Cervical Cancer

Dr Lorand SLAIMAN

Cervical cancer

- Risk Factor

1-HPV: Type 16, 18

2-STDs (sexually transmitted Ds): Ecpisially HIV -5 fold increase in risk

3-high-risk partner

4-smooking

5-Familly H.

Cervical Cancer: Signs & Symptoms

Some cases may be asymptomatic

Abnormal Vaginal Bleeding

One of the most common and early signs of cervical cancer

Post-coital bleeding; more frequent and spontaneous as disease progresses

Heavy menstrual bleeding, intermenstrual bleeding, post-menopause

Vaginal Discharge

- One of the first signs of cervical cancer
  - Early on in course of disease
- Watery → Red/Brown
- May become malodorous
- Due to inflammatory processes

Cervical Cancer: Signs & Symptoms

Vaginal Discomfort

- Pain, discomfort, irritation
- Pain during intercourse (dyspareunia)
- Due to extension of cervical cancer into the vagina

Pelvic Pain

- *Unexplained*
- Pain from cancer impinging on local nerves
- May be due to extension of cervical cancer into the pelvis (pelvic wall)

Constipation

Urinary Retention

Back Pain

- *Unexplained*
- May occur if cancer extends into or past true pelvis

Dysuria

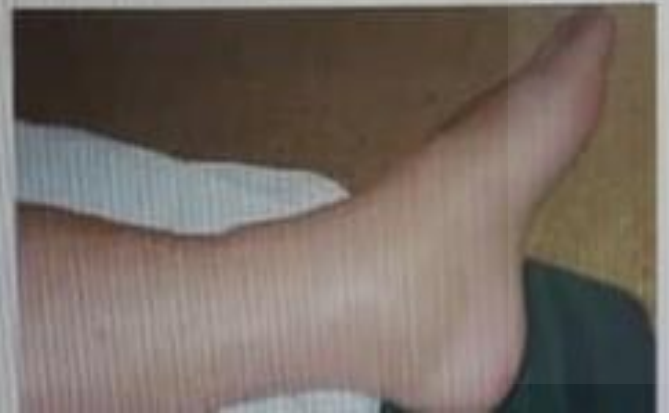
- Burning sensation while urinating
- May be due to cancer impinging on bladder/urethra

Cervical Cancer: Signs & Symptoms

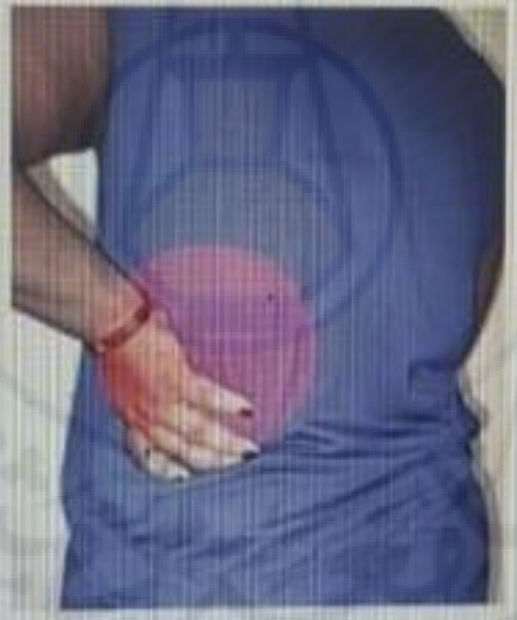
Complications of Metastasis

Leg Edema

- Swelling of the legs due to accumulation of interstitial fluid
- Due to compression on lymphatic drainage

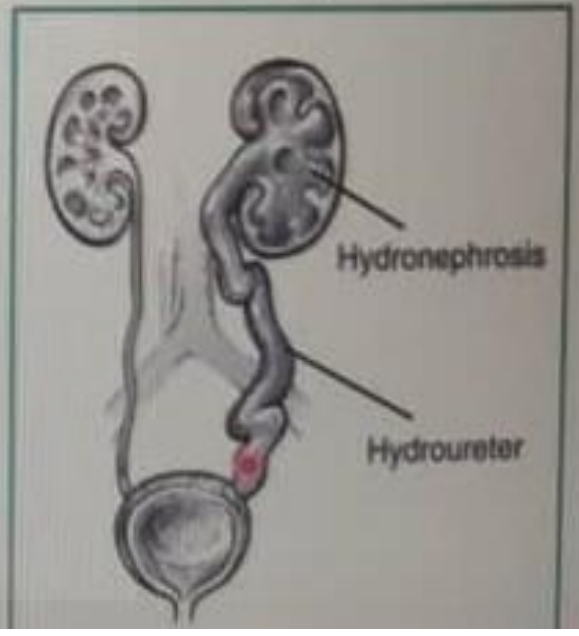


Pain



Hydronephrosis

- Fluid build-up around kidney
- Due to compression on urinary outflow or urinary retention



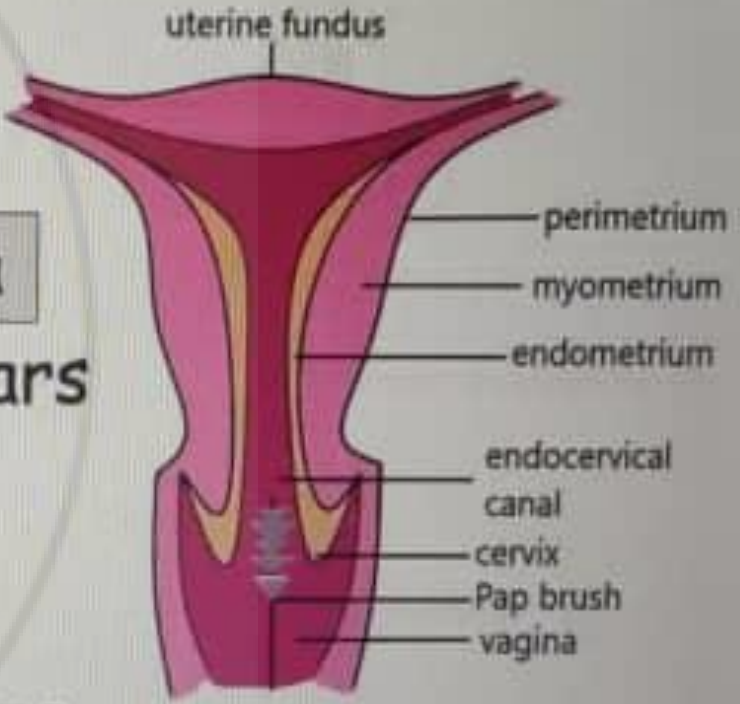
Cervical Cancer: Screening & Diagnosis

Pap (Papanicolaou) Smear

- *Detects pre-cancerous changes (squamous)*

Guidelines will differ depending on country/area

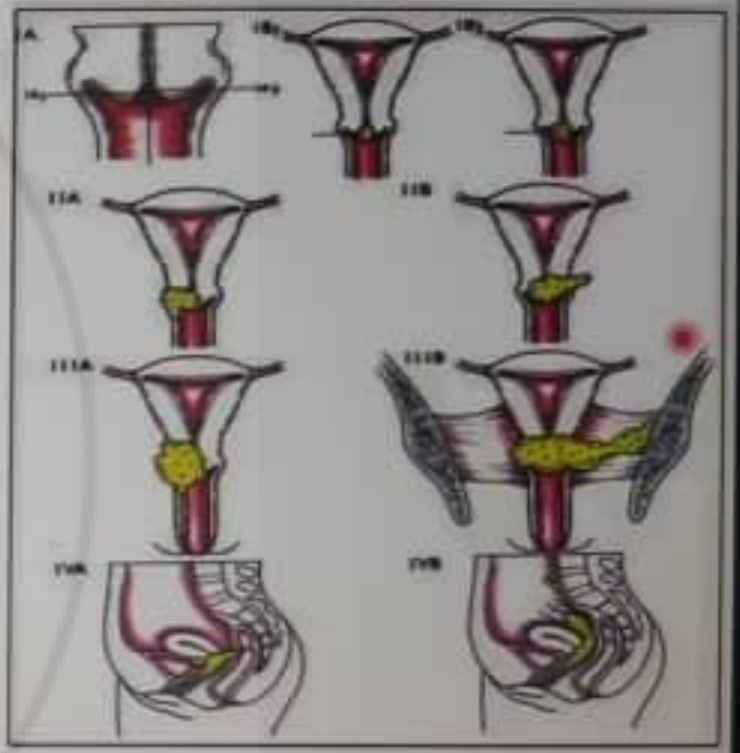
- Screen all female patients starting at 21 years old (25-30)
  - Every 3 years
  - More frequent if abnormal test result
- May be able to discontinue after age of 65-70
  - No abnormal results in past 10 years
  - At least 3 consecutive tests that are normal



HPV Serologies

Cervical Cancer: FIGO Staging

- Stage I (Confined to cervix/uterus)
  - IA: Microinvasive
  - IB: Clinically visible lesion
- Stage II (Spread beyond uterus; upper 2/3 vagina and parametrium)
  - IIA: Parametrium not involved
  - IIB: Parametrium involved
- Stage III (Pelvic wall; lower 1/3 vagina; hydronephrosis [ureteric obstruction])
  - IIIA: Lower 1/3 vagina but no pelvic wall involvement
  - IIIB: Pelvic wall; hydronephrosis/kidney dysfunction
- Stage IV (Metastasis outside true pelvis)
  - IVA: Invasion of adjacent organs (bladder, rectum)
  - IVB: Distant metastases



IIIc1 pelvic LN

CIII2 Paraaortic LN

Treatment

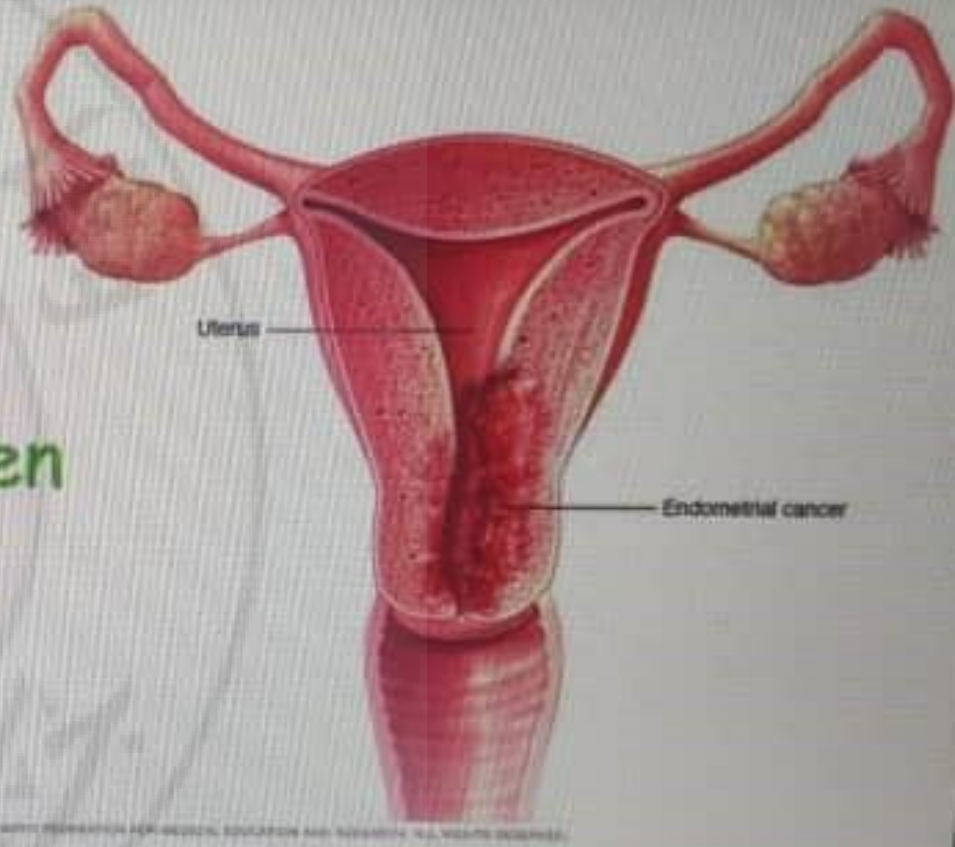
- Early stage-------Surgery+/-RT
- Radiotherapy+/-Chemotherapy+/-Surgery
- Advanced: chemoradiotherapy
- Stage IV: Chemotherapy+/-RT

Uterine Cancer (Endometrial carcinoma)

Dr Lorand Slaiman

Endometrial Cancer: Introduction

- Also known as **Corpus Cancer**
- Cancer of the endometrium
  - Inner lining of the uterus
  - Malignant cells of glands of endometrium
- Risk factors related to **increased estrogen**



Epidemiology:

- Most common gynecological cancer
  - Lifetime risk of 2-3%
- Mean age of onset is 62 years old

Endometrial cancer can cause a variety of signs and symptoms

Endometrial Cancer: Signs & Symptoms

Abnormal Uterine Bleeding

- Most important and common sign
  - *Especially in Type 1*
- Painless bleeding
- Due to erosions and/or tissue growth from cancer in endometrium

Pre-Menopause

- Heavy menstrual bleeding (menorrhagia)
- Intermenstrual bleeding/spotting

Perimenopause

- Increasing frequency and severity of menstrual bleeding

Post-Menopausal

- 75% of patients will be post-menopausal
- Any post-menopausal bleeding is abnormal

Abdominal Pain

- Pain or discomfort
- May be generalized or focal
- Due to cancer extension into surrounding areas (abdominal cavity)
- More likely to occur in Type 2 Endometrial cancer

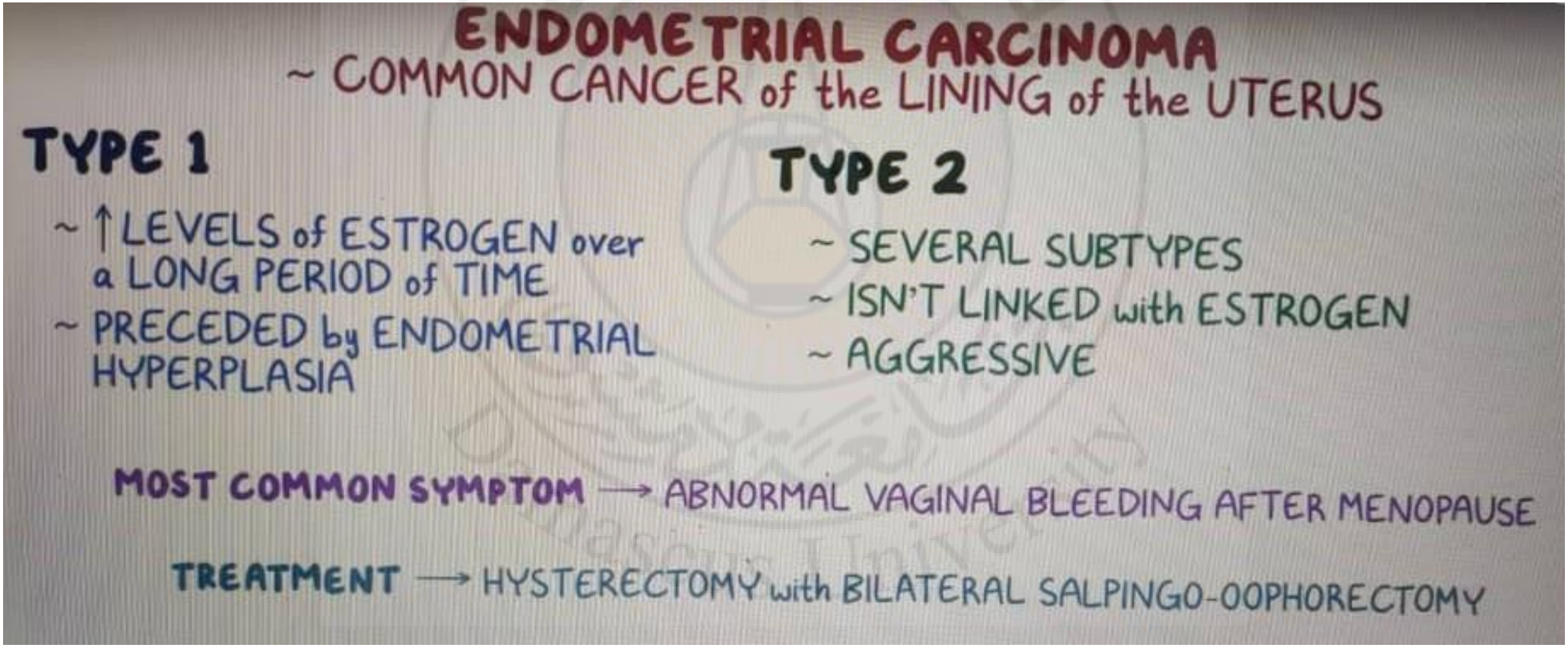
Pelvic Pressure

- May also have pain/discomfort
- Also due to extension of cancer
- More likely to occur in Type 2 Endometrial cancer
- May also have pelvic mass

Iron-Deficiency Anemia

- May occur due to excessive and/or prolonged abnormal uterine/vaginal bleeding
- <u>Signs and symptoms:</u> Fatigue, weakness, decreased concentration, presyncope/syncope

Pathology


ENDOMETRIAL CARCINOMA
~ COMMON CANCER of the LINING of the UTERUS
TYPE 1
~ ↑ LEVELS of ESTROGEN over a LONG PERIOD of TIME
~ PRECEDED by ENDOMETRIAL HYPERPLASIA
TYPE 2
~ SEVERAL SUBTYPES
~ ISN'T LINKED with ESTROGEN
~ AGGRESSIVE
MOST COMMON SYMPTOM → ABNORMAL VAGINAL BLEEDING AFTER MENOPAUSE
TREATMENT → HYSTERECTOMY with BILATERAL SALPINGO-OOPHORECTOMY

Pathology

1-Type 1: Pure Endometrial carcinoma (ADK)

