INTRODUCTION TO GYNE-ONCOLOGY

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Gynecological swelling

Gynecologic swelling is either non neoplastic or neoplstic.

Non neoplstic swelling may be ;
1.Congenital 2.Traumatic 3.Inflamatory 4.Vascular 5.Others.

Neoplastic swelling [tumor] may be;
A.Benign: e.g. 1.papilloma[from epthelial origin].
2.Adenoma[from glandular origin].
3.Connective tissue swelling (lipoma,fibroma……etc)

B.Malignant: e.g. 1.Carcinoma[from epithelial origin]
2.Adenocarcinoma[from glndular origin]
3.Sarcoma[from connective tissue origin]

Malignant tumor is either ***primary*** or ***secondary*** :

(a) Primary malignant tumors are more common than secondary tumors in:

1. ovary 2.uterus 3.cervix 4.vulva.

(b). Secondary tumors are more common than primary malignant tumors in:

1.vagina 2.fallopian tube.

- *We will discuss tumors in a systematic manner i.e . tumors of the ovary, tumors of the uterus ,tumors of the cervix* ……etc.

- Under each organ ,the following is discussed:

1.Neoplastic swelling; benign ,malignant(pre-invasive & invasive).

2.Non-neoplastic swelling (as differential diagnosis).

When discussing a malignant swelling , discussion is not complete except after fulfilling the following:

I. ANATOMY

II.PATHOLOGY

III.CLINICAL PICTURE

IV.CLINICAL STAGING

V.INVESTIGATION

VI.TREATMENT

VII.FOLLOW-UP AFTER TREATMENT

VIII.PROGNOSIS

I. ANATOMY: the exact anatomy, relations, blood supply, venous and lymphatic drainage of the affected part must be known well.

II.PATHOLOGY (**i**ncidence, **s**ite, **g**eographic distribution , **p**redisposing factors or **p**remalignant lesions, **m**acroscopy or gross appearance , **m**icroscopy, **c**omplications &spread ,**p**rognosis &prognostic factors).These items can be remembered by the following sentence[***I***n ***s***urgical ***g***own ***p***hysician ***m***ay ***m***ake ***c***onsiderable ***p***rogress].

III.CLINICAL PICTURE:

(A).**Symptoms**: The patient may present with[ABCDEPP] :

1-Asymptomatic: discovered accidentally.

2-Bleeding: pre-menopausal, peri-menopausal, or post-menopausal.

Menorrhagia, metrorrhagia or contact bleeding.

3-Complication symptoms:

* *General* :cachexia (rapid, progressive loss of weight)

Infection (systemic) due to diminished immunity.

**Local:* depend on the organ affected.

4.**D**ischarge: which starts asserous or mucoid &may turn serosangionous or mucopurulent or purulent due to infection.

5.**E**nlargement: a swelling can be detected by the patient or the abdomen is enlarged.

6.**p**ressure symptoms:

- on urinary bladder→ frequency of micturition .

-on rectum → dyskasia, constipation ,sense of in complete act .

-on pelvic vessels → edema, varicose veins in lower limbs or vulva

7.Pain : may be:

a). *somatic* pain: due to infiltration of somatic nerves(eg. sciatic roots) leading to severe shooting pain in gluteal region & back of the thigh.

b). *visceral* pain :due to infiltration of organs (urinary bladder or rectum).

(B). Signs(=examination):-

*General exam: cachexia enlarged L.N.,…… etc.

*Abdominal exam:(especially for liver & ascites).

*Local exam.: for the tumor &local complication including local spread.

*P/R exam is mandatory for exam. of : rectal wall, parametric tissue ,uterosacral ligament & cul-de-sac.

N.B.

The organs that give *secondaries* to genital tract & should be examined are :*thyroid , breast, stomach, colon, kidney, lymphoma*.

The organs which are sites for secondaries from genital tract are:

(i)Lymphatic spread: local LN, para-aortic LN & left supraclavicular

gland (Virchow' s gland) → Troisier sign.

(ii)Blood spread: to Brain, Bone, Lung, Liver(BBLL).

(C).Differential diagnosis:(of the earliest [1st] presentation as follows)

(i). vulva → DD *of pruritus vulva*.

(ii). vagina → DD *of bloody discharge*.

(iii). cervix → DD *of contact bleeding*.

(iv). Uterine body → DD *of postmenopausal bleeding*.

(v) . Ovary → DD of GIT symptoms(*dyspepsia, distension & dyskasia*)

IV-CLINICAL STAGING:

- Applied to all *except ovary* which is intra-abdominal organ.

According to FIGO Staging:

Stage 0: Pre invasive lesion.(in-situ tumor).

Stage I: Tumor limited to affected organ.

Stage II :Local spread (to genital organs).

