INTEGRATED CANCERS

STAGING AND MANAGEMENT

ENDOMETRIUM

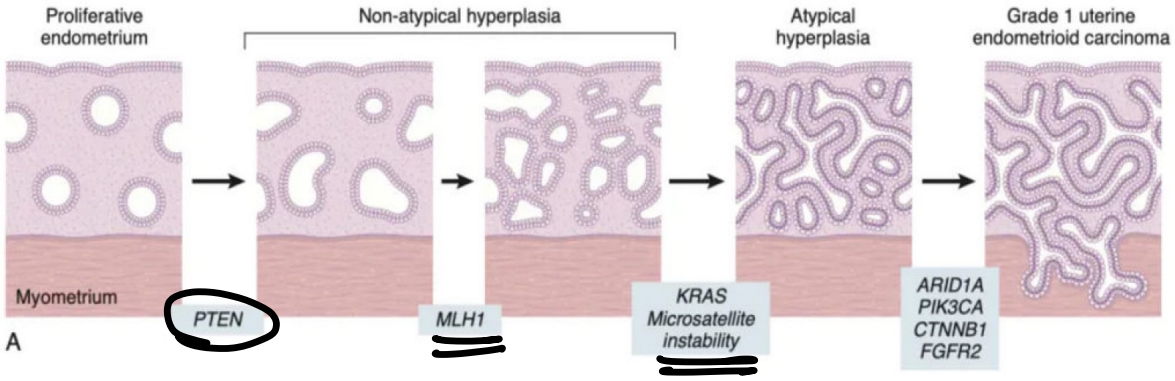
TABLE 23.10: Risk factors for endometrial hyperplasia.

- Unopposed estrogen stimulation
- Delayed menopause (>52 years)
- Polycystic ovary syndrome (PCOS)
- Nulliparity
- Family history of endometrial carcinoma, carcinoma of breast, ovary or colon
- Tamoxifen therapy
- Previous radiation therapy
- Diabetes
- Obesity (BMI >30)
- Hypertension
- Insulin resistance
- Estrogen secreting ovarian tumors

TABLE 23.9: Protective factors for endometrial hyperplasia.

- Multiparity
- Normal weight
- Combined oral contraceptive use
- Progestogen therapy
- Levonorgestrel-intrauterine system (LNG-IUS) use
- Menopause <49 years.

Clinical characters	Type I	Type II
Risk factor	Unopposed estrogen	Age
Age	Perimenopause	Postmenopause
Endometrial hyperplasia	Present	Absent
Tissue differentiation	Well	Poor
Myometrial invasion	Minimal	Deep
Histology	Endometrioid	Serous, clear
Molecular characters		
Ploidy	Polyploid	Aneuploid
Her2/neu over expression	No	Yes
P-53	No	Yes
PTEN mutations	Yes	No
Prognosis	Favorable	Not favorable



CA Endometrium

Type of hyperplasia	Progression to cancer (%)
Simple hyperplasia	1
Complex hyperplasia (without atypia)	3
Atypical complex hyperplasia	29

30 - 1 = 29

Women in reproductive age (fertility desired)

A. No cytologic atypia:
- a. Simple, b. Complex ♦ Continued high dose progestin therapy: MPA (high dose)—20–40 mg, 3 to 4 times/day continuous
- a. Simple, b. Complex ♦ Local LNG-IUD

Endometrial sampling at interval of 3–6 months.

B. With cytologic atypia:
- a. Simple, b. Complex ♦ Continued high dose progestin therapy
- a. Simple, b. Complex ♦ Local LNG-IUD

■ **Once atypical hyperplasia is cleared, therapy with intermittent progestin to start until the woman is ready to conceive**

Women in postreproductive years (fertility not desired)

A. No cytologic atypia ■ Medical therapy (as above) or

Hysterectomy

atypia

CA Endometrium

I

<50 % myo 1a

>50% myo 1b

II

STROMA

III

a - S: serosa
A: adnexa

b - V: vagina (upper 2/3)
P: parametrium

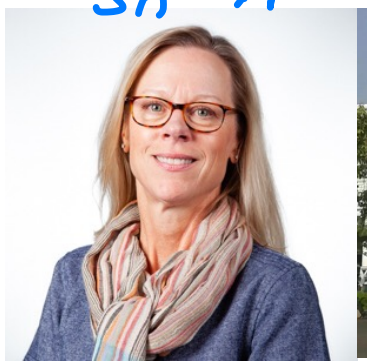
c - 1 pelvic LN
2 paraortic LN

IV

a - BB

b - distant

SA - VP - CP



Stage	Description
I	Tumor confined to the uterus
IA Ib	<50% invasion of the myometrium ≥50% invasion of the myometrium
II	Tumor invades the cervical stroma but does not extend beyond the uterus
III	Local or regional spread of tumor
IIIA IIIB IIIC IIIC1 IIIC2	Serosal or adnexal invasion Vaginal or parametrial involvement Metastasis to pelvic or paraaortic lymph nodes Pelvic lymph node involvement Paraaortic lymph node involvement
IV	Extension to the pelvic wall, lower one-third of the vagina, or hydro-nephrosis or nonfunctioning kidney
IVA IVB	Invasion of bladder or bowel mucosa Distant metastases, including involvement of inguinal lymph nodes

MANAGEMENT:

TAH + BSO + POST-OP RT + LN DISSECTION EXCEPT

LN dissec^ x RTx

a) Stage- 1
b) Grade- 1/2
c) Size- <2cm
d) Histology type 1 -endometrioid
e) LVSI xx

most imp prognostic

CA ENDOMETRIUM

Cervical glands- I

Inguinal LN- 4b

Pelvic LN- 3c 1

Paraaortic LN- 3 c 2

Upper 2/3 vagina- 3 b

2023 Figo Stage	Defining Criteria
IA1	non-aggressive histological type limited to the endometrium or an endometrial polyp
IA2	non-aggressive histological type involving <50% myometrium, with no/focal LVSI
IA3	low-grade EEC limited to the uterus and ovary
$IAm_{POLEmut}$	*POLEmut EC, confined to the uterine corpus or with cervical extension, regardless of LVSI or histological type*
IB	non-aggressive histological type involving ≥50% myometrium, and with no/focal LVSI
IC	aggressive histological type limited to the endometrium or an endometrial polyp
IIA	non-aggressive histological type with invasion of the cervical stroma
IIB	non-aggressive histological type with substantial LVSI
IIC	aggressive histological type with any myometrial infiltration
$IICm_{p53abn}$	*p53abn EC, confined to the uterine corpus with any myometrial infiltration, with or without cervical invasion, and regardless of LVSI or histological type*
IIIA1	spread to ovary or fallopian tube (except if it meets the Stage IA3 criteria)
IIIA2	involvement of uterine subserosa/serosa
IIIB1	metastasis or direct spread to the vagina and/or the parametria
IIIB2	metastasis to the pelvic peritoneum

IHC :

- POLE
- MMR defcent
- p53 abN
- NSMP
  non -sp

Types of Hysterectomy

Take out covering fascia of uterus	Parametrium removed up to level of ureter	Parametrium removed lateral to the ureter also
Uterine vessels ligated close to uterus	At the level of ureter	At the origin from internal iliac vessels
Uterosacrals ligated close to uterus	Midway to rectum	Near rectum
Vaginal cuff not removed	1-2cm of vagina removed	>2cm vagina removed

CERVIX

CA CERVIX screening

Screening
- **Start at:** 21yr
- **Pap smear:** 3 Yearly
- **Co-testing:** 5 Yearly (Age>30yr) HPV+Pap
- **Immunocompromised:** annually
- **Vaccinated:** no change
- **Stop when:** 65yrs (10 yrs -ve)

HPV

Low-risk ✓ 6, 11

High-risk

E6: p53

E7: RB

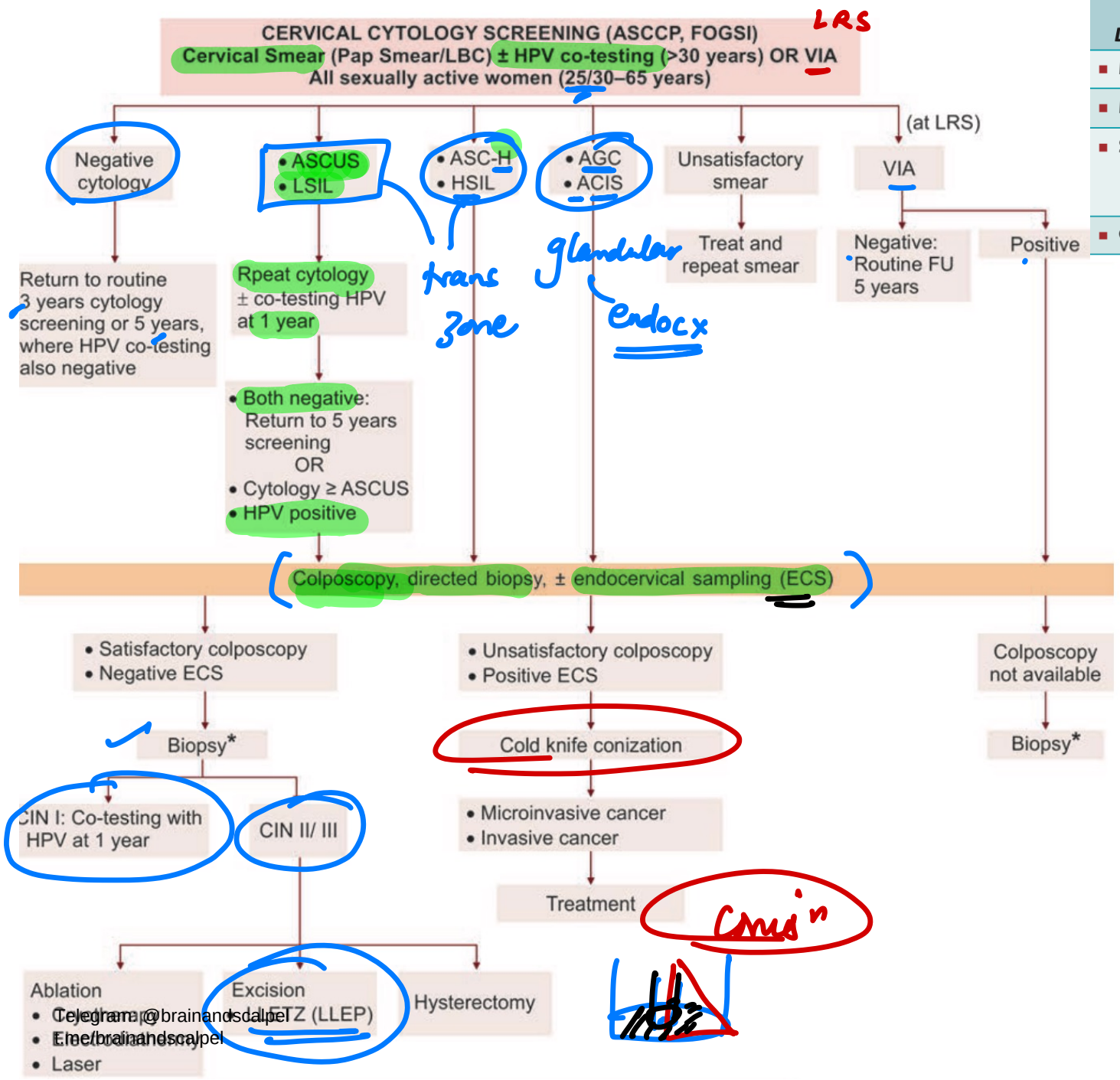
L1 → vaccine

TABLE 23.3: Risk factors for CIN and cervical cancer.