2-Type2:

- Serous CA,
- Clear cell CA,
- Carcinosarcoma,
- Undifferentiated CA

Stage (AJCC cancer staging Eighth Edition 2017)

Definitions for T, N, M

T	FIGO Stage	Primary Tumor
TX		Primary tumor cannot be assessed
T0		No evidence of primary tumor
T1	**I**	Tumor confined to the corpus uteri, including endocervical glandular involvement
T1a	**IA**	Tumor limited to the endometrium or invading less than half the myometrium
T1b	**IB**	Tumor invading one half or more of the myometrium
T2	**II**	Tumor invading the stromal connective tissue of the cervix but not extending beyond the uterus. Does NOT include endocervical glandular involvement
T3	**III**	Tumor involving serosa, adnexa, vagina, or parametrium
T3a	**IIIA**	Tumor involving the serosa and/or adnexa (direct extension or metastasis)
T3b	**IIIB**	Vaginal involvement (direct extension or metastasis) or parametrial involvement
T4	**IVA**	Tumor invading the bladder mucosa and/or bowel mucosa (bullous edema is not sufficient to classify a tumor as T4)

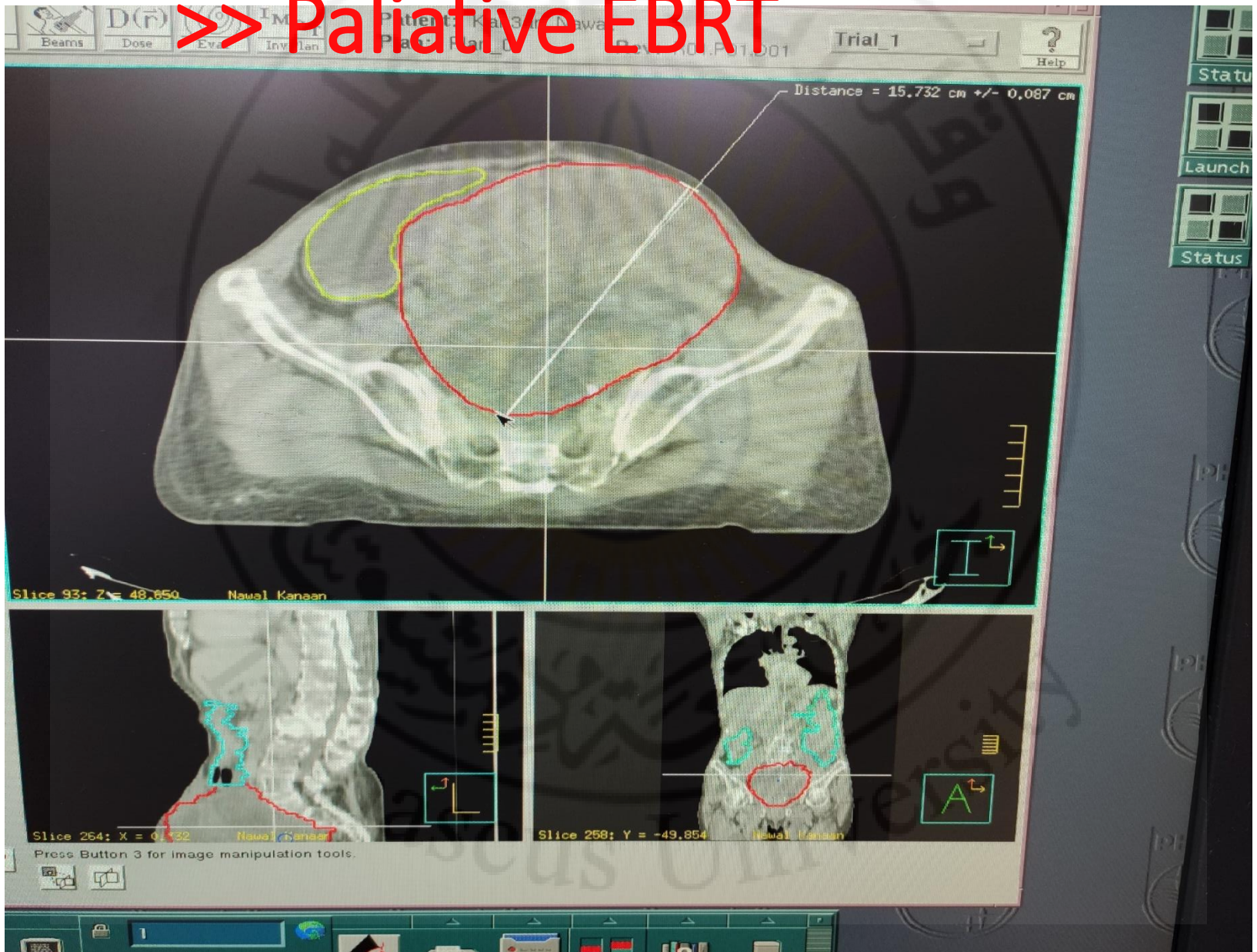
IIIc: LN+

IVB: M+

Treatment

- **Uterus Limeted** --Surgery: Total Hesterectomy and bilateral salpingo-
- oophprectomy (TH/BSO)+ Surgical Staging
- **Cervical Extended**: (TH/BSO) or EBRT +BT (+/-Chemotherapy)
- **Extrauterin D.:** surgery (if possible) or RT-CT
- **Metastases** Systemic Therapy

Case: Recurrent endometrial Carcinoma >> Paliative EBRT



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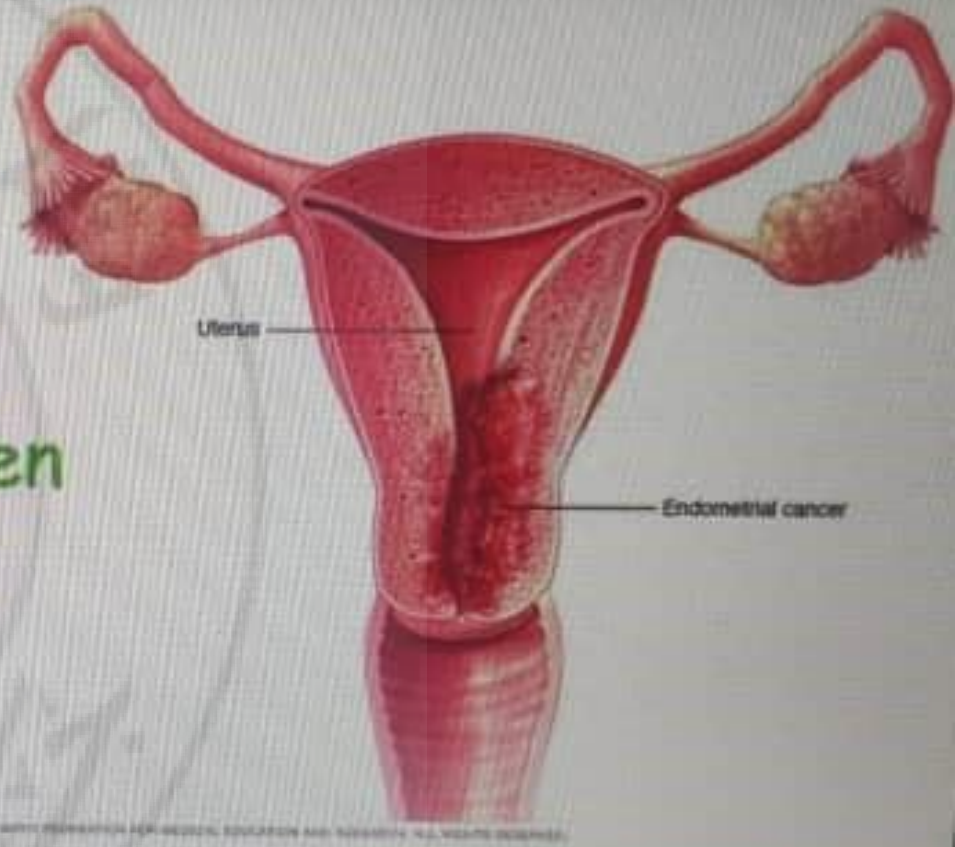

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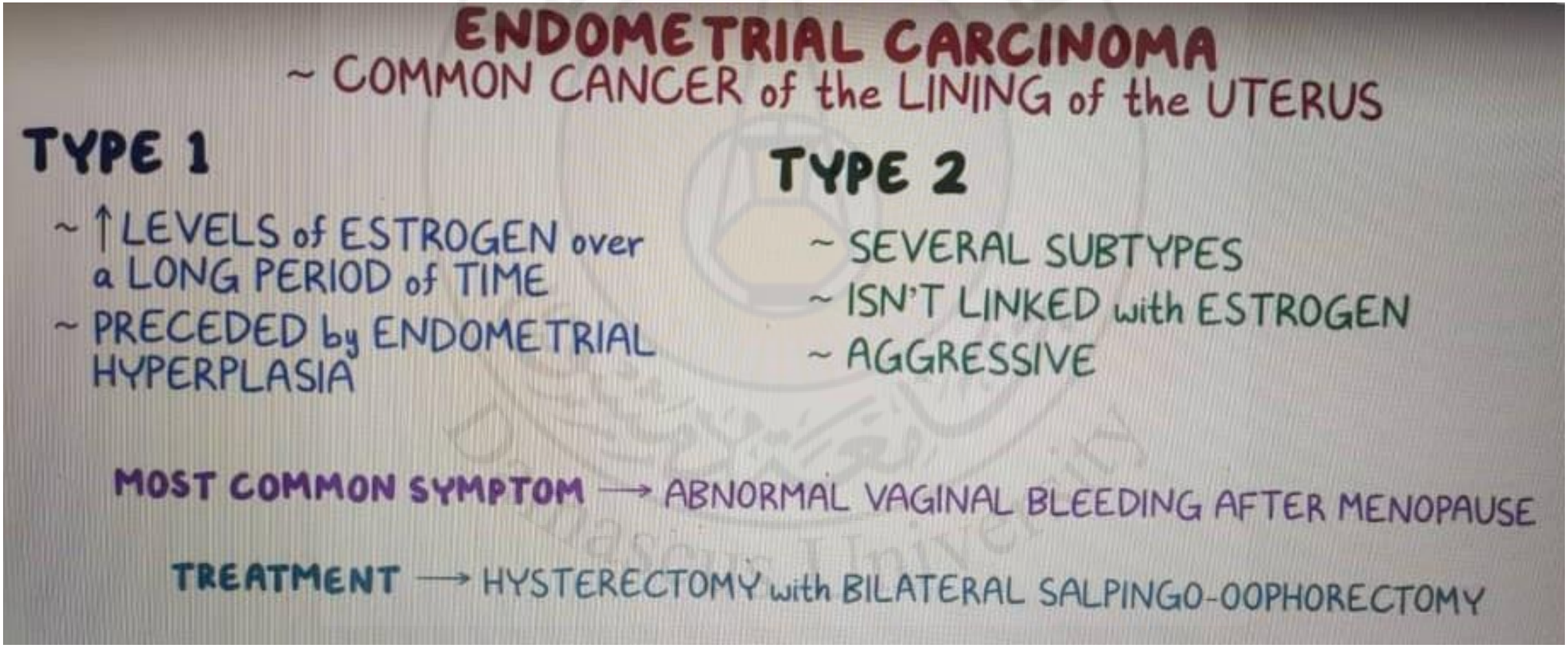
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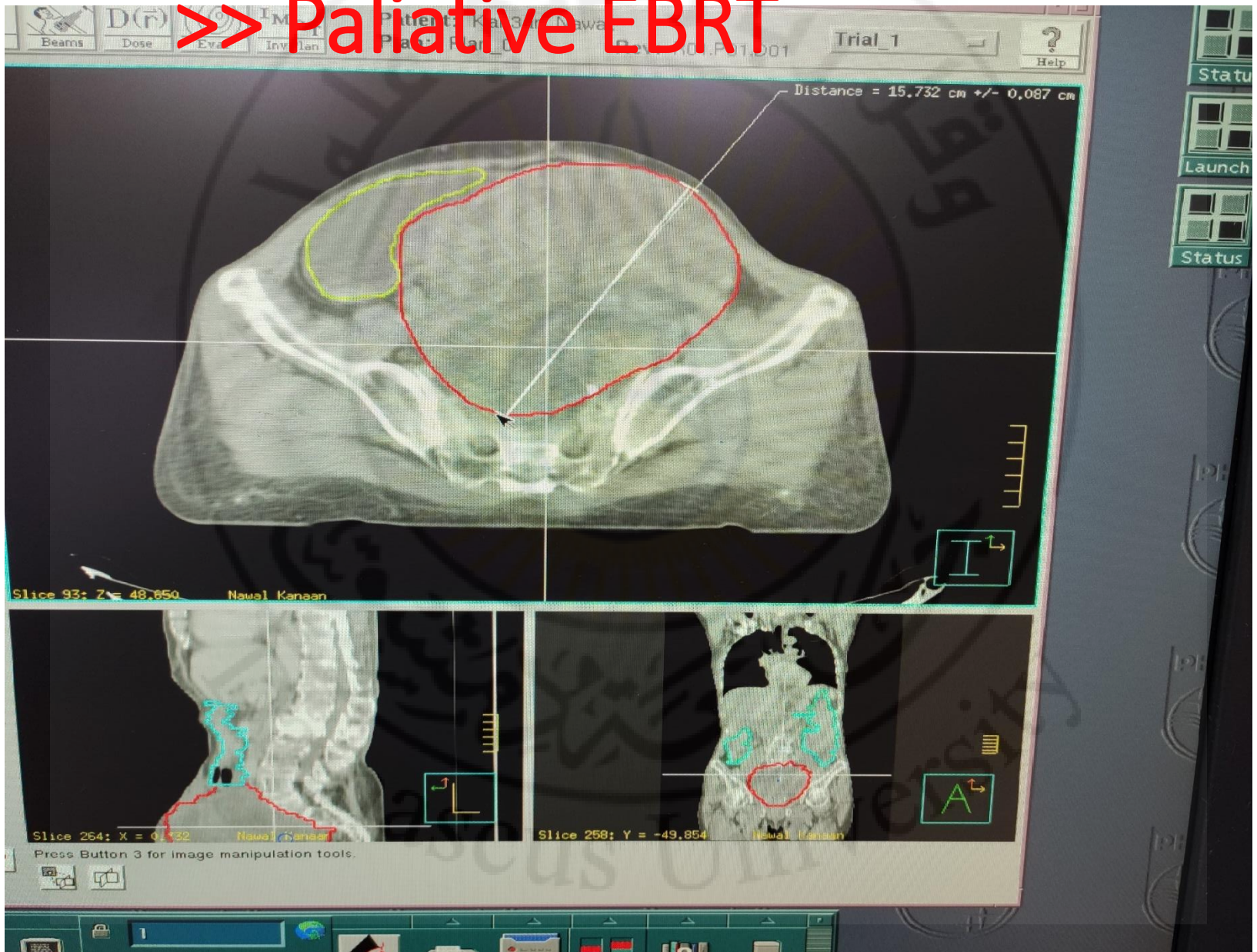


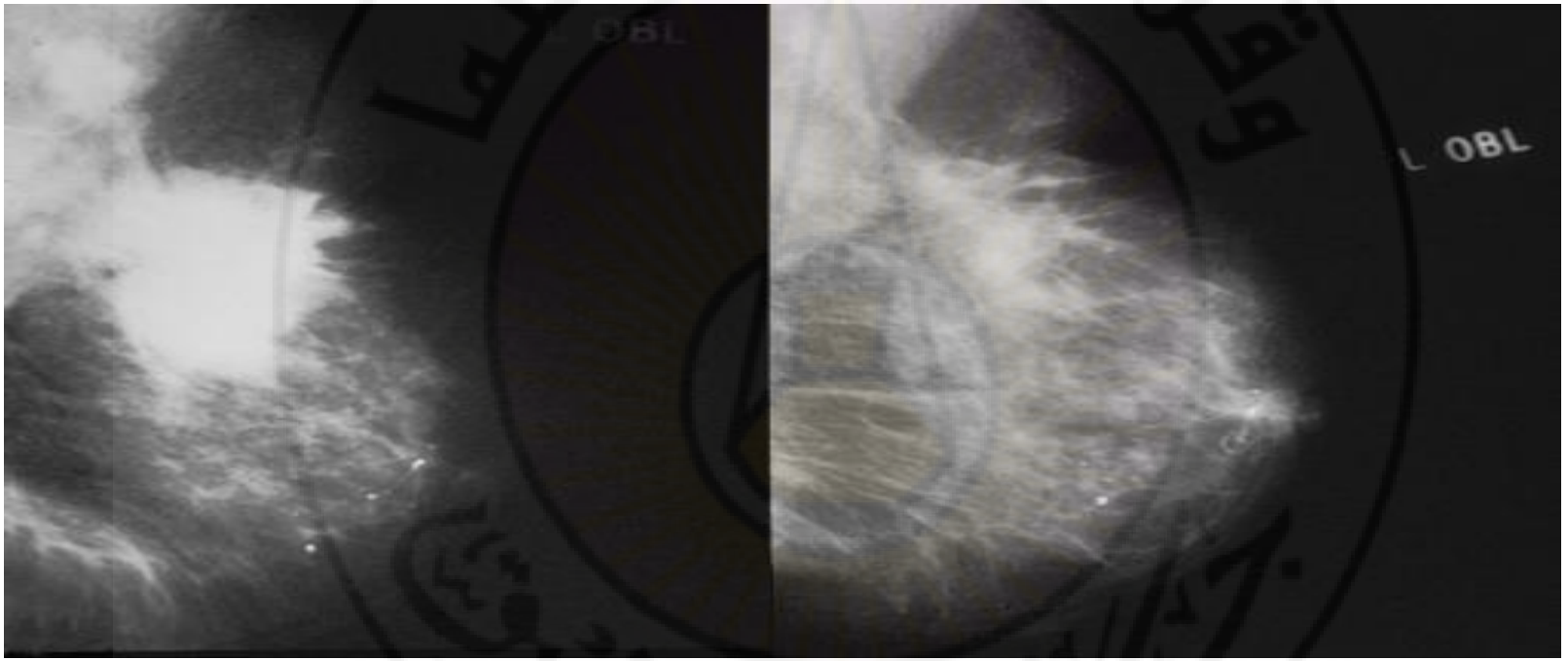
وقل رب زدني علما
جامعة دمشق
Damascus University

