

Risk Factors for Breast Cancer

BRCA-I + II

- ↑ risk of breast ca.
- ↑ risk of ovariana.
- ↑ risk of pancreatic prostate ca.
- ↑ risk of colon ca.
- test women w/ ⊕ FH or personal history @ young age
- pre-test counseling
- ↑ in Ashkenazi Jews

1. Age > 50
2. Family history (BRCA I & BRCA II mutation)
3. Early menarche or late menopause
4. Nulliparity
5. Late age of first pregnancy (> 30 years)
6. Radiation exposure before age 30
7. Benign breast disease with ductal or lobular cell proliferation or atypical hyperplasia
8. Prior H/O of breast cancer
9. Carcinoma in situ
10. Estrogen replacement therapy
11. ↑ Alcohol & fat intake, obesity

lifetime 65% risk

→ most important risk factor (esp. < age 40)

p53 Mutation

- ↑ risk of multiple cancers:
 - breast
 - bone
 - brain
 - lung
 - larynx
 - sarcoma
 - leukemia
- congenital or acquired

Types of Breast Cancer

Invasive Ductal	80%
Infiltrating Lobular	10%
Tubular, Papillary, Mucinous	10%

Ex.) Rash in upper outer quadrant of the breast w/ thickened skin + brownish induration + orange skin
 nipple involvement
 palpable mass
 mass on mammogram

Di: Inflammatory Breast Ca.

- 1/3 have distant mets @ Dx

Tx: Surgery
 Chemo
 Rad Tx

Poor Prognostic Factors in Breast Cancer

1. Axillary nodal involvement
2. Size > 2 Cms
3. Negative estrogen & progesterone receptors
4. Poor nuclear grade
5. Tumors with high proportion of cells in S phase (S-phase assessment by flow cytometry)
6. Involvement of capillaries or lymphatic channels by tumor
7. Tumors that overexpress erbB2 (Her-2/neu) or have a mutated P53 gene

CA-15-3

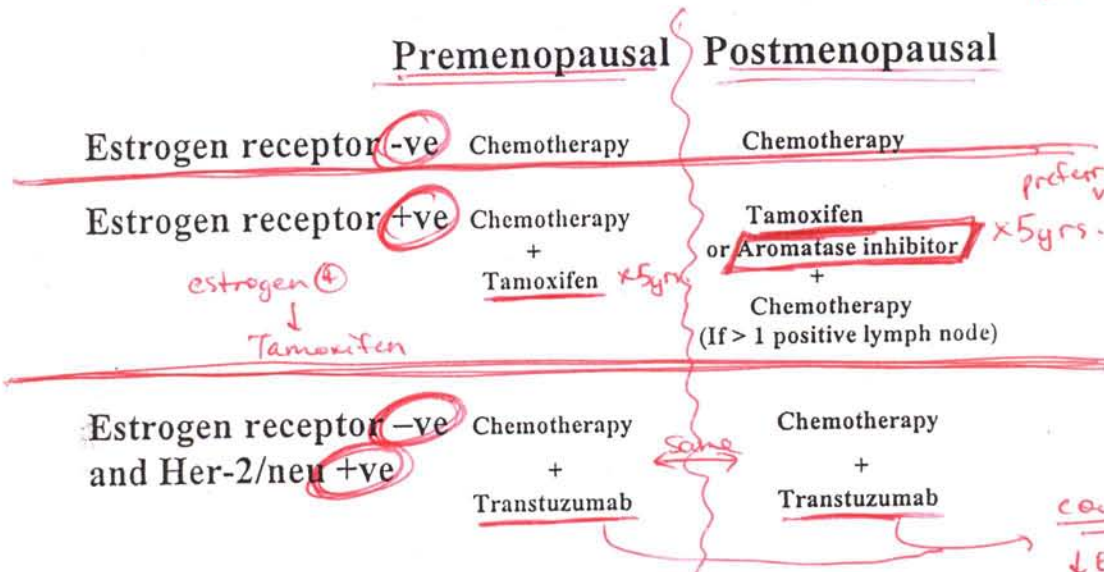
- breast cancer tumor marker
 - also ↑ in ovariana.

Treatment of Primary Breast Cancer

- (A) Modified radical mastectomy (mastectomy + axillary nodal dissection)
 - ⊕ re-excision until margins ⊖
 - Radiation if tumor > 5 cm or +ve margin or +ve nodes (≥ 4 nodes)
- (B) Lumpectomy + axillary nodal dissection + radiation

Sentinel node biopsy
 - if ⊖ then can avoid axillary node dissection

Adjuvant Therapy of Breast Cancer



* Adjuvant Chemo given for 4-6 mos

preferred vs. Tamoxifen in post-menopausal women x 5yrs.

Aromatase inhibitors: Letrozole, anastrozole, exemestane

side effect: only for post-menopausal women
 - osteoporosis
 - hot flashes
 - sexual dysfx
 - ↑ thrombosis risk

contraindicated /:
 ↓ EF
 MI/Angina
 uncontrolled HTN
 Pys rhythmicias
 - follow w/ echo's
 - if contraindicated then give Paclitaxel

