Toppersnotes
Unleash the topper in you

NEET-PG

PART

VOLUMI

Cardiology oncolog

SIERRA INNOVATIONS
Private Limited

CARDIOLOGY

GENERAL ONCOLOGY

→ GENERAL ONCOLOGY ←

NEOPLASM : Abn, excessive, uncontrolled, uncordinated and unregulated growth → continues to presut m the same exces pattren → given of the ~~the~~ initial stimulus is withdrawn

all together K/A . "Autonomous growth"

Benign Malignant

MCQ ① Most reliable creteria : Metastasis

② 2nd reliable in absence of metastasis : Invasiveness

3rd most reliablity : a) ↑ N/c ratio
b) loss of polarity
c) Hyperchromatosis
d) ↑ cd mitotic activity

There is no 3rd creteria

Only 2 criteria

Sarcomas shows . a) Epithelial lining creteria
b) connective tissue "

Benign : > Encapsulated

capsule

True Benign — Pseudo - Malignant

- circumscribed
  - True capsule : Continuous / ē out any breech
  - Pseudo : It is an incomplete capsule

(3) Necrosis

Geographic =

Sudden transition from

Viable → necrotic area

(clear cut demarcation)

(4) ↑ mitotic activity

Mitotically active leiomyomas

vs

LMS

Locally invasive tumours

They have notorious tendency for recurrence

Ex: 1 BCC (basal cell carcinoma)

2 PA (pleomorphic adenoma)

3. Fibromatosis (Desmoid tumour)

4. DFSP → It may evolve into Fibrosarcoma.
↓
(Dermato fibrosarcoma protuberance)

MARGIN CLEARANCE

margin defined as. amount of the (N) parent (or) host tissue that is removed along the tumour circumference.

Margin clearance

Ideal / adequate margin — Minimum margin

I Malignant:

minimum margin: 5cm

Q: LAR & APR

↓ for cancer in sigmoid colon ↓ significantly above the pectinate line

for tumour in close vicinity for tumour like. below the pectinate line →

↓ sphincter can be saved / <5cm is removed — It has to be removed

* 5 cm resional because of Intramuscular spread

* Ideal margin depends on Blood supply / physiology

Eg: T.I + C&A + A.C + 1/2 T.C = Rt Hemicolectomy

* But pt can't cop in malabsorption

all these are supplied ⇒ Caecum / ileum / jejunum / ascending colon by superior mesenteric artery

Locally Invasive

Ideal 1 cm Minimum 0.5 cm

Chemotherapy → M/c for Haemotological malig

* Induction chemotherapy (High dose chemotherapy)

C out significant side effects (oo)

Dose limiting side effect

M/C S/E = Bone marrow suppression (Nutropenia)

Induct^{n} chemotherapy

↓

Single drug / Multiple drug regimen

↓

High dose to achevie remission

(Remission dou not mean cure)

clinical remission: pt free from clenical symptoms of the cancer

* Consolidation: (Repitation of induction chemotherapy) → Haemotological malig

traget is to prolong remission

* Intensification: change the → general malig

Higher dose chemotherapy:

↓

Same (or) alternate drugs

↓

Further prolong remission

* Maintenance: (General malig) defined as low dose CT i.e given over long periods & drug free intervals.

↓

traget is to prevent Recurrance

- maintanance (or) cycles

* Adjivent Chemotherapy: Sx and after that CT

Eg: Epithelial Cancer

↓

Q Serous cancer in ovary

↓

Sx f/b CT

Debulking Sx → IP/CT → systemic (or) IV CT

↓

(Intraperitoneum)

* ChemoSensitive

Growth fraction of tumours

proliferative pool / Replicative pool

Definition: % of tumour cell that are actively multiplied (or) % of tumour cell that lie in the cell cycle.

⇒ chemosensitive phase in cell cycle: S phase

Growth fraction : CONSTANT

↓

Benign / Malignant = 15 to 20%

* Debulking Sx : Excission of the tumour that is surgically amenable

100 cell (tumour) → Debulking → 70 cell (removed)

↓

30 cell (remaining)

↓↓

↑Growth fraction

↓

Induction chemotherapy ⇒ 27/30 ← ↑90%

↓

Acheive remision

↓

3 cells remaining

↓

to remove these 3 cell DO Maintanance CT

↓

* After debulking → IP CT / HIPEC

↓

① Hyperthermic IP CT : 4-6 wks

↓

② Interval for 4-6 wks

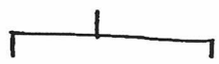
↓

③ Systemic CT

[on OT table itself]

* Neoadjuvant Chemotherapy

- Mostly for Breast Ca (Neo and adjuvant CT)
- T_4 lesion ⟶ LABC (locally advanced Breast Ca)



T_0 No tumour

T_{is} DCIS

T_1 ≤ 2 cms

T_2 2-5 cms

T_3 > 5 cms

T_4 { T_{4a} Skin ulcer ; T_{4b} Infiltration into chest wall } } LABC

- Neoadjuvant CT = CT ✝b Sx ✝b CT

LABC = CT → Sx → CT → (RT) *

Neoadjuvant CT = Shrinkage of Tumour (or)
Downstaging of Tumour

* Radiotherapy

External RT
Eg: LINAC

Internal RT
Eg: Brachy therapy

Brachytherapy

Intracavitary (Body cavity)	Interstitial Brachytherapy (implant C in, tumour/ close to tumour)
eg: Ca Cx Uterine Ca Ca Colon	↓ Permanent Implants

* Implants of Brachytherapy:

- Short $t_{1/2}$ and Low energy
- High dose in a close range
- Low normal dose for the purpose of conformal treatment

→ METAPLASIA ←

Change of one type of epithelium into another type of epithelium (or)

Replacement of one type of mature epithelium by another type of mature epithelium

Eg: squamous, metaplasia lung & Cx

SCC

Q Pancoast tumour: apical adeno carcinoma of lung

Barret's metaplasia : Goblet cells → AB-PAS (stain) ..

- for TB / Histoplasm : Stain
  (∞) ZN stain
  Lepra

- Lepra → ∞
- .
- .
- Melanin → Masson fontena and
  Melanin bleech

* DYSPLASIA "Disordered growth"

1. Loss of polarity:

   Architectural disorientation of cell & respitive to each other.

Q: Loss of polarity is the 1st change in the indicates the ongoing neoplastic process.

2. ↑ N/C ratio :

Q: Normal range : 1:6 - 1:4

Cancer cell : 1:2 - 1:1

↓ → Seen in Highgrade anaplastic cancers

But answer

3. pleomorphism

4. Hyperchromasia / Course chromatin

5. ↑ed Mitosis / ↑ed mitotic activity / ↑ed mitotic Index

(N) tissues showing ↑ed mitosis = Skin
GIT
Highest Mitotic Index ⇐ Bone marrow
} Normal process

* ANAPLASIA

(1) ALL features of dysplasia are present in anaplasia

(1) Mitotic Index : ~~###~~ no of mitotic figure per 10 HPF

Q $\frac{15\ MF}{\text{"50" Hpf}}$ = used in GIST

(N) Bipolar Mitotic figure

Tripolar / Quadripolar / Multipolar Mitotic figures

(2) Atypical mitotic figure

Anaplastic

* Metaplasia is always a reversable change

* Dysplasia in initial stages

D- Low grade = LSIL (reversable change)

↓

D- High grade = HSIL

(or)

A/k/A carcinoma insitu

↓

Invasion

↓

converted to malignancy → May / may not go into stage of anaplasia

(SCC)

High grade and Anaplasia = Irreversible

All anaplastic tumours

- clinically malignant
- All malignant tumour may / may not anaplastic

Definition of anaplasia: loss of differentiation

[Undifferentiation / poorly differentiation]

Q Desmoplasia:

1. Definition 2. Major factor 3. Mechanism 4. example

Definition:

Excessive host stromal fibroplastic proliferation

Stony hard carcinoma = Scirrhous

Major factor: Vascular endothelial growth factor

Mechanism. Tumour cell (Tumour on host reaction)

↓

VEGF

↓

acts on host stromal fibroblasts

↓

PDGF & FGF

↓

trigger the cascading reaction

↓

excessive fibroblastic proliferation

⇒ Host on Tumour Reaction

Be host try to minimize tumour ☆ help of capsule

Example:

- Ca Breast
- Ca colon
- Linitis plastica
- Fibrolamellar Ca Liver
- Anaplastic ca thyroid
  ↓
  extremely Hard
- Ca Gall Bladder
- Cholangio carcinoma

- Perampulary ca
- Desmoplastic variant, Ca pancreas

* DIFFERENTIATION

"the morphological and functional resemblance of tumour cells to the cell of origin".

Well dif	Mod dif	Poorly dif
Carry Both, morphological & functional	M + No Func	No Morph + No Func

Q Adenocarcinomas

Well dif adenocarcinoma: M+F present

Intact glands → Altered size/shaped
+
presence of Mucin

(Or called as)
⇒ Musin secreting adenocarcinoma

Moderately diff adenocarcinoma: M + No funct

Broken / fragmented gland
+
No mucin

Poorly diff: No morp + No function

Single cell pattern

+

No mucin

Q Exception: Poorly dif adenocarcinoma which has retained function

↓

Signet Ring cell Adenocarcinoma { Mucin is present + Single cell pattern

↓

clinically called as Diffused Carcinoma Stomach

↓

Linitis Plastica

↓

Q M/c site : GIT

M/c site in GIT: Stomach > colon

↓ ↓

(Colorectal Carcinoma) CRC

M/c extra GIT site: Krukenburg's tumour

→ IMMUNOHISTOCHEMISTRY ←

(IHC)

Epithelial: CK, EMA → is better

Cytokeratin, epithelial memb Ag

Pan CK

Soft tissue tumour : Vimentin

(Vimentin is +ve also in epithelial cancer)

Q: A Carcinoma c Vimentin +ve = Carcinosarcoma

(or)

always of grade 4 cancer ← Sarcomatoid carcinoma

Carcinosarcoma of uterus : MMMT

(malignant mixed mullerian tumour)

* Connective tissue / Sarcomas = C +ve CK

↓

***Q Example: Synovial Sarcoma

- Monophasic
- *Q Biphasic
  - ↓
  - epithelium is well formed gland
  - ↓
  - show +ve CK

* Examples of Biphasic :

Carcinosarcoma

Synovial Sarcoma

Wilm's tumour

Mesothelioma
- Epithelioid mesothelioma (m/c type)
- Sarcomatoid (spindle shaped cells)