المعالجة الشعاعية

د لوراند سليمان

Wommen , 68y , Breast Cancer

Mamography

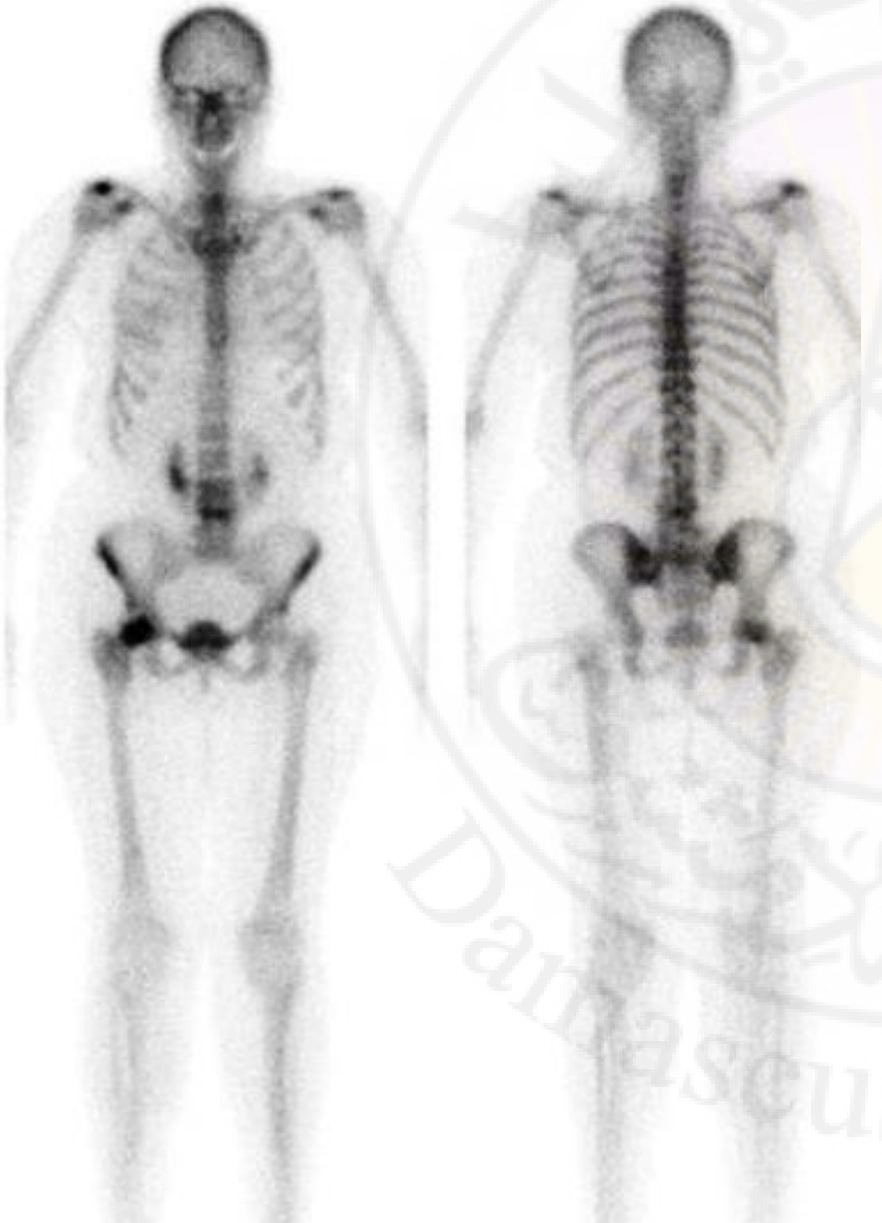


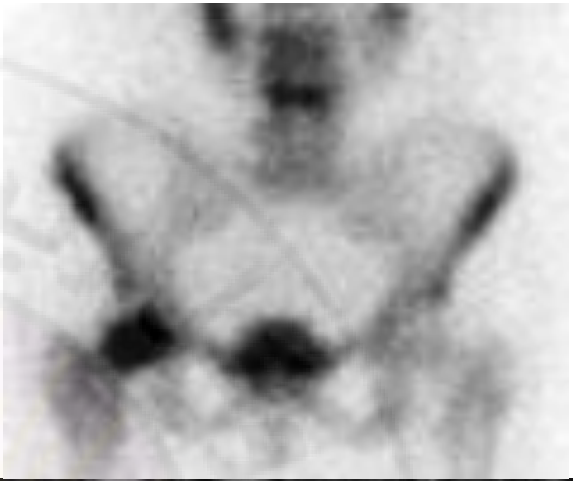
pT3(7cm) N3(16N+/18N) M1

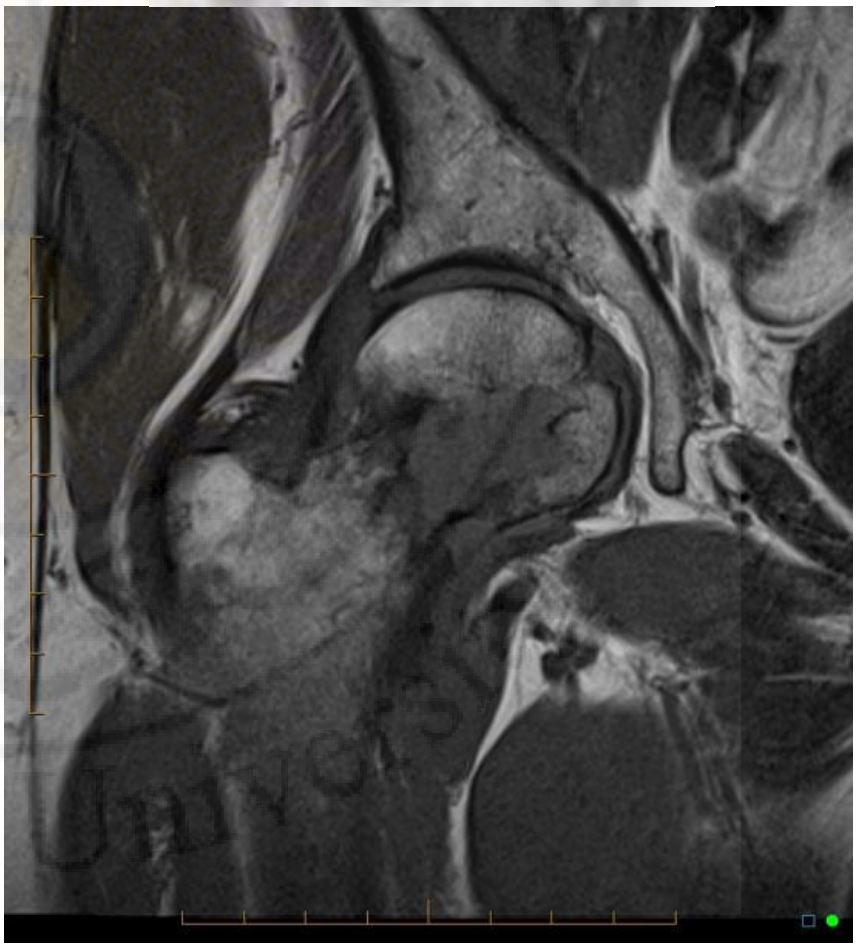
Stage IV

CA- CT Scan: Normal

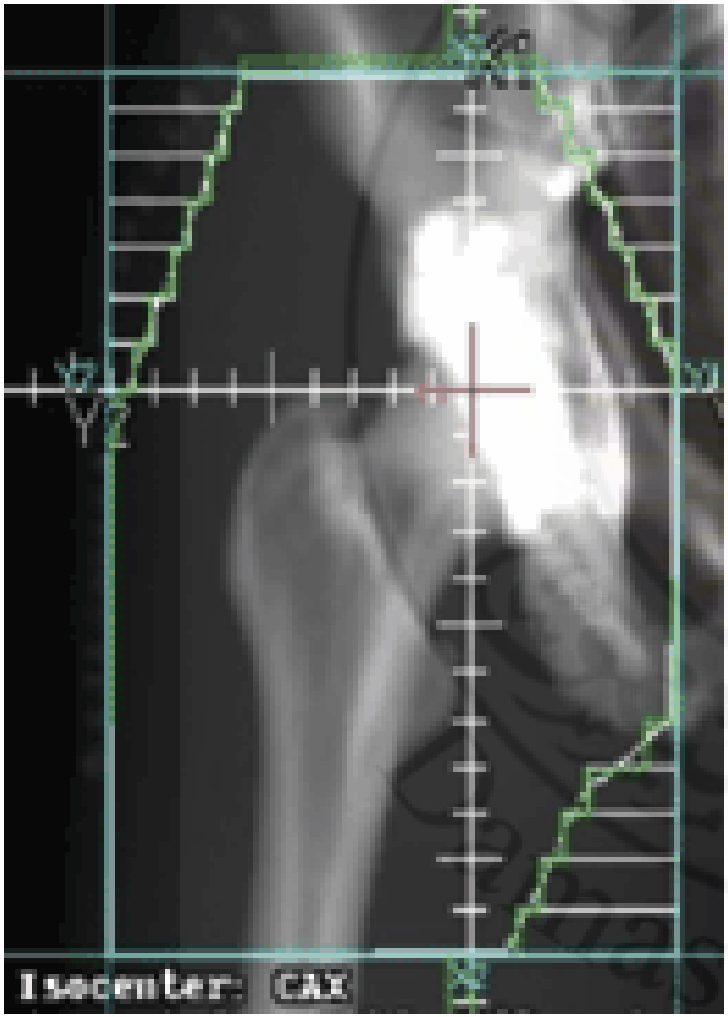
Bone Scan: Metastases



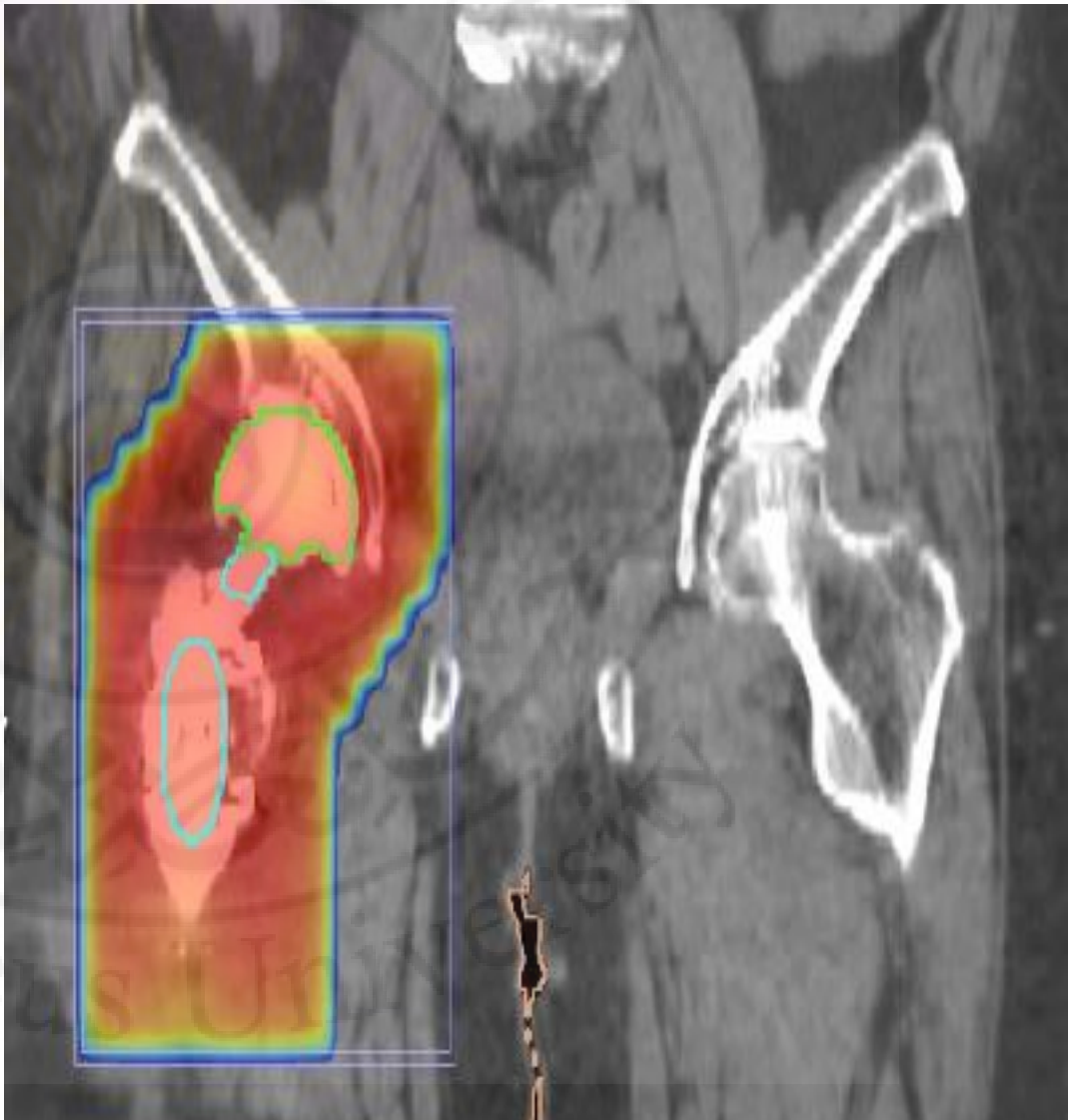




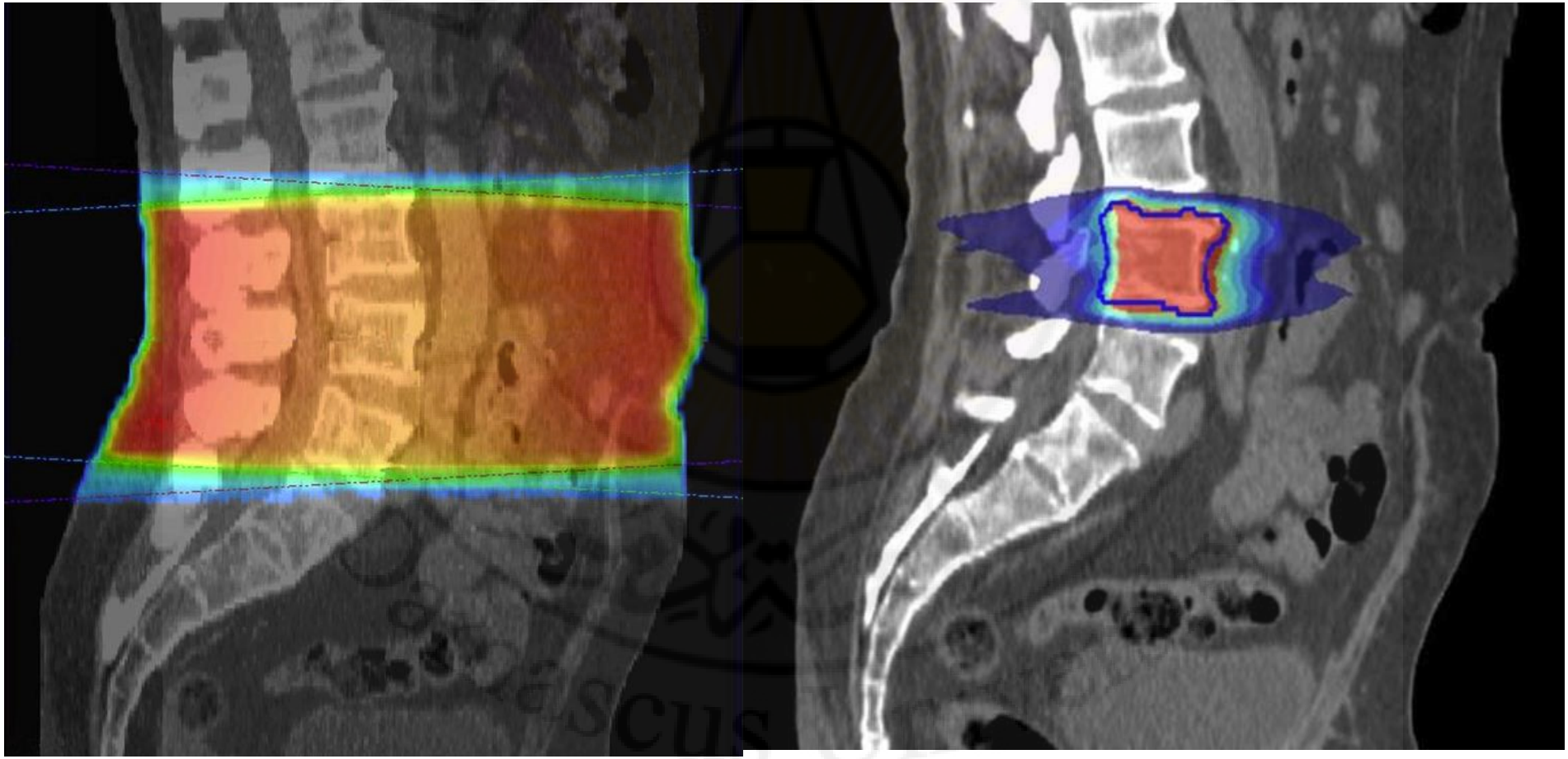
2D RT



3D RT