Indications of Adjuvant Systemic Therapy after Surgery

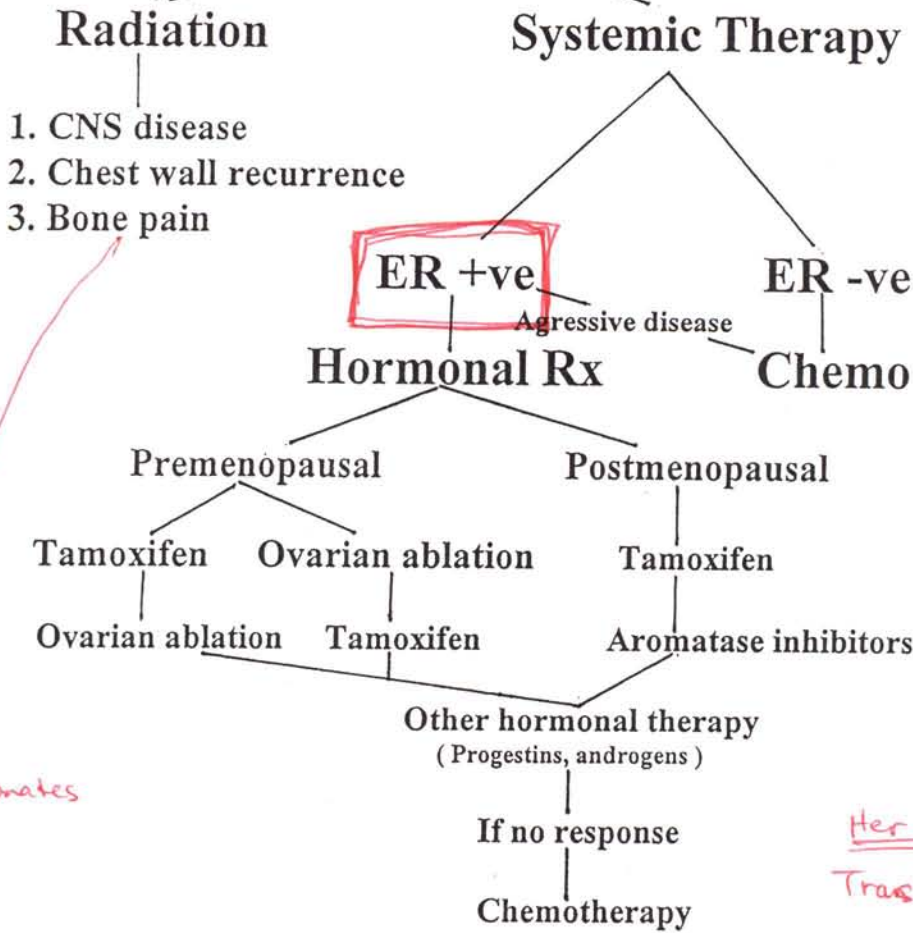
1. Invasive breast cancer with positive axillary nodes
 (All tumors regardless of size or histological cell type)
2. Tumor size > 1 cm

Adjuvant therapy is not indicated:

1. For tumors < 1 Cm in size with negative axillary nodes
2. Ductal or lobular carcinoma in situ (Non invasive breast cancer)

Treatment of Metastatic Breast Cancer

Ex) 55yo woman w/ a 3cm axillary LN biopsy showing adenocarcinoma
 Estrogen/Prog Receptors+
 CT chest+
 MRI Breast+
 ↓
 Tx as breast ca.
 -LN Bx
 -Rad Tx
 -chemo



Bisphosphonates

Tamoxifen

→ Best drug to ↓ risk of breast ca. (↓ by 50%)
 -indicated w/ risk of 1.66% or higher
 -standard risk = 1.19%

- Reduces risk of recurrence and death from breast cancer after surgery
- Reduces risk of cancer in the contralateral breast
- Effective for treatment of metastatic breast cancer
- Effective only for tumors with estrogen or progesterone receptors
- Effective for primary prevention of breast cancer in high risk women
- It has both estrogenic and antiestrogenic effects

Estrogenic

- 1. ↑ bone density
- 2. ↓ Cholesterol ↓ LDL
- 3. ↑ risk of endometrial cancer & hyperplasia
- 4. ↑ risk of thromboembolism

↑ liver tumors

Side Effect:

- Hypercalcemia → continue drug but tx ↑ Calcium
- Fluid Retention
- Cataracts

Antiestrogenic

- 1. Responsible for antitumor effect
- 2. Menopausal symptoms

→ irregular menstrual bleeding → biopsy

Breast Carcinoma in Situ

(non-invasive)

Lobular
(LCIS)

No palpable tumor
Multiple foci in both breasts
↑ Risk of cancer in both breasts
Treatment : Close observation

Ductal
(DCIS)

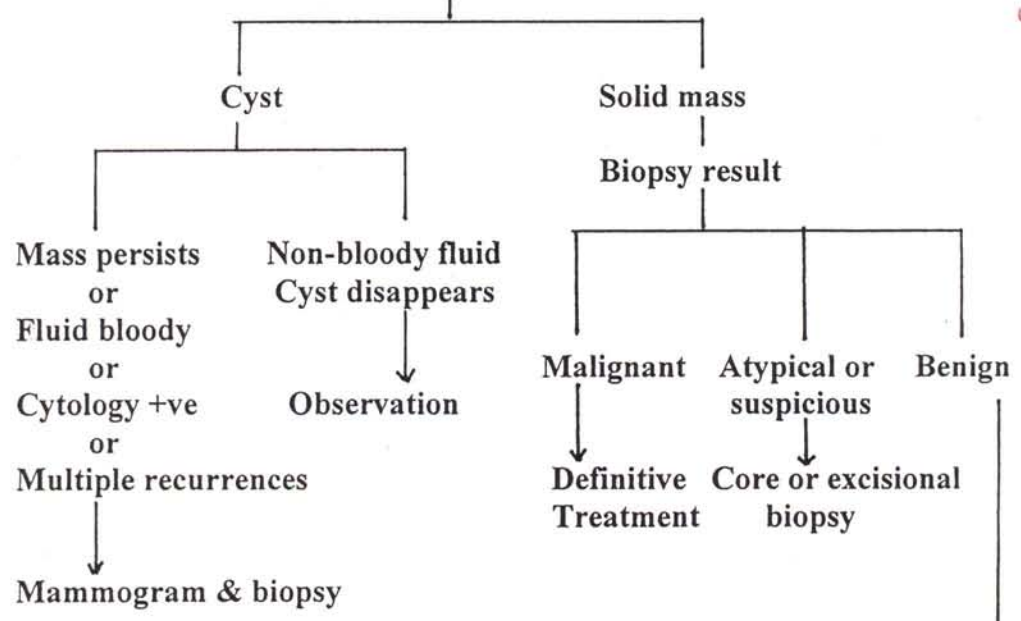
Palpable tumor +/-
Confined to one breast
↑ Risk in ipsilateral breast
Wide excision + radiation
or simple mastectomy