Stage III: pelvic spread

Stage IVA: to urinary bladder &rectal mucosa.

IVB: distant metastases(LLBB).

IV-CLINICAL STAGING:

*Stages I,II,III may be subdivided into a, b, c.

*FIGO (International Federation of Obstetrics & Gynecology) staging system is the most widely used allover the world.

*Surgical staging (at laparotomy) is applicable to :

1.Ovarian (and correspondingly Tubal) carcinomas.

2.Endometrial carcinoma.

*TNM staging of UICC (International Union Against Cancer) which consider tumor size(T),Lymph node involvement(N),and distant metastastasis(M) have been included in the (1996) FIGO staging of carcinoma of the VULVA.

V. INVESTIGATIONS:

There are four aims of investigations:

(A).*Screening of malignancy.*

(B).*Confirmation of diagnosis.*

(C).*Confirmation of spread; local ,lymphatic , or blood spread.*

(D).*Preparation of the patient for therapy.*

(A) Screening for genital malignancy:

The WHO criteria for ideal screening are:

1-The condition is an important health problem.
2-Disease history should be well-known.
3-Early stages should be known.
4-Treatment of early stages is better than late stages.
5-Screening test should be:
(a).suitable, (b).accepted by the patient,
(c).easy to physician & cheap for patient.
6-facilities for diagnosis & treatment of abnormalities.
7-cost/ benefit ratio evaluated.

In screening for gynecologic malignancy, the only nearly "ideal" is screening for "pre-invasive cervical malignancy" in the present time.

(B) Confirmation of "malignant" diagnosis:

-Malignancy is only diagnosed after "*histopathologic examination*" of a biopsy taken from the affected tissue.

-Pathological diagnosis is usually made on tissue fixed in formaline which takes several days to process. However, fresh tissue can be examined within minutes of removal from the body if it is *flash –frozen &sectioned immediately*. While the accuracy of diagnosis on frozen section is limited, it is a useful method of determining whether or not margins of excision during surgery are clear or whether lymph nodes are involved.

-Special *histochemical methods* may help to resolve the precise diagnosis in some difficult groups of tumors e.g. uterine sarcomas , germ cell tumors and tumors that are anaplastic or have no obvious cell origin.

-Equally, staining of tissues with *"monoclonal antibodies"* may show the presence of tumor markers(e.g. CEA, CA125)that were not detectable in patient's serum, allowing a more specific diagnosis to be made.

(C) Confirmation of spread:
1-Local spread:

i-*Vulva, vagina, cervix* :- by inspection ,palpation, colposcopy &biopsy.

ii-*Uterine body :*-by D&C and hysteroscpy.

iii-*Ovary, tubes, cul-de-sac,peritoneum*:- by laparoscopy or laparotomy.

iv-*Urethra & urinary bladder* :-by cystoscopy.

v-*Ureters* :-by IVP (usually compressed ,not infilterated)

vi-*Rectum* :-by P/R and proctoscopy.

vii-*Intestines* :-by barium studies ,upper or lower G.I.T. endoscopies.

(C) Confirmation of spread:
2. Lymphatic spread:

-The lymphatic vessels &nodes lie in the extra-peritoneal connective tissue & since they are embedded in adipose tissue, are extremely difficult to locate or demonstrate unless they are the seat of some pathological disturbance .

-It should always be remembered that lymphatic are developed from veins &that the lymphatic vessels tend to follow the course of the veins draining a particular region.

-The lymphatic nods which are filters lying along the course of the vessels are usually aggregated into small groups lying in close contact with the larger blood vessels.

-The groups of lymph nodes which are concerned with draining the pelvis &perineum are the external ,internal, and common iliacs, the aortic and the inguinal nodes.

(C) Confirmation of spread:
2. Lymphatic spread:

(A)*External iliac groups:

- Adjacent to the external iliac vein ,divided into:

(1) Superior external iliac group(above vein).

(2) Inferior external iliac group(below vein).

-Efferent from them go to common iliac nodes.

(B)*Internal iliac groups: include:

(1).Nodes adjacent to internal iliac vessels.

(2).Nodes in the base of the broad ligament in close relation to the cervix uteri (paracervical nodes).

(3) inferior sacral group: consists of :

i-lateral set → on medial aspect of internal iliac vessels.

ii-medial set → along side the median sacral vessels in the midline &extends behind the rectum.

-Efferents drain into common iliac nodes.

(C) Confirmation of spread:
2. Lymphatic spread:

(C)* Common iliac group:

(1).Lateral nodes: on the lateral aspect of common iliac vessels.

(2).medial nodes: at the bifurcation of the aorta & known as "sub aortic group".

-Efferents drain into the aortic(para aortic nodes).

(D)* Aortic group: (para-aortic).

(1).pre-aortic group: lie in front of the aorta.

(2). Retro-aortic group: lie behind the aorta.

(3).lateral aortic group: lie on either side of the aorta ;in front of inferior vena cava on the right &in front of the sympathetic chain on the left.The medial border of psoas muscle is the land-mark to identify them.

-Efferents from these groups pass into the lumbar trunk → cisterna chyli.

(C) Confirmation of spread:
2. Lymphatic spread:

(E)*Superficial inguinal group:

-Lies in the superficial fascia in the groin.

-It forms a chain consisting of medial & lateral groups just below the inguinal ligament in adults (higher in children).

-Efferent from these nods pass into the superior external iliac group via the deep inguinal group.

Confirmation of lymphatic spread

Done via the following techniques:

1-Bipedal lymphangiography:(Jackson, 1966).

Old technique rarely done nowadays.

2-Imaging techniques: "ultra sound , CT Scan, MRI Scan "

-Diagnose LN enlargement that should be at least 1 cm or more to be seen.

3- ***Percutaneous, ultra sound guided needle biopsy:***

-Diagnose histopathologic nature of LN enlargement (benign or malignant). Invasive technique & needs great skill when applied to deep LN.

4- Laparotomy (or laparoscopy) and lymph node biopsy.

(laparoscopic lymph adnectomy is discussed elsewhere).

III. Blood spread: (BBLL)

Hematogenous spread of genital tract malignancy usually occurs in bone, brain ,lung & liver.

1-Bone 2 ries:

(a). Bone survey (x- ray whole skeleton) to show osteolytic lesions.

(b). bone scan (using Technitium-99) to show radioactive uptake by the metastatic lesion.

2-*Brain 2ries*: CT Scan ,MRI Skull.

3-*lung 2ries*:

(a). Chest x-ray → cannon ball metastases. (b).CT scan or MRI chest.

4- *Liver 2ries:*

.Abdominal ultrasound .Liver scanning using Tc 99

.C T or MRI Abdomen.

. ultrasound guided needle biopsy from liver mass.

(D).Investigations to prepare the patient for treatment:

- **Required for:**

1-preoperative preparations. 2-preparation of the patient for chemotherapy or radiotherapy.

- Include:

1-Blood investigations: 2-Kidney function tests: 3-Liver function tests:

4-CHEST:

(a). chest x-ray. (b).pulmonary function tests(when indicated).

5-Heart:

(a).chest x-ray. (b).ECG ,Echocardiogram ,…….etc.

6-Medical fitness & anesthetic consultation .

7-Other investigations depending on the patient′s condition.

VI. TREATMENT OF GENITAL TRACT MALIGNANCY:

- **Includes:**

1-Prophylactic

2-Curative

3- Palliative

{A}.Prophylactic treatment:

1-Avoidance of predisposing factors.

2-Proper treatment of predisposing factors.

3-Screening for pre invasive disease.

4-proper management (treatment & follow-up) of pre invasive disease

Curative treatment: including:

1-surgery 2-Radiotherapy
3-Chemotherapy 4-Immunotherapy
5-gene therapy 6-combined therapy

Palliative treatment:

Indicated for those terminal patients who are dying from malignancy (±50% of malignant patients) to get a painless exit of life.

Palliative measures

1-General measures:

(a)Psychotherapy (b)Proper nutrition

(c)replacement therapy: vitamines , albumin, minerals, blood constituents or whole blood transfusion.

2-Specific palliative therapies:

(a).palliative surgery: cytoreductive (debulking) surgery.

(b) palliative radiotherapy.

(c)palliative chemotherapy

(d) palliative immunotherapy.

The aim of all is to delay the progress of disease.

Palliative measures

3-Pain killing measures:

(a).Drugs: analgesics ,narcotic analgesics (from aspirin to morphine).

(b).Acupuncture.

(c).surgical procedures:

i-Local neurectomy: to cut-off the sensory afferent fibers from the painful organs.

ii-Regional blockade :"on spinal cord level": **@**injection of absolute alchol into epidural space demyelination. **@** spino-thalamic cordotomy spinothalamic tract carries pain to brain.

@presaceral neurectomy.

iii-Central blockade: forntal lobectomy.

Palliative measures

4-Treatment of malignancy complications:

(a). Treatment of infection (local or systemic)

(b). Drainage of pyometra.

(c). Treatment of severe local hemorrhage.

(d). Treatment of malignant fistulas.

(e). proper drainage of urinary tract or GIT obstruction (e-g. nephrostomy, colostomy).

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VII -FOLLOW-UP AFTER TREATMENT

-The aim is to detect “persistant” or”recurrent” disease after initial treatment as early as possible:

persistant (=Residual) disease:discovered within 6 months from the initial treatment.

Recuurent disease: discovered after 6 months from initial treatment.

-Must be done for life after treatment.

-Includes follow-up of complication of treatment e.g. radiotherapy,…

VII -FOLLOW-UP AFTER TREATMENT

-Follow-up program includes:

(A). Clinical follow-up:

1-*History*: symptoms suggestive of recurrence or persistence.

2-*Examination* :local , abdominal & general exam. To detect recurrence.

(B).Investigations:

1-*Non-invasive*:

(a). Imaging techniques: x-ray, ultrasound, CT ,MRI ,Doppler studies.

(B). Tumor marker in patients serum.

2-*Invasive:*

Endoscopy : laparoscopy, cystoscopy, upper &lower GIT endoscopy..

Laparotomy :2nd lock laparotomy (e.g. ovarian malignancy).

Biopsy.

VIII. PROGNOSIS OF GYNECOLOGIC MALIGNANCIES:

-Measured by 5-year survival rate, however in aggressive lesions e-g uterine sarcoma or advanced maliganant ovarion tumor it is measured by 2- year survival rate or by the disease free interval.

-prognosis depend on many “prognostic factors” which are:

{A}-Tumor- related Factors.

{B}- Patient-related Factors.

{C}- treatment- related Factors.

{A}-Tumor- related Factors:

1-Site of tumor (and size of tumor).

2-Staging of tumor.

3-Histopathologic type.

4-Differentiation (Grading:G1=well differentiated, G2=moderately differentiated & G3 Poorly differentiated).

5-Lymph node metastases.

{B}-Patient-related prognostic factors:

Obesity , diabetes, hypertension, medical disease, old age are all factors that make the patient risky for any aggressive (radical)treatment.

{C}-Treatment –related prognostic factors:{oncology team}

1-proper sugical skills

2-proper calculation of doses & selection of chemo therapeutic regimen.

3-proper dosage & technique radiotherapy.

4- proper follow-up programs.

In general the prognosis of gynecologic malignancies can be ordered as follows (from best to worst):

Endometrial → vulvar → vaginal → cervical → ovarian.

Exceptions are :

1-uterine sarcoma : very poor prognosis.

2-choriocarcinoma :varies greatly depending on the extent of the extent of the disease & responds to proper chemotherapy.

PSYCHOSEXUAL ASPECTS OF GYNECOLOGICAL CANCER

-For a woman of any age the diagnosis of gynecological cancer can be a crisis point. Support from her partner, medical & nursing staff at all stages of diagnosis, treatment & follow-up is important.

-Sexuality is basic to how a patient"sees herself" and makes a major contribution to her quality of life ,both in social & biological sense (Andersen,1994).

-If the relationship with her partner suffers then there may be disruption of the recovery process.

-problems can be reduced by acknowledging sexuality as an area of discussion & providing support at an " early stage "in the clinician-patient contact.

PSYCHOSEXUAL ASPECTS OF GYNECOLOGICAL CANCER

-Information, which can be oral or written ,or both, needs to be understandable & relevant.

-Despite both physical & psychological chonges many women strive to remain sexuallyactive.

-if there are sexual problems, counseling & advice on dealing with them should be given ,if possible to both partners.

-Hormone replacement therapy can be also helpful ,and suitable for most patients who have been found to have gynecological cancer.

FERTILITY &GYNECOLOGIAL CANCER

1-Certain gynecologic cancers e.g gestational trophoblastic disease, and germ cell ovarian tumors , can be treated by chemotherapy without sterilization.

2-Fertility can be preserved by the use of limited surgery in superficial invasive cancer of the cervix & early stage epithelial cancer of the ovary.

3-Modern techniques of assisted conception are of help for women treated for gynecologic cancer . options are:

(a**).** *Freezing of embryos* (best results)

(b) *cryopreservation of ovarian tissue* (2nd best)

(c) Oocyte cryopreservation (least)

THE MULTI-DISCIPLINARY TEAM

- The multi-disciplinary approach to the management of cancer patient includes both primary care in the community & specialized hospital care .
- The latter should take place in a cancer center or cancer unit & should extend beyond the specialist medical team of gynecological , clinical & medical oncologists to include both general & specialist nurses, therapy radiographers , dietitians & many others.

THE MULTI-DISCIPLINARY TEAM

The following table will summarize the paramedical personnel involved in cancer patient care:

1-NURSES:

(a). hospital-based:

i-general ii-specialist(e.g. oncology , gynecology, and stoma therapy).

(b). Hospice-based (continuing care)

(c). Macmillan (both continuing & home care).

(d). District (home care).

……..

2-RADIOGRAPHERS (therapy) and medical physicists.

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3-SOCIAL WORKERS(hospital & community-based).

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4-OTHERS:

(a).physiotherapist.**(b).**occupational**(c).**Dietitian.**(d).**Pharmacist.**(e).** Counselors.

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- Thanks