3D-Rdiation therapy

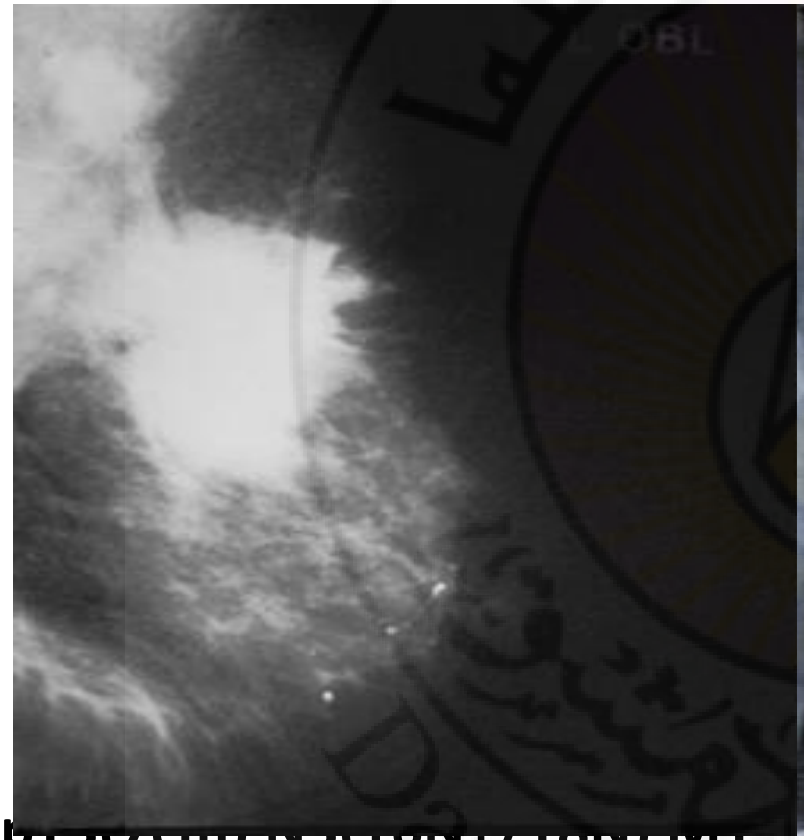


Wommen , 63 y, Breast Cancer

Mamography

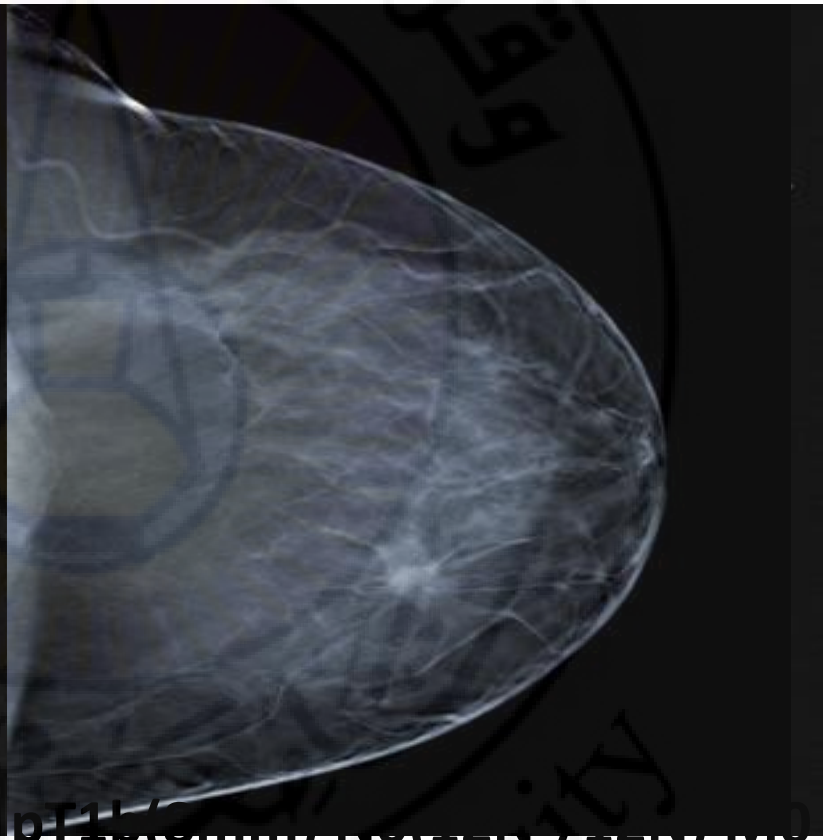
Wommen , 63 y, Breast Cancer

Mamography



pT3(>5cm) N3(10N+/ 18N) M1

Stage IV

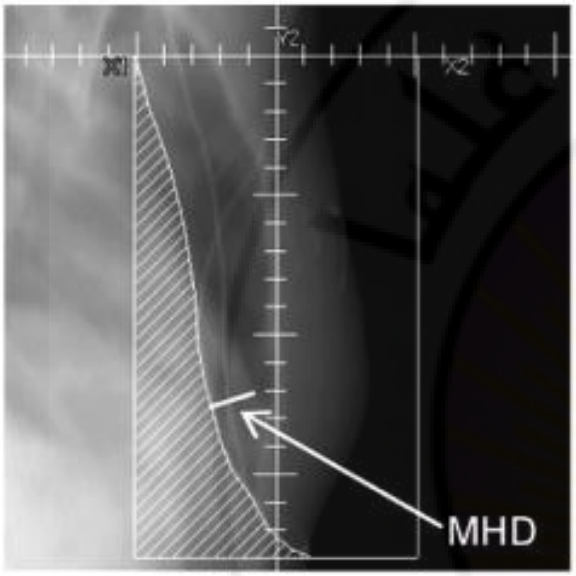


pT1b(<1cm) N0(1LN+/ 12N) M0

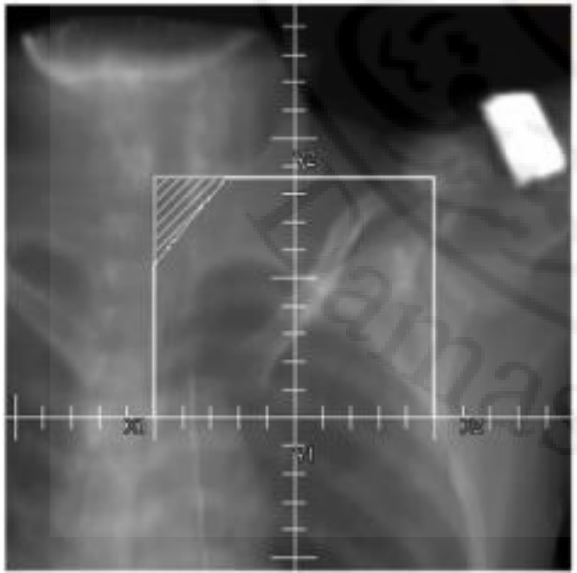
Stage IA

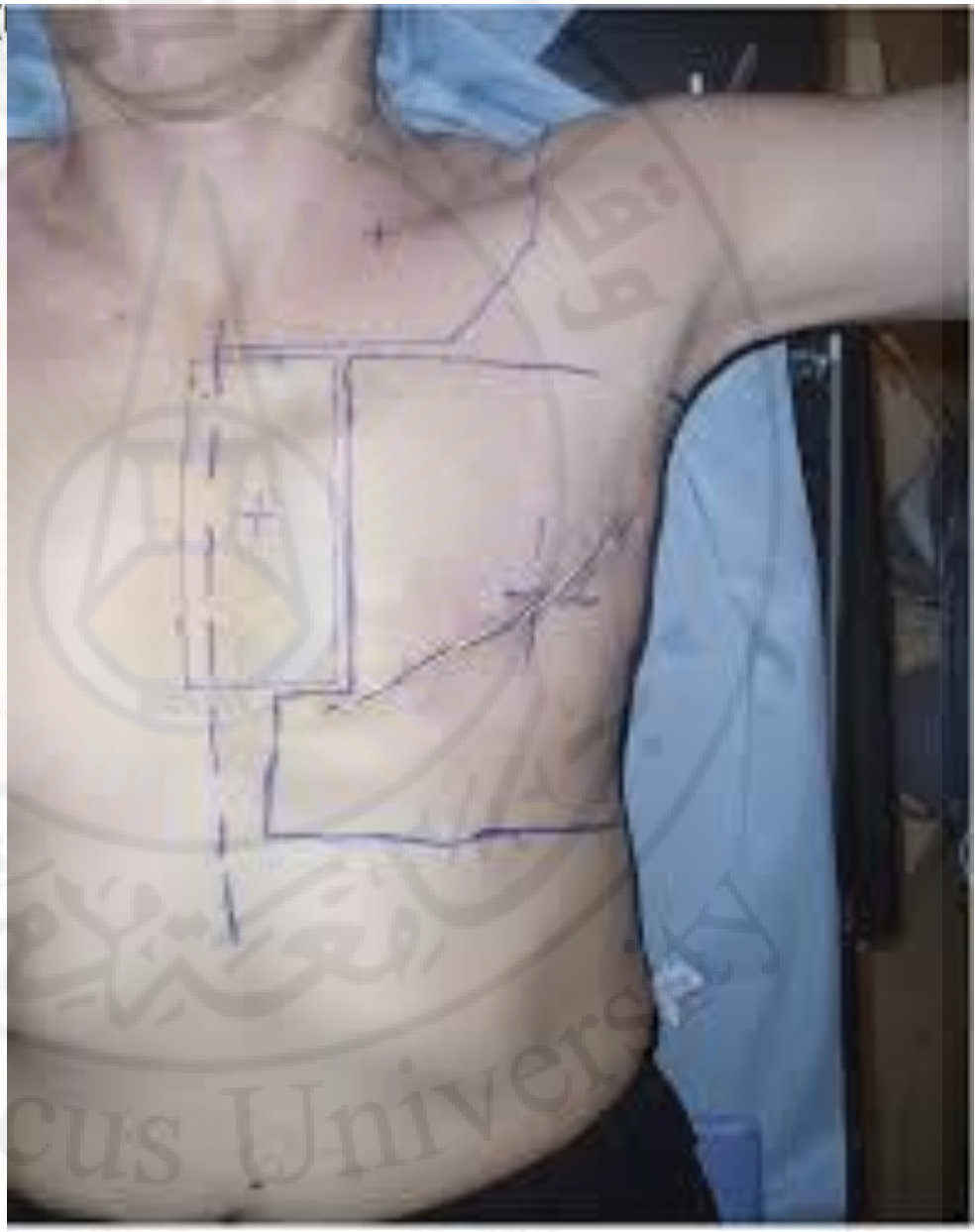
2 Dimensions Radiotherapy (2DRT)