*axillary LN dissection
adjunct tx.*

Palpable Breast Mass

- persists thruout menstrual cycle in pre-menopausal women or any mass in post-menopausal woman

Fine needle aspiration



Paget's Dis of Breast

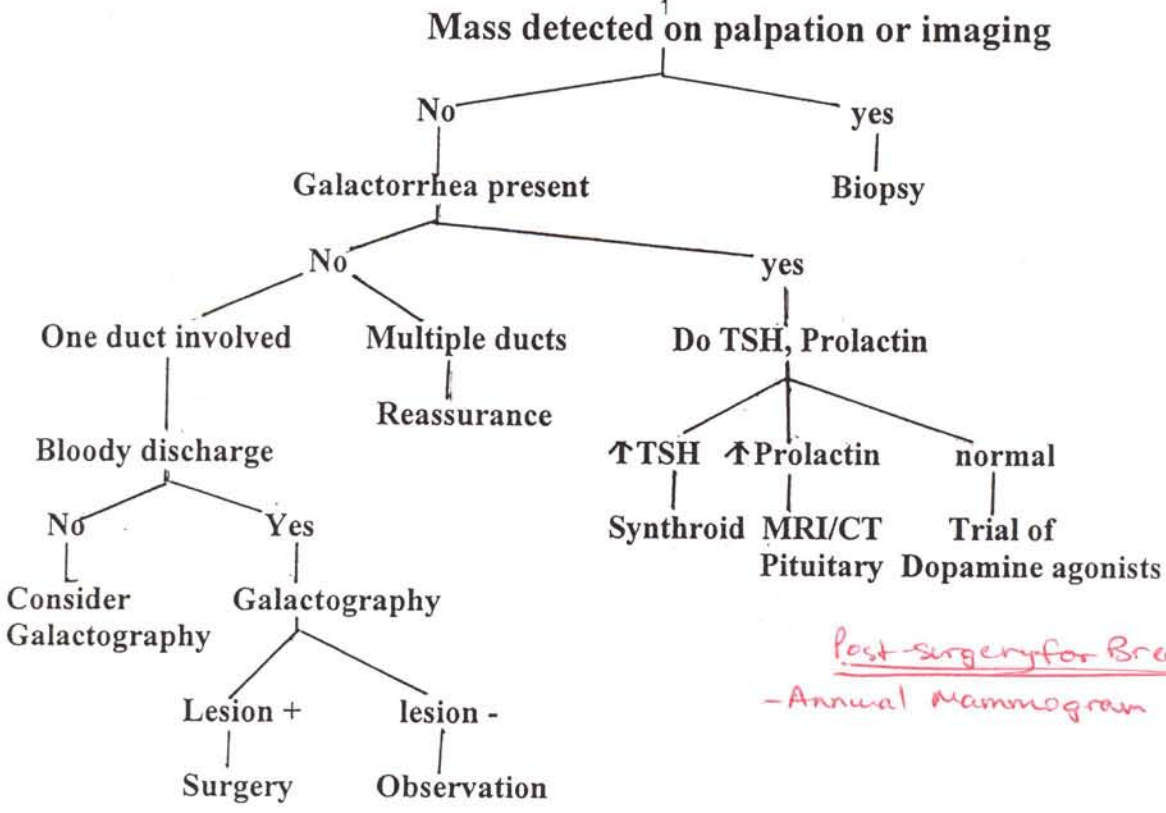
- crusting, scaly lesions around nipple
- eczematous
- mass deep in breast in most

Dx: Mammogram + Bx

Tx: Localized Dis w/out mass
↳ excision

Mass → tx as breast ca.

Breast Discharge



*Post-surgery for Breast Ca.
- Annual Mammogram*

Risk Factors for Colon Cancer

1. Adenomatous polyp (Tubular, Villous, Mixed)
2. Inflammatory bowel disease
3. Streptococcus bovis bacteremia
4. Uretero-sigmoidostomy
5. Hereditary polyposis syndromes

*Hyperplastic Polyps
↓
ϕ malignant risk*

a) Adenomatous polyposis

1. Classical familial adenomatous polyposis
2. Gardner syndrome
3. Attenuated familial adenomatous polyposis
4. Turcot's syndrome

→ sulfindac → ↓'s incidence of polyps

b) Hamartomatous polyposis

1. Peutz-Jeghers syndrome
2. Juvenile polyposis

6. Hereditary nonpolyposis syndrome

- AD inheritance
- ① Lynch1 - proximal colon ca.
- ② Lynch2 - colon ca. + extracolonic tumors

*-AD inheritance
-small/large bowel polyps
-extracolonic tumors, top (osteomas of mandible, fibromas of neck)
Total colectomy plus
Ileoanal anastomosis
-50% incidence offspring
-screen family members w/ sigmoidoscopy @ age 12-35
-if polyp @ then colonoscopy
-EGD 1-2 yrs. after dx.
arcocolorectal ca. involving 1-2 relatives screen family colon ca. @ age 50
relatives w/ colon ca. screen @ 25*

*→ AD inheritance
-large bowel (thousands of polyps)
-↑'d risk of duodenal, ampullary + gastric adenomas*

*-del (5)
-↑'d risk of ca. (100% by age 40)*

*-char by fewer polyps - flr + proximal + splenic flex
-age of onset - later
-↑'d risk of gastric, duod + ampullary adenomas
-↑'d risk of gastric ca.
Remove polyps + EGD @ 5*