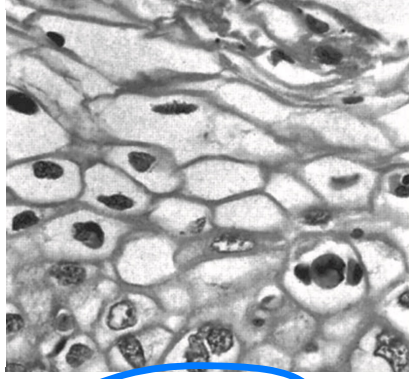
- Infection: HPV (16, 18, 31, 33, 45, 52, 58), HSV2, HIV, *Chlamydia*
- Early sexual intercourse (≤16 years)
- Sexually transmitted infections
- Early age of first pregnancy
- Multiparity
- Too many and too frequent births
- Poor genital hygiene
- Multiple sexual partners
- Immunosuppressed (HIV positive) individuals
- Husband who has multiple sexual partners
- Dietary deficiency of (vitamins A, C, E, folic acid)
- Increasing age
- Inadequate screening
- Oral pill users
- Smoking habit

Gardasil -9

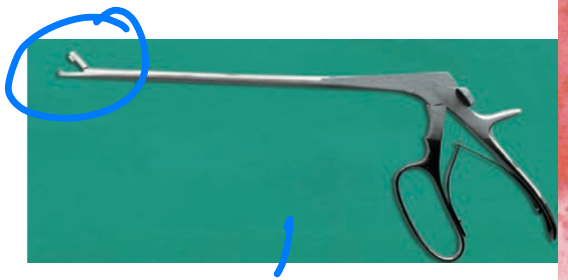
OCP



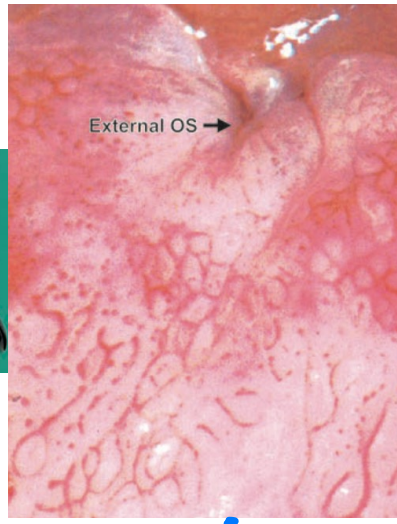
Dysplasia	*CIN*	*Limit of histologic changes*	*Bethesda (p. 91)*
▪ **Mild**	CIN I	Basal one-third	**LSIL**
▪ **Moderate**	CIN II	Basal half to two-third	**HSIL**
▪ **Severe**	CIN III	▪ Whole thickness except one or two superficial layers	
▪ **CIS**		▪ Whole thickness	



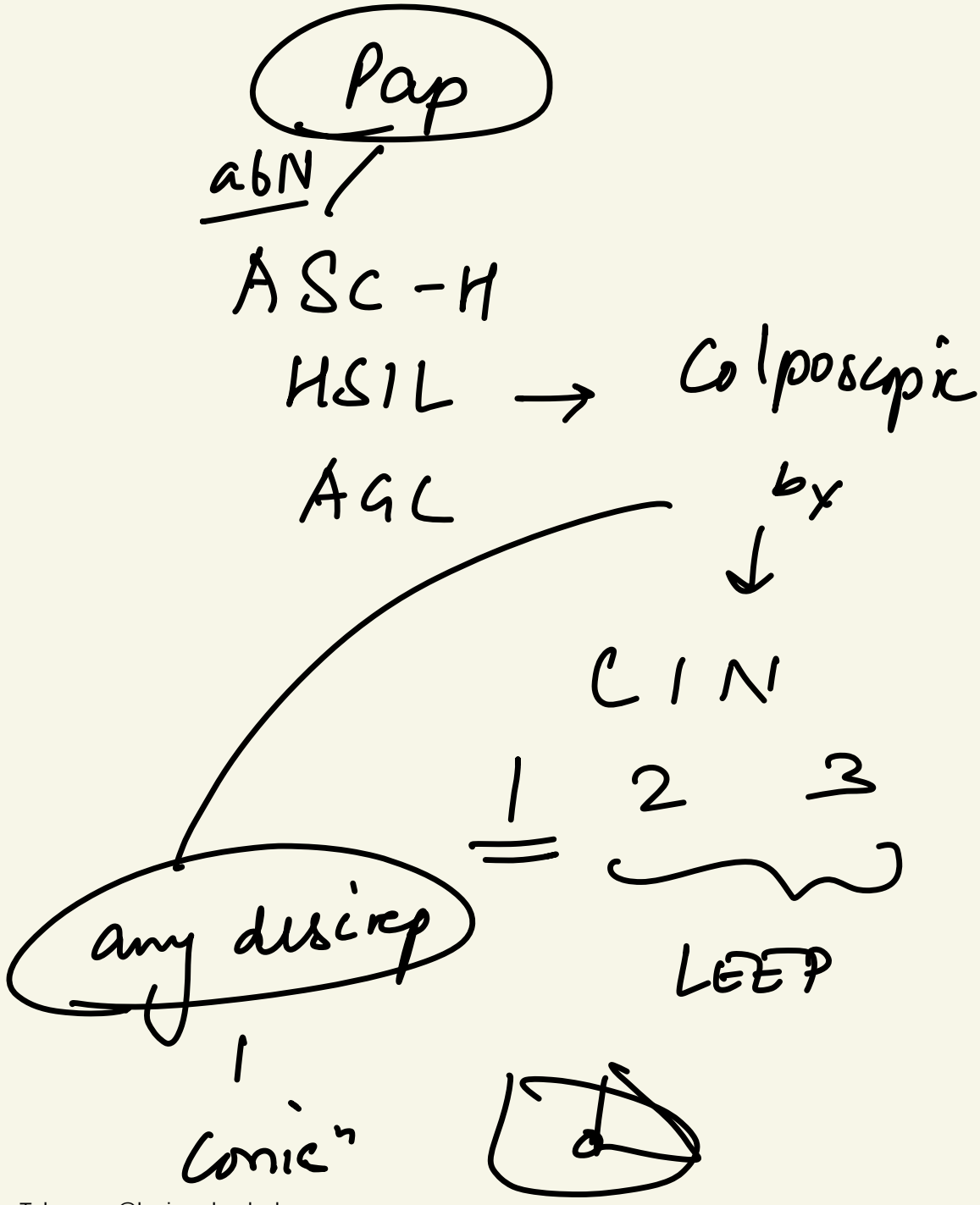
Koilocyte
↓
HPV



bx
Colposcopic



• mosaic



CA CERVIX

Mass → Punch bx → inv Ca
Pap → colpos → inv Ca

I a: mscopic

Ib: clinically visible

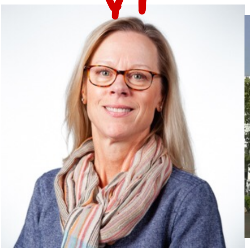
1: <2cm
2: 2-4cm
3: >4cm

Radical trachelectomy

II a: vag 2/3

b: parametrium

1: <4cm
2: >4cm

VP


CP


III a. vag lower 1/3

b: pelvic side wall, ureter, HDN

c: 1 pelvic
2: paraaortic

IV a - BB
b - distant

I IA IA1 IA2	The carcinoma is strictly confined to the cervix (extension to the uterine corpus should be disregarded) Invasive carcinoma that can be diagnosed only by microscopy, with maximum depth of invasion <5mm[a] Measured stromal Invasion <3mm in depth Measured stromal Invasion ≥3mm and <5mm in depth
IB IB1 IB2 IB3	Invasive carcinoma with measured deepest invasion ≥5 mm (greater than Stage IA), lesion limited to the cervix uteri[b] Invasive carcinoma ≥5mm depth of stromal invasion, and < 2cm in greatest dimension Invasive carcinoma ≥2cm and < 4cm in greatest dimension Invasive carcinoma ≥4cm in greatest dimension
IIA IIA1 IIA2 IIB	Involvement limited to the upper two-thirds of the vagina without parametrial involvement Invasive carcinoma < 4cm in greatest dimension Invasive carcinoma ≥4cm in greatest dimension With parametrial involvement but not to the pelvic wall
IIIA IIIB IIIC IIIC 1 IIIC 2	The carcinoma involves the lower third of the vagina, with no extension to the pelvic wall Extension to the pelvic wall and/or hydronephrosis or nonfunctioning kidney (unless known to be due to another cause) Involvement of pelvic and/or para-aortic lymph nodes, irrespective of tumor size and extent (with r and p notations) Pelvic lymph node metastasis only Para-aortic lymph node metastasis
IV IVA IVB	The carcinoma has extended beyond the true pelvis or has involved (biopsy proven) the mucosa of the bladder or rectum. (A bullous edema, as such, does not permit a case to be allotted to Stage IV) Spread to adjacent pelvic organs Spread to distant organs