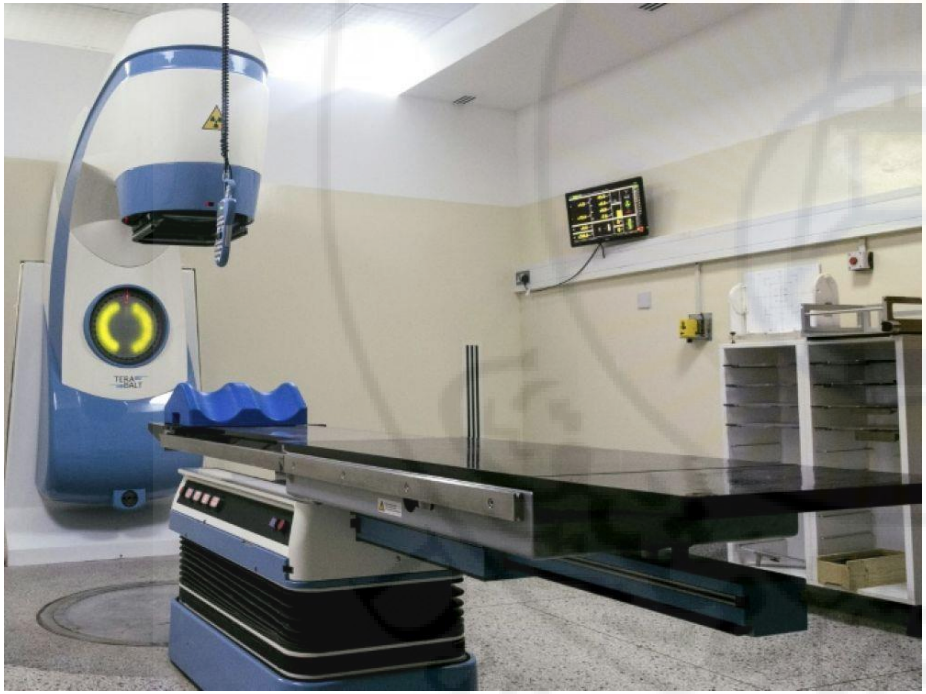
(a) Regimen A/B tangential field

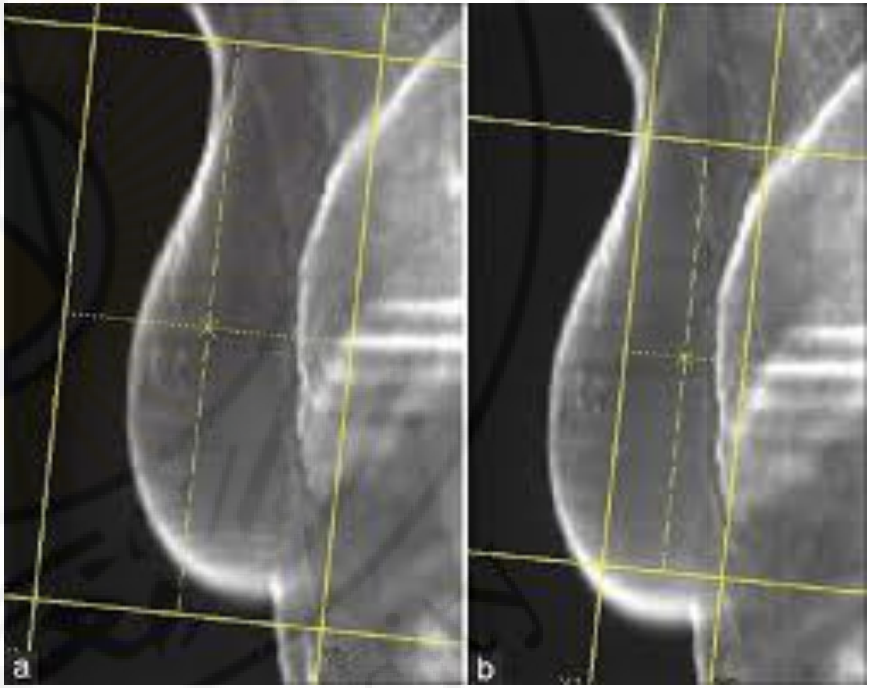


(c) Regimen B preiclavicular field

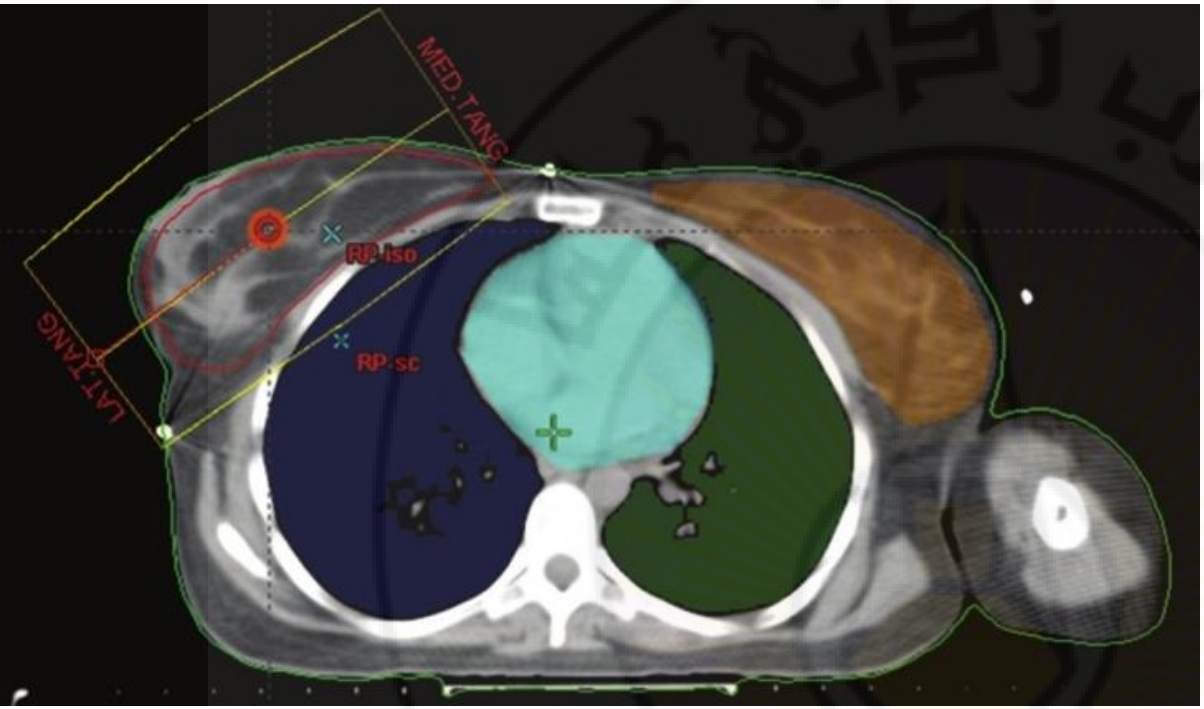


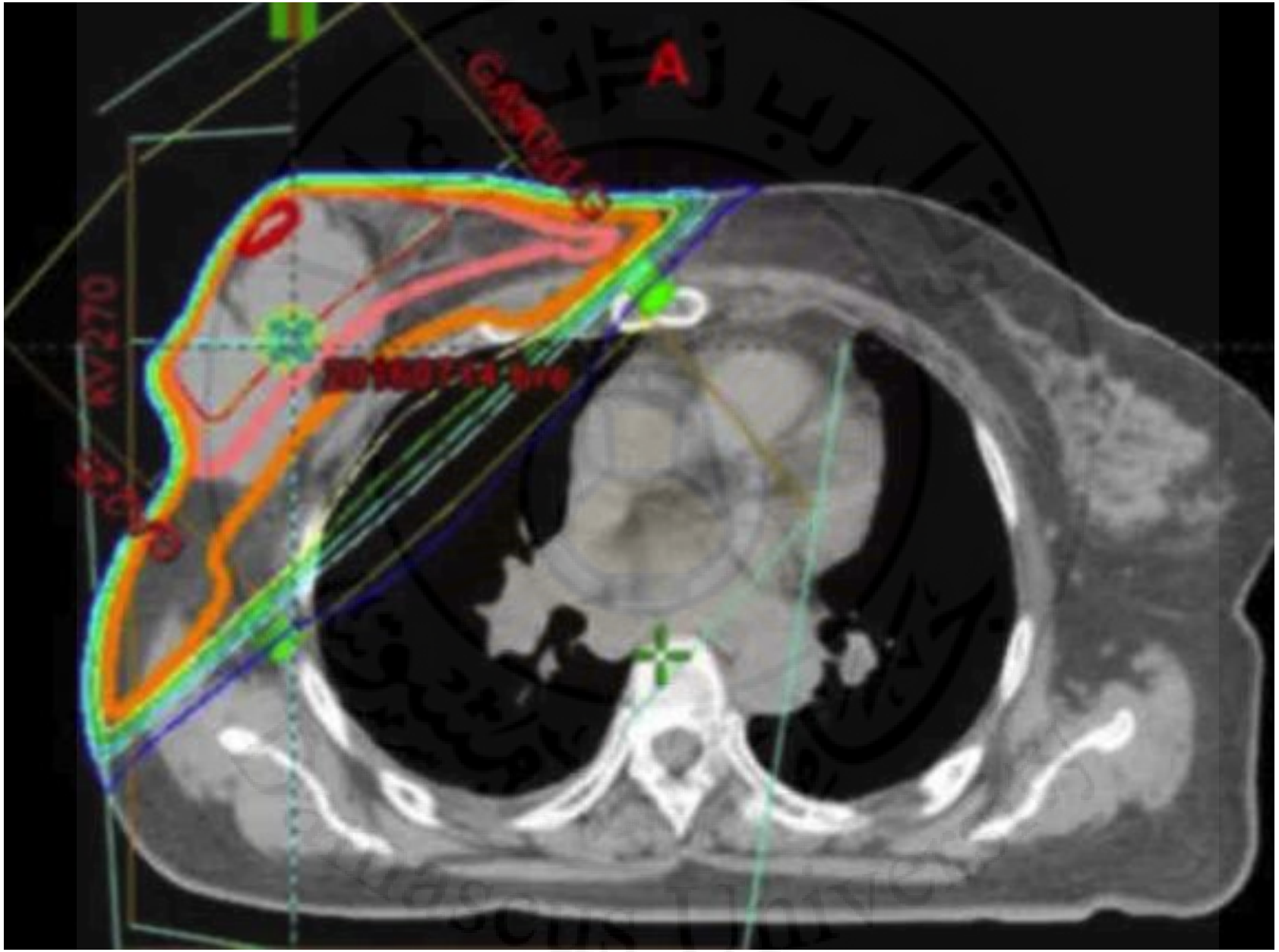




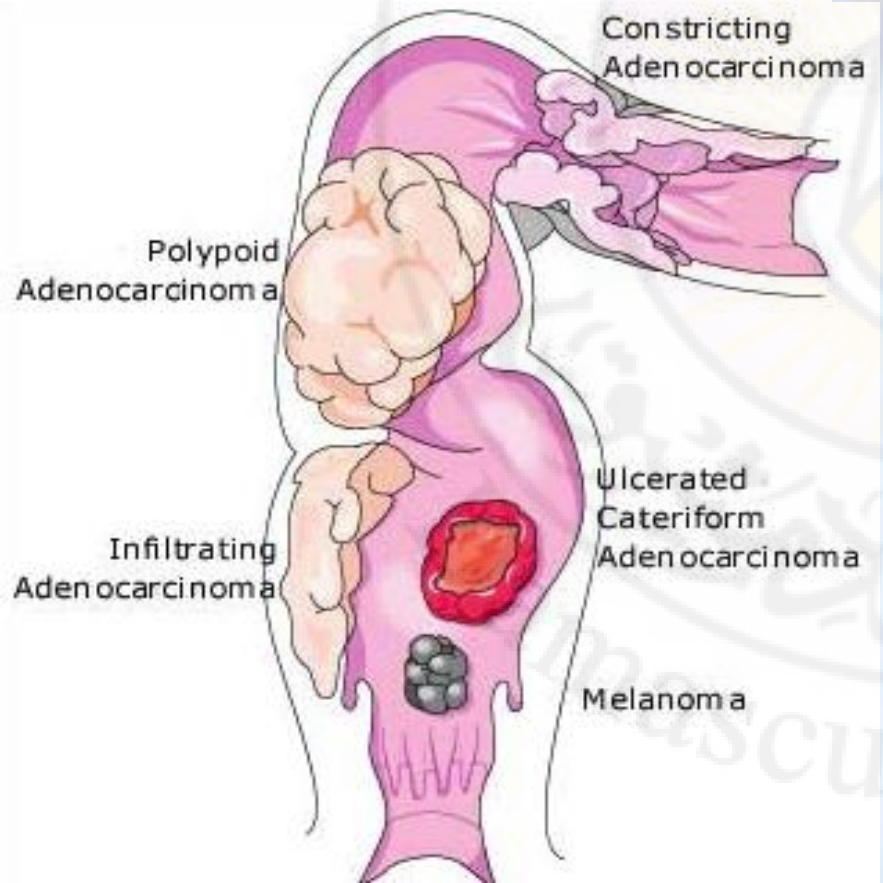

a
b

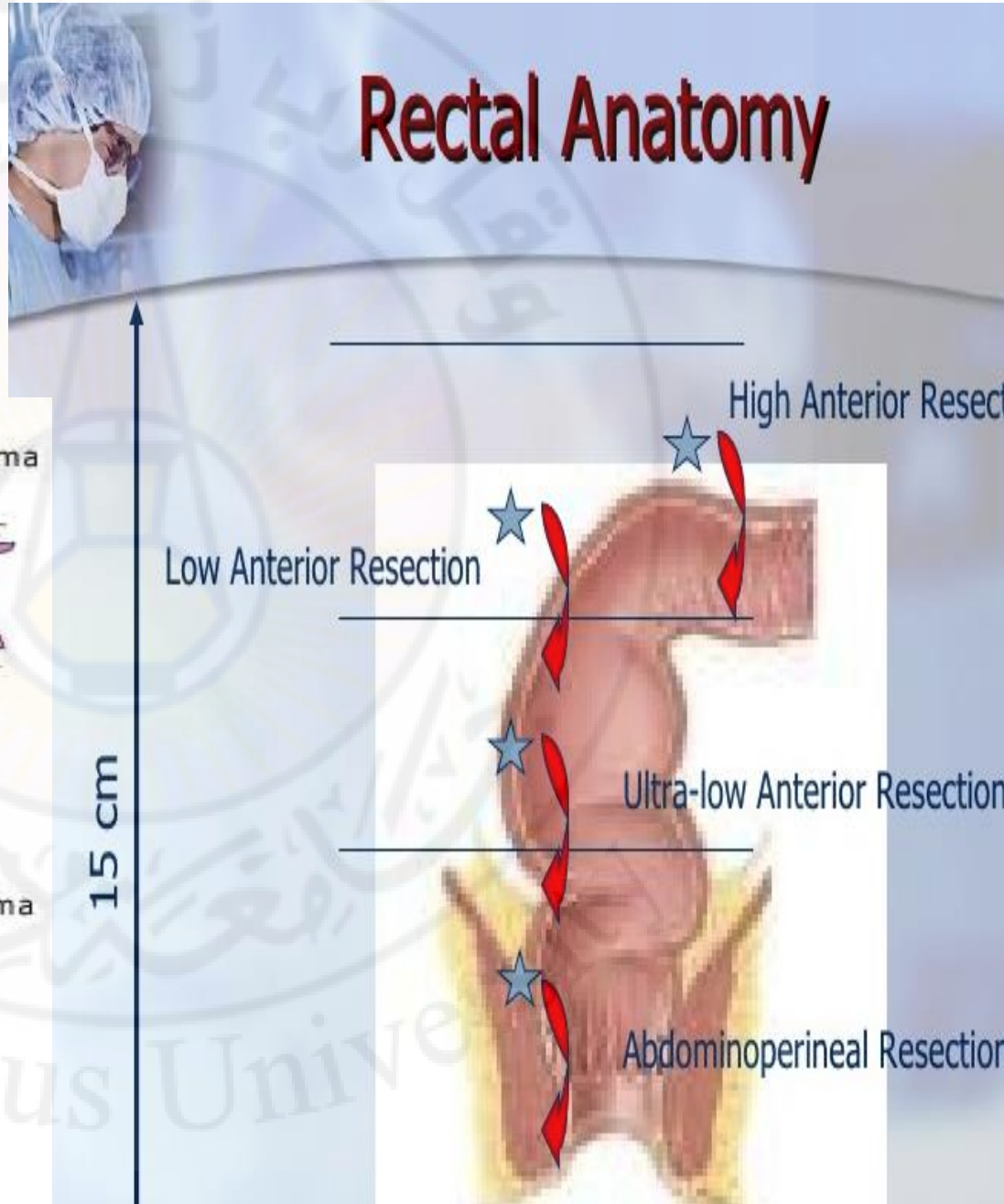
3 Dimensions RT




A

Rectal Cancer- Neoadjuvant RT





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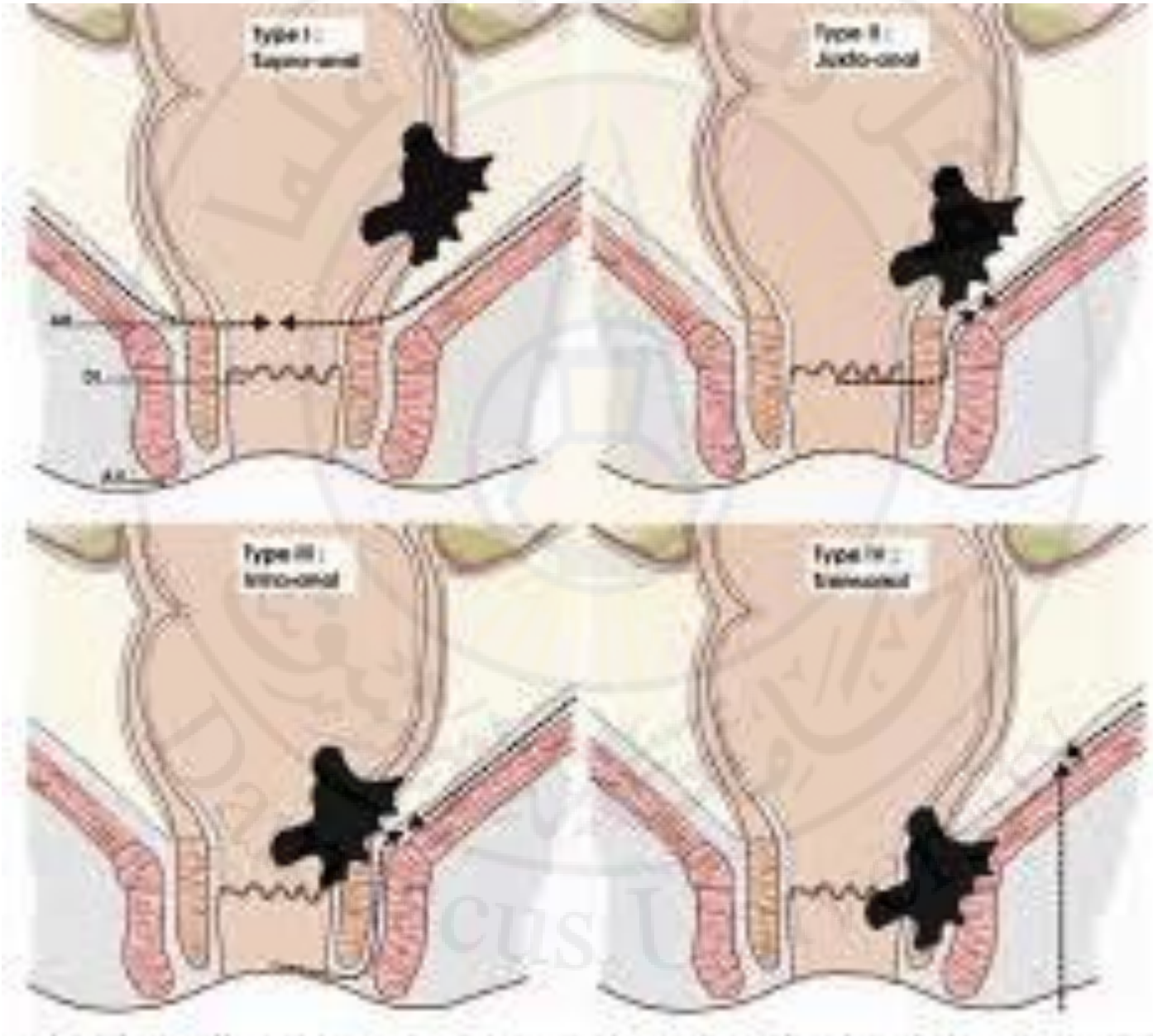

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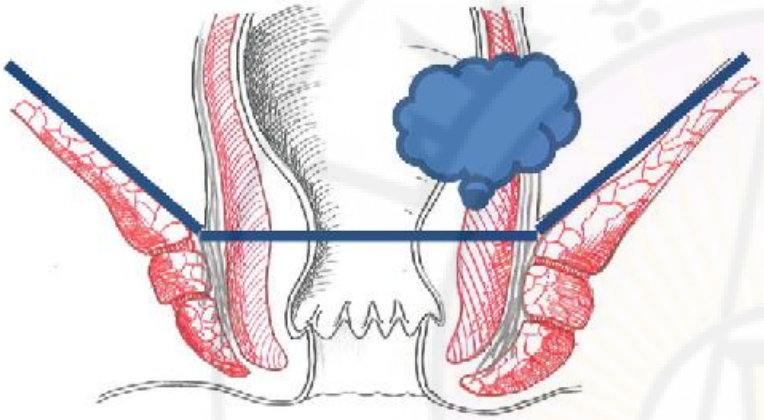
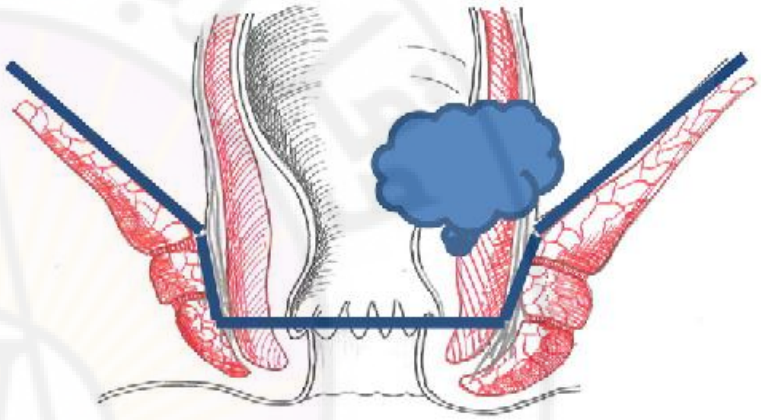
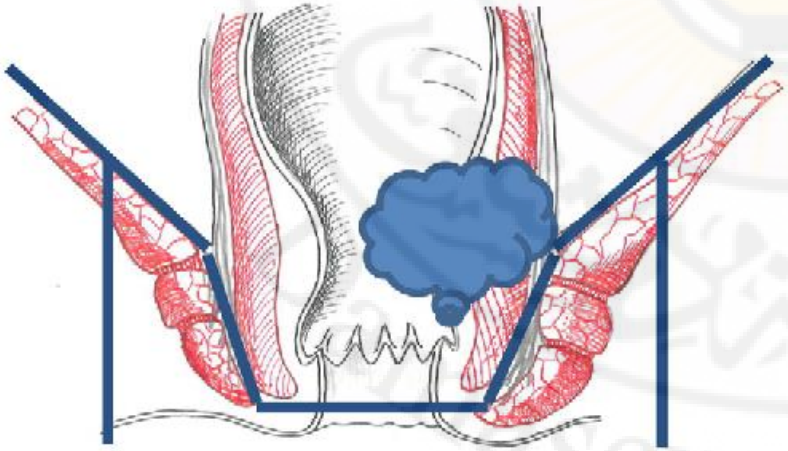


