Malignant disease of the cervix

Pathology:

If **CIN** left untreated after period of time, it may get the ability to invade the basement membrane of the cervical epithelium into the underlying stroma that may progress in to a larger lesion and becomes frankly invasive carcinoma.

80% of carcinomas of the cervix are ***squamous cell carcinoma*** of the squamous epithelium (Ectocervix) and the remaining 20% are ***adenocarcinoma*** of the glandular epithelium of the Endocervix.

Ectocervical carcinoma may appear as fungating, cauliflower-like growth or as an ulcer on the cervix while endocervical carcinoma may expand the cervix into barrel shape mass. The surface epithelium of the malignant growth usually become eroded; then infection occurs and the growth sloughs away to produce ulcer or cavity.

Carcinoma of the cervix can spread by:

Direct infiltration to around the growth, down to the vaginal wall, foreword to the bladder, laterally to the parametrium and paracervical area toward the pelvic side wall and backword along the uterosacral ligaments and upward extension to the uterine body can also occur.

Lymphatic spread occurs to the external and internal iliac nodes including the obturator nodes. Backward spread to presacral nodes. From these nodes spread is into the common iliac and para-aortic nodes.

Metastasis to distant organs via bloodstream is relatively uncommon because the patient may die from the effect of local extension before distant metastasis becomes evident.

Prognosis will depend on the extent of the growth at time of diagnosis and the type of histology.

Symptoms;

The earliest symptom is **vaginal bleeding.** It is irregular, intermenstrual and often brought on by coitus (postcoital bleeding) later on it becomes continuous with a varying degree of severity, it may be profuse.

When the growth ulcerates and becomes infected then a **blood stained discharge** appears which becomes **offensive.**

Pain, develops late and indicates extension of the growth beyond the cervix and infiltration of the nerves (pelvic nerves).

In **advanced cases** the bleeding may become profuse and the discharge become copious and very foul. Sever intractable sciatic pain may result from involvement of the sacral nerve plexus. Vertebral metastasis will cause sever back pain.

Incontinence of urine and some times of feces may occur following extension and ulceration to the bladder or rectum and fistula formation.

Death often occurs due to uremia following the blockage of both ureters or ascending pyelonephritis or it may occur due to hemorrhage or rarely from metastasis.

Signs;

On inspection, cancer of the cervix is usually presents as a nodule or ulcer, it often bleed on touch. In more advanced cases it may appear as large friable mass. There may be visible vaginal involvement and in advanced condition there will be fixity of the cervix to the parametrium or to the side pelvic wall, sometimes there is a visible fistula to the bladder or rectum.

Diagnosis can only be confirmed by histological study of biopsy specimen from the lesion.

Staging;

The FIGO staging is based on the findings that obtained from;
Examination under Anastasia, (Clinical staging)
***** I VP , Cystoscopy and Proctoscopy
*Liver function test and liver scan
*Biopsy of the lesion to determine the depth of stromal invasion in early disease

Staging is useful to choose the most suitable method of treatment.

FIGO staging of cervical cancer

Stage 0; CIN 3 (Carcinoma in situ)

Stage 1; Tumour is confined to the cervix.
A. Microinvasion (tumour invading to a depth between 3-5 mm in the stroma beyond the basement membrane and called preclmical invasive disease)
A1. Invasion < or equal to 3 mm
A2. Invasion to 3-5mm
B. Invasive cancer (clinically evident disease) depth of invasion is more than 5 mm.

Stage II; Tumour extending outside the cervix.
A. Tumour extending to the upper third of vagina.
B. Tumour extending to the parametrium but not reaching the pelvic wall.

Stage III; Tumour extending outside the cervix.
A. Tumour involving the lower vaginal third.
B. Tumour extending to the pelvic wall (obstructing the ureter)

Stage IV;
A. Tumour involving the bladder or rectum.
B. Tumour spread outside the pelvis i,e liver or lung involvement

Treatment:

Treatment of the clinical invasive carcinoma of the cervix is either by surgery or radiotherapy or by combination of both. If the disease is clinically confined to the cervix, then either surgery or radiotherapy can be equally effective.
Once the disease has spread outside the cervix (parametrium), then radiotherapy is usual method of treatment.

Surgery;

1. Early disease (stage 1A): Because lymph node involvement is very limited then less radical surgery can be used like Cone biopsy (when preservation of uterus is necessary) or by Trachelectomy (removal of cervix) or by simple hysterectomy.
2. More advanced conditions (stage I B – II A): There is high chance for lymph node involvement the radical surgery is recommended.

*The standard surgical procedure for carcinoma of the cervix is a ***"Wertheim's Hysterectomy"***, it is a radical hysterectomy with bilateral pelvic lymphadenectomy, it involves removal of the uterus and cervix, the parctcervical tissue and the upper 2-cm of vagina. In addition, the pelvic lymph nodes including the external, internal iliac nodes-common iliac nodes, obturator and the presacral nodes.*
* In young women in whom the uterus need to be preserved for further pregnancy then "**Radical Trachelectomy"** is performed, where the cervix and cuff of vagina(2cm) and the paracervical tissue with bilateral pelvic lymph nodes are removed

These surgical procedures are indicated only when the disease on the clinical examination does not involve the parametrium.

NOTE; ONCE THE DISEASE INVOLVED THE PARACERVICAL AND THE PARAMETRIUM TISSUE (stage IIB or more) THEN OTHER MODALITIES OF TREATMENT IS INDICATED WHICH IS *RADIOTHERAPY.*

Complications of surgery;

Bladder dysfunction, shortening of vagina, lymphedema, injuries to bladder and ureters, bowel injury, primary hemorrhage.
*The operation is especially difficult in obese patients.
*This type of surgery requires a welltrained surgeon.

Radiotherapy (radical radiotherapy); it involves the use of;
External therapy to shrink the central carcinoma and to treat the whole pelvis (map used to treat the pelvic lymph nodes).
Internal therapy, radioactive sources (caesium) are placed in the upper vagina and within the cervical canal to provide a very high dose to the central tumour.
The external beam therapy is usually given in approximately 25 fraction over 5 weeks followed by two internal treatments in the following week.

Complications of Radiotherapy;

* .Damage to the bladder including cystitis, haematuria, fistula formation.
* Damage to the rectum causing diarrhea.
* Damage to the ovaries -,menopausal symptoms
* Damage to the vagina including narrowing and loss of elasticity of vagina.

Radiotherapy can be used to treat all cervical cancer stages, it is also used as Adjuvant therapy following surgery (post operative radiation) when lymph nodes proved to be involved after the histopathological study of the specimen, or sometimes radiation may be given preoperatively to shrinks the the primary tumour and makes surgery easier.

Carcinoma of the cervix during pregnancy;

It is difficult situation but the condition managed as in nonpregnant women by Wertheim hysterectomy after doing caesarean section (in late pregnancy) or by radiotherapy using external irradiation and internal irradiation after doing abortion (in early pregnancy).

Pelvic excentration;

Consists of removal of the uterus vagina, bladder and rectum with implantation of the ureters into artificial bladder made from ileal loop and terminal colostomy is performed.
This type of surgery is performed in selected cases of pelvic recurrent disease without distant metastasis after radical radiotherapy.

Palliative treatment;

Used to manage patients with advanced disease (stage III and IV), it requires expert nursing and it involves pain relieve using analgesics like codeine, pethiden. In severe pain that is not relived by analgesics, nerve block by thecal injection of phenol or alcohol or surgical division of the spinothalamic tract (cordotomy) may be used to treat sever reluctant pain.
Surgery to divert the urine when fistula had complicate the tumour.
Radiotherapy may be used to reduce vaginal bleeding and the discharge and to control the tumour locally.
Blood transfusion for anemic patient with vaginal bleeding should be given and antibiotic therapy to combat infection.

Prognosis;

Depend on the stage of the disease progress and the experience of the radiotherapist and surgeon and the facilities offered, five year survival (for both methods of treatment) is as followings;
Stage I about 85%
Stage II about 50%
Stage III about 25%
Stage IV about 5%