CA CERVIX

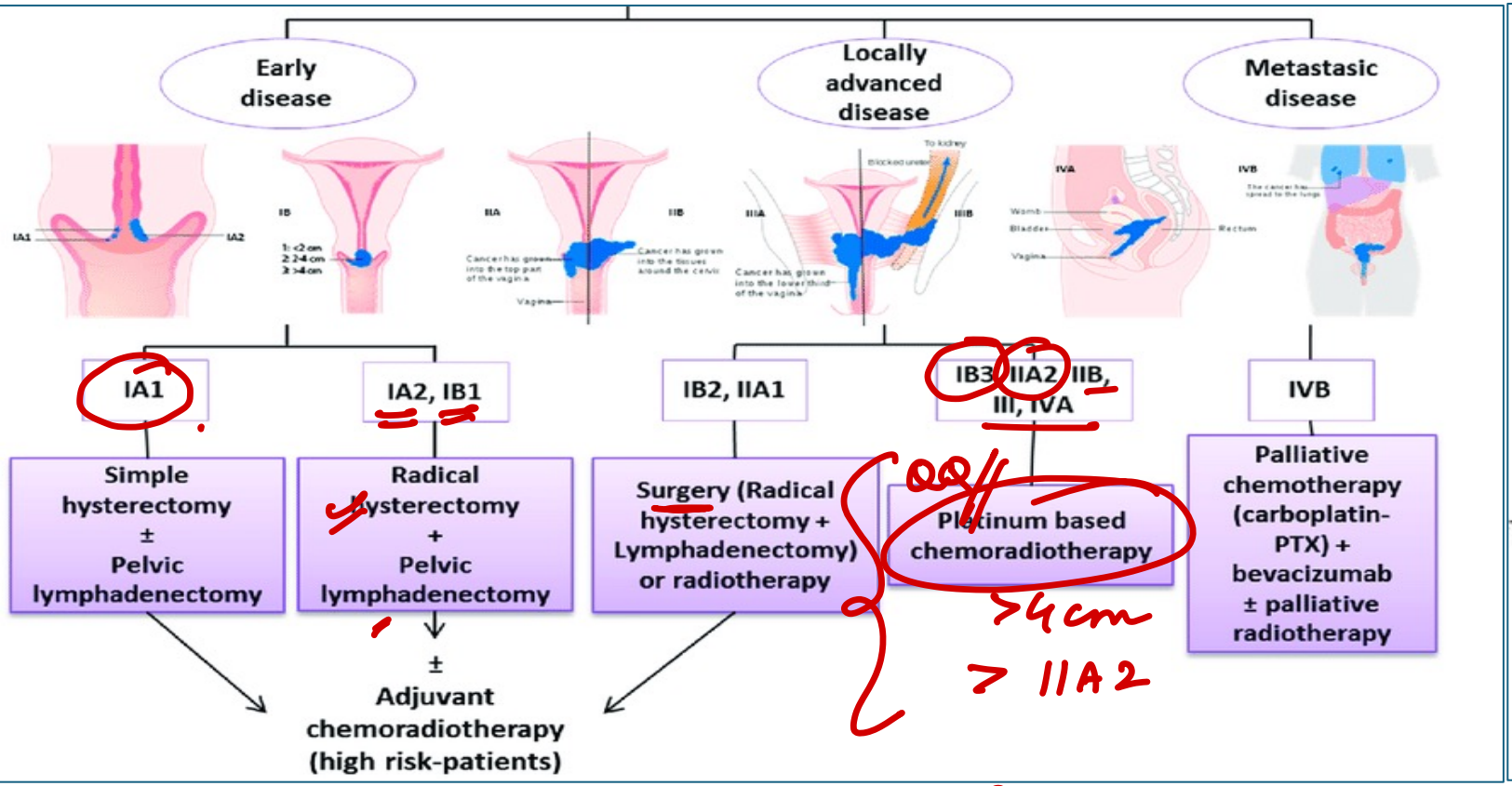
Uterus corpus → 1

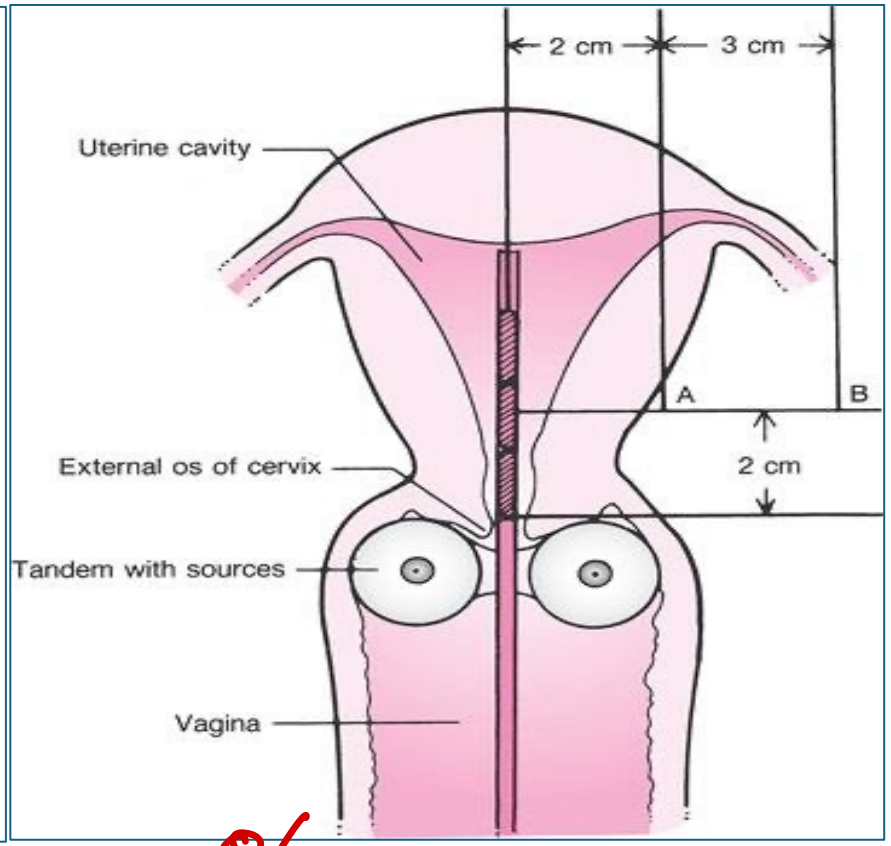
Bullous edema of UB → no invasion

Inguinal LN → 4b

Pelvic LN 3c 1

Paraaortic LN 3c 2





bowels 45 to 50 Gy. **Point A** is 2 cm cephalic and 2 cm lateral to the external os and is the point of crossing of the uterine artery and ureter. **Point B** is 2 cm cephalic and 5 cm lateral at the same plane and is approximately the site of obturator gland (Fig. 31.3).

It has been calculated that point A gets about 7000–8000 cGy and point B 2000 cGy. Taking into consideration that cancerolytic dose is approximately 7000–7500 cGy, the rest of the dose at point B is supplemented by external beam irradiation of 4000 cGy spreading over another three weeks. For external irradiation, linear accelerator with energy of 4 million electron volts or more is commonly used.

OVARY

TABLE 24.31: Women with 'high risk' factors for ovarian cancer.

- **Age** group 40–60 years
- **Familial cancers**: Breast, endometrial, ovarian, colorectal
- **History** of removal of benign ovarian tumor or breast carcinoma
- Women with *BRCA1* and *BRCA2* mutation
- Postmenopausal palpable ovary (volume >8 cm^3)
- Nulliparity
- Early menarche, late menopause
- Relative or absolute infertility
- Dysgenetic gonad
- Fertility drugs use (incessant ovulation)
- Women with BMI >30
- Women workers in asbestos related industries
- Pelvic inflammatory disease

PROTECTIVE FACTORS FOR OVARIAN MALIGNANCY

- Combined oral contraceptives
- Pregnancy
- Tubal ligation, hysterectomy
- Breastfeeding
- Low fat and high fiber diet
- DMPA

CA OVARY

I

a - U/L

b - b/L

c - caps rupture

II a - F T/ uterus/ cx

b - pelvic organ

III -

a - usg pic RD LN

b - pent deposits <2cm

c - >2cm

IV a - pl eff

b - distant

CA OVARY

Pelvic LN → 2b

Paraaortic LN → 3a

Inguinal Ln → 4b

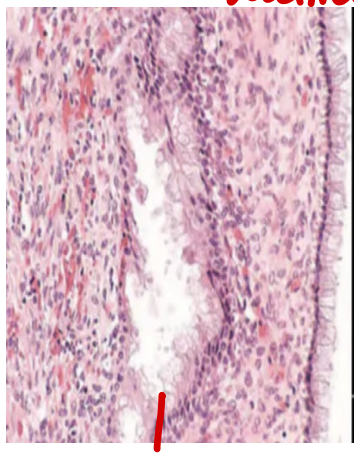
Stage I	Tumor limited to the ovaries or fallopian tubes
I A	Tumor limited to one ovary (capsule intact) or fallopian tube
I B	Tumor limited to both ovaries (capsules intact) or fallopian tubes
I C	Tumor limited to one or both ovaries or fallopian tubes, with any of the following: Stage IC 1: Surgical spill Stage IC2: Capsule ruptured before surgery, or tumor on ovarian or fallopian tube surface Stage IC3: Malignant cells in the ascites or peritoneal washings
Stage II	Tumor involves one or both ovaries or fallopian tubes, with pelvic extension (below pelvic brim)
II A	Extension and/or implants on the uterus and/or ovaries and/or fallopian tubes.
II B	Extension to other pelvic intraperitoneal tissues
Stage III	Tumor involves one or both ovaries or fallopian tubes, or primary peritoneal cancer, with cytologically or histologically confirmed spread to the peritoneum outside the pelvis and/or metastasis to the retroperitoneal lymph nodes
III A	Positive (cytologically or histologically proven) retroperitoneal lymph nodes only
III B	Macroscopic peritoneal metastasis beyond the pelvis up to 2 cm in greatest dimension, with or without metastasis to the retroperitoneal lymph nodes
III C	Macroscopic peritoneal metastasis beyond the pelvis more than 2 cm in greatest dimension. with or without metastasis to the retroperitoneal lymph nodes. Stage IIIC includes extension of tumor to the capsule of liver and spleen without parenchymal involvement of either organ
Stage IV	Distant metastasis, excluding peritoneal metastases
Iv A	Pleural effusion with positive cytology
Iv B	Parenchymal metastases and metastases to extra-abdominal organs (including inguinal lymph nodes and lymph nodes outside of the abdominal cavity)

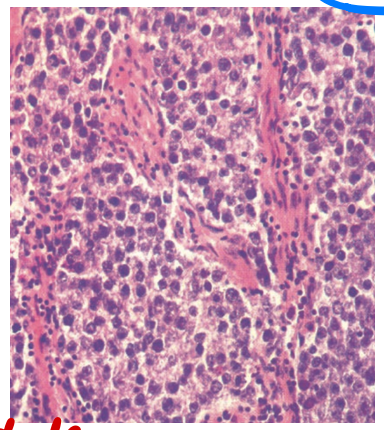
u/l oophorectomy

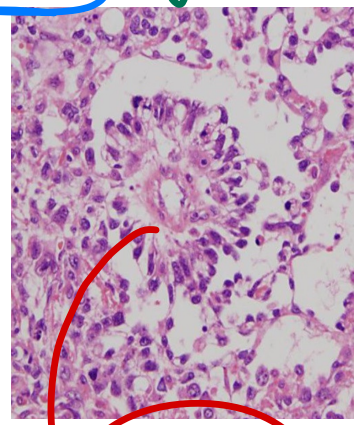
TAH + BSO

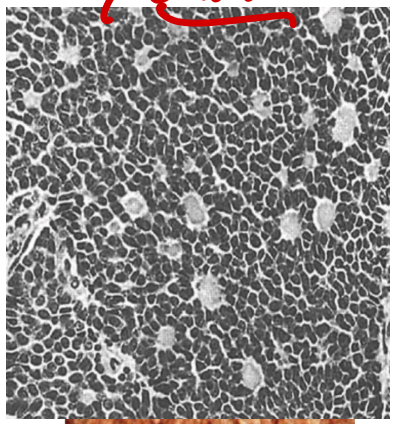
TAH + BSO + Cytored Sx → CT → Carboplatin + paclitaxel

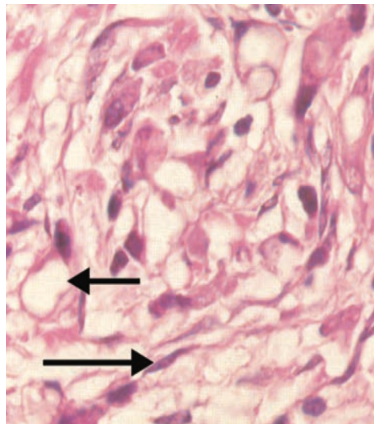
Epithelial (80–85%)	Germ cell (5%)	Sex cord stromal (1%)	Metastatic disease (5%)	Hereditary (10–15%)
■ High-grade serous (70%) ■ Mucinous (10%) ■ Endometrioid (10%) ■ Low-grade serous (5–10%) ■ Clear cell (5%)	■ Teratoma (immature) (36%) ■ Dysgerminoma (33%) ■ Endometrial sinus tumor (15%) ■ Embryonal carcinoma (4%) ■ Choriocarcinoma (2%) ■ Gonadoblastoma ■ Mixed germ cell (5%)	■ Granulosa cell (70%) ■ Thecoma ■ Fibroma ■ Sertoli-Leydig cell ■ Gynandroblastoma	■ GI tract 39% ■ Breast (28%) ■ Endometrium (20%) ■ Lymphoma	■ Hereditary breast and ovarian cancer syndrome ■ Lynch syndrome