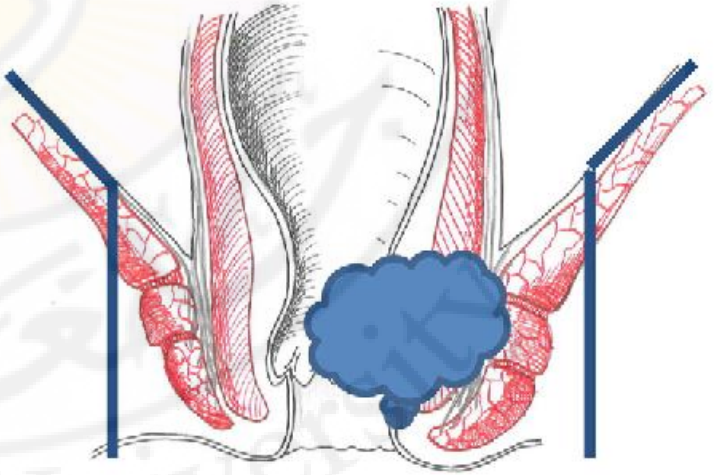
a- Supra-anal tumor



b- Juxta-anal tumor



c- Intra-anal tumor



d- Transanal tumor

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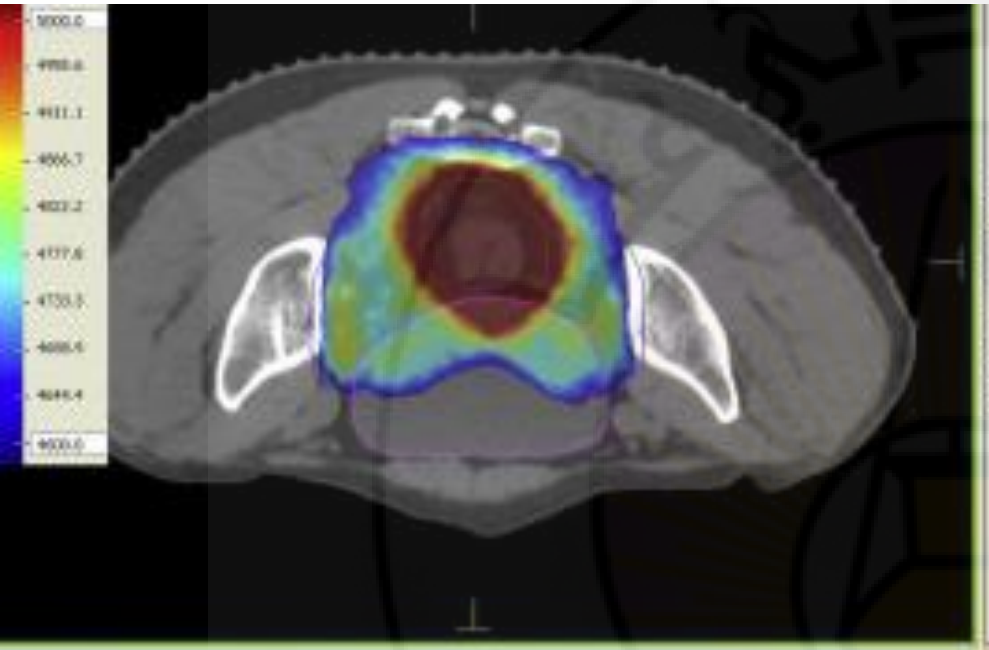
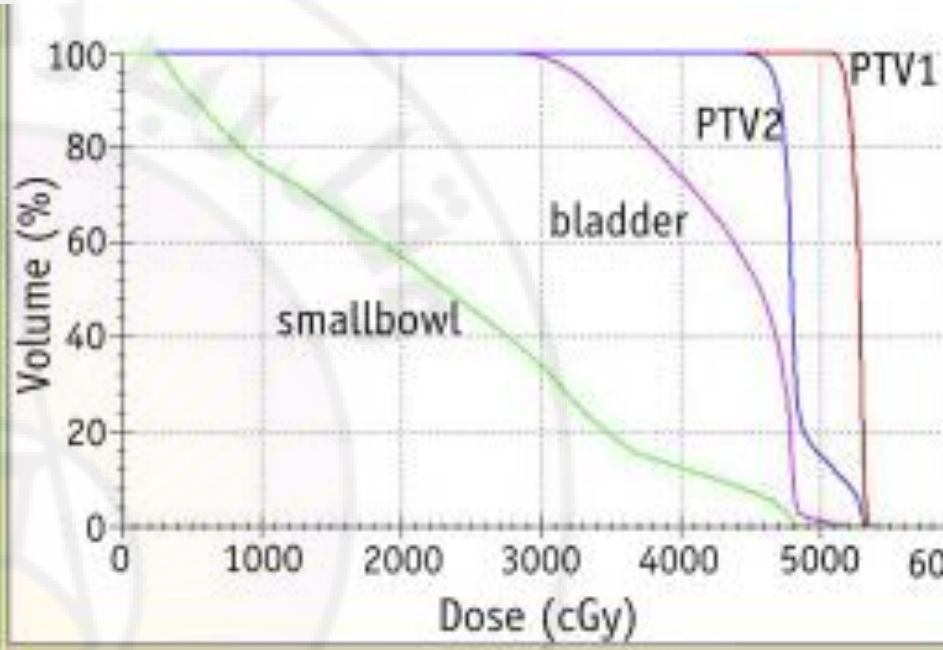
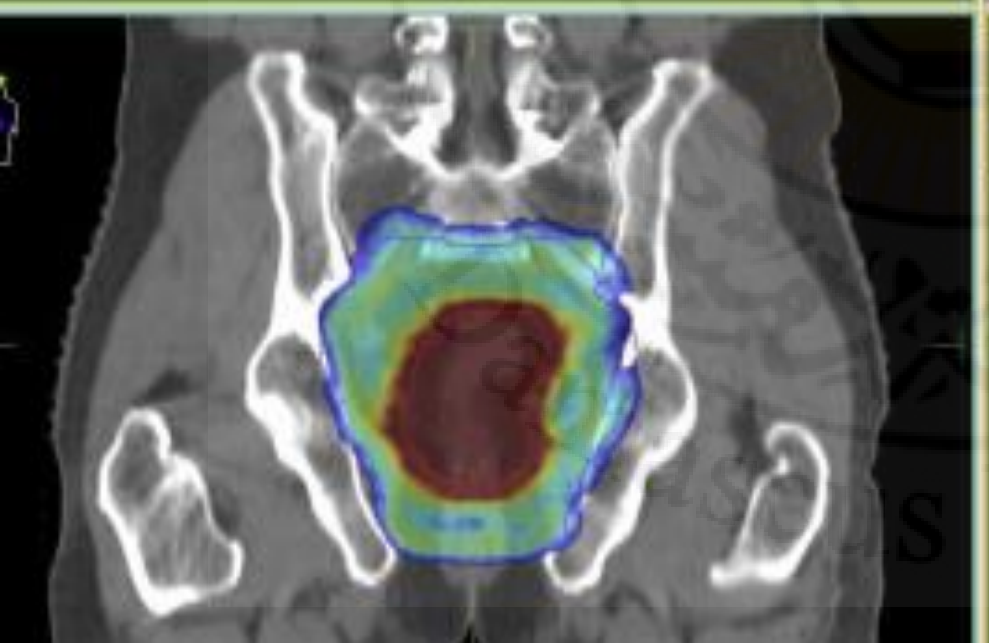
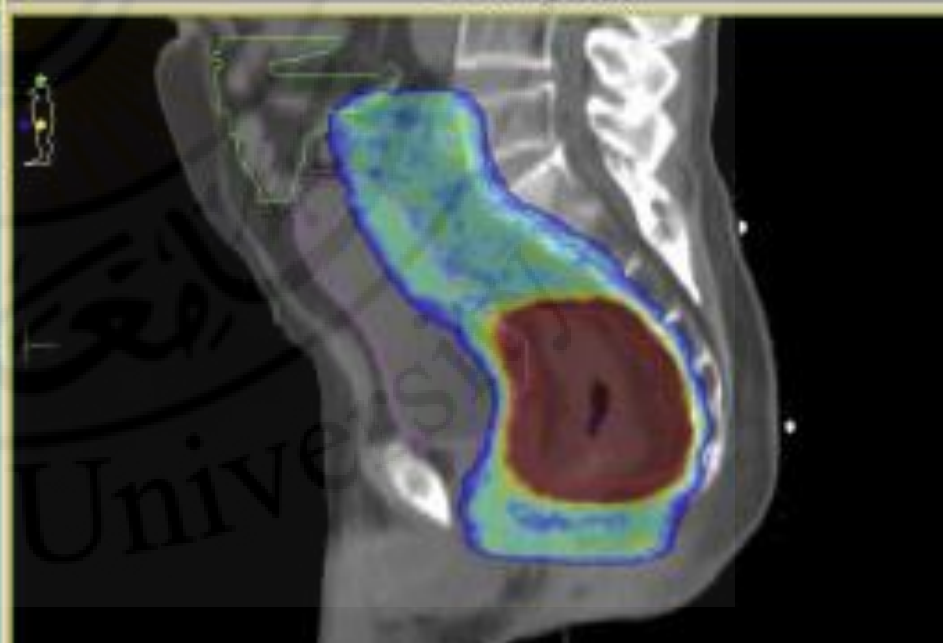
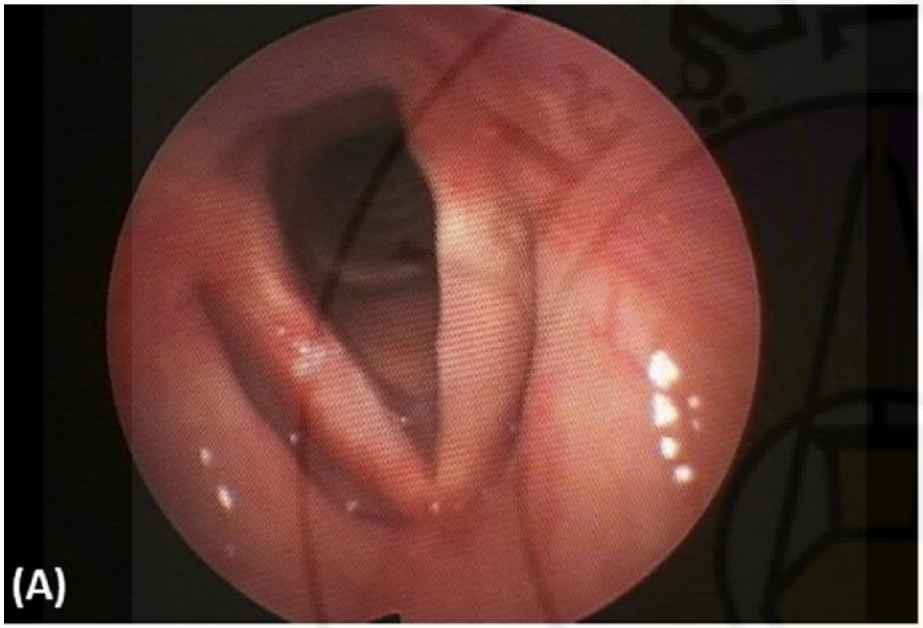


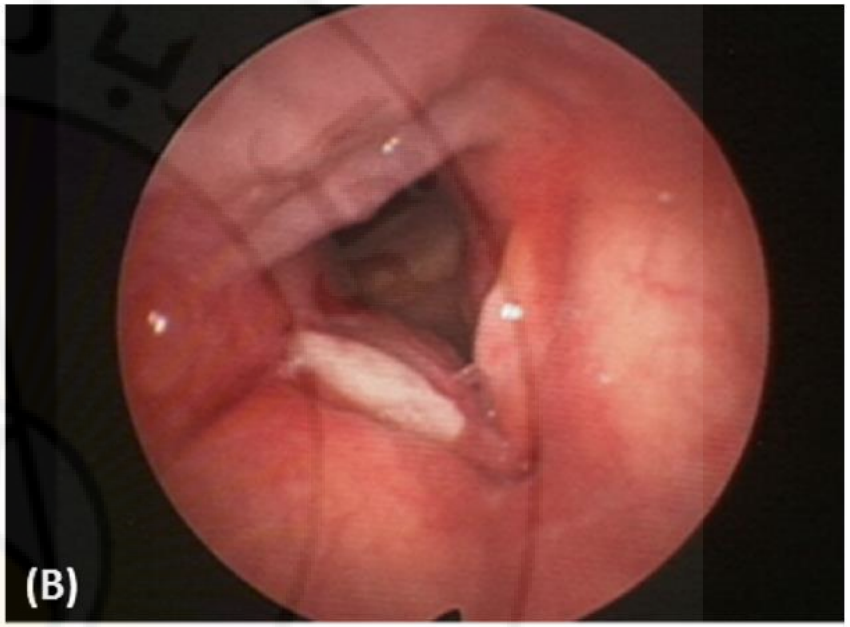


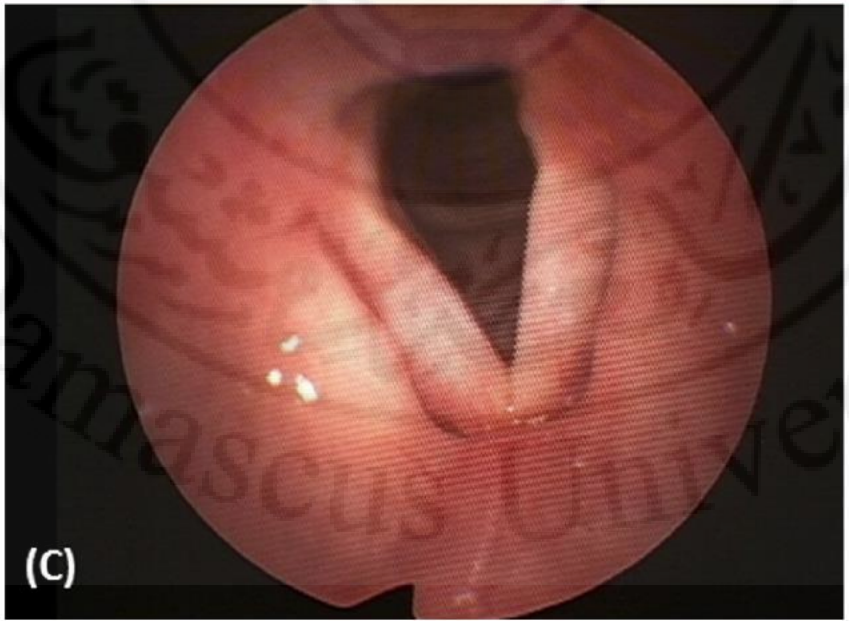




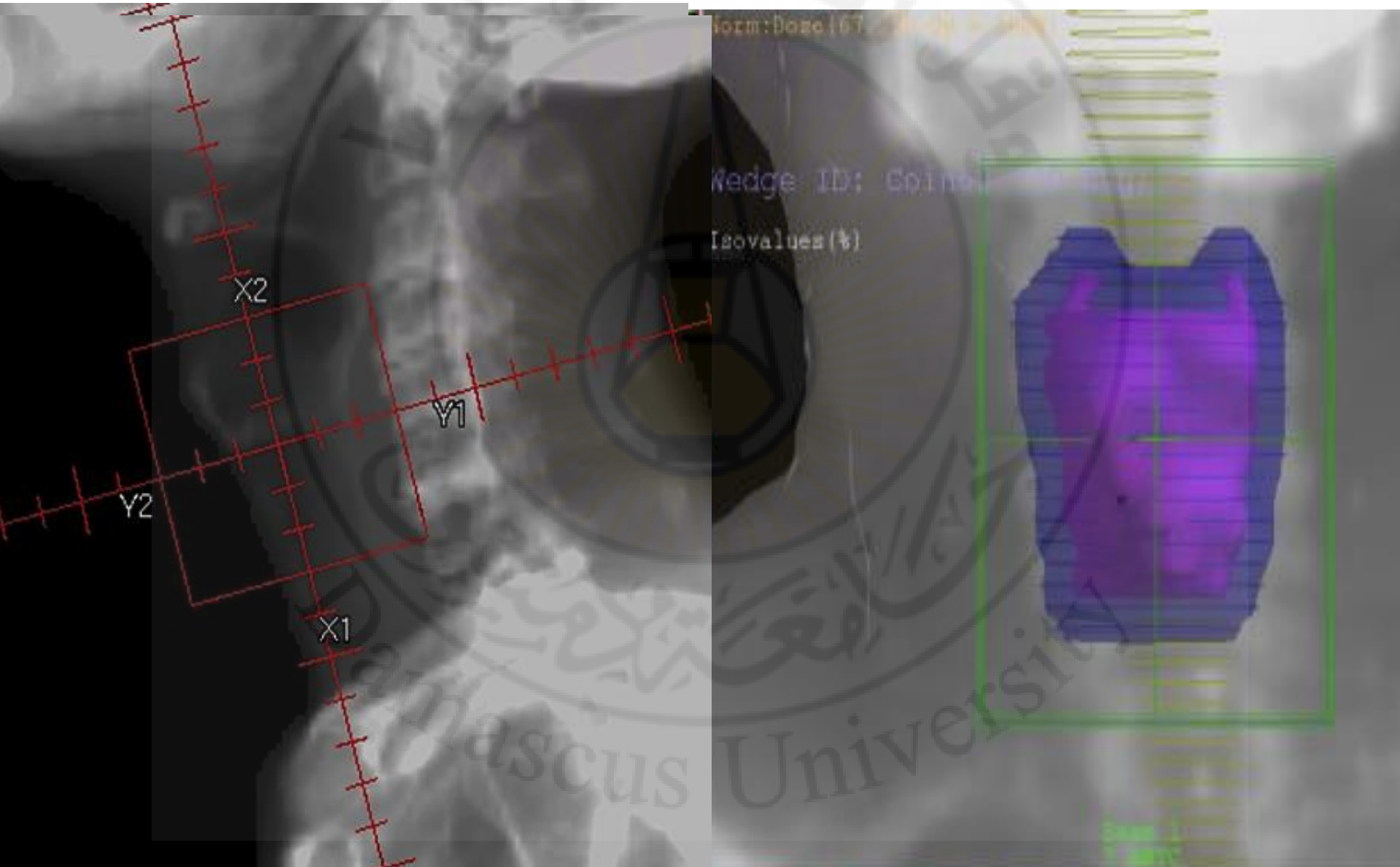
Larynx Cancer -Definitve RT







Larynx RT



Radiation Therapy

Approximately 60 % of all cancer patients receive radiotherapy as a component of their treatment.

The main goals of Radiation Therapy

I-Curative:

1-Neoadjuvant: Rectum, colon, Lung, Sarcoma, uterus.

2-Adjuvant: Skin,larynx, Brain, Breast, bladder, cervix, uterus, testis, Lymphoma, Leukemia.