Slightly ↑'d risk of malignancy

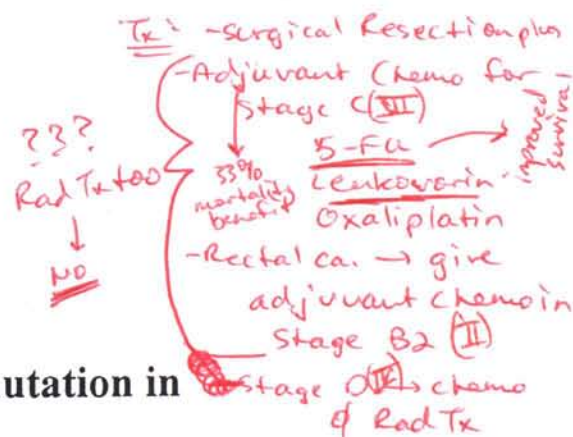
-screen offspring w/ colonoscopy begins @ age 15

Staging of Colorectal Cancer

- I Stage A: Confined to mucosa & submucosa
- II Stage B1: Extends to muscularis
- Stage B2: Extends to serosa (or perirectal fat)
- III Stage C: Regional lymph nodes involvement
- IV Stage D: Distant metastasis

Prognostic Factors for colon cancer

1. Degree of invasion at surgery
2. Preoperative CEA > 5 ng/ml
3. Poorly differentiated histology
4. Bowel perforation
5. Venous invasion
6. Adherence to adjacent organs
7. Deletion of chromosome 5, 17, 18 and mutation in ras-proto oncogene



Screening for Colorectal Cancer

General population Begin at age 50, FOBT annually and sigmoidoscopy every 3-5 years or colonoscopy every 10 years (better)

First-degree relative with colorectal cancer Begin above screening at age 40 years

Two first-degree relatives with colorectal cancer or one first-degree relative with cancer diagnosed at 50 years of age or younger Begin screening at age 40 years or 10 years younger than the youngest affected relative
Colonoscopy every 3-5 years

Hereditary nonpolyposis colorectal cancer Begin screening at age 25 years or 10 years younger than the youngest affected relative
colonoscopy every 2 years and yearly after the age 40

Familial adenomatous Polyposis (classical) Sigmoidoscopy every 1-2 years starting at age 12 years and continue upto age 35 years

FAP (attenuated) Annual colonoscopy starting at age 15-25 yrs

IBD

-screen 8-10 yrs after Dx and yearly after -if dysplastic

Δ's seen then colectomy

Ex) 27yo patient w/ Fit of colon ca. in Dad @ age 47 + sister @ age 37

↓

colonoscopy now then Q5-5yrs.

Ex) 1.5cm adenomatous polyp removed @ colonoscopy

repeat in 3 yrs.

<2 polyps <1cm → @ 5 yrs.
7-2 polyps or 1 polyp >1cm → @ 3 yrs.

lots of polyps

not as many polyps

Carcinoma of Anal Canal

RISK Factors

1. HPV infection
2. Receptive anal intercourse
3. History of sexually transmitted diseases
4. Greater than 10 sexual partners
5. History of cervical, vulvar, or vaginal cancer
6. Immunosuppression
7. HIV infection
8. Smoking

Anal sphincter
preservation
- preop Rad tx w/
chemo

Tx:
Anal margins → skin
ca.
- local excision
mucosa → squamous
cell ca.
- EBRT
chemo w/ 5-FU
+ mitomycin
~~EBRT~~

Chemo Prevention of Colon Cancer

1. Aspirin
2. Folate
3. Calcium
4. Postmenopausal hormone replacement therapy
5. Modification of risk factors
 - a) ↓ Intake of red meat
 - b) exercise
 - c) smoking cessation
 - d) weight control

Treatment of Metastatic Colon Cancer

1. 5-FU + Leucovorin
2. 5-FU + Leucovorin + Irinotecan or Oxaliplatin
3. Regimen 2 + Bevacizumab + Cetuximab
4. Irinotecan with Cetuximab

Irinotecan: Topoisomerase 1 inhibitor

Bevacizumab: Monoclonal antibody against vascular endothelial growth factor

Cetuximab: Monoclonal antibody against epidermal growth factor receptor

Diagnosis of Cancer of the Prostate

(most common cancer in men)

Finasteride

- 5- α -reductase inhibitor
- ↓ risk of prostate cancer by 25% over 7 yrs.
- ↑ d' Gleason scores though
- Annually b/w 50-75 y.o.

1. Digital rectal examination

2. PSA (nonspecific protein prostatitis)

Proscar ↓ PSA

>10

4-10

50% risk of ca

25% risk of ca

free PSA

need to multiply by 2

↑ risk if free-PSA < 25% of total

If ↑ d' then tumor has already extended beyond prostate

3. Acid phosphatase

4. Transrectal sonography (TRUS)

5. TRUS biopsy (transrectal prostate biopsy under sonography)

Approach to Diagnosis of Prostate Cancer

Poor Prognostic Factors

- ↑ Gleason Score (8-10) → ↑ risk of mets
- PSA velocity (↑ PSA during year before Dx)
- >2 → ↑ risk
- PSA doubling Time < 3 months after tx → worse

1. Abnormal DRA, any PSA level
2. Normal DRA, PSA > 7 ng/ml
3. Normal DRA, PSA 4.1-7 ng/ml
4. Normal DRA, PSA < 4.0 ng/ml
5. PSA rise > .75 ng/ml/year based on 3 measurement over 12-24 months

TRUS biopsy
 TRUS biopsy
 TRUS biopsy if TRUS abnormal or TRUS biopsy or biopsy if free PSA < 25%
 Follow annually
 Trus biopsy

Ex.) PSA in 3
 DRE → palpable nodule
 ↓
 Bx
 PSA < 10
 ↳ metastatic prostateca. unlikely

Most likely to ↑ suspicion of prostate ca.
 ↓
 ↑ PSA

Staging of Prostate Cancer

Stage A: Tumor not detected on rectal examination

Found in a surgical specimen after surgery < 10% of chips removed from one lobe +ve

A1:

A2:

More diffuse involvement

Stage B: Palpable tumor confined to prostate

B1: Single nodule involving one lobe

B2: Involves the gland more diffusely

Stage C: Palpable tumor extends beyond the prostate

Stage D: Metastatic disease present

D1: Involvement of pelvic nodes only

D2: Widespread metastatic disease

Tx
 Prostatectomy or Rad Tx (then Hormonal Tx - only tx after if Rad Tx)
 Hormonal Tx

Treatment of Metastatic Prostate Cancer

- may initially ↑ LH/FSH / Testosterone levels but then will suppress → combine w/ antiandrogens to eliminate this

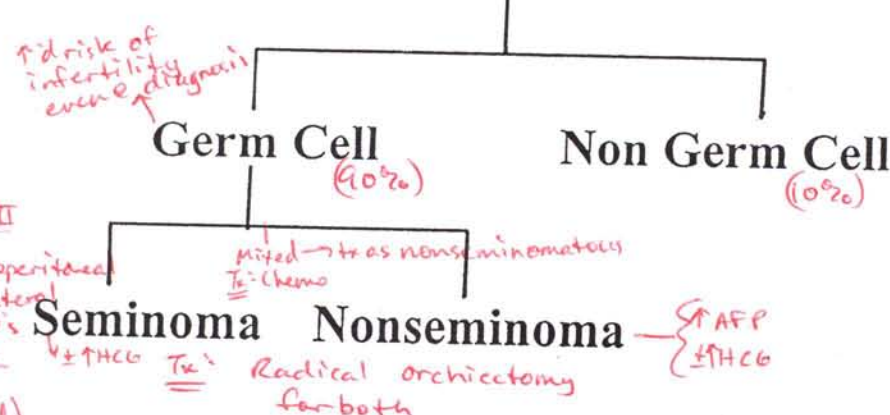
LHRH Agonists: Leuprolide, Goserelin, Triptorelin
Antiandrogens: Flutamide, Bicalutamide, Nilutamide
GnRH Antagonist: Abarelix

Castration → ↓ benefit over hormone tx
 Refractory to hormonal ablation → Tx w/ Docetaxel (improved mortality) + Prednisone

Zoledronate (Disphosphonate)
 ↓ skeletal complaints w/ prostate ca.
 ↓ effect on mortality
 ↓ suppress testosterone levels
 ↓ estradiol levels
 ↓ osteoporotic risk
 Leuprolide ⊕ Flutamide
superior together

BPH:
 - selective α-blockers (Flomax)
 + Finasteride is superior to Flomax alone

Testicular Tumors



Seminoma
 Stage I - Early II
 Rad Tx to retroperitoneal LN's + ipsilateral inguinal LN's
 Advanced II - III
 chemo (cisplatin-based)

Risk Factors
 ① Cryptorchidism
 ② Orchiopexy before age 30
 ③ Klinefelter's

Evaluation of a Testicular Nodule

Non Seminoma
 Stage I - Early II
 RTP LN dissection
 Advanced II - III
 chemo then resection of residual dis.

complications of chemo
 - azoospermia (semen cryopreservation prior to tx)
 - ↑ risk of other tumors (leukemia)

1. Sonogram
2. Alpha fetoprotein ↑ ↓ → nonseminoma
3. HCG (can be ↑ ↓ in both seminoma or nonseminoma)
4. CT scan of abdomen and pelvis
5. Biopsy by inguinal route (⊕ trans scrotally)

Staging of Testicular Cancer

Stage I : Limited to testis, epididymis or spermatic cord
Stage II : Involvement of retroperitoneal nodes
 Early : Nodes < 5 cm
 Advanced : Nodes > 5 cm
Stage III : Distant mets or visceral involvement

w/ Brain Mets
 Rad Brain + chemo

Tx: whole brain RadTx w/ combination chemo Bleomycin/Etoposide/cisplatin

Ex.) Man w/ a testicular mass
 ↑ HCG + AFP
 CT: Large RTP LN's > 5cm
 ↓
 orchiectomy then chemo then post-chemo resection of residual masses

Ex.) 25 y.o. man w/ a mediastinal mass + cervical LAD
 Bx → poorly-differentiated carcinoma

Next Best Test →
 VAFP/HCG
 If ↑ ↓ then ✓ scrotal US

Risk Factors for Melanoma

1. Fair complexion
2. Sun exposure (sunburns @ young age)
3. Family history
4. Multiple typical or atypical moles
5. Atypical mole and melanoma syndrome
6. Congenital nevus >10 cm

- AD
 - multiple dysplastic nevi
 - FH in ≥ 1 1st-degree relatives
 - mostly self exam w/ serial pictures

Best way to avoid skin cancer (squamous + melanoma)
 ↓
 Sun avoidance
Sunscreen
 ↓ risk of squamous cell ca. but effect on melanoma
Selenium → ↑ risk of non-melanomatous cancer

Types of Melanoma

- Superficial spreading:** Initial radial growth before invasion
- Lentigo:** On sun exposed areas, very long radial growth phase before invasion
- Acral:** Palms & soles, most common forms in blacks
- Nodular:** Invasive growth from onset, poor prognosis

Staging of Melanoma

<p><u>Tx</u> Marginal resection (1cm) 1-4mm thick 2cm margins Stage III 24mm 2.5-3cm margins Stage IV</p>	<p>Stage I ≤ 1 mm thick / deep</p> <p>Stage II > 1 mm thick / deep</p> <p>Stage III Clinically <u>palpable regional nodes</u> that contain tumor</p> <p>Stage IV <u>Disseminated disease</u></p>	<p>most important prognostic factor <u>depth</u></p> <p><u>Tx</u>: Local Resection LN Dissection plus <u>IFN</u> - α 2B <u>K1 year</u></p>
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Nonmelanoma Cancers of Skin

BCC:
 - 3-5mm resection margins
 - Moh's micrographic surgery

Basal-cell carcinoma

Squamous-cell carcinoma (worse prognosis)

SCC insitu
 - precursor lesion → actinic Keratosis

Risk Factors

1. Fair complexion
2. Age
3. Prior h/o skin cancer
4. Sun exposure

Lymphomas

Non-Hodgkin's Hodgkin's

Cellular type	90% B cell 10% T cell	Mainly B cell + Reed-Sternberg cell
Sites of disease		
Localized	Uncommon	Common
Nodal spread	Discontiguous	Contiguous
Extranodal	Common	Uncommon
Mediastinal	Uncommon	Common
Abdominal	Common	Uncommon
Bone marrow	Common	Uncommon
Systemic Symptoms	Uncommon	Common
Curability	< 40%	> 75%

Ex.) Patient w/ well-differentiated lymphoma + 2 yrs w/ weakness
Hgb - 9.3
↑ Retic
Smear → spherocytes
↓
✓ Coombs test
Di: Autoimmune hemolysis

H/O lymphoma + dx w/ Rad Tx
Young women ↑ risk of breast ca. lifetime risk 50-60%
Recurrent Hodgkin's risk 20%
non-Hodgkin's risk - 5%
of ↑ risk of leukemia

Ex.) Patient w/ Hodgkin's dis. develops progressive heart failure w/ normal heart size

Di: Constrictive Pericarditis

Ex.) 26 y.o. woman s/p neck Rad Tx for Hodgkin's now w/ fatigue/weakness

✓ TSH

Same case but w/ infertility instead of fatigue/weakness

✓ FSH (look for premature ovarian failure)

Ex: Observation
Rituximab for symptoms
median survival 10-15 yrs.

w/ tx → tumor regresses

Ex.) 50 y.o. man w/ wt loss + multiple enlarged cervical + hilar LN's

- Best Dx Test: complete excisional LN Bx

Ex.) 70 y.o. man w/ skin rash + systemic symptoms w/ diffuse LAD, HSM

④ Coombs

↑ IgG

Di: Angioimmunoblastic Lymphoma

Tx: Prednisone

Etiology of Lymphomas

Genetic

- + (8; 14) in Burkitt's lymphoma
- + (14; 18) in Follicular lymphoma
- + (11; 14) in Mantle cell lymphoma
- + (2; 5) in Anaplastic large cell lymphoma

Viruses

- EB virus: Burkitt's lymphoma, Extranodal nasal NK/T cell lymphoma, Post-organ transplant lymphoma, Primary CNS diffuse large B cell lymphoma, Hodgkin's disease
- Herpes virus-8: Body cavity lymphoma in AIDS
- HTLV-1: Adult T cell leukemia/lymphoma
- HIV: Diffuse large B cell lymphoma, Burkitt's lymphoma
- Hepatitis C: Lymphoplasmacytic lymphoma
- H. Pylori: MALT Lymphoma

very aggressive
↑ risk of tumor lysis
T: oral (Allopurinol) or IV Rasburicase

All include chemo

Hodgkin's Tx

- Stage I + II: Chemo + trans subtotal CN radiation tx
- Stage II Bulky → occupies more than 1/3 of diameter
Rad to bulky side
- Stage III A (w/ symptoms): Chemo + Rad Tx
- Stage III B + IV: Chemo

φ more staging laparotomy

Ex.) 43 y.o. man w/ enlarged cervical LAD + white plaques on oropharynx

✓ HIV test then excisional LN Bx

- Aggressive - curable

Tx: Rituximab + CHOP + Rad Tx
- systemic even w/out imaging → requires systemic tx

Staging of Lymphomas

- Stage I: Involvement of single lymph node region or single extralymphatic site
- Stage II: Involvement of two or more lymph node regions on same side of the diaphragm. Can also include localized involvement of extralymphatic site
- Stage III: Involvement of lymph node regions or extralymphatic sites on both sides of the diaphragm
- Stage IV: Disseminated involvement of one or more extralymphatic organs

Complications of Therapy for Hodgkin's Disease

Chemotherapy

- Sterility in both males and females
- Myelodysplasia and acute myeloid leukemia
- Non-Hodgkin's lymphoma

Radiation

- Hypothyroidism
- Other solid tumors
- Accelerated coronary artery disease
- Pericarditis and pericardial effusion

Splenectomy

- Infection with encapsulated bacteria

Tx Ovarian Ca:
 - TAH-BSO
 - Debulk dis.
 - Stage IC-III (chemo)
 (Paclitaxel and Carboplatin)

Follicular Center Lymphoma
 - indolent form
 - painless peripheral LAD
 - involves several nodal regions
 - Tx:
 Localized Dis
 Rad Tx
 Advanced
 Chemo + IFN

Treatment of Non-Hodgkin's Aggressive Lymphoma

(Diffuse Large B-cell Lymphoma)

Limited stage disease

3 cycles of CHOP combination chemotherapy

+

Rituximab for CD 20 positive disease

Bulky stage II or III, IV

6-8 cycles of CHOP + Rituximab (CD 20 positive disease)

Leading cause of death in women from GI cancers
 ↳ the most common
 ↳ risk of future breast cancer

bladder symptoms
 { ascites
 abd fullness
 bloating
 dyspepsia

Mycosis Fungoides
 - cutaneous lymphoma
 - lymphocytic infiltration
 Rad Tx or topical nitrogen mustard

Staging of Ovarian Cancer

Stage I: Limited to the ovary

- A) one ovary involved
- B) Both ovary involved
- C) Ascites, positive peritoneal washings, surface involvement or rupture present

Stage II: Ovarian tumor + pelvic extension

Stage III: Intraabdominal spread

Stage IV: Visceral involvement or distant mets

Risk Factors

- Age
- Nulliparity
- Fitz
- 1st birth after 35
- BRCA-I+II
- Lynch II

assoc. w/ dermatomyositis
 seborrheic keratosis
 subacute cerebellar ataxia
 degeneration
 superficial thrombophlebitis
 palmar fasciitis
 paraneoplastic syndromes

Sezary Syndrome
 - 10% Sezary cells in peripheral circulation
 - can transform into cutaneous T-cell lymphoma

ovarian ca w/ known gene mutations
 - screen annually w/ pelvic exam, vaginal u/s + CA-125 begin @ 25 y.o.
 - salpingo-oophorectomy when child bearing is complete
 ↳ risk of both ovarian + breast ca.

Risk Factors for Cervical Cancer

1. Low socioeconomic class
2. Early age of first intercourse and/or first pregnancy
3. Multiparity
4. Increased number of sexual partners
5. Human papilloma virus infection
6. Herpes simplex II infection
7. HIV infection
8. Smoking

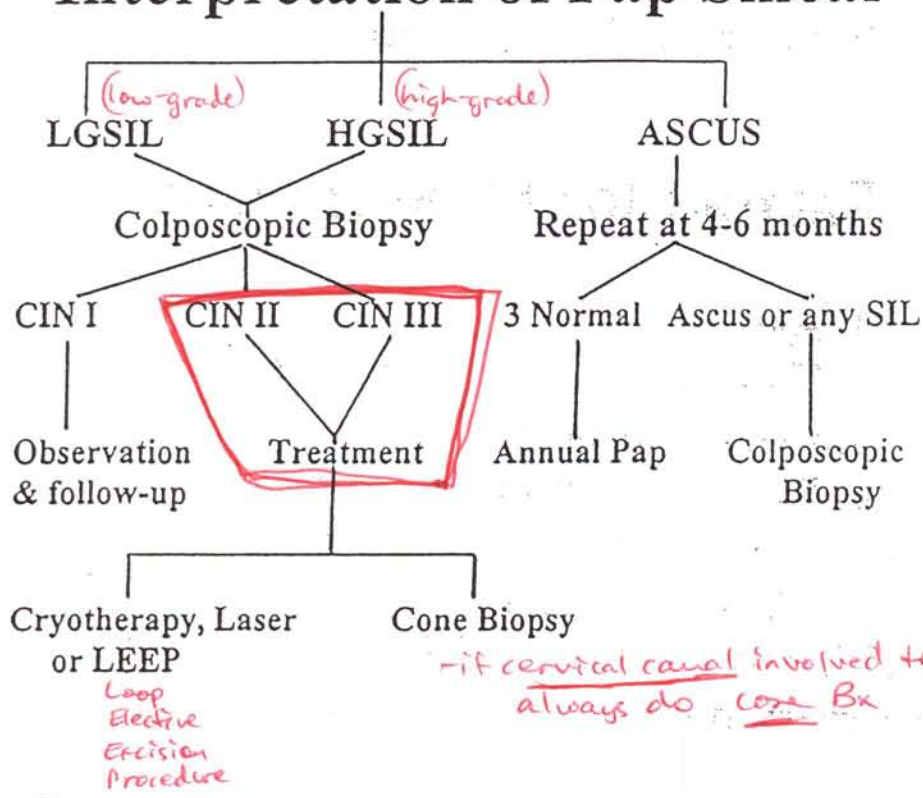
(most common malignancy of women in world)

→ start screening 3yrs after sexual activity onset or age 21 (earlier)

-low-risk w/ normal PAP's → @ 3yrs.

-stop screening @ age 65

Interpretation of Pap Smear



Cervical intraepithelial neoplasia

if cervical canal involved then always do cone Bx

Staging of Cervical Cancer

- Tx:
cone Bx — Stage 0 Carcinoma in situ
- Radical hysterectomy or Rad Tx — Stage I Tumor is confined to cervix
- Stage II The tumor extends beyond Cervix but does not involve the pelvic sidewall or lower 1/3 vagina
- Rad Tx ± Chem — Stage III Involvement of lower 1/3 of vagina or the pelvic sidewall or hydronephrosis
- Stage IV Invades the mucosa of bladder or rectum or extends beyond the true pelvis

Risk Factors for Endometrial Cancer

1. Estrogen replacement therapy
2. Polycystic ovary disease
3. Obesity
4. Infertility
5. Late menopause
6. Tamoxifen therapy
7. Nulliparity
8. Diabetes
9. Familial (Lynch II)

Ex.) 30 y.o. woman w/
large uterine fibroid
- bleeding
- pelvic pain
- infertility

↓
of tx

- can she take OCP's? } Yes
- can she take HRT? }
post-menopause

Ex.) 26 y.o. woman w/
symptomatic fibroids
wants children

↓
Tx: Myomectomy

Ex.) Pregnant women w/
leiomyoma
↳ of tx

Poor Prognostic Factors in Carcinoma of the Uterus

1. Grade 3 serous or clear cell tumor
2. Deep myometrial invasion
3. Extension of tumor to cervix or adnexa
4. Para-aortic nodal involvement
5. Invasion of Vascular space by tumor

- presents as uterine bleeding

Tx: TAH-BSO

Staging of Endometrial Cancer

Stage I	Confined to Corpus
Stage II	Involves corpus and cervix
Stage III	Extends outside the uterus but not outside the true pelvis
Stage IV	Extends beyond pelvis or involves bladder and rectum