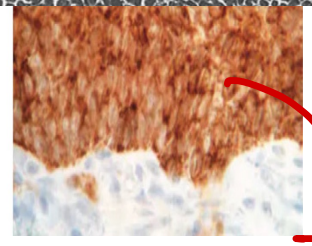












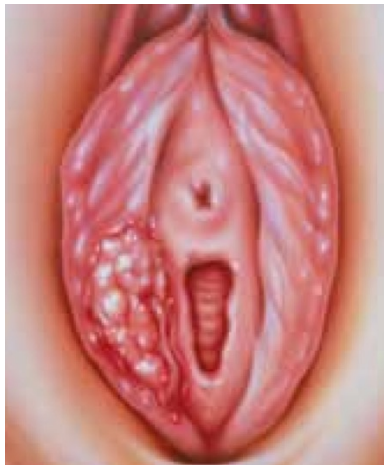
LDH, PLAP, HCG, OCT3/4, NANOG

VULVA

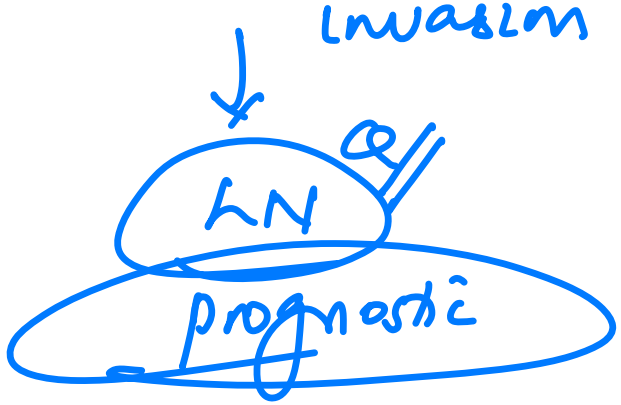
Ca vulva

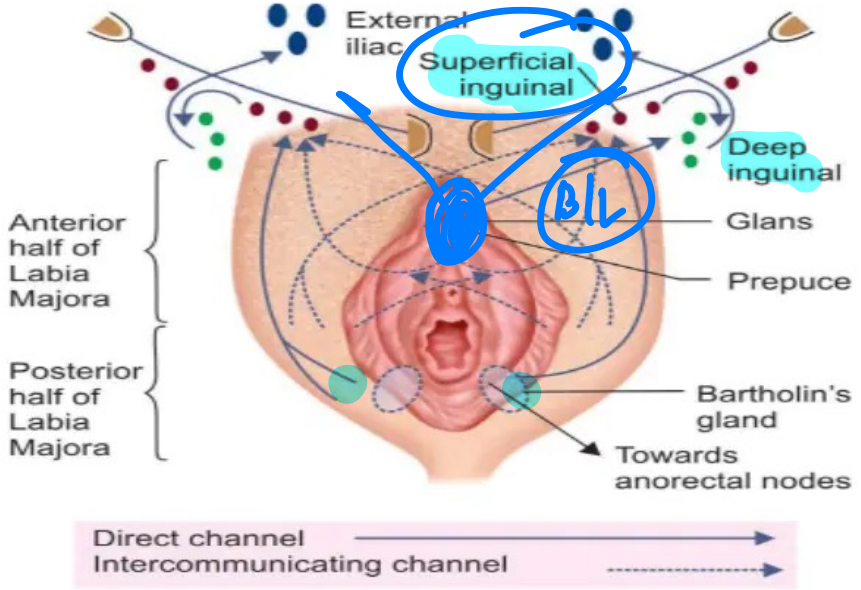
RISK FACTORS FOR VULVAR CANCER

- Infection with high risk oncogenic HPV
- Non-neoplastic chronic epithelial disorders (lichen sclerosis 4–7%)
- Immunocompromised state
- Smoking
- Advanced age
- Immune deficiency
- Presence of cervical neoplasia
- Melanoma
- Paget's disease
- Presence of VIN (5–96%)



MC: Stromal invasion





Primary tumor (T)

TNM categories	FIGO stages	Definition
TX		Primary tumor cannot be assessed
T0		No evidence of primary tumor
Tis		Carcinoma in situ
T1a	IA	Lesions 2 cm or less in size, confined to the vulva or perineum and with stromal invasion 1.0 mm or less
T1b	IB	Lesions more than 2 cm size or any size with stromal invasion more than 1.0 mm confined to the vulva or perineum
T2	II	Tumor of any size with extension to adjacent perineal structures (lower/distal 1/3 urethra, lower/distal 1/3 vagina, anal involvement)
T3	IVA	Tumor of any size with extension to any of the following: upper/proximal 2/3 urethra, upper/proximal 2/3 vagina, bladder mucosa, rectal mucosa or fixed to pelvic bone
Regional lymph nodes (N)		
NX		Regional lymph nodes cannot be assessed
N0		No regional lymph node metastasis
N1		One or two regional lymph nodes with the following features
N1a	IIIA	One or two node metastases, each 5 mm or less
N1b	IIIA	One lymph node metastasis 5 mm or greater
N2	IIIB	Regional lymph node metastasis with the following features
N2a	IIIB	Three or more lymph node metastases each less than 5 mm
N2b	IIIB	Two or more lymph node metastases 5 mm or greater
N2c	IIIC	Lymph node metastasis with extracapsular spread
N3	IVA	Fixed or ulcerated regional lymph node metastasis
Distant metastasis (M)		
M0		No distant metastasis
M1	IVB	Distant metastasis (including pelvic lymph node metastasis)

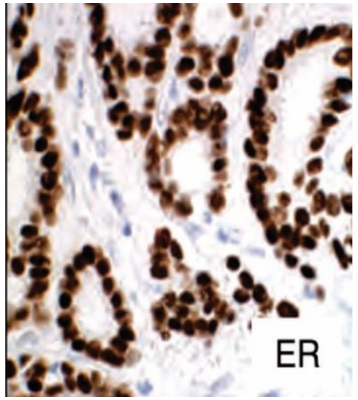
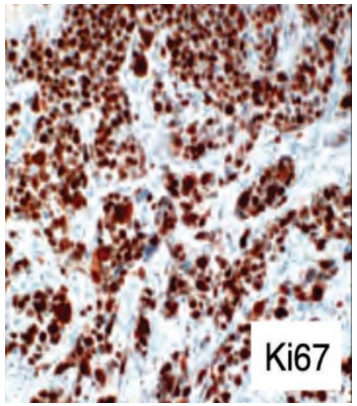
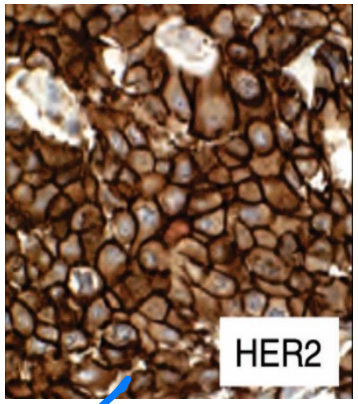
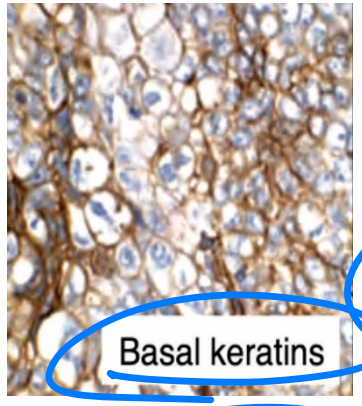
BREAST

TRIPLE ASSESSMENT

C/E + Radiol + H/P — 99.9%

BIRADS	Category	% risk of cancer	Further management
0	Incomplete assessment	N/A	— Complete
1	Normal	0	— annual screening
2	Benign	0	— " — Fibroadenoma
3	Probably benign	0-2%	F/U - 6 mon - FA non calcified
4 4a 4b 4c	Suspicious for malignancy Low suspicion Moderate suspicion High suspicion	2-10% 10-50% 50-95%	Bx
5	Highly suggestive of malignancy	>95%	
6	Known biopsy proven malignancy	N/A	

Molecular classification

Luminal (ER-positive, PR-positive Her-2 negative)		HER2 (HER2-positive)	TNBC (ER-negative, HER2-negative)
Low proliferation	High proliferation	High proliferation	High proliferation
			

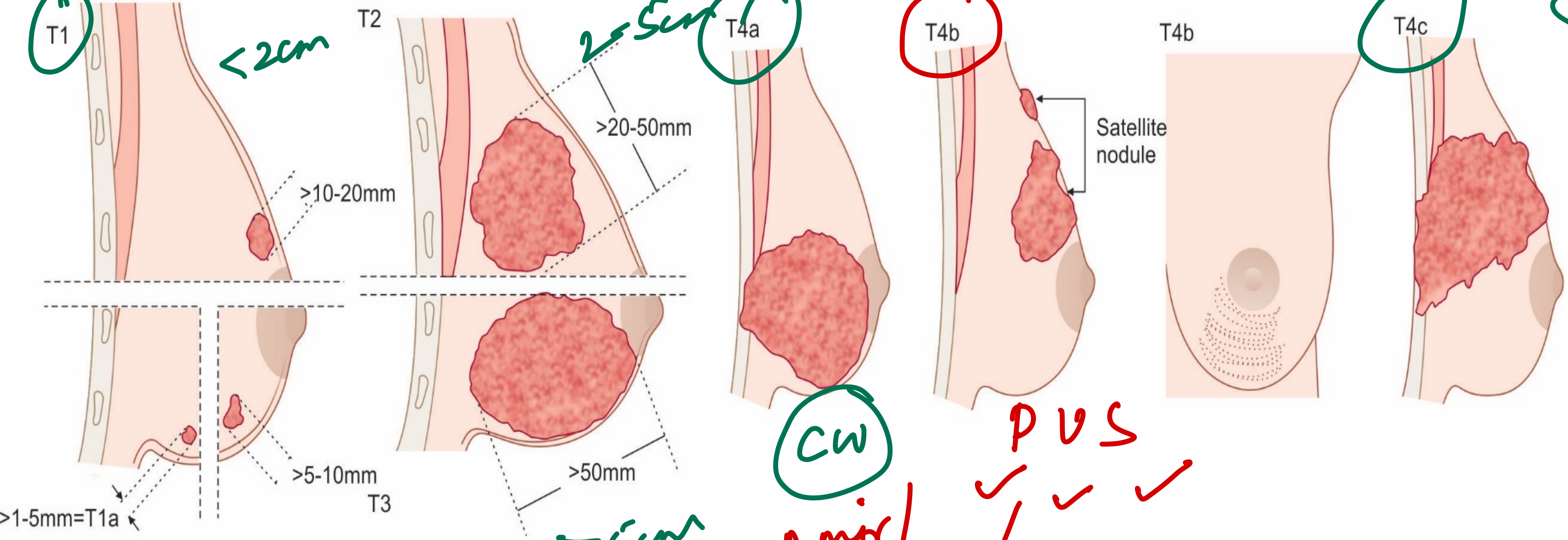
PTM
Mucinous

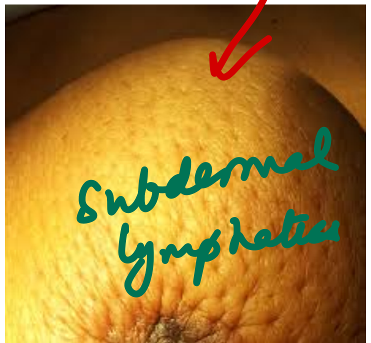
TNBC

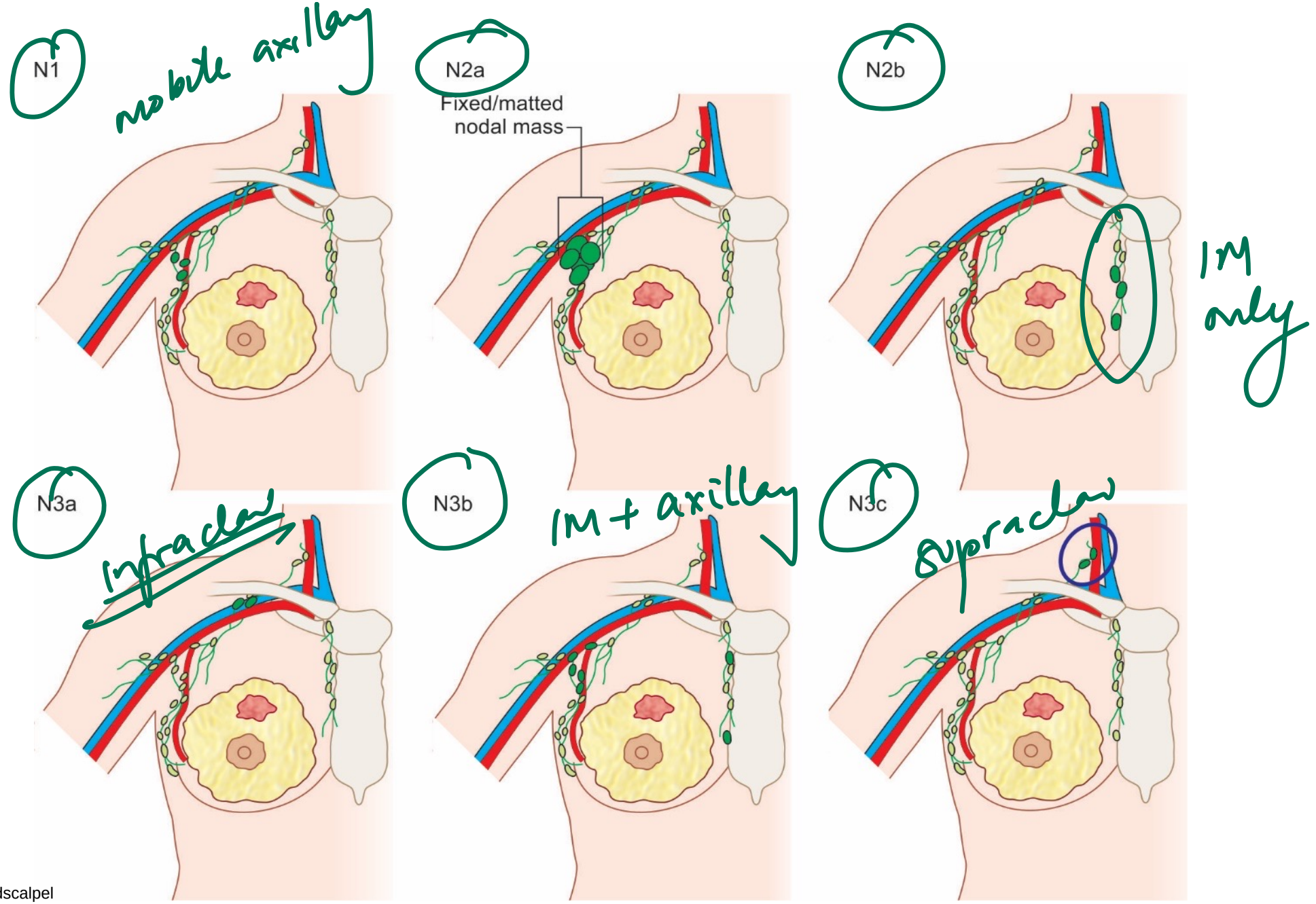
TNBC

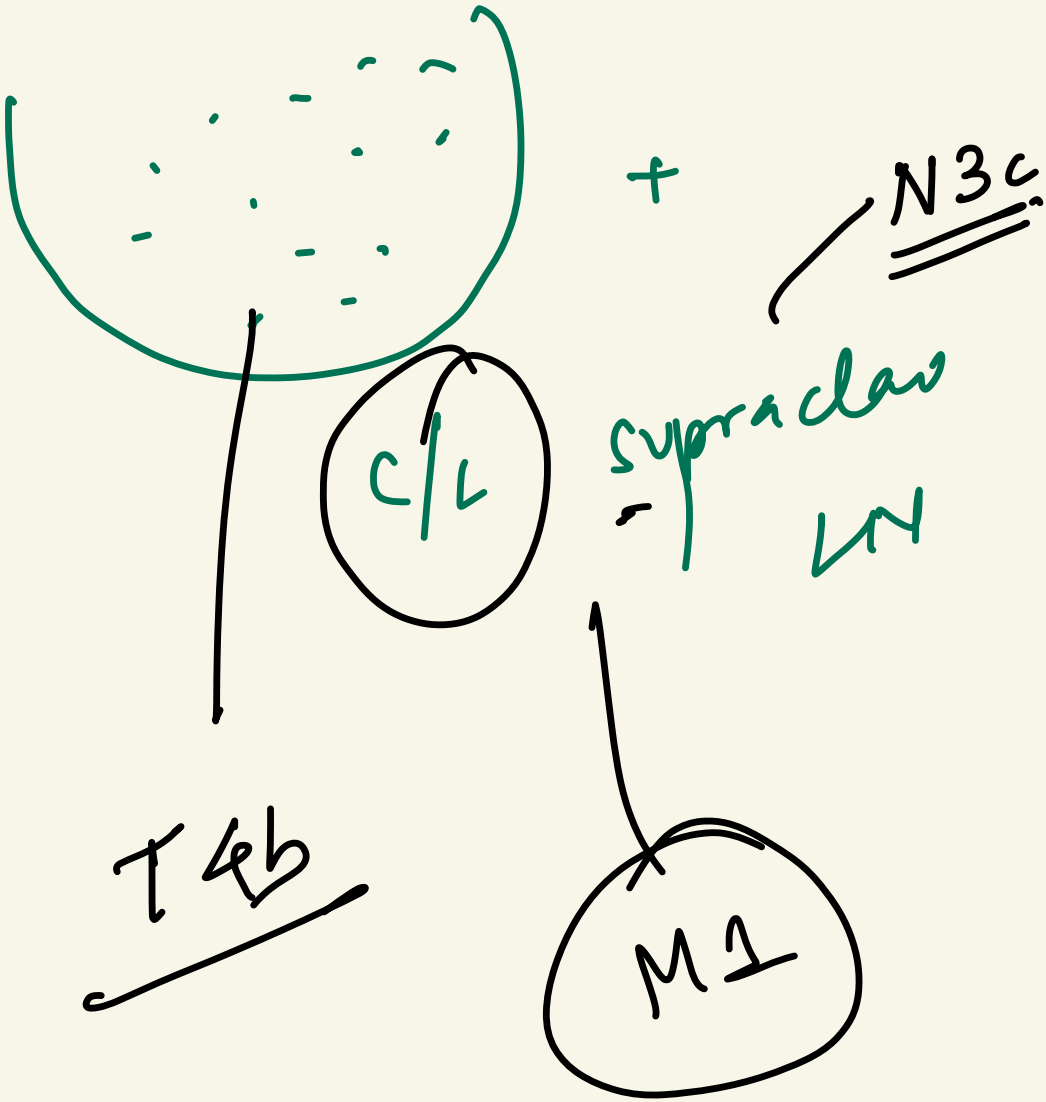
Ca breast
Most imp: LN
Worst progn:
- Inf ca
- TNBc

Staging CA breast









Breast-High yield

PREFIXES:
- c- clinical
- p- pathol
- r- recurrent
- y- neoadj
- m- multifocal
- a- autopsy

BCS CI:
1. Pregnancy
2. Prior RT to CW] RT CI
3. Collagen vascular diseases
4. Multicentric > Multifocal
5. Lobular ca
6. LABC

Chemotherapy:
LABC or LN +
TNBC

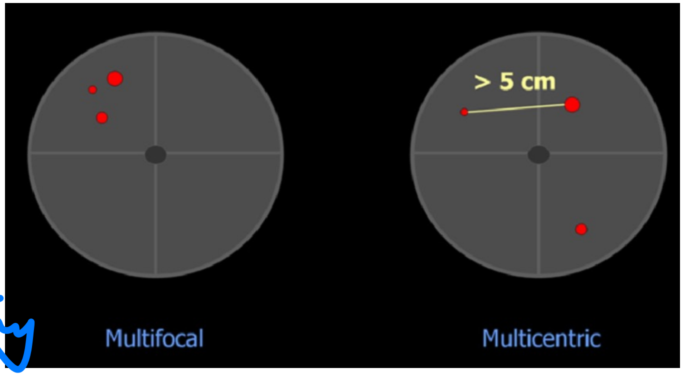
Radiotherapy:
LABC or LN +
BCS
>5cm

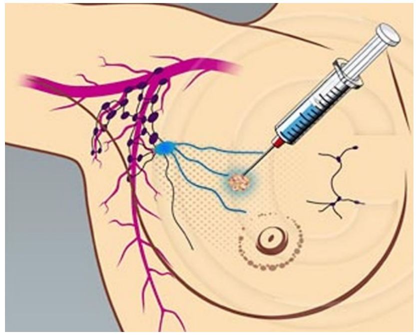
MOLECULAR TESTS:
T1/T2 N0 LUMINAL A (<5cm) — chemo ✗
Oncotype Dx: 21
Mammaprint: 70
Endopredict: 12
PAM 50: 50
CAN assist: Indian

LABC:
- T3 N1
- any T4
- any N2/N3

NACT → MRM → RT

Early:
BCS / Simple mastectomy





SLNB

BCS / WLE → Node ? → RT
C/R + → ALND
C/R −

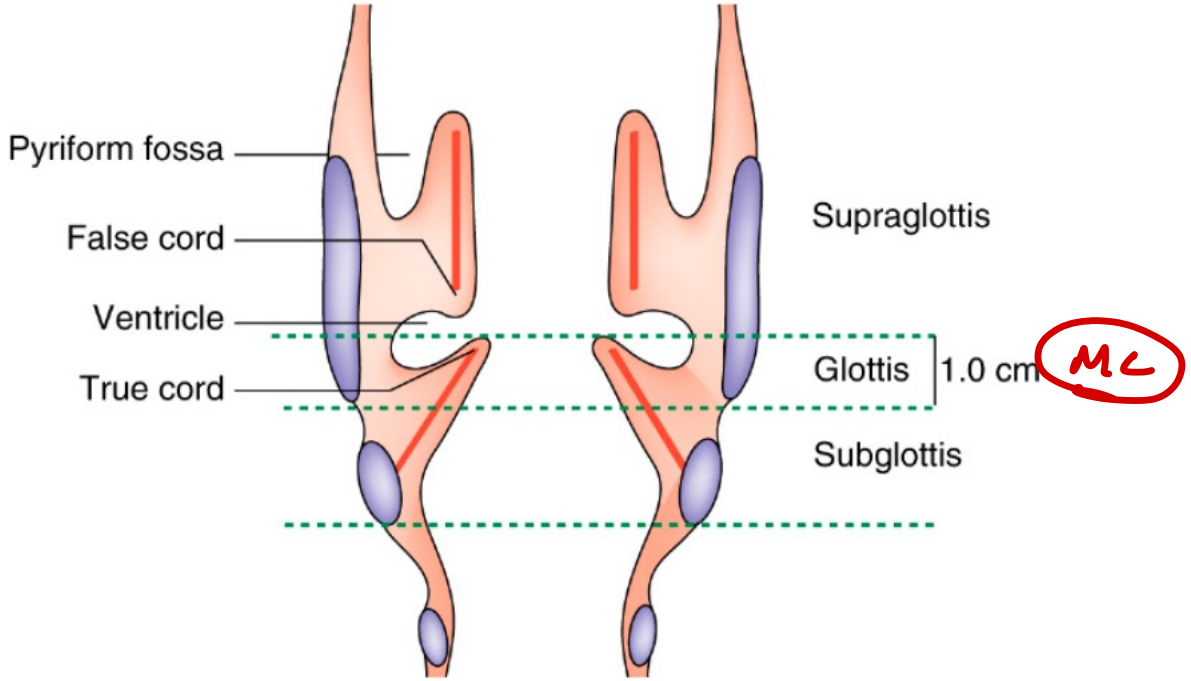
Blastic
Breast / prostate Batson's

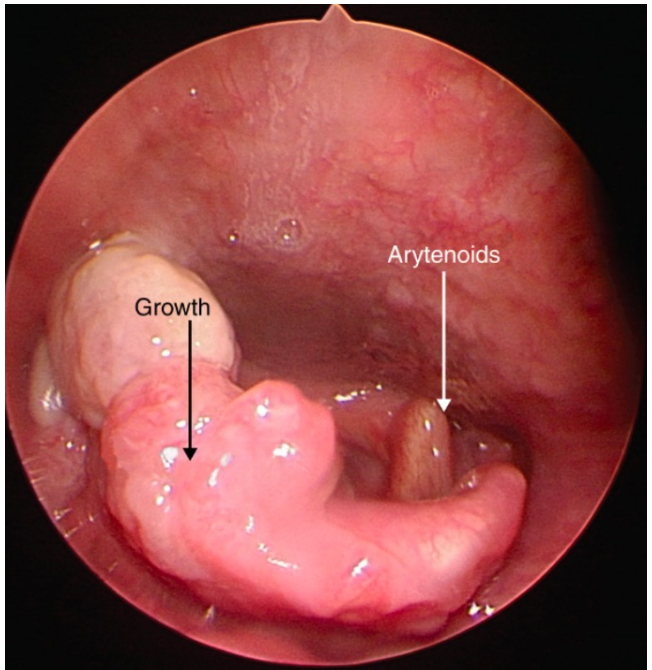
Modified Radical Stewart incision	Preserve: Axillary vein, Bell's nerve, Cephalic vein, Dorsal thoracodorsal N

Auchinclaus	Scanlon	Patey
	cut pectoralis	remove

LARYNX

Both *tobacco* and *alcohol* are well-established risk factors in laryngeal cancer. Cigarette smoke contains benzopyrene and other hydrocarbons which are carcinogenic in man. Combination of alcohol and smoking increases the risk 15-folds compared to each factor alone (2-3 folds). *Previous radiation* to neck for benign lesions or laryngeal papilloma may induce laryngeal carcinoma. Japanese and Russian workers have reported cases of familial laryngeal malignancy incriminating *genetic factors*. *Occupational exposure* to asbestos, mustard gas and other chemical or petroleum products has also been related to the genesis of laryngeal cancer but without conclusive evidence.





CA LARYNX

T1	T2	T3	T4
• one subsite	• 2 subsites	• 3 Ps — post cricoid, preglottic, paraglottic	(a)
• VC mobile	• VC mobility (↓)	• VC fixed	(b) I M P — ICA, med, prevert
		• Thyroid cartilage — inner cortex	

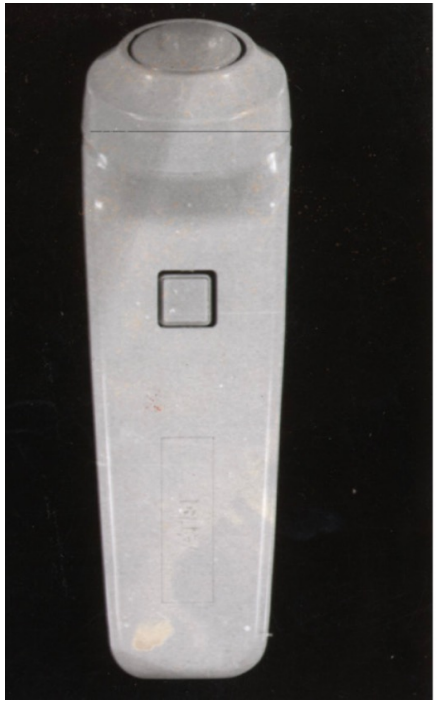
MC: Glottic
Best prognosis: "
IOC FOR STAGING CA LARYNX- CECT
IOC FOR CARTILAGE INVASION- MRI

T1 glottic: Co2 laser
T1/ T2: RT > PL
T3/T4: TL > CT-RT

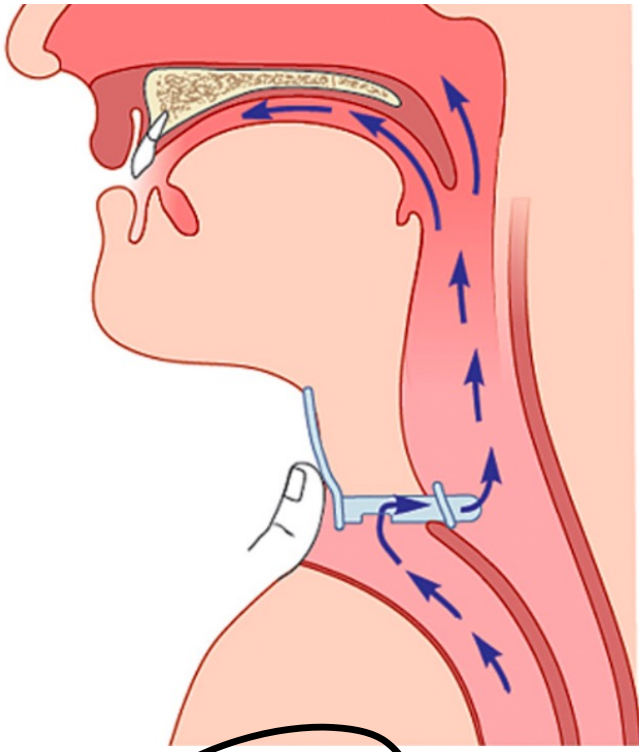
Total laryngectomy is indicated in the following conditions:

(i) T_3 lesions (i.e. with cord fixed)
(ii) All T_4 lesions
(iii) Invasion of thyroid or cricoid cartilage
(iv) Bilateral arytenoid cartilage involvement
(v) Lesions of posterior commissure
(vi) Failure after radiotherapy or conservation surgery
(vii) Transglottic cancers, i.e. tumours involving supraglottis and glottis across the ventricle, causing fixation of the vocal cord.

It is contraindicated in patients with distant metastasis.

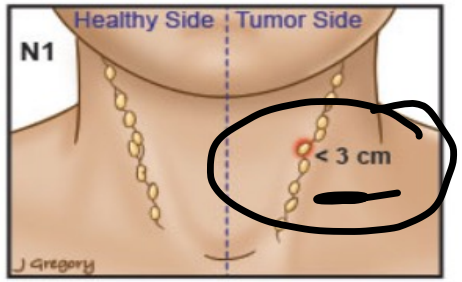


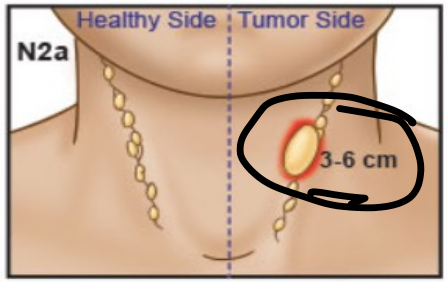
electro-laynx

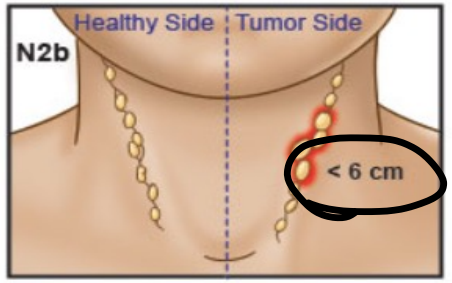


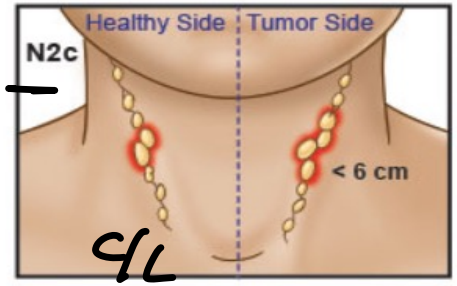
TEP

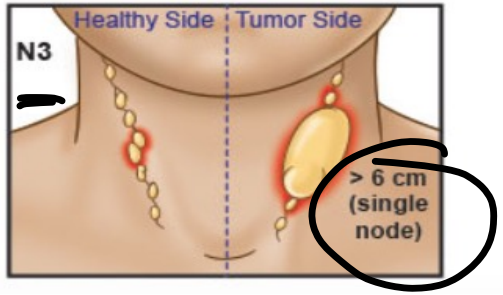
N CATEGORY	N CRITERIA[b]
NX	Regional lymph nodes cannot be assessed
N0	No regional lymph node metastasis
N1	Metastasis in a single ipsilateral lymph node, 3 cm or less in greatest dimension and ENE-negative
N2	Metastasis in a single ipsilateral lymph node, 3 cm or less in greatest dimension and ENE-positive; *or* more than 3 cm but not more than 6 cm in greatest dimension and ENE-negative; or metastases in multiple ipsilateral lymph nodes, none more than 6 cm in greatest dimension and ENE-negative; *or* metastasis in bilateral or contralateral lymph nodes, none more than 6 cm in greatest dimension, ENE-negative
N2a	Metastasis in a single ipsilateral or contralateral lymph node 3 cm or less in greatest dimension and ENE-positive; *or* metastasis in a single ipsilateral lymph node more than 3 cm but not more than 6 cm in greatest dimension and ENE-negative
N2b	Metastasis in multiple ipsilateral lymph nodes, none more than 6 cm in greatest dimension and ENE-negative
N2c	Metastasis in bilateral or contralateral lymph nodes, none more than 6 cm in greatest dimension and ENE-negative
N3	Metastasis in a lymph node more than 6 cm in greatest dimension and ENE-negative; or metastasis in a single ipsilateral lymph node more than 3 cm in greatest dimension and ENE-positive; *or* metastasis in multiple ipsilateral, contralateral, or bilateral lymph nodes, with any ENE-positive
N3a	Metastasis in a lymph node more than 6 cm in greatest dimension and ENE-negative
N3b	Metastasis in a single ipsilateral node more than 3 cm in greatest dimension and ENE-positive; *or* metastasis in multiple ipsilateral, contralateral, or bilateral lymph nodes, with any ENE-positive





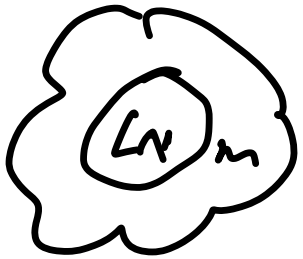






ENE R/P

Extra-nodal



N1 — <3cm single

N2 a — 3-6cm sing

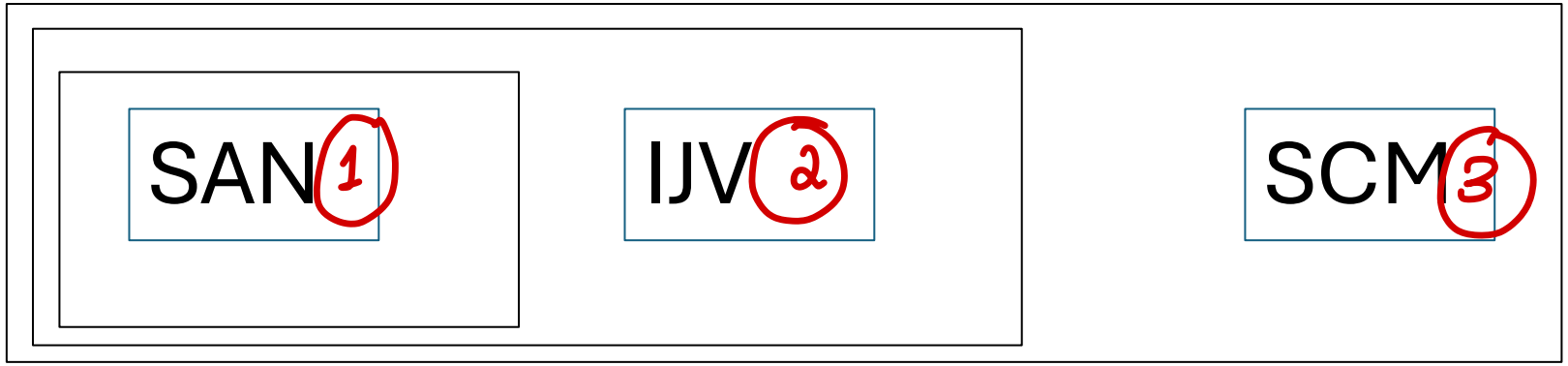
b — <6cm multip

c — c/l

N3 — >6cm

ENE +/-

NECK DISSECTION



Level
1-5 LN

SMG

PAROTID
TAIL

× SL

Functional dissection- type 3
-Supraomohyoid dissection- Level 1–3
-Central dissection- +6 pretracheal

ORAL CAVITY

1. **Smoking.** Incidence of oral cancer is six times more in smokers than in nonsmokers. In certain parts of India, there is an unusual habit of reverse smoking where burning end of the "churat" (rolled tobacco leaf) is put in the mouth. This gives high incidence of cancer of the hard palate.
2. **Tobacco chewing.** Powdered tobacco, mixed with lime, is placed in some part of the vestibule of the mouth. Carcinoma develops at the site of the quid. Chewing "pan" and keeping the quid in the vestibule is largely responsible for oral cancer in India.
3. **Alcohol.** Cancer of upper aerodigestive tract occurs six times more in heavy drinkers as compared to non-drinkers.
4. **Dietary deficiencies.** Their role in genesis of cancer has not been definitely established. Riboflavin deficiency may be responsible for cancer in alcoholics. Paterson–Brown–Kelly syndrome also called *Plummer–Vinson syndrome* (iron deficiency anaemia) is responsible for cancer of the oral cavity and hypopharynx.
5. **Dental sepsis, jagged sharp teeth and ill-fitting dentures.** All these cause chronic irritation and may lead to development of cancer.

CHEMOPREVENTION

It is the use of certain pharmacological agents to *halt*, *delay* or *reverse* the process of carcinogenesis. It has been used to prevent oral premalignant lesions to develop into cancer or to prevent the development of second primary cancers after the main primary cancer has been treated. Agents used have been vitamin A, beta carotene, alpha tocopherol (vitamin E), selenium and natural or synthetic retinoids such as 13-cis retinoic acid. Beta carotene and vitamin A induced remission of oral leukoplakia is seen in 25–50% of patients. Similarly, in a controlled trial, 13-cis retinoic acid reduced the incidence of second primary lesions in the aerodigestive tract. The beneficial effect of these agents may be limited to the duration of treatment only.

In addition to their use in head and neck, retinoids have shown significant chemopreventive activity in cancers of lung, skin, cervix, bladder and ovary. Trials are also being conducted in Cox-2 inhibitors (e.g. celecoxib) in the prevention of oral premalignant lesions.

CATEGORY	T CRITERIA
TX	Primary tumor cannot be assessed
Tis	Carcinoma in situ
T1	Tumor ≤2 cm, ≤5 mm **depth of invasion (DOI)** (not tumor thickness)
T2	Tumor ≤2 cm, DOI >5 mm and ≤10 mm *or* tumor >2 cm but ≤4 cm, and ≤10 mm DOI
T3	Tumor >4 cm *or* any tumor >10 mm DOI
T4	Moderately advanced or very advanced local disease
T4a	Moderately advanced local disease: (lip) tumor **invades through cortical bone** or involves the **inferior alveolar nerve**, **floor of mouth**, or **skin of face** or **maxillary sinus.** Note that superficial erosion of bone/tooth socket (alone) by a gingival primary is not sufficient to classify a tumor as T4
T4b	Very advanced local disease; tumor invades **masticator space**, **pterygoid plates,** or **skull base** and/or **encases the internal carotid artery**

most imp prognostic

SIMP

IOC FOR CA ORAL CAVITY : CECT

IOC FOR CA TONGUE: MRI

Depending on the size and extent of the primary lesion of the tongue, surgery may consist of hemiglossectomy including a portion of the floor of mouth, segmental or hemimandibulectomy and block dissection of neck nodes—the so-called "commando operation."

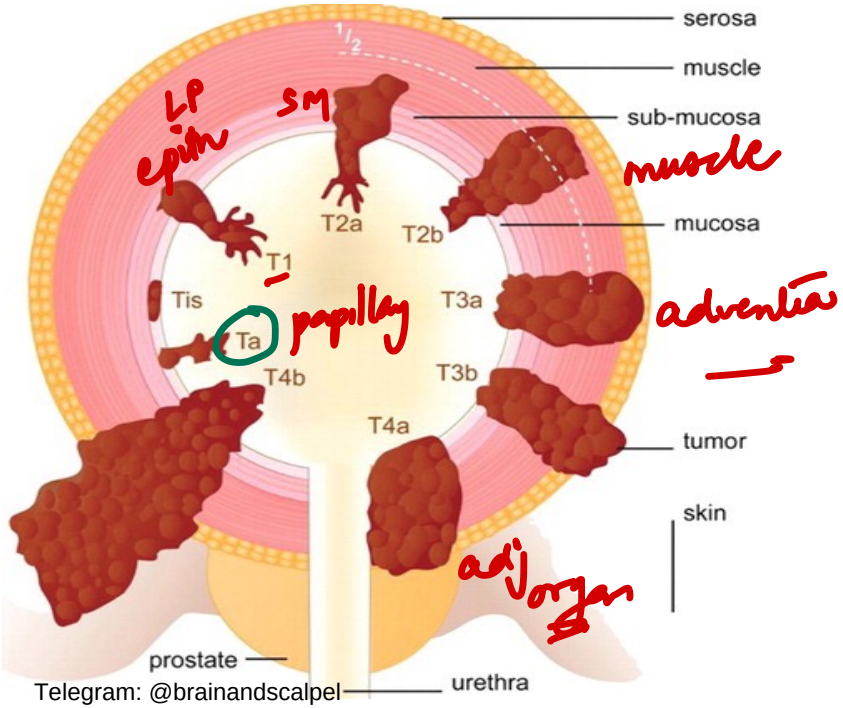
UB

UROLOGY

CA UB
Smoking, Textile dyes: benzidine → TCC
Stones, Schistosomiasis: sq cc
Ectopia vesicae, Urachus: adenoca
IOC: cystoscopy
Radiological IOC: MRI
VIRADS

CA PENIS (shaft / glans)
Bowen's disease = Erythroplasia of Queyrat
BXO
Jackson staging
Moh's micrographic surgery
Excision with 2cm margin
FNAC/ SLNB for inguinal LN

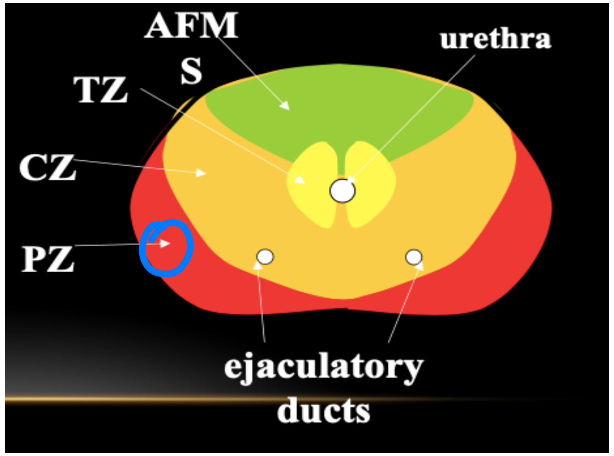
BCC



Ta/T1 - cystoscopic excision → Contact CT : BCG / mitomycin
T2- radical cystectomy
T3/T4 → Chemo (NACT) → Sx
Urinary diversion: ileum

PROSTATE

CA PROSTATE



Initial- PSA
IOC- MRI
PIRADS- MRI
PMSA PET - staging
GOLD STANDARD → Core bx (TRUS)
No. of cores- 12

Risk Group*	Grade Group	Gleason Score
Low/Very Low	Grade Group 1	Gleason Score ≤ 6
Intermediate (Favorable/Unfavorable)	Grade Group 2	Gleason Score 7 (3 + 4)
	Grade Group 3	Gleason Score 7 (4 + 3)
High/Very High	Grade Group 4	Gleason Score 8
	Grade Group 5	Gleason Score 9-10

TZ: BPH
PZ: adenoca

TURP
DISTAL LIMIT- Verumontanum (ext sphincter)
TURP syndrome- ↓Na+
DW-Monopolar cautery

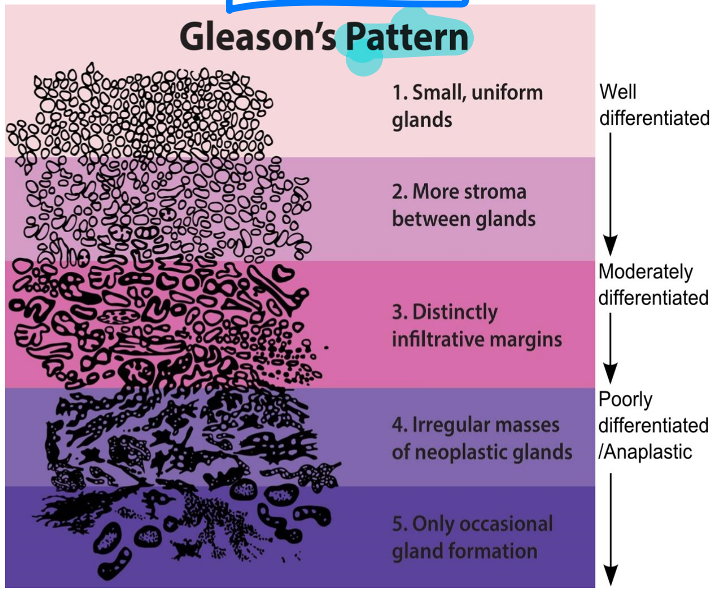
MC complication- RG ejaculⁿ

T1/ T2: Capsule
<10yr survival, PSA<10,Gleason <6: Surveillance

>10yr survival: RP / RT

T3/T4: androgen ablⁿ ± RT

AA:
Goserelin/Leuprolide
Flutamide
Orchidectomy



TESTES

TESTICULAR TUMORS

Painless testicular mass

MC- Seminoma

Initial- USG +

Tumor markers- HCG ✓, AFP ✓, LDH ✓ (HALL)

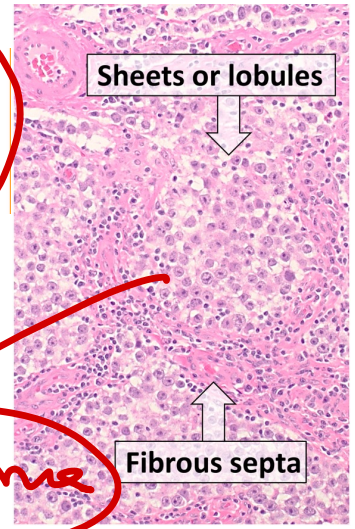
Biopsy/FNAC? No

IOC for T staging- HIRO

Chevassu's maneuver- frozen seen by

IOC for RP LN- CECT

	LDH (U/L)	hCG (mIU/ml)	AFP (ng/ml)
S1	<1.5 x normal	<5000	<1000
S2	1.5–10 x normal	5000–50 000	1000–10 000



Seminoma

Stage	
I serological	Tumor limited to the testis with persistence of elevated markers
Stage II	Regional lymph-node spread, but not to distant lymph nodes or distant organs
Stage IIA	Regional lymph node measures <2 cm; if surgical lymph-node dissection has been performed, no more than five lymph nodes are positive for cancer
Stage IIB	Regional lymph node measures 2–5 cm; if surgical lymph-node dissection has been performed, no more than five lymph nodes are positive for cancer
Stage IIC	Regional lymph node measures >5 cm
Stage III	Supradiaphragmatic lymph-node, pulmonary, or other visceral involvement

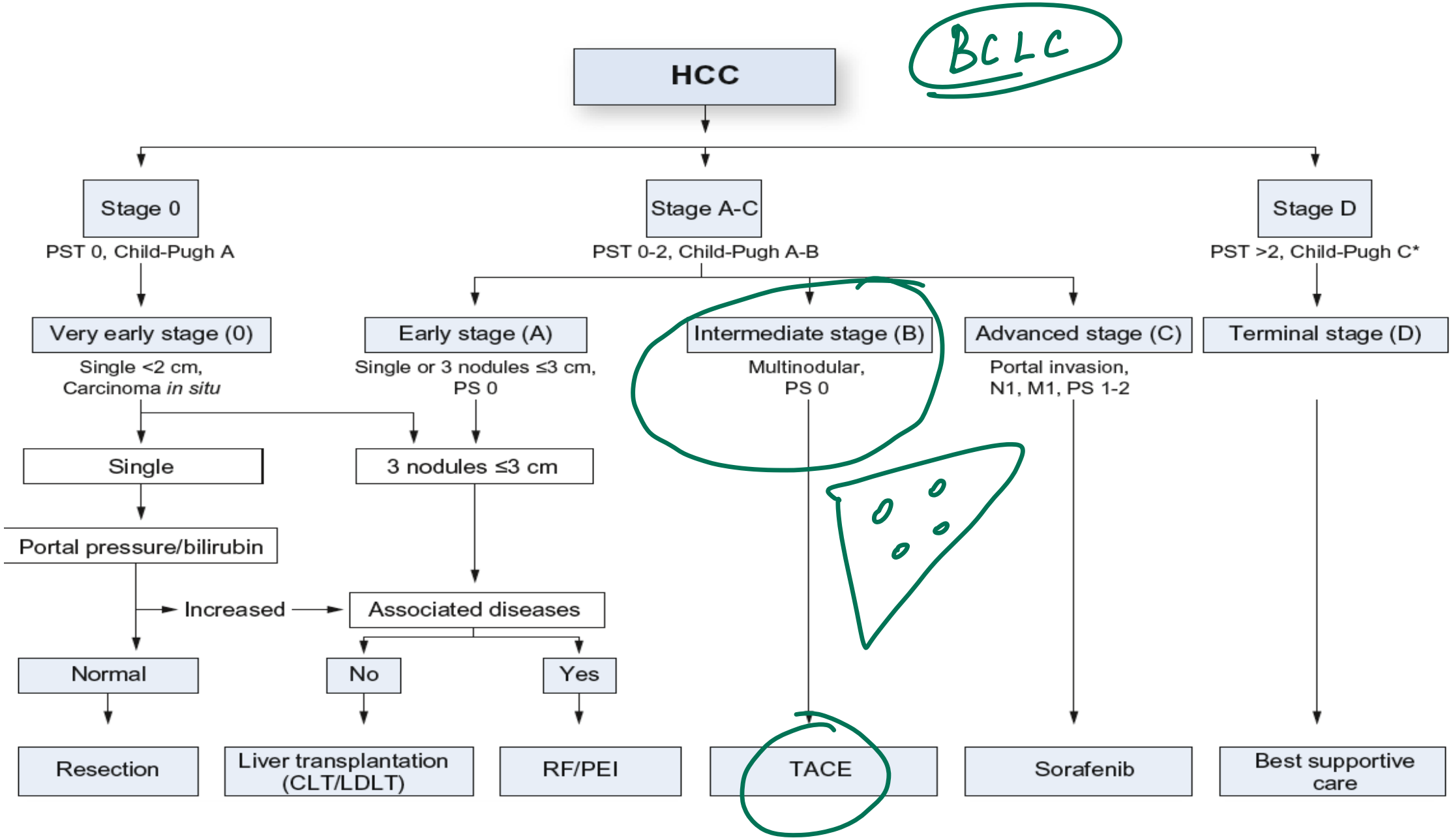
Seminoma → CT/RT — 1 cycle

NSGCT → CT — 2 cycle

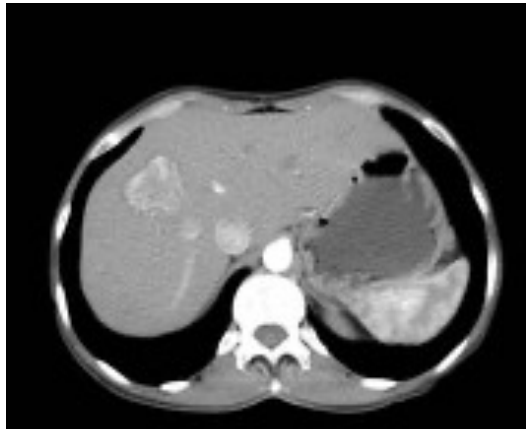
adj → RP LN

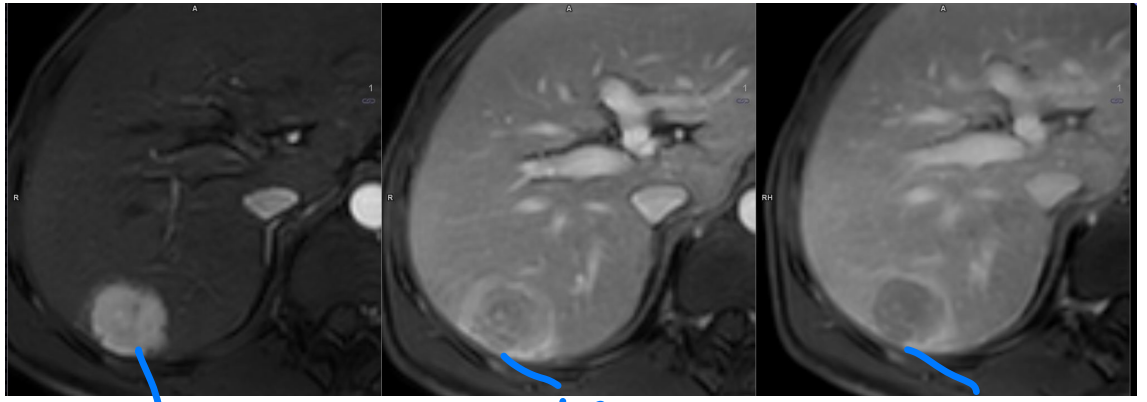
CT

HCC



LIVER-Tumors





art enh

venous washout

delayed capsule

HCC

TP CT / TP MRI

Type I: Inactivated HNF1-a

LFAT

Type II: B catenin activation – worst prognosis

Type III: Inflammatory (inc)

DCP

Adenoma

AFP

PIVKA II

GPC3

OPN

Milan Criteria (Mazzaferro et al, 1996)

- Single tumor ≤ 5 cm, or
- 2-3 tumors none exceeding 3 cm, and
- No vascular invasion and/or extrahepatic spread

UCSF Criteria (Yao et al, 2001)

- Single tumor ≤ 6.5 cm, or
- 2-3 lesions, none exceeding 4.5 cm, with total tumor diameter ≤ 8 cm
- No vascular invasion and/or extrahepatic spread

Liver transplant + HCC

CLIP staging system for HCC

Variable	0	1	2
Child-Pugh score	A	B	C
Tumor morphology	Uninodular and extension ≤ 50%	Multinodular and extension ≤ 50%	Massive or extension > 50%
AFP (ng/dL)	< 400	≥ 400	
Portal vein thrombosis	No	Yes	

Table 4 Okuda staging

Factors representing advanced disease	
- Tumor size >50% of liver	
- Ascites	
- Albumin <3 g/dL	
- Bilirubin >3 mg/dL	
Stage I	No factors present
Stage II	1-2 factors
Stage III	3-4 factors