3-Definitive treatment: Skin, Brain, nasopharynx, larynx, Lung, esophagus, prostate, cervix

The main goals of Radiation Therapy

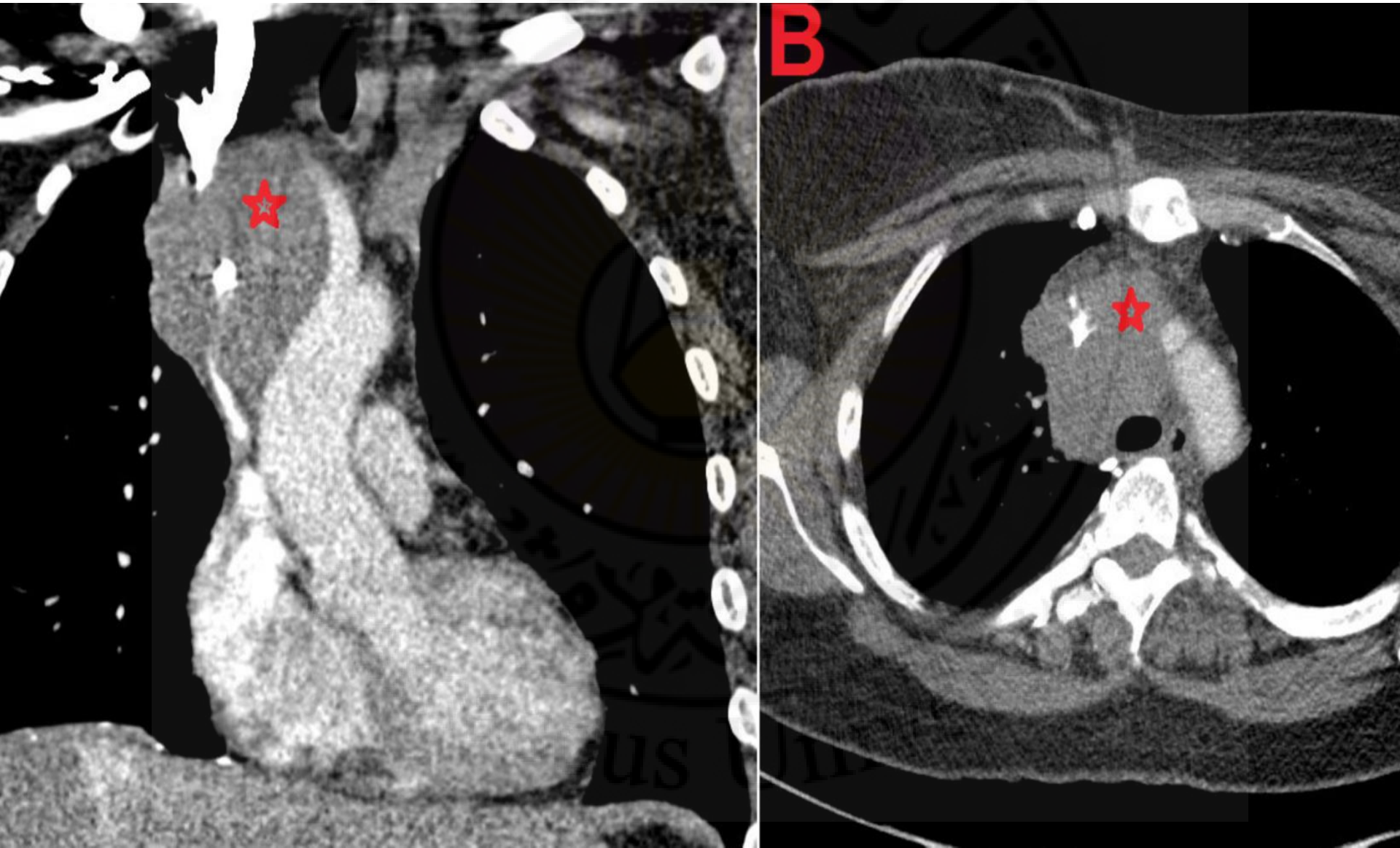
II-Paliative:

1- Pain: Bone Metastases, nerves involvement(Brachial plexus , intracostal nerves, sacral plexus,

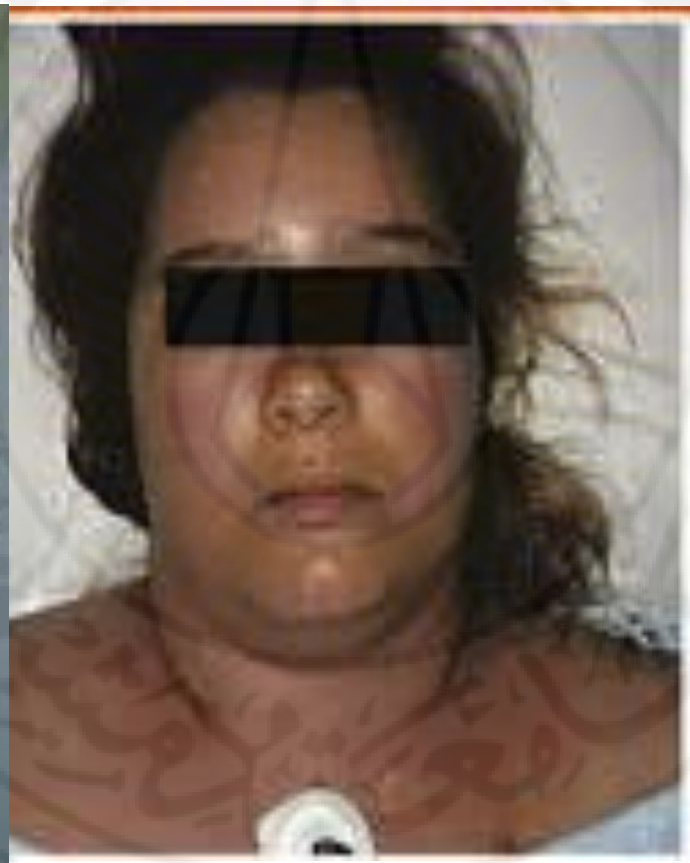
2- **Bleeding** : Lung, Bladder, Rectum, Cervix,

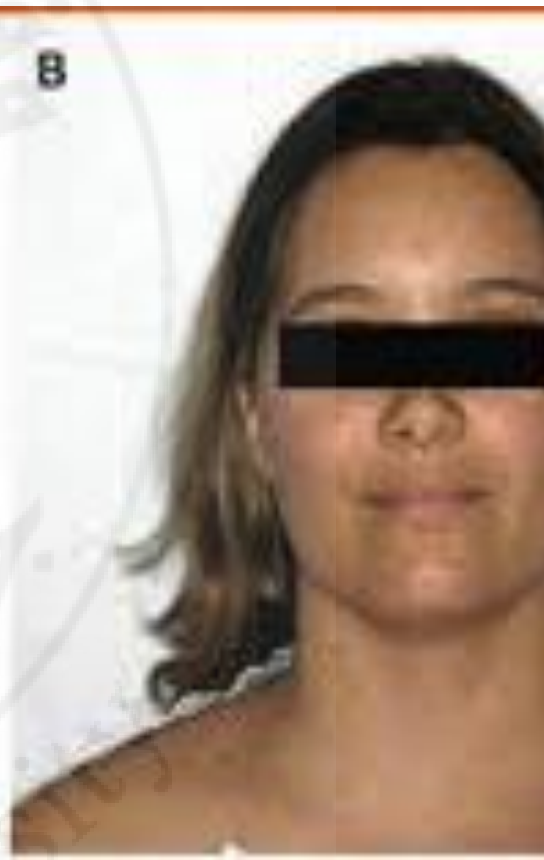
3-**Emergency**: Brain Metastases, malignant spinal cord compression (MSCC) , Superior vena cava syndrome (SVCS).

SVCS



SVCS –Face





Types of Radiation Therapy

- **1- External Beam Radiation Therapy (EBRT) (Teletherapy):** Radiation delivered from a distant source, from outside the body and directed at the patient's cancer site.

- **2-Internal Radiation Therapy (Brachytherapy):** Placing radiation sources as close as possible to the tumor site. Sometimes, they may be inserted directly into the tumor.

Machines of EBRT

Systems which produce different types of radiation for external beam therapy include:

1- Orthovoltage x-ray machines.

2- Cobalt-60 machines.

3- Gamma knife(steriotactic radiosurgery)192,201 sourses

4- Linear accelerators.

5- Tomotherapy

6- Proton beam machines.

7- Neutron beam machines.

8..??

Types of brachytherapy

1- Intracavitary brachytherapy: Cervix

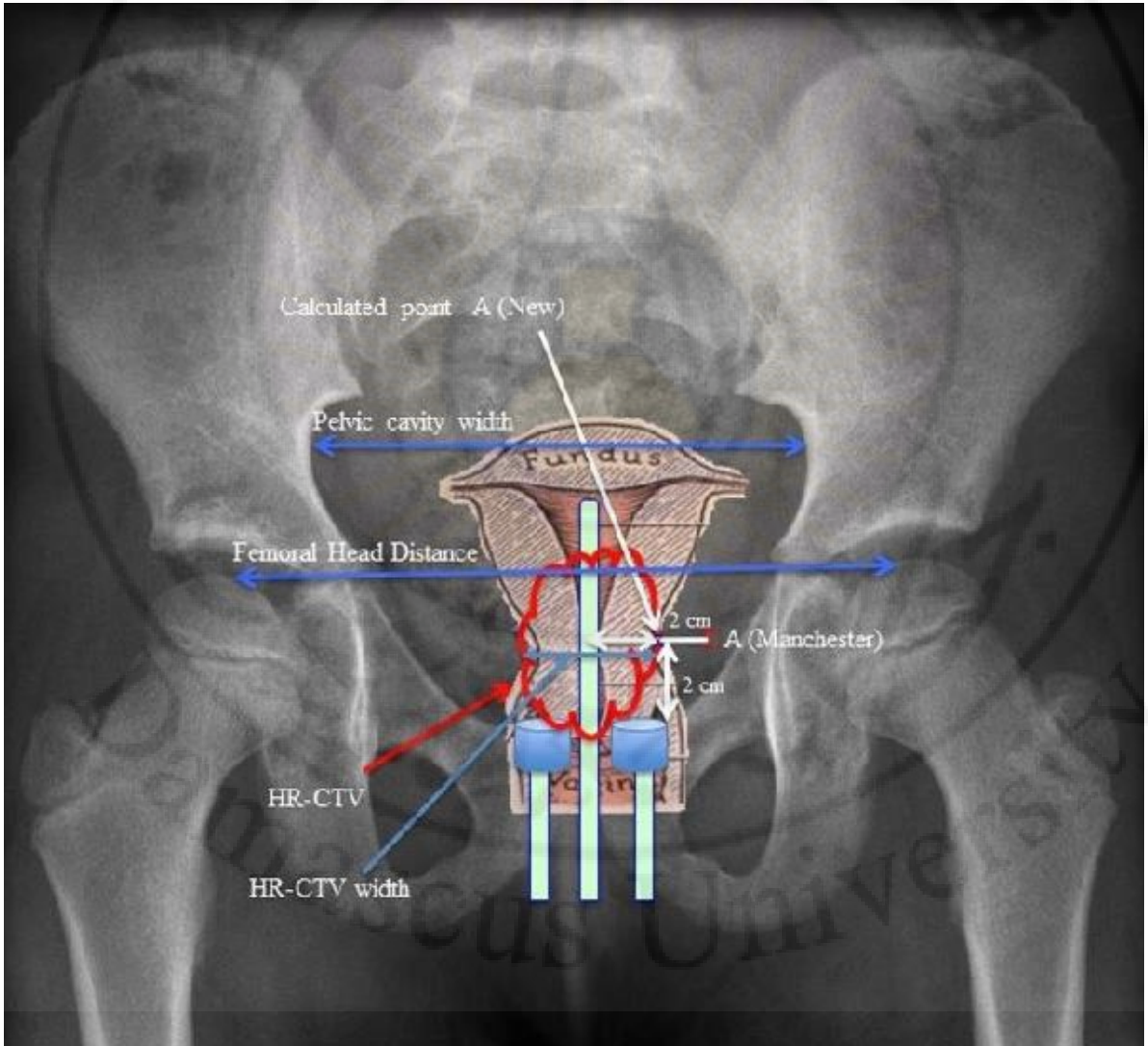
2-Interstitial brachytherapy:Prostate, Breast, tongue..

3- Intraluminal Brachytherapy: Esophagus, Rectum.

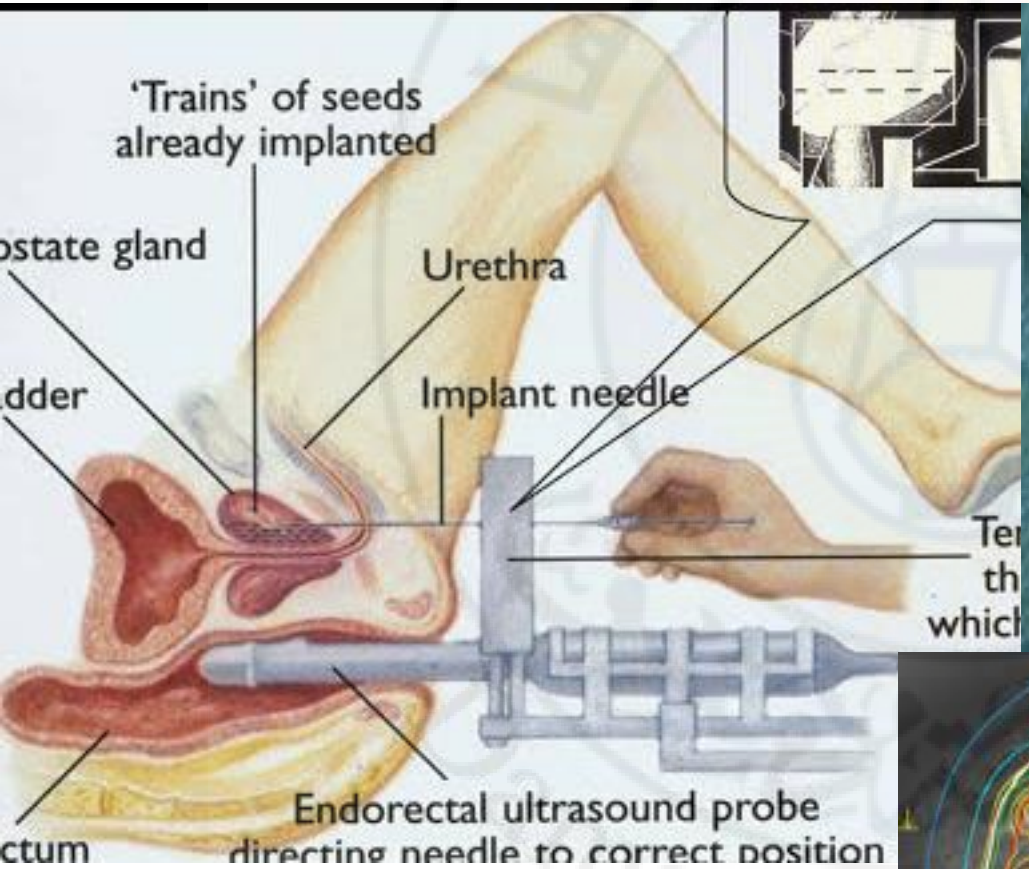
4-Radioactive Isotopes: Thyroid (I-131)

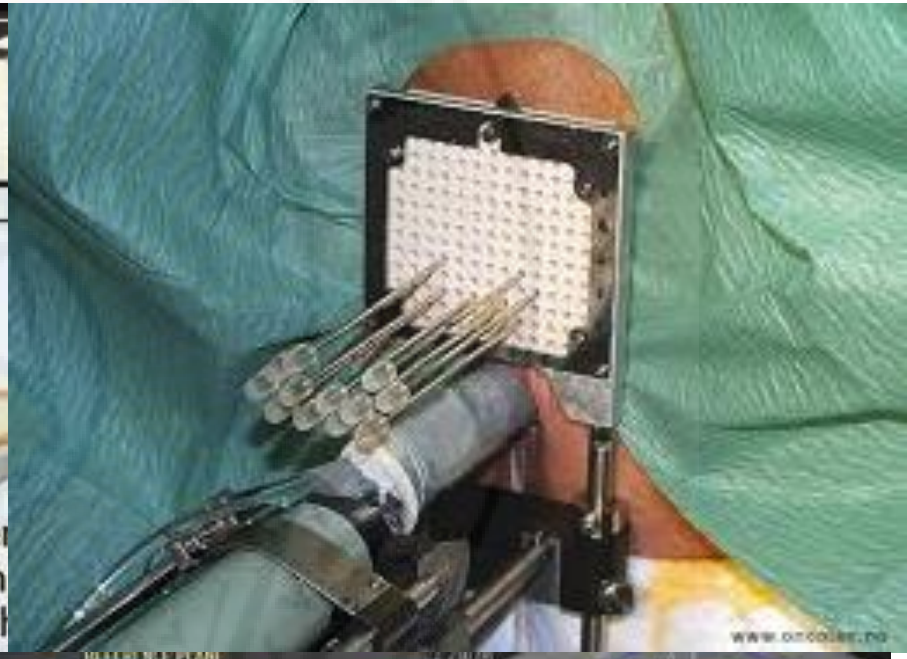
Prostate (Strontium-90)

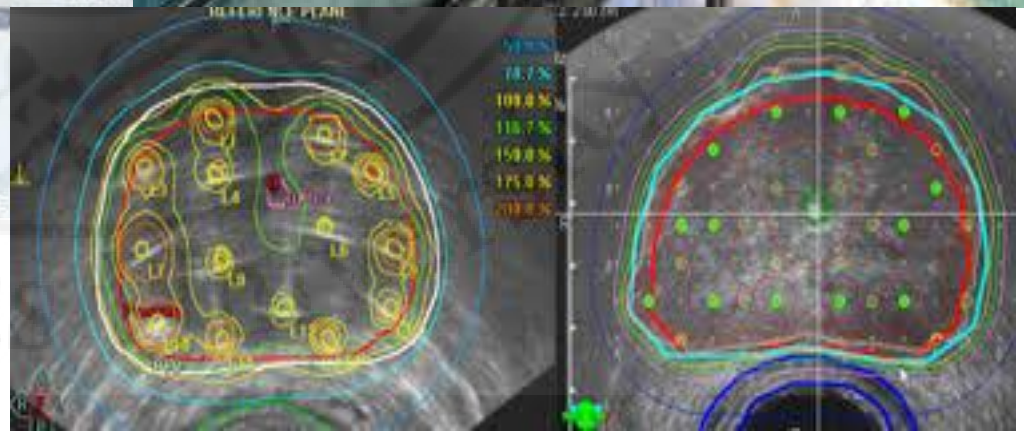
intracavitary brachytherapy: Cervix..



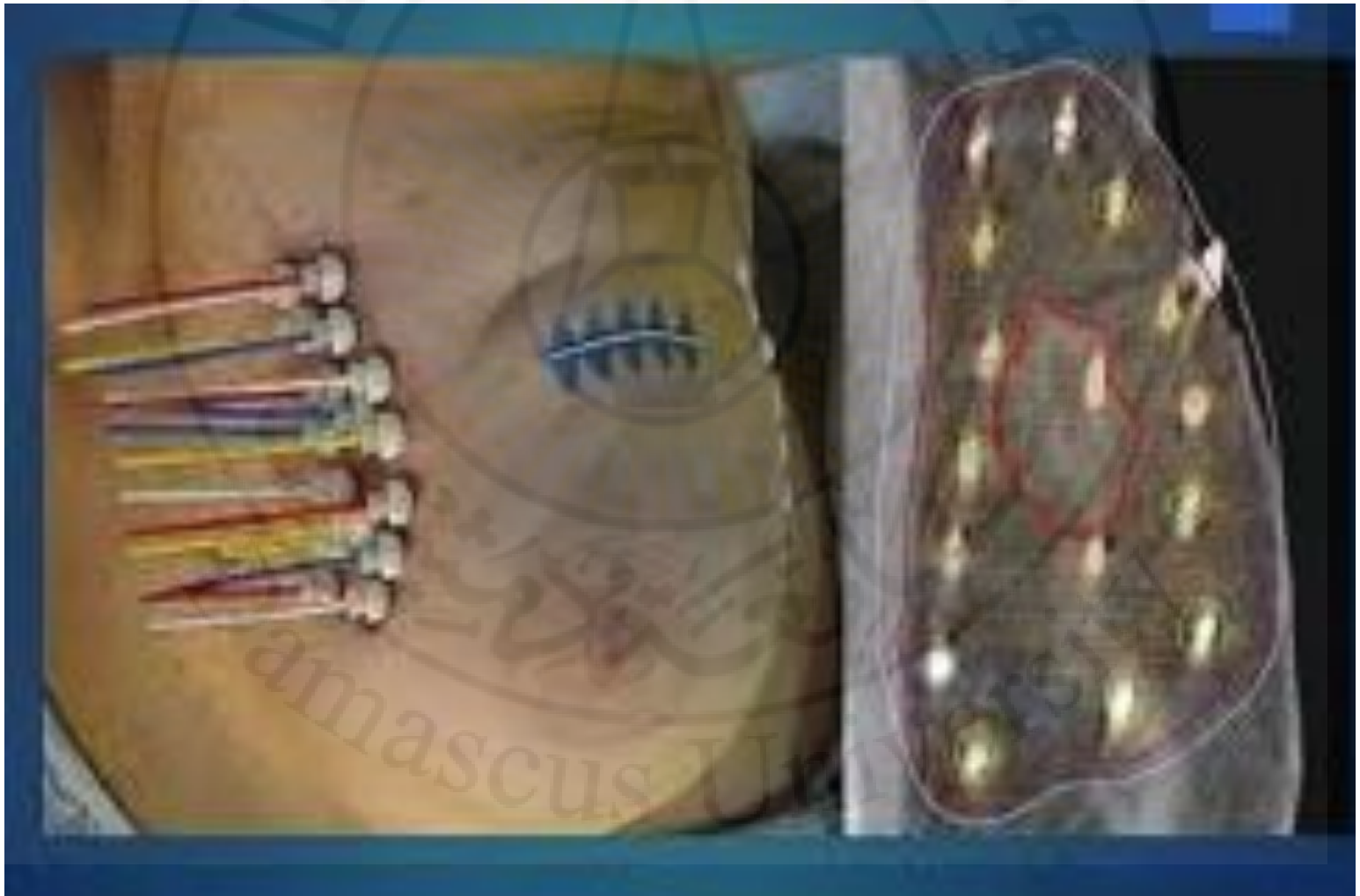
Interstitial brachytherapy: Prostate, Breast, tongue..



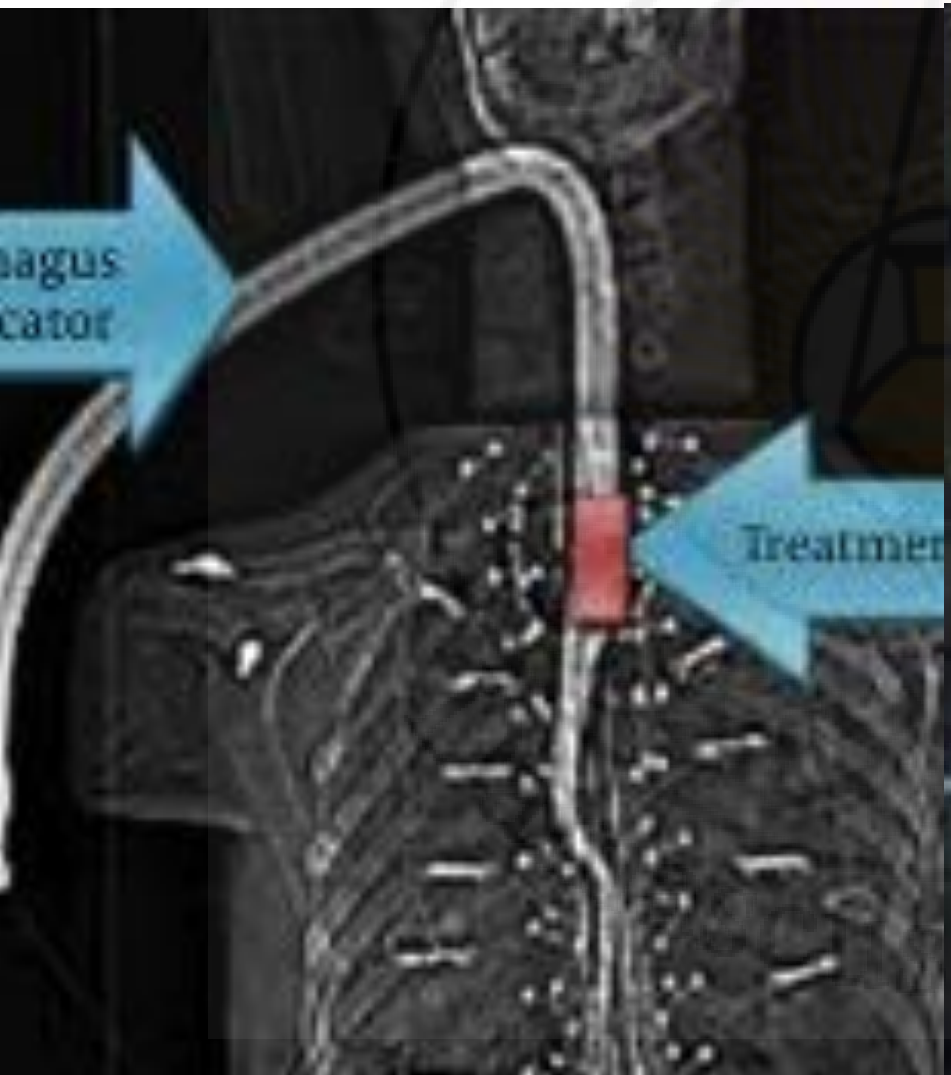


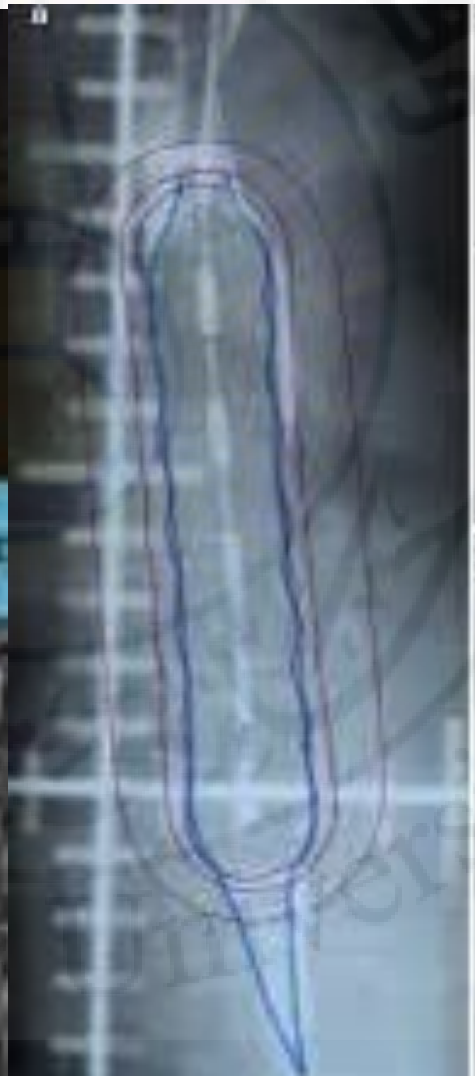


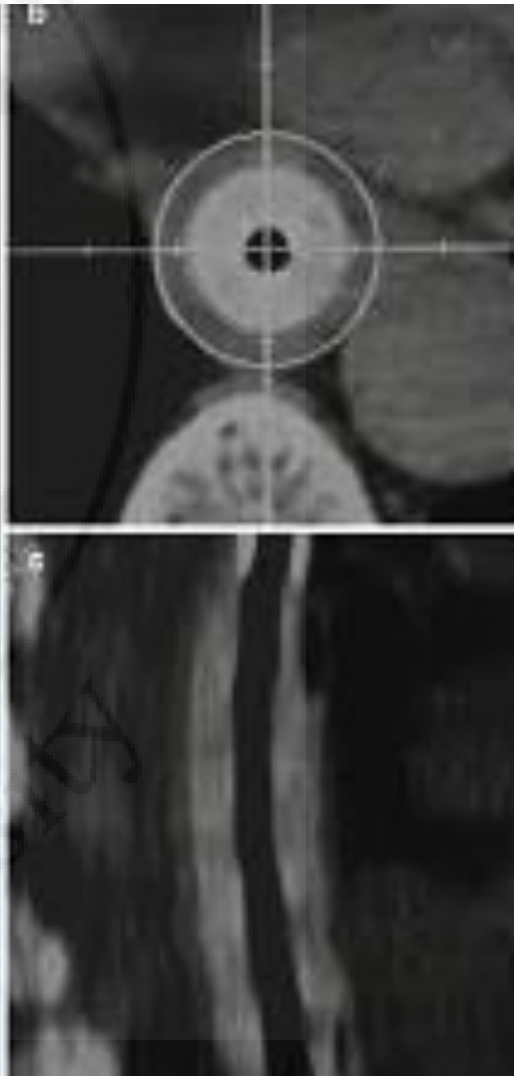
Interstitial brachytherapy: Prostate, Breast, tongue..



Intraluminal Brachytherapy: Esophagus, Rectum.

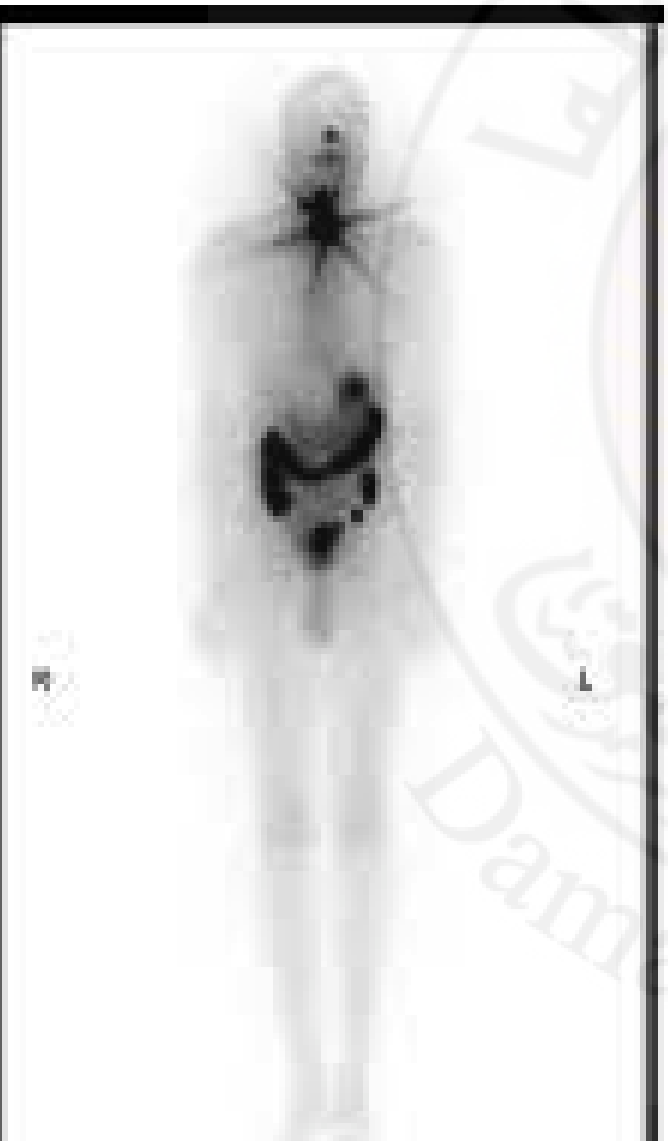


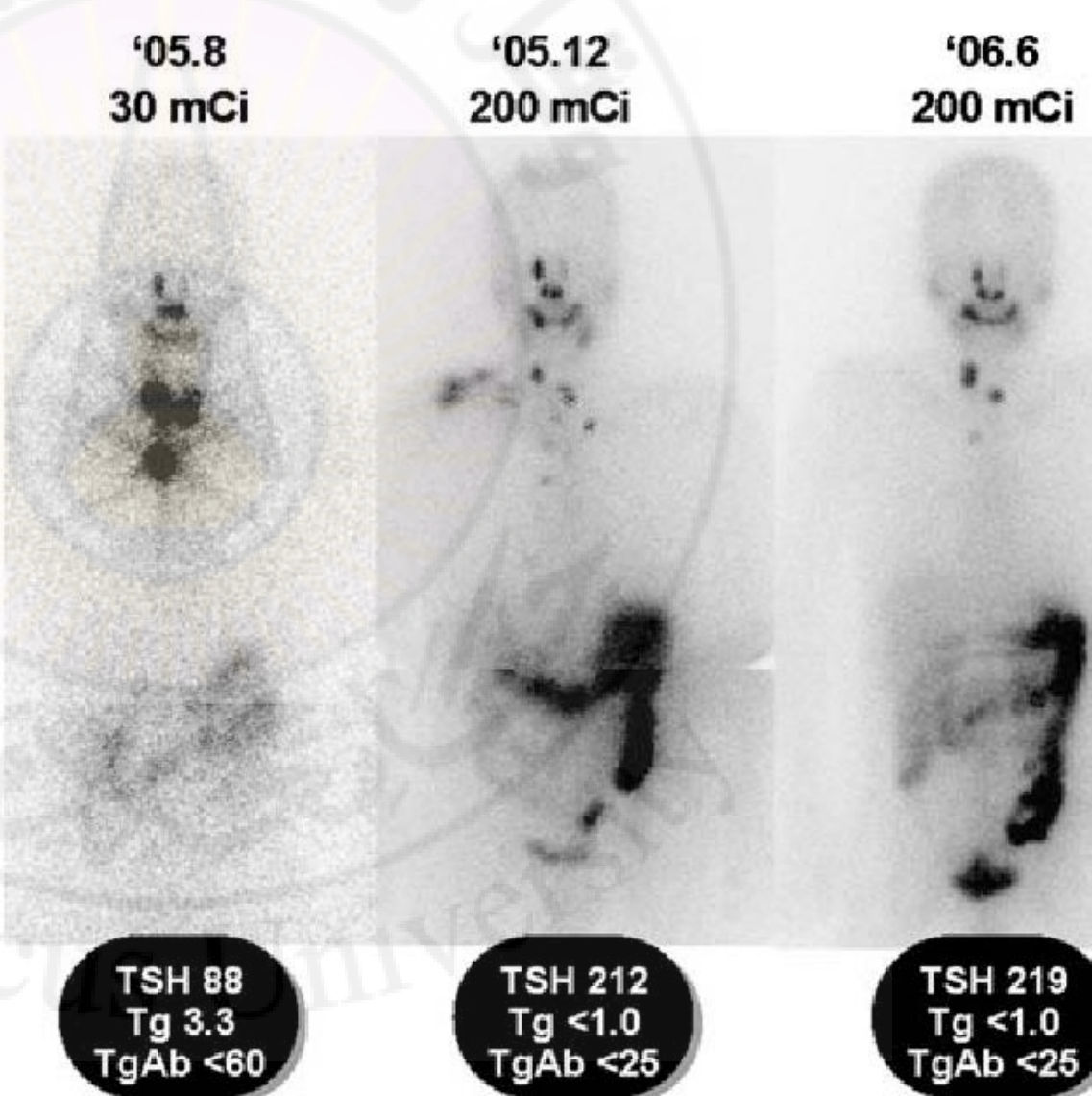




Radioactive isotope

Thyroid I-131





Side effects of RT

*** General:**

1- Fatigue

2- