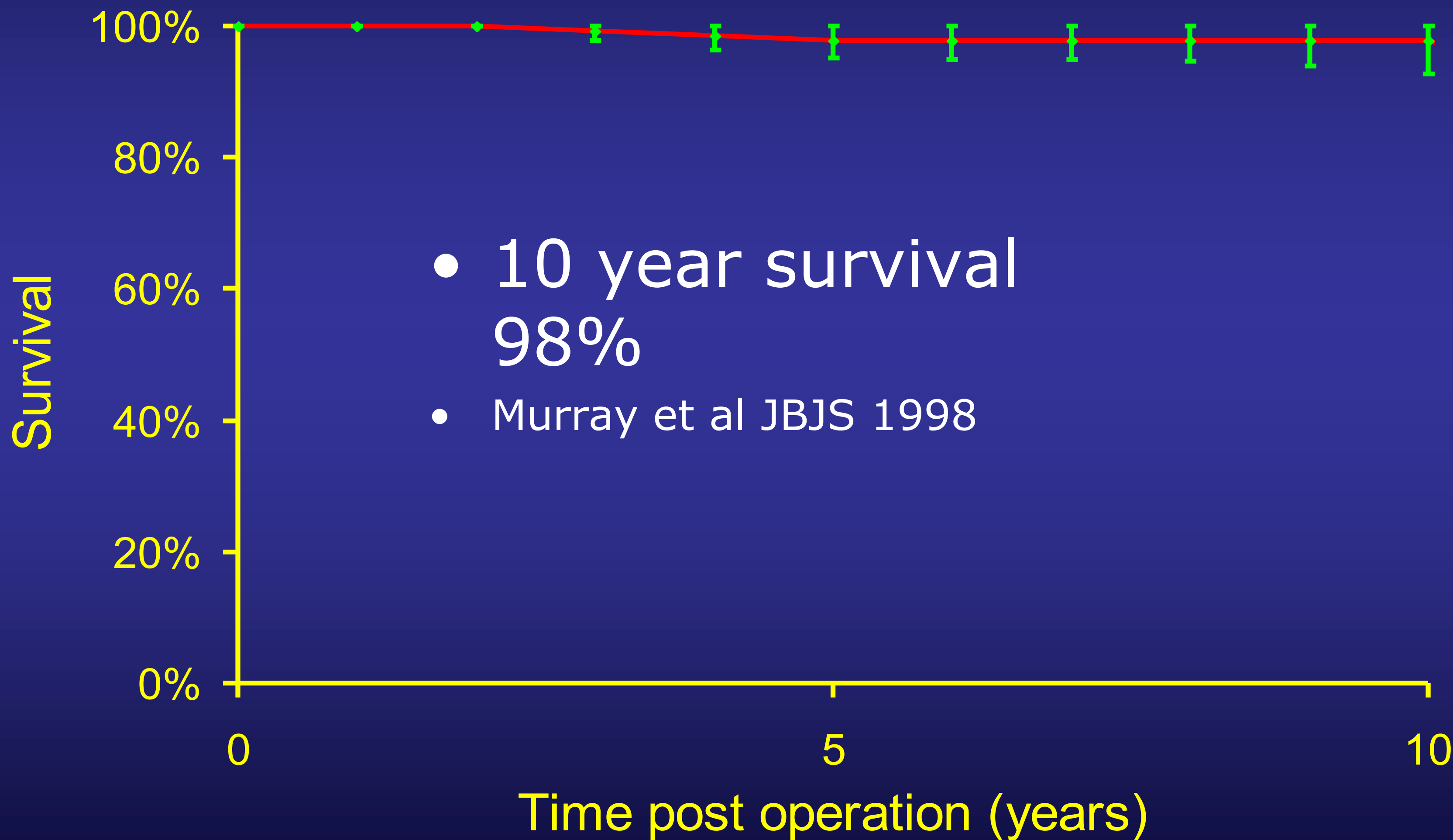
- Operation simpler & more reliable
  - Modified instruments
  - Increased range of sizes
- Minimal invasive approach
- Surgeon training instructional courses



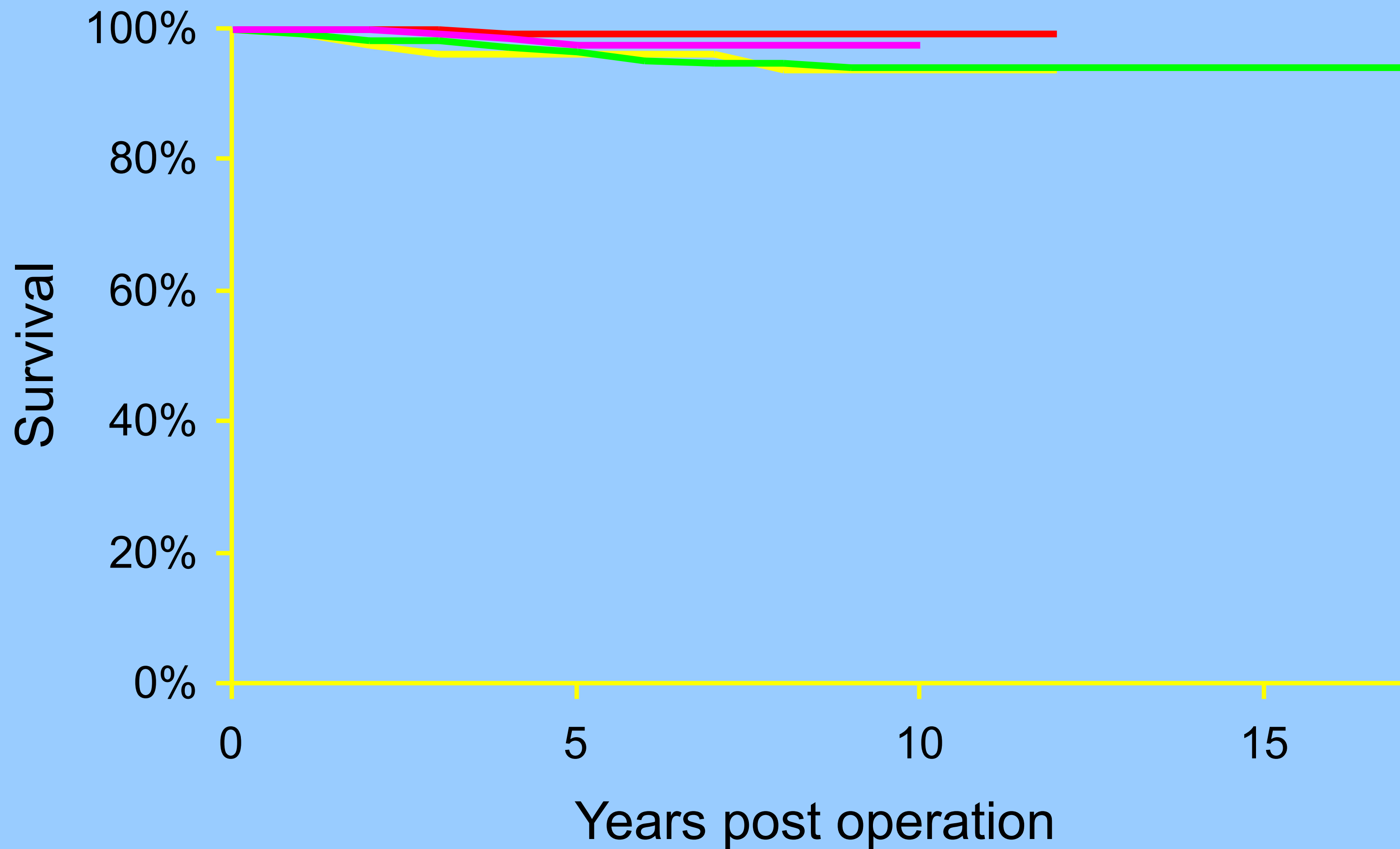
Other UKA Designs

- Fixed bearing
  - High contact stresses
  - Increased wear rates
  - 10year survival 90%
    - Increased failures thereafter

UKR - Designer's series



Phase 1 & 2 series >10yr, >100 UKR, with Oxford indications

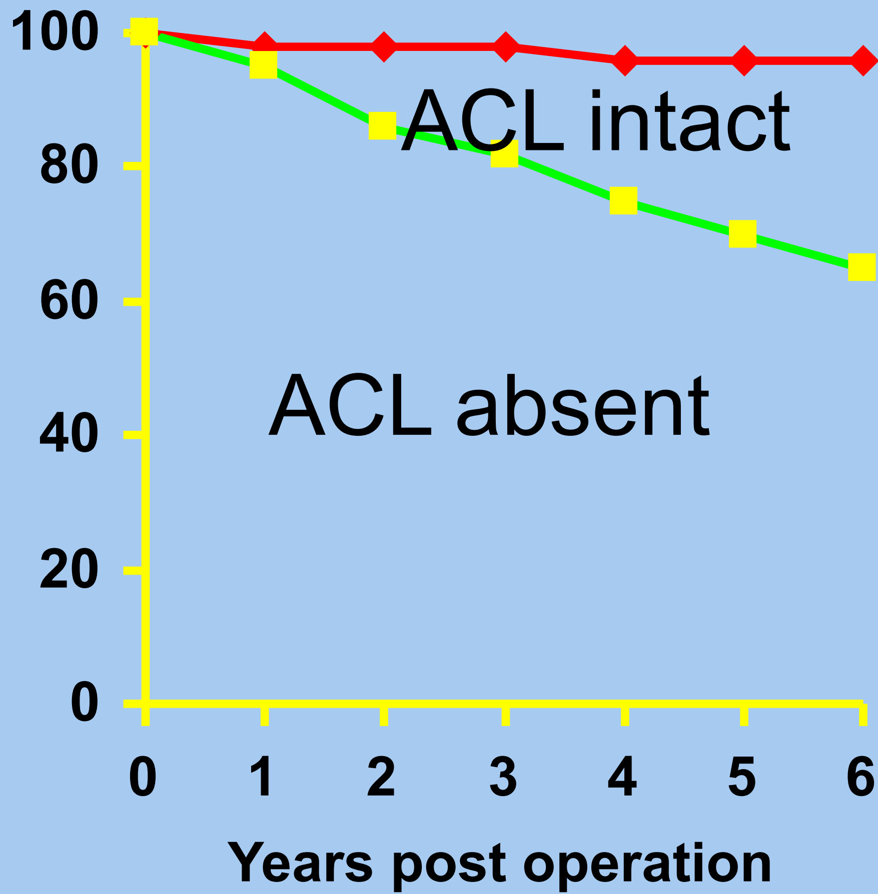


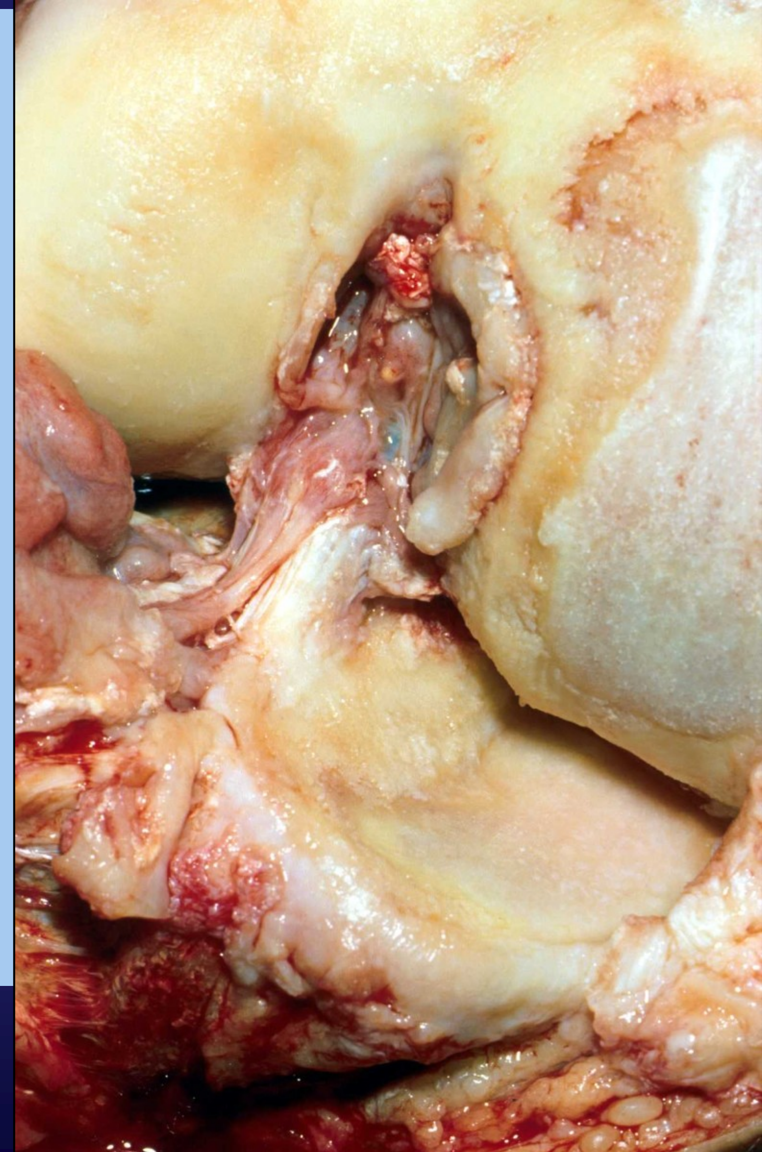
Polyethylene Wear

- Average penetration rate 0.03mm per year
- Average time for 1mm penetration 33 years

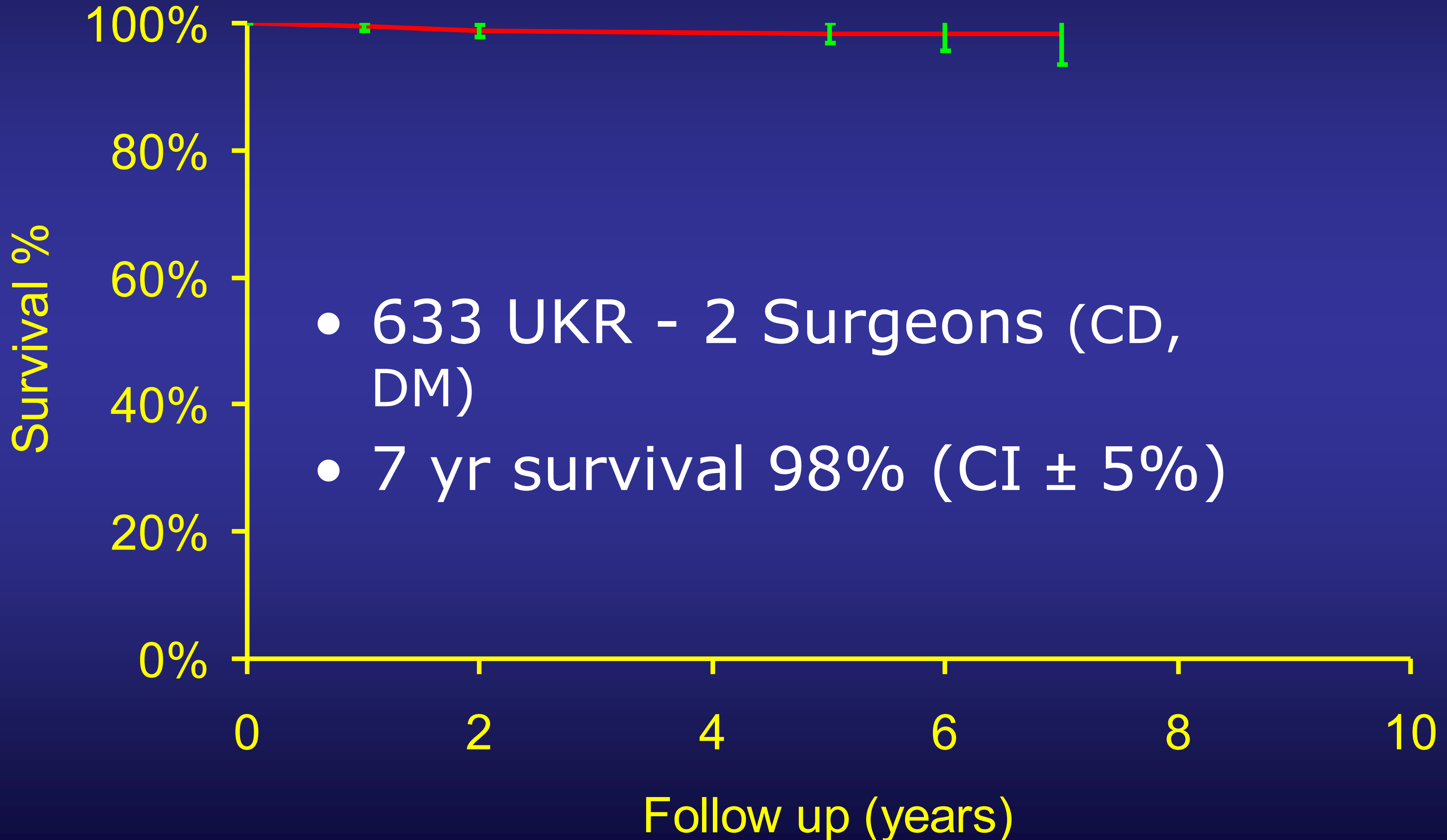
10 year retrieval

Survival

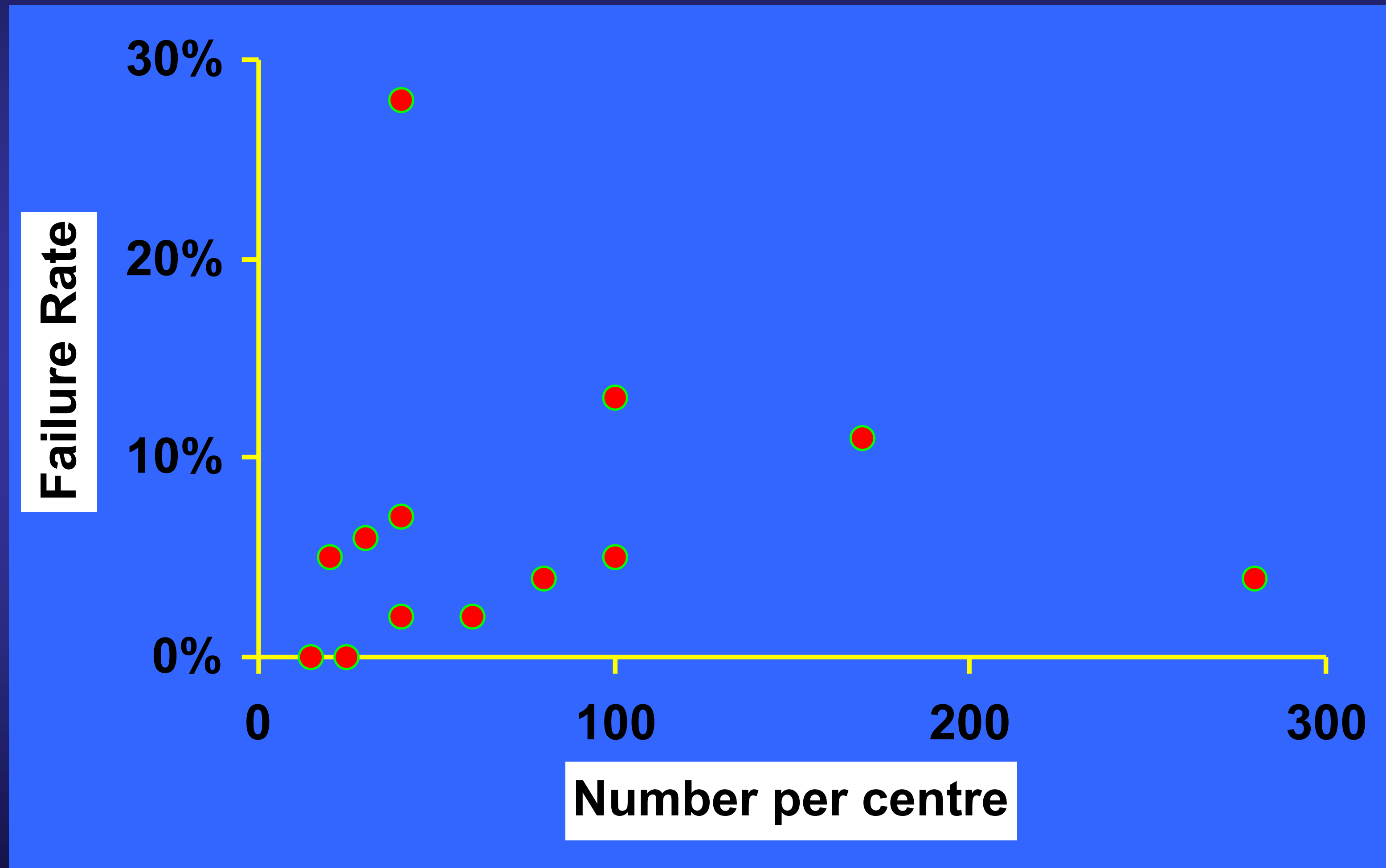




Phase 3 survival (Pandit 2005)

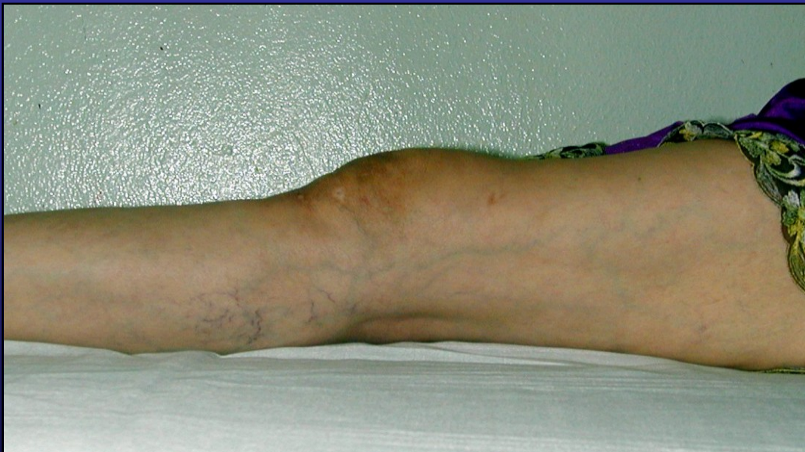


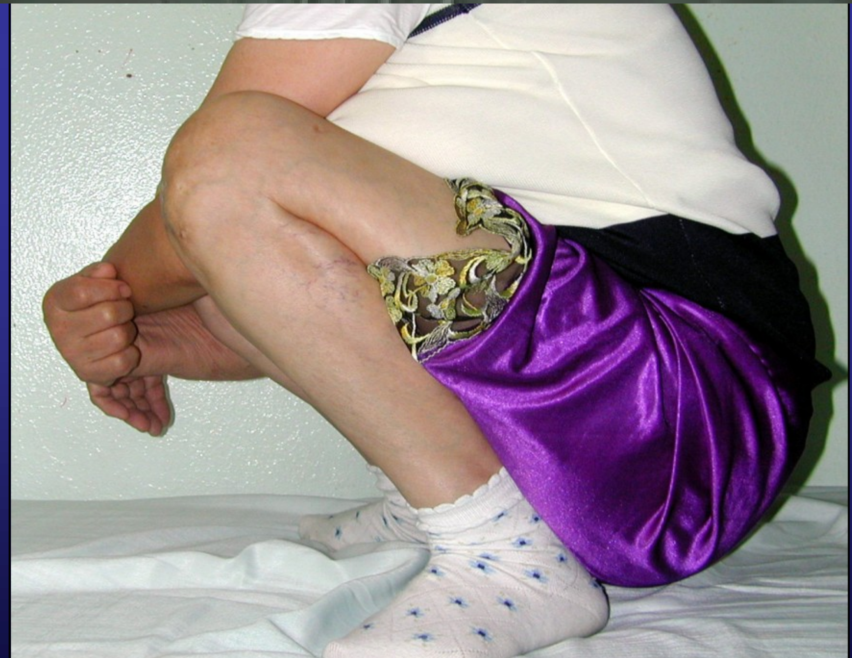
Swedish Knee Arthroplasty Register Lewold et al 1995



Korea (Prof Choy)

- 40 patients
- 3 months
- Full flexion in 95%
  - 2 others 135° & 120°
- Squat 86%





Indications

- Medial OA
  - Full thickness cartilage loss on stress Xray
- Functionally normal ACL (PCL also)
- Functionally normal MCL
  - Correctable varus on stress X ray
- Full thickness lateral
  - Full thickness cartilage on stress Xray

Contraindications (very rare if ACL intact)

- Fixed flexion deformity > 15º
  - (Pre Op mean 8, 1 year mean 2)
- Varus deformity > 15º
- Flexion < 90º anaesthetised
- Lat femoral condyle central ulcer

Other “Accepted” Contraindications

Kozinn & Scott (J Arthroplasty 1989) and others

- Patellofemoral OA and Anterior Pain
- Age (< 60 and very old)
- High Activity
- Obesity
- Chondrocalcinosis

Most NOT FOUNDED ON SCIENTIFIC EVIDENCE

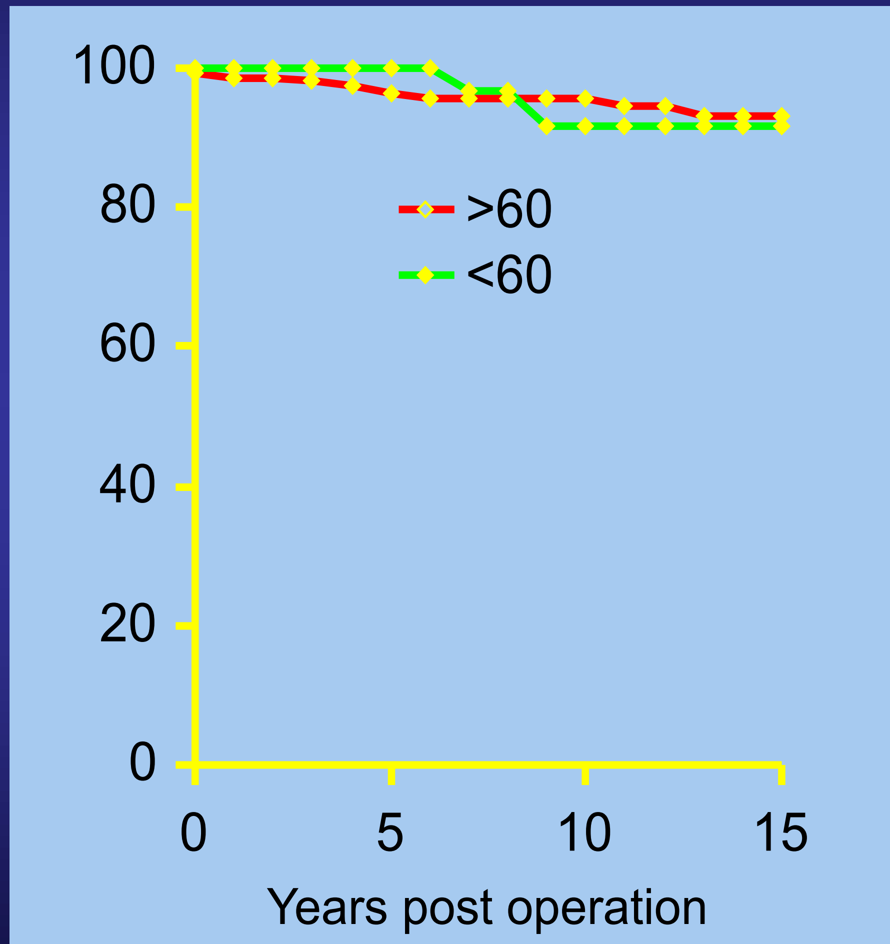
The designer's never considered these to be contraindications and now have some evidence to support their view

Patello-femoral joint
For the Oxford knee

- Full thickness cartilage loss
  - Seen at operation
  - Or on Pre-operative Xrays
  - Is not a contraindication
- Pain anteriorly is
  - Not a contraindication

Age

- Old/unfit - ideal
  - minimal invasive
  - low morbidity
- Young (50s or less)
  - <60 & >60 NSD
  - JWG & Svard
  - mean 55, n=52
  - 92% 10yr survival



Actual Activity - Tegner Score
50 patients, < 60yr, min 2yr

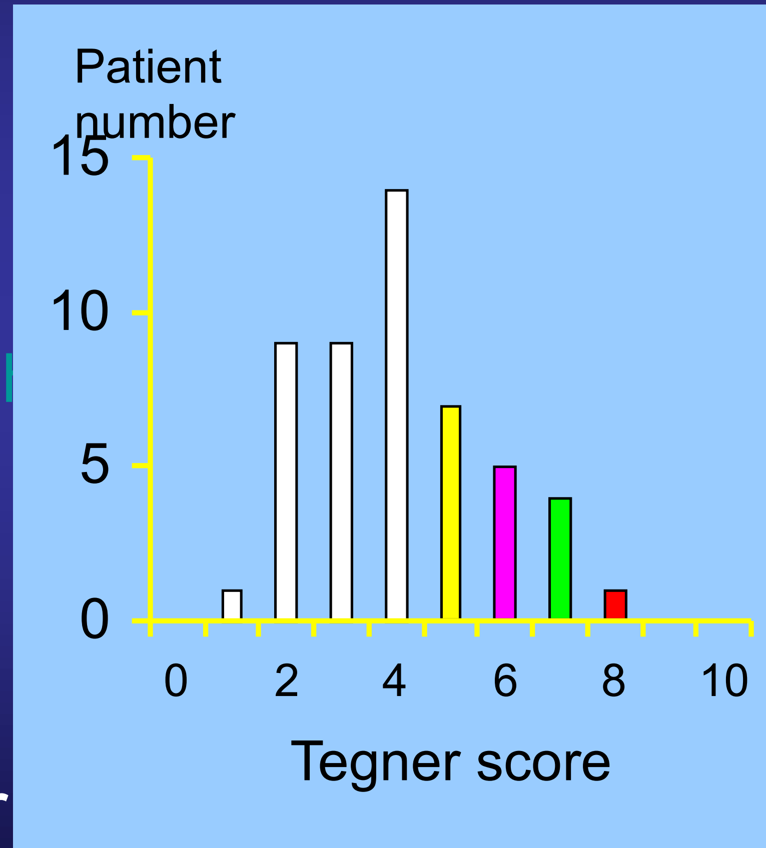
5 Heavy labour, competitive cycle, jog uneven ground

6 Tennis, downhill skiing

7 Competitive tennis, running

8 Competitive soccer, squash

- 4 or less "Advised"
- 30% 5 to 8
- Don't do as advised!
- ?Does not seem to matter



Obesity

- No increased wear
  - Argenson et al JBJS 1992
- No data on grossly obese
- In very obese
  - Exposure relatively straight forward as instrumentation works from front
  - Easier than TKR

Complications NOT Requiring Revision

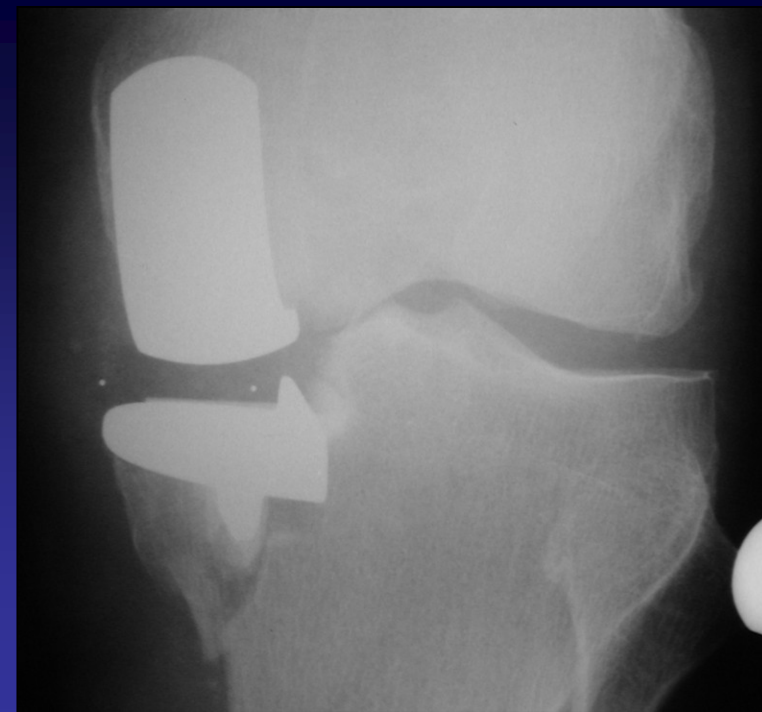
• Pain at 1 year	2%
• Stiffness requiring MUA	0.7%
• Hemarthrosis - scope	0.2%
• PE	0.3%
• CVA	0.5%
• Death	0

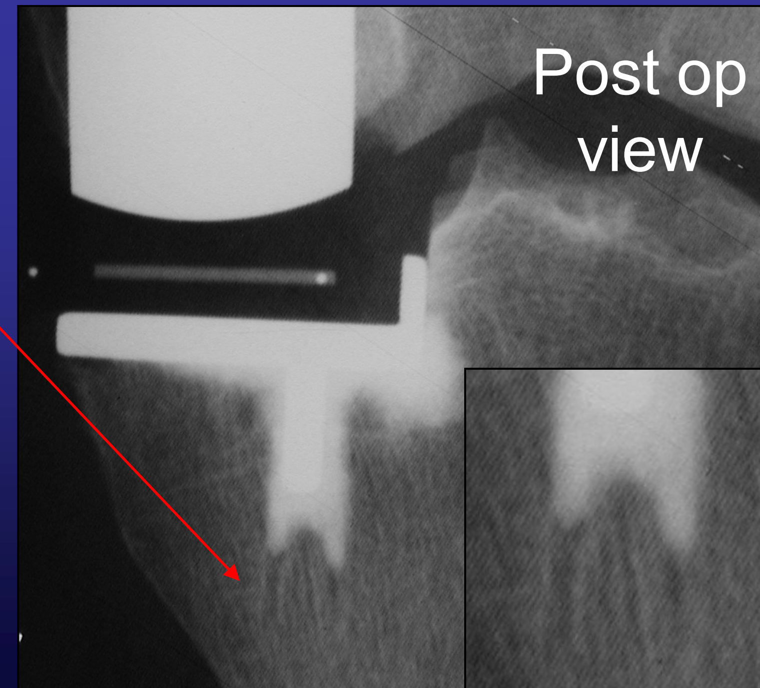
Revisions – Medial OA

	CD & DM 600 5yr	Svard 600 20yr
Lateral OA	0	2%
Infection	0.5%	0.3%
Dislocation	0.2%	0.8%
Loosening	0	0.8%
Unexplained pain	0.4%	0
Tib plateau #	0	0
Wear	0	0
PFJ problems	0	0

Tibial plateau

- Cause
  - Bone weakened per-op
- Presents
  - Per-op or early post-op
- Prevention
  - Light hammer
  - <u>AVOID DEEP SAW CUTS</u>
  - Preserve posterior cortex
  - Adequate slot for keel





Surgical Technique

Post Operative Care

- **Eat & drink - 2hrs**
- **Mobilization**
  - **Walk from 2hrs (helps pain relief)**
- **Drain – removed following morning**
- **Flexion**
  - **Day 1 achieve flexion**
  - **Thereafter flex as tolerated - will improve**
  - **Physio for gait training**

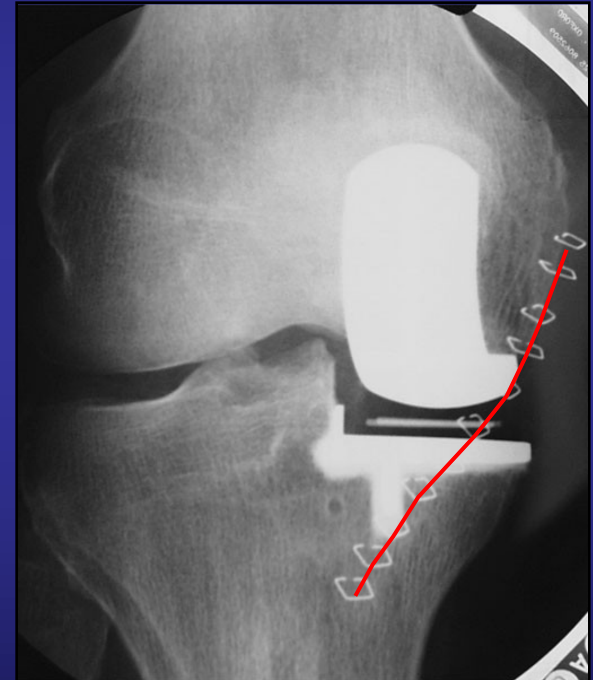
- **Analgesia**
  - **Naproxen 500 mg BID**
  - **Or Celebrex 400mg QD**
  - **Ranitidine 150 mg BID**
- **As necessary - breakthrough pain**
  - **Percocet 5/325 Q4h PRN**
- **Discharge Home POD #1 or 2**
  - **Moving towards same day surgery**

Post Op Course

- 6 weeks
  - Patients usually have
    - Some pain
    - Small effusion
    - Some restriction of movement
- 3 months
  - Walk without limp
  - Flexion near normal
- 6 months to 1 year
  - All remaining symptoms usually resolve

Oxford UKR - Summary

- Results
  - Rapid recovery
  - Normal kinematics
  - Excellent function
  - Good long term survival, even in young



Q & A

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Reconstructive Options in Breast Cancer

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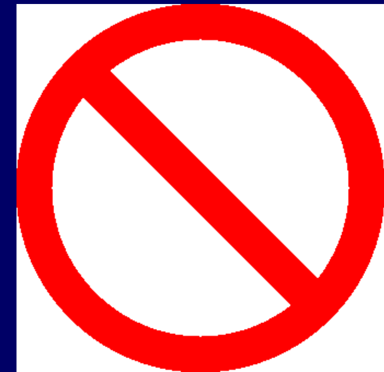
http://www.pinkribbon.com/

Disclosures

- No financial interests
- No industry support

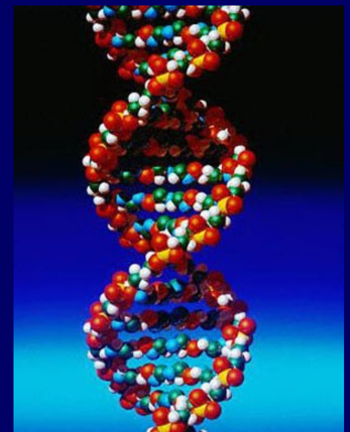


Objectives

- Discuss the impact/sequelae of breast cancer therapy
- Highlight reconstructive options
- Review cutting-edge techniques

Breast Cancer Overview

- **Lifetime risk: 1 out of 8 women**
  - +family hx with +BRCA gene: *much* higher risk
- **Up to 30% undergo mastectomy**
- **Loss of breast impacts a woman's well being**
  - society places importance on the female breast
- **Restoration of the removed breast can have beneficial psychological effects**



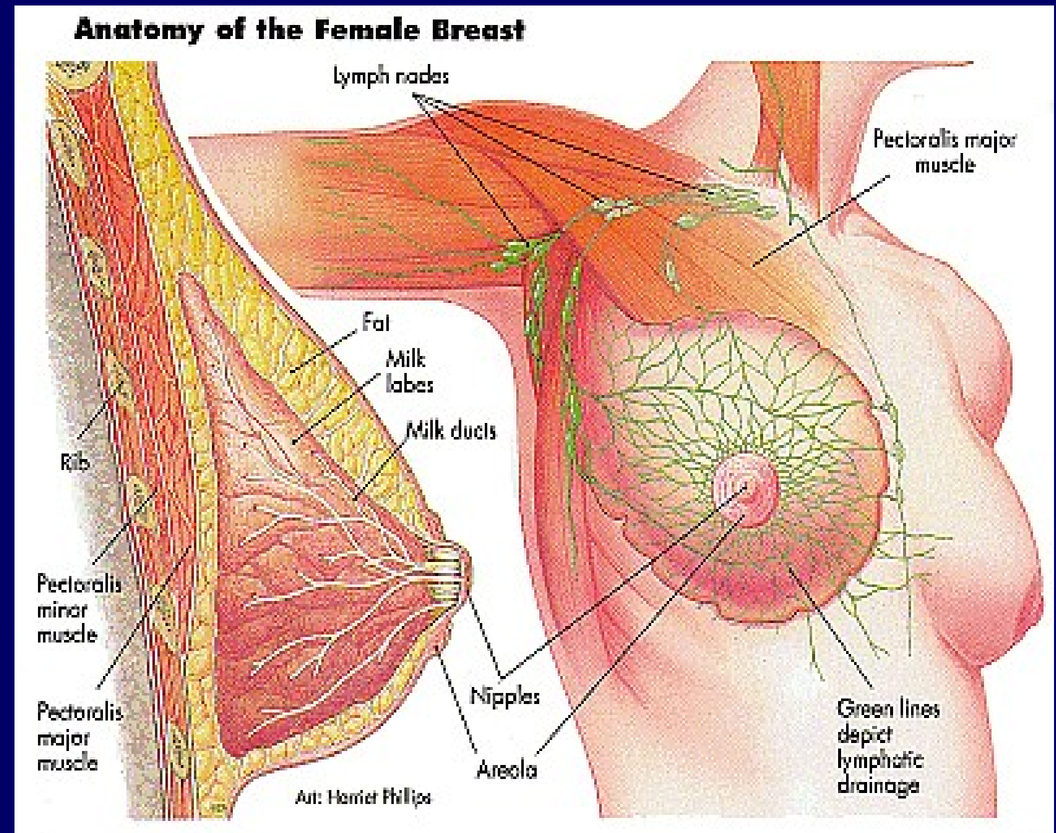
http://www.cristyli.com/?p=1837

Psychological Effects of Reconstruction

- **Diminished anxiety and depression**
  - 304 recon pts, 114 pts w/o recon (*p=0.01)*
  - Fernandez-Delgado et al. Satisfaction with and psychological impact of immediate and deferred breast reconstruction. Annals of Oncology 2008:1430-1434.
- **Improved self-esteem, body image, and sexuality**
  - Atisha et al. Prospective analysis of long-term psychosocial outcomes in breast reconstruction: two-year postoperative results from the Michigan Breast Reconstruction Outcomes Study. Ann Surg 2008:1019-1028.

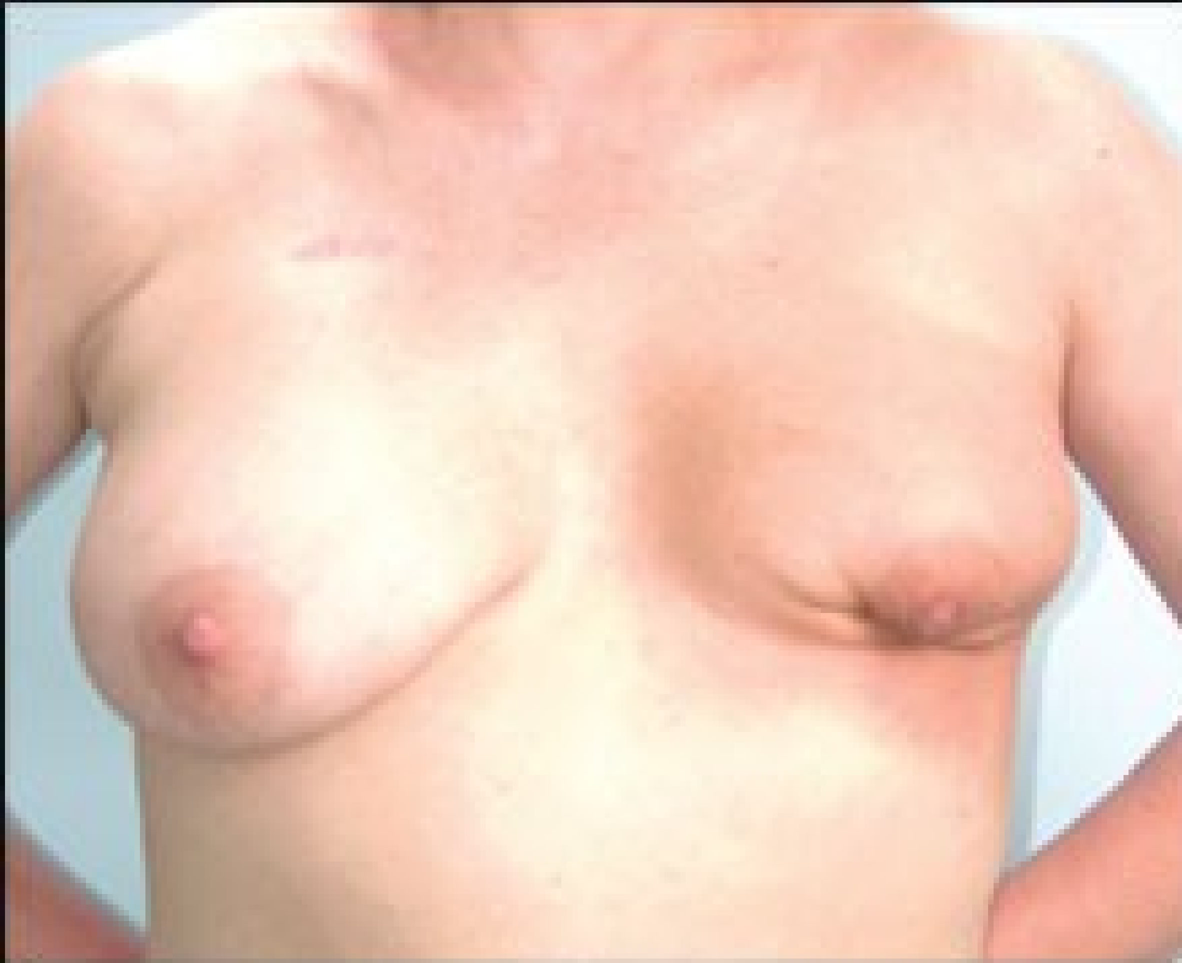
Treatment Modalities

- Lumpectomy
- MRM
- SLND/ALND
- XRT
- Chemo



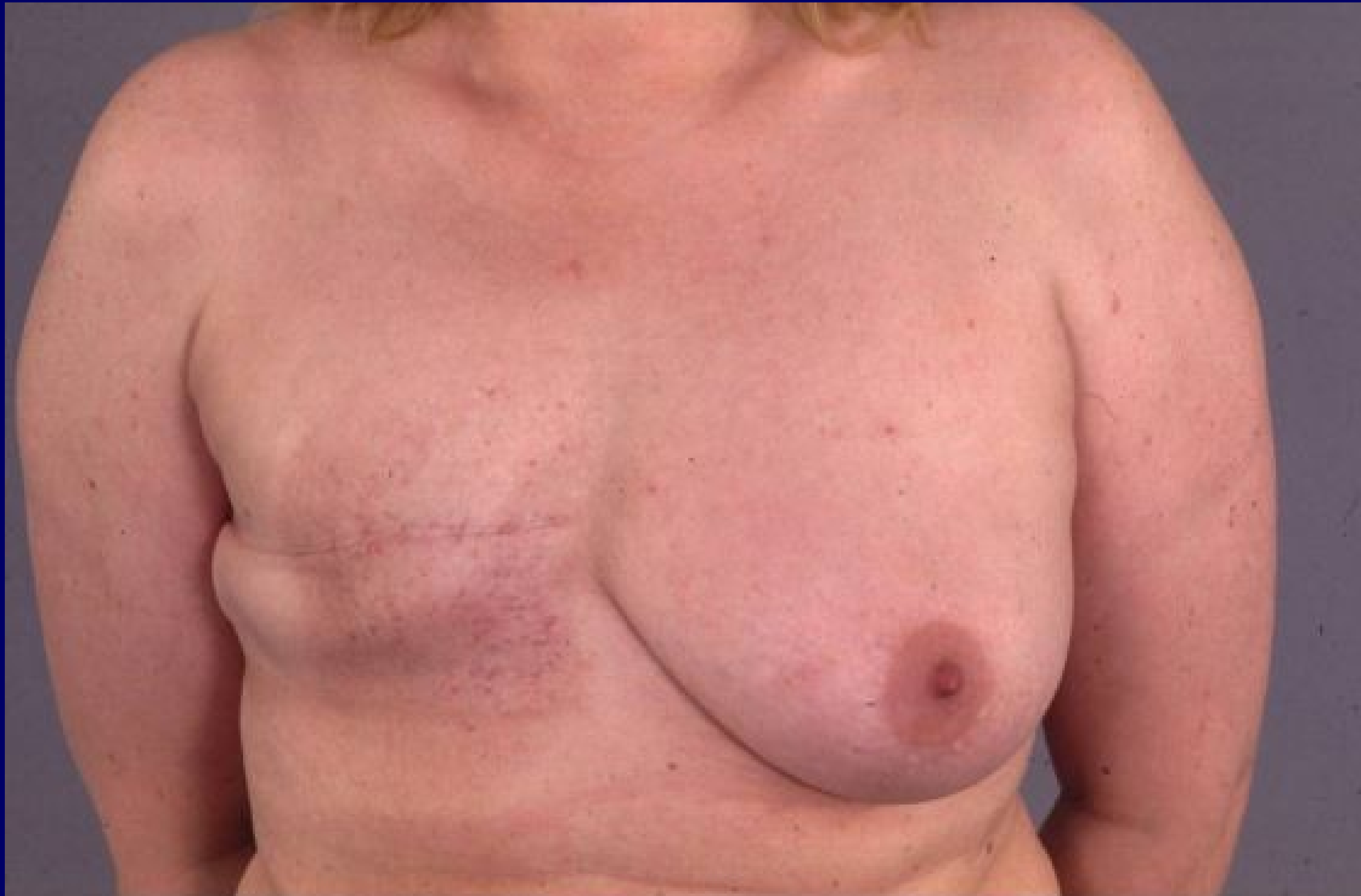
http://www.newsperuvian.com/anatomy/breast-anatomy/

Lumpectomy/XRT Sequelae



http://www.plasticsurgerypractice.com/issues/images/2009-05/2009-05_05-02.jpg

Mastectomy



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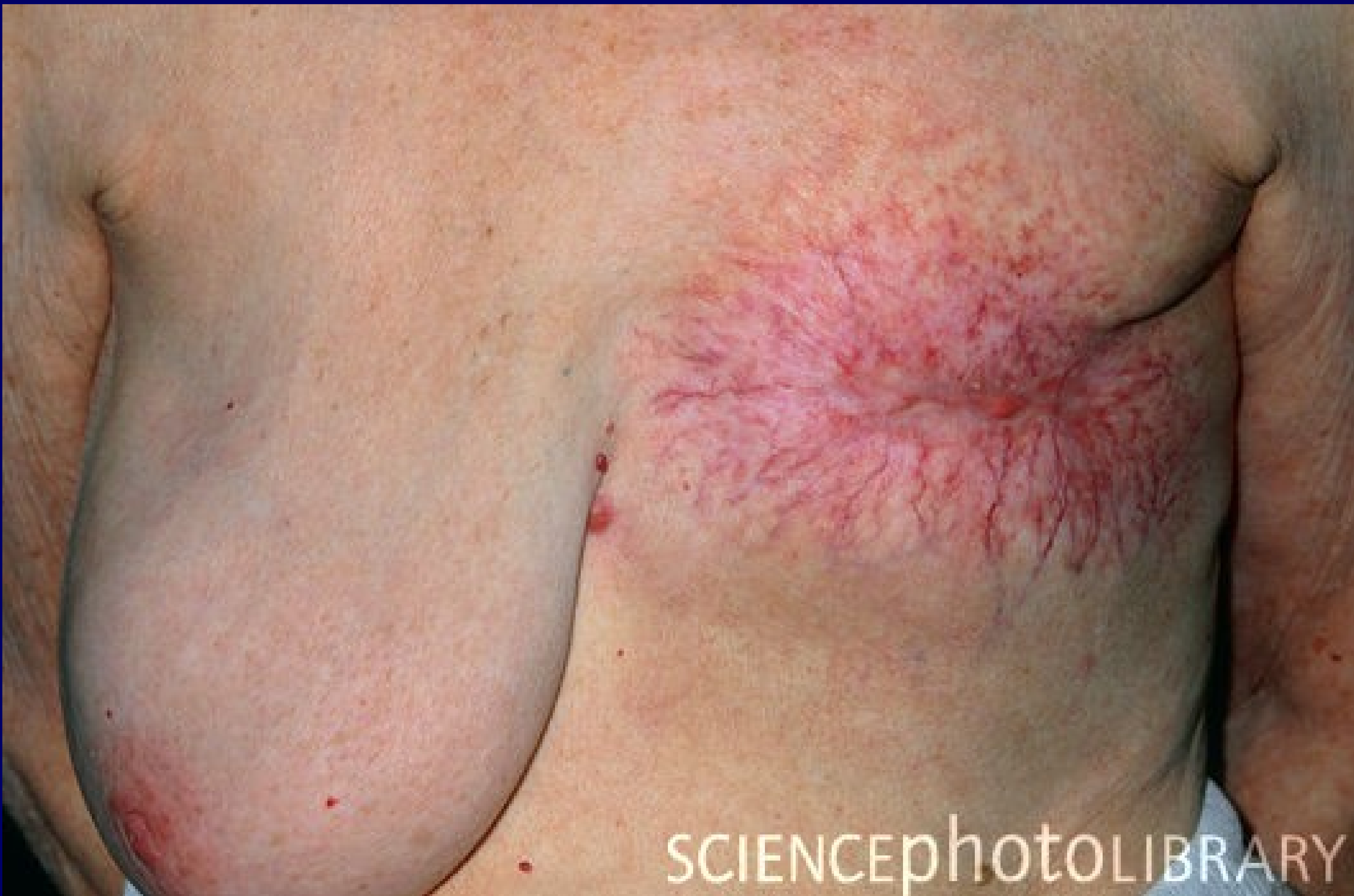
Mastectomy/XRT Sequelae



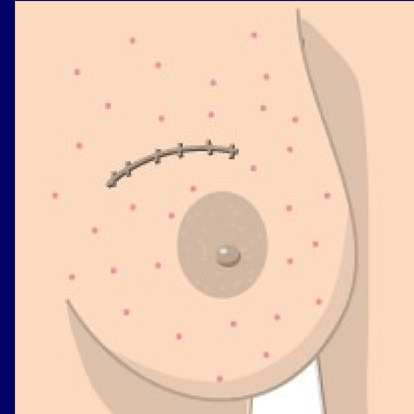
http://www.sciencephoto.com/media/252110/enlarge

Goals of Reconstruction

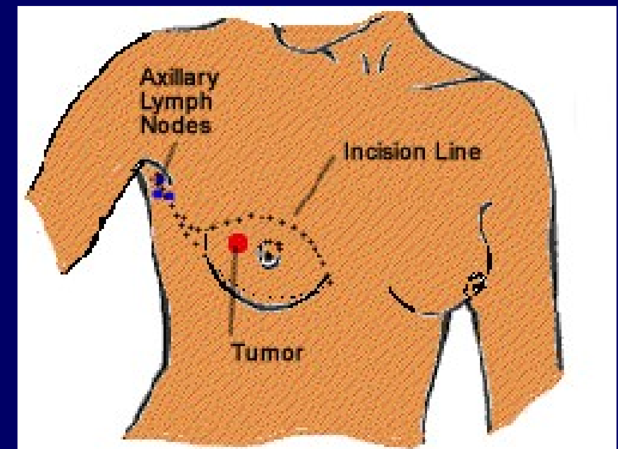
- Psychological well-being
  - minimize deformity, morbidity
  - achieve symmetry
  - help patients move on with their lives
- Improve local tissue quality/healing
  - chronic nonhealing wounds
    - especially after XRT

Reconstructive Settings

- **Cancer Reconstruction**
  - post-mastectomy
  - lumpectomy/
    partial mastectomy
  - oncoplastic surgery
  - **S/p XRT**

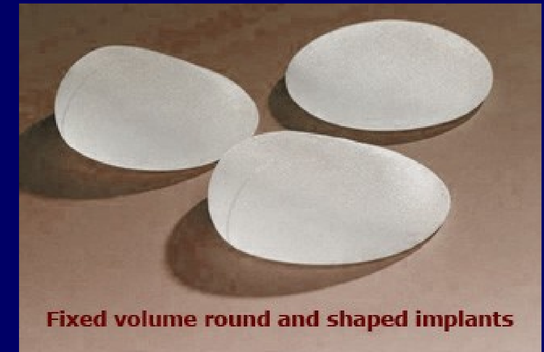


- **Congenital Amastia**
  - Poland's Syndrome



Reconstructive Options

- **Implant-based reconstruction**
  - single-staged
  - two-staged with tissue expansion
- **Autologous tissue transfer**
  - +/- implant augmentation
- **NAC reconstruction**
- **Contralateral symmetry surgery**
- **Oncoplastic techniques**


Fixed volume round and shaped implants

Reconstructive Thought Process
*choose options based on:

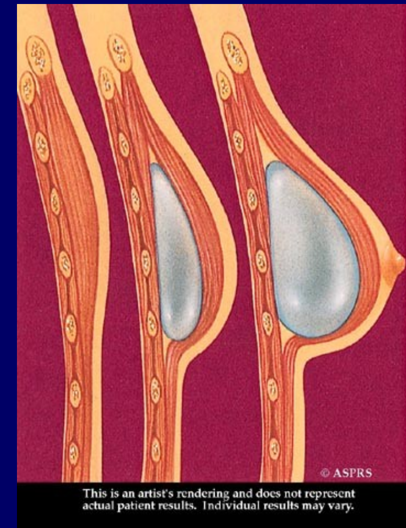
- Defect
  - size
  - location
- Anatomy
- Medical history, prior/future XRT
- Patient desires

Single Staged Implant-based Recon

- Adequate skin, inadequate volume
- **Indications:**
  - Skin-sparing mastectomy
  - Large volume lumpectomy
- **Complications:**
  - Implant infection
  - Rupture
  - Mastectomy skin flap necrosis
  - Capsular contracture

Multistaged: Tissue expansion

- Inadequate skin, inadequate volume
- Temporary implant expanded over several months
  - Skin envelope hypertrophy
  - Later exchanged for final permanent implant
- Indication:
  - Traditional mastectomy (with wide skin excision)



http://www.breastreconstruction.ca/pictures/implants/mstectomyscar.jpg

Autologous Tissue Transfer

- **Inadequate skin and volume**
- **Flap: composite tissue island with its own blood supply**
- **Ideal in radiated tissues where local blood supply is compromised**
  - Better wound healing, tissue quality
- **Indications:**
  - Tissue deficient radiated fields
  - Severe tissue deficiency preventing wound closure
  - Patient's desire to avoid synthetic implants

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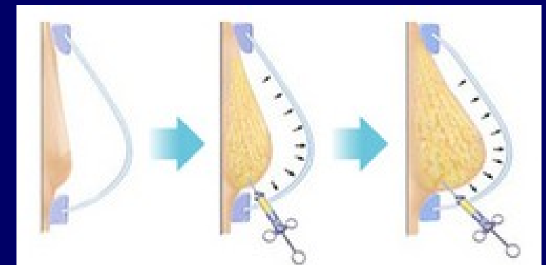
http://wsip-24-248-24-17.hr.hr.cox.net/source/images/image_popup/w7_tramflap.jpg

Autologous Fat Grafting

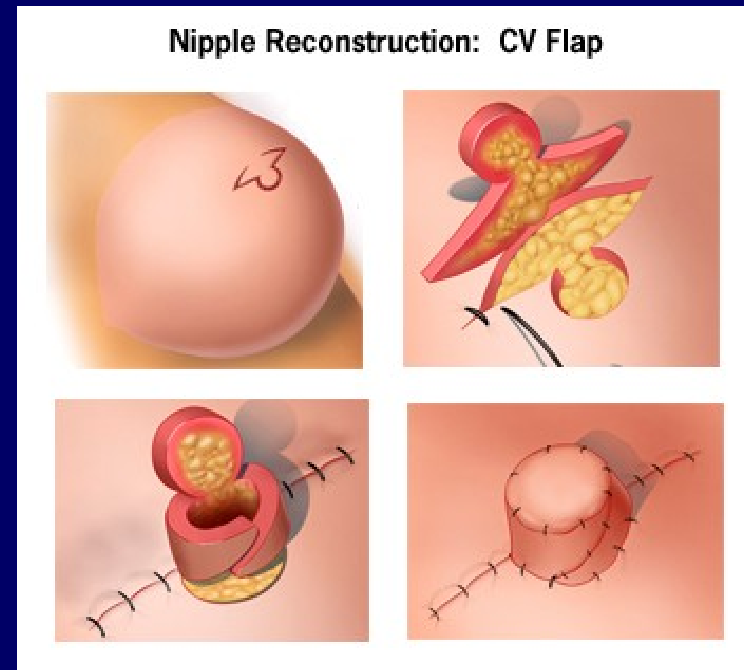
- **Volume deficiency**
- **Lipoaspirate transfer to areas of volume deficiency**
  - > 50% graft volume loss may necessitate multiple injections
  - Preadipocyte: fat stem cell



- **New research**
  - Rejuvenation of radiation-damaged tissues
  - Expression of paracrine tissue growth factors
- **Indications:**
  - Smaller volume deficiencies
  - Contour irregularities; Total breast recon?

Nipple-Areola Recon

- Office-based procedure
  - local flaps
  - full-thickness skin graft
  - tattooing



http://www.mdanderson.org/patient-and-cancer-information/cancer-information/cancer-topics/cancer-treatment/breast-reconstruction/nipple-cv-flap.jpg

Symmetry Surgery

- Manipulation of the healthy breast
  - Covered by the Women's Health and Cancer Rights Act (1998)
- Reduction
- Augmentation
- Mastopexy

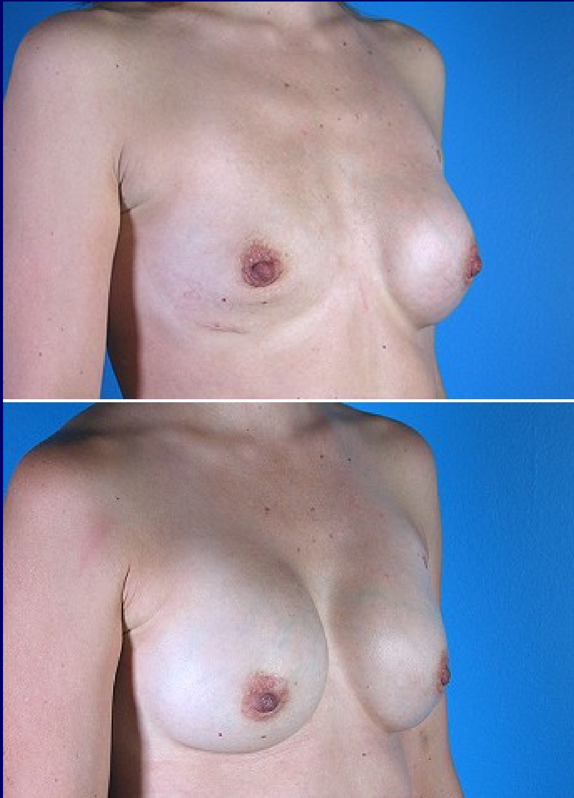
Oncoplastic Surgery

- **Breast conserving therapy: 20-30% deformity rate**
- **Combined Breast Onc / PRS approach to lumpectomy**
  - allows wider resection margins
  - local tissue rearrangement, fill in lumpectomy cavities
- **Institute Curie Study:**
  - 540 patients (compared to BCT literature)
  - slightly better survival and recurrence profiles (not powered)
  - *much better aesthetic outcomes*
- **Indications:**
  - moderate to large volume lumpectomies (>10% volume)

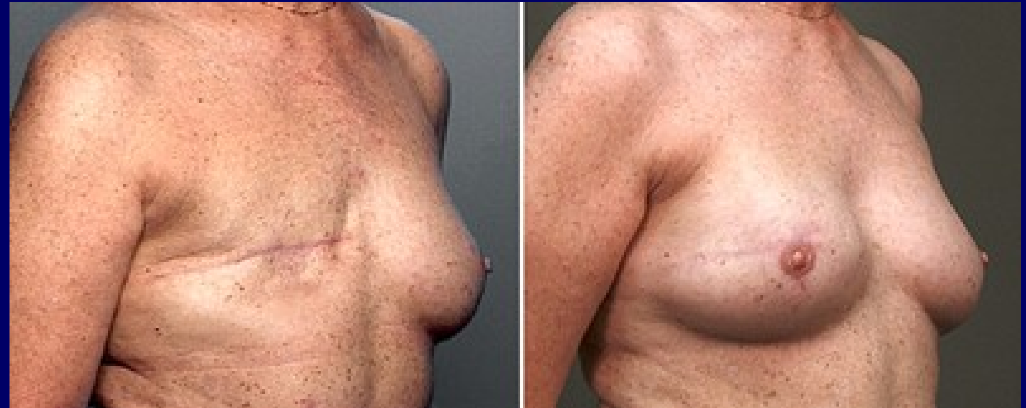
Clough K, Cuminet J, Fitoussi A, Nos C, Mosseri V. Cosmetic sequelae after conservative treatment for breast cancer: classification and results of surgical treatment. Ann Plast Surg 1998;41:471–481.

D'Aniello C, Grimaldi L, Barbato A, Bosi B, Carli A. Cosmetic results in 242 patients treated by conservative surgery for breast cancer. Scand J Plast Reconstr Hand Surg 1999;33:419–422.

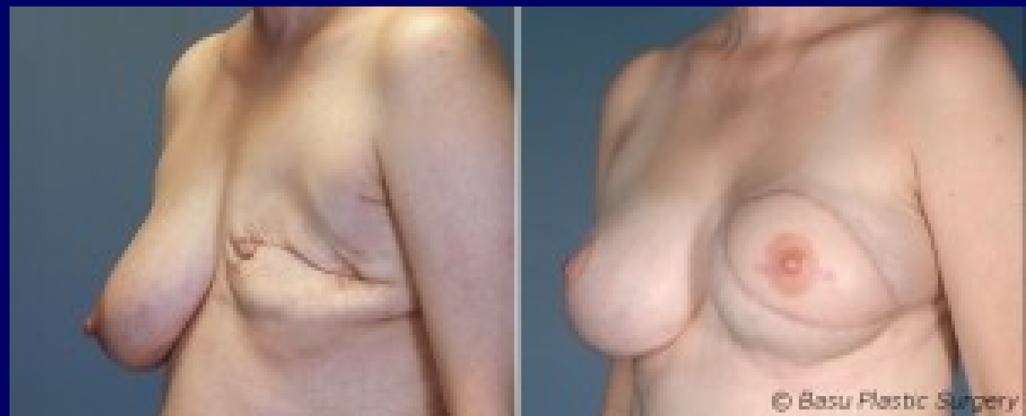
Reconstructive Examples



http://www.swancenteratlanta.com/wp-content/uploads/before-after/breast_reconstruction_01b.jpg

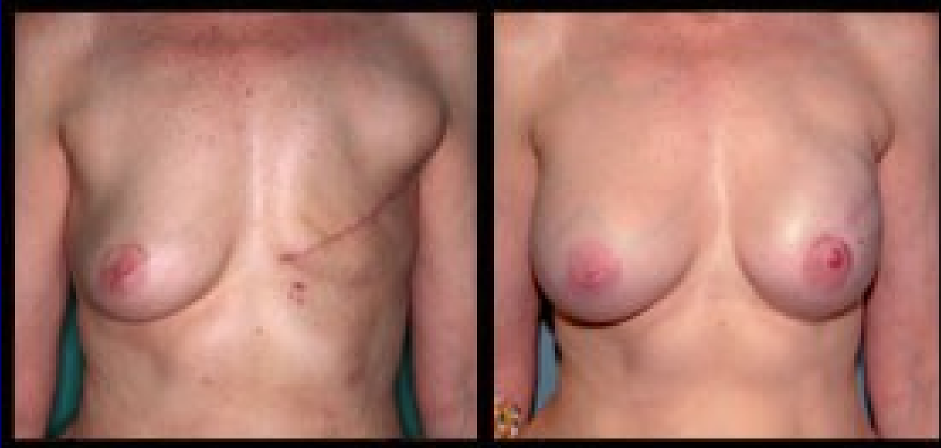


http://www.pschr.com/before-after/breast_reconstruction_01.jpg

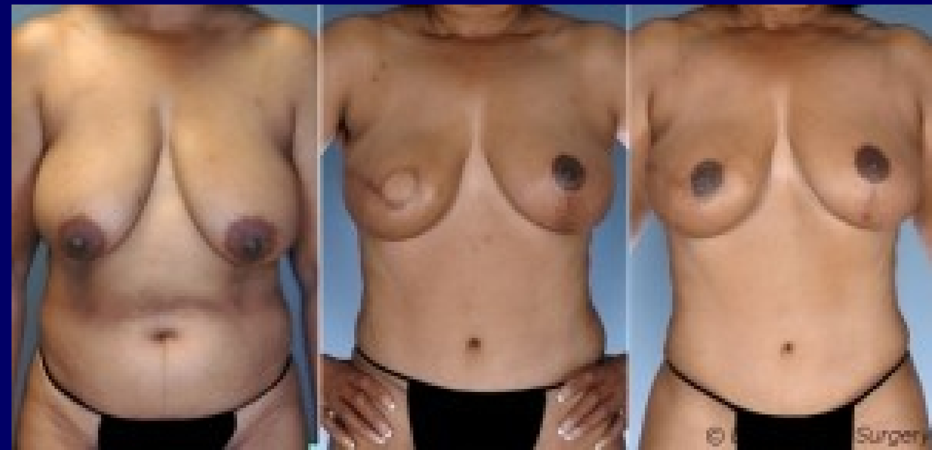


http://ww1.prweb.com/prfiles/2009/03/09/2218014/0_houston_breast_reconstruction_2.jpg

Reconstructive Examples



http://www.alwaysyouthful.com/images/breast_reconstruction_surgery.jpg



http://ww1.prweb.com/prfiles/2009/03/09/2218014/0_houston_breast_reconstruction_3.jpg

Mastectomy Recon

- SEER database review of 51,702 mastectomy patients
- Approximately 17% of mastectomy patients undergo reconstruction
- Multivariate analysis: improved survival?
  - mortality hazard ratio: 0.62, $p < 0.001$
  - confounding factors
  - no worse survivals in factor-matched groups
  - *implies that reconstruction is safe*

Agarwal S, Liu JH, Crisera CA, Buys S, Agarwal JP. Survival in breast cancer patients undergoing immediate breast reconstruction. Breast J 2010; 16(5):503-9.

Why So Few Reconstructions?

- Informed refusal
- Unable to medically tolerate surgery
- Women's Health and Cancer Rights Act, 1998
  - Group health plans, insurance companies, HMO's that cover mastectomy <u>must</u> also cover reconstruction
- Many women do not know or understand their options and rights regarding reconstruction

http://www.dol.gov/ebsa/publications/whcra.html

Take-Home Messages

- Reconstructive solutions exist for almost any post-resection deformity (if medically able to tolerate surgery)
- Modern techniques are improving patient outcomes with less invasive modalities
- Patients must understand their options, including reconstruction, in order to make a truly informed decision
  - Consider adding your local reconstructive Plastic Surgeon to the care team

Thank you

Additional Resources

- Mathes Plastic Surgery, Vol 6: Trunk and Lower Extremity.
- Grabb and Smith's Plastic Surgery.
- Coleman SR, Saboeiro AP. Fat grafting to the breast revisited: safety and efficacy. Plast Reconstr Surg 2007;119(3):775-85; discussion 786-7.
- Fitoussi A, Berry M, Fama F, et al. Oncoplastic breast surgery for cancer: analysis of 540 consecutive cases. Plas Recon Surg 2010;125:454-462.
- Klimberg V, Harms S, Korourian S. Assessing margin status. Surg Oncol 1999;8(2):77-84.
- Jacobson J, Danforth D, Cowan K, et al. Breast conservation versus mastectomy in stage I and II breast cancer. N Engl J Med 1995;332:907-911.

Q & A

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NUAL GENERAL MEETING
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ON
NOVEMBER 12TH, 2011

NEW YORK HILTON AND TOWERS
1335 Avenue of The Americas New York, NY

“Metabolic and cardiac consequences of HIV and HIV treatment"

Vel Sivapalan, MD FACP

Traditional risk factors such as age, smoking, DM and hypertension, increase the risk of CVD in individuals with or without HIV infection.

There is evidence of an increased rate of cardiovascular events in HIV-infected patients compared with HIV-negative patients and there is also evidence to suggest that HIV virus may confer its own increase in CVD risk.

J Clin Endocrinol Metab. 2007.

CVD risk in HIV infection is likely a product of host, virus and antiretroviral therapy.

Host Factors

Patients with HIV infection are at increased risk of developing metabolic syndrome.

Metabolic syndrome involves a constellation of symptoms, often related to obesity, that increase the risk for diabetes and heart disease.

A diagnosis of metabolic syndrome is made when a patient has at least three of the following symptoms:

1. **Abdominal obesity**
2. **High triglyceride levels, low HDL cholesterol,**
3. **Hyperglycemia/insulin resistance**
4. **Hypertension.**

Composition of the components making up the metabolic syndrome differs in HIV-infected individuals compared with the general population.

Hyper triglyceridemia and low HDL cholesterol are the predominant features in HIV associated metabolic syndrome.

HIV metabolic syndrome has several features in common with the lipodystrophy syndrome observed in HIV-infected individuals, such as insulin resistance, dyslipidemia and fat redistribution.

HIV-Infected men appear to be at increased risk for Diabetes.

Brown TT, et al. Lipodystrophy Workshop 2003. Abstract 43.

Patients living longer with HIV increases the traditional risk factors such as age, HTN, DM

Smoking incidence is increased in HIV-infected patients vs general population.

Savès M, et al. Clin Infect Dis. 2003

HIV Viral Factors

HIV infection itself has profound effects on lipids

Macrophages, which play a pivotal role in atherosclerosis, are also hosts for HIV.

Endothelial dysfunction - HIV infection may increase endothelial dysfunction. Torriani F, et al. EACS 2005. Abstract PS5-3.

HIV has been reported to infect smooth muscle cells in vitro and in vivo and increase secretion of a monocyte chemo attractant which facilitates development of foam cells and initiate plaque formation in vessel walls

Mujawar et al, PLoS Biol, 2006
Eugenin et al, Am J Pathol,2008
Bukrinsky et al, CROI, 2009

Anti retro viral therapy

There is evidence of an association between prolonged ART use and an increase in the absolute risk of CVD related to elevation in lipids, although study results are presently inconsistent. Friss-Moller N et al. N. Eng. J Med. 2003

Chai H, et al. J Acquir Immune Defic Syndr 2005

Some studies have linked this to Protease Inhibitor therapy.

Dube MP, et al. Clin Infect Dis. 2003

Some studies have not shown increased incidence as clearly.

Others have shown link to HIV disease and not to treatment.

Anti retro viral therapy

- In all studies, most incidents of cardiovascular disease occurred in persons with known traditional risk factors.

Treatment of HIV infection reverses (at least partially) HIV effect but introduces the complexity of drug effects on lipids.

Overall impact of ART on lipids in an individual patient also reflects host considerations including lifestyle and diet, genetic predisposition and comorbidities (eg: insulin resistance and diabetes)

Management

CVD risk should be considered in the overall care of patients with HIV infection.

Traditional factors are the biggest contributor to CVD in HIV population

Management

- Assess cardiovascular risk
- Address lifestyle issues
- Diet
- Exercise
- Smoking
- Treat hypertension
- Treat dyslipidemia
- Treat diabetes mellitus

Management

- In HIV-positive patients, as in the general population, lifestyle modification should be the first approach: smoking cessation, diet modification, increase exercise
- Use of lipid-lowering therapy or ART switching should be individualized
- Switching ART in patients with undetectable viral load may result in improvements in lipid parameters
- Impact of smoking cessation is greater than the impact of any other intervention

THANK - YOU

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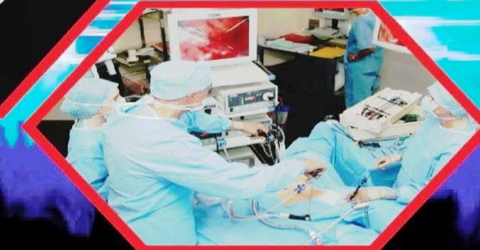

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