Toxicity of Antitumor Drugs

Antimetabolites

Mtx	Folic acid deficiency, hepatic fibrosis, reversible pneumonitis
6 MP	Dose should be reduced by 75% in patients on <u>allopurinol</u>
5 FU	Myocardial ischemic syndrome
Hydroxyurea	Leukopenia
Fludarabine	↓ CD4 cells, Pneumocystis infection

Plant Alkaloids

Vincristine & Vinblastin	Peripheral & autonomic <u>neuropathy</u> , SIADH
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Anti-tumor Antibiotics

Doxorubicin & Daunorubicin	Cardiomyopathy
Bleomycin	Chronic interstitial fibrosis
Mitomycin	<u>Hemolytic uremic syndrome</u>

Alkylating Agents

	Infertility, myeloid leukemia
Cyclophosphamide	<u>Hemorrhagic cystitis</u> , bladder tumor
Busulfan	Pulmonary fibrosis, pigmentation

Miscellaneous Agents

L-Asparaginase	Pancreatitis, hypercoagulable state
Cisplatin	<u>Nephrotoxicity</u> , <u>hearing loss</u>
BCNU	Pulmonary fibrosis

Workup of Metastatic Cancer of Unknown Site

PSA hCG AFP CEA CA-125
 Chest x-ray, abdominal & pelvic CT, mammography,
 Immunohistology on biopsy sample:

Ex.) Lung cancer patient
 post-surgery (yr. ago)
 Takes Lipitor
 Normal LFT's
 Normal GGT
 ↑ ALP Phos (must be
 bone if GGT normal)
 ↓
 ✓ Bone scan to
 eval. for mets

Leukocyte common antigen
 Leu-M1
 AFP
 PSA/Acid phosphatase
 Thyroglobulin
 Placental alkaline phosphatase
 hCG
 B & T cell markers
 Estrogen/Progesterone receptors
 S-100

↓
 immunohistochemical
 staining

Lymphoid neoplasm
 Hodgkin's disease
 Liver, stomach, germ cell
 Prostate
 Thyroid
 Germ cell
 Germ cell
 Lymphoma
 Breast
 Melanoma

Ex.) 3cm mass in kidney
 ↓
 Tx: Resection

Ex.) Patient w/ neutropenia
 ↑ fevers + multiple bluish-
 red papules on skin
 ↑ ESR
 Dx: Sweet Syndrome
 - seen w/ acute leukemia
 Tx: ↑ dose Prednisone
 x 2-3 wks.

Metastatic Dis. to
 Spine
 ↑ Dose Dexa
 then Rad Tx

Single Brain mets
 - surgical resection

Carcinoid
 Best Dx Test 5-HIAA
 in urine
 Tx: ~~opioid~~
 - diarrhea, flushing
 ⊕ - valvulopathy

Treatment of Cancer Pain

Step I Nonopioid analgesics
 Acetaminophen, NSAIDS

Step II Opioids
 Codeine, Dihydrocodein, Hydrocodone, Oxycodone,
 Oxycodone SR (oxycotin)

Step III Opioids
 Morphine, Morphine SR (MS contin), Hydromorphone,
 Fentanyl

Patient-controlled analgesia
 (Best tx if hospitalized)

Best Overall Tx
 MS contin + MSIR
 oral dose is
 3-4 x IV dose

β-carotene
 ↑ lung cancer
 risk in pts w/
 ⊕ history of
 smoking

Prevention of Chemotherapy Induced Nausea & Vomiting

1. Antidopaminergic phenothiazines (acts on CTZ)
 (Prochlorperazine, thiethylperazine, haloperidol)
2. Metoclopramide (acts on peripheral dopamine receptors)
3. Serotonin Antagonist (ondansetron, granisetron)
4. Dexamethasone given before and after treatment
5. Lorazepam

Best ←

Bladder ca.
 - RF's - smoking
 - dyes
 - cystosarcinoma
 tobacumif
 - cyclophosphamide
 - cystoscopy
 then CT/MRI
 - Tx: Resection
 or
 cystectomy w/
 Rad Tx (if mets
 involved)
 mets → chemo
 intravesicular BCG

Risk Factors For Biliary Tract Cancers

Gallbladder

Gallstones, Chronic salmonella infection + gallstones,
Polyp > 1cm, calcification of gallbladder wall

Bile ducts (Cholangio carcinoma)

Primary sclerosing cholangitis, infection with Clonorchis Sinensis or Opisthorchis Viverrini

Ampulla of Vater

Adenomas of ampulla, familial adenomatous polyposis, tobacco use, AIDS, S/P cholecystectomy or sphincterotomy

Eti) 70 y.o. man w/ wt loss
↑ ALP, Phos + GGT
Slightly ↑ d AST/ALT
TBili - 4
Normal CT
↓
✓ MRCP

Staging For Biliary Tract Cancers

- Stage I Invasion limited to mucosa
Stage II Local Invasion
Stage III Invasion into regional or hepatoduodenal lymph nodes or invasion of adjacent tissues
Stage IV Extensive invasion of the liver and distant mets

poor survival ←

Pancreatic cancer
improved mortality w/ Gemcitabine over 5-FU
resection of pancreas w/ hepatic lesions has β benefit

Risk Factors For Esophageal Cancer

Both squamous cell and adenocarcinoma

Tobacco use, radiation to mediastinum

Squamous cell carcinoma

Alcohol use, caustic injury to esophagus, achalasia, Plummer-Vinson syndrome, H/O head and neck cancer

Adenocarcinoma

Barrett's esophagus, obesity, weekly reflux symptoms

(most common cause)

Tk's surgery

50% w/ nonresectable dis. @ time of dx
↓
chemo

Gastric Ca.

① Adeno ca.

- surgery
- gastrectomy

② Lymphoma

③ MALT Lymphoma

- eradicate
H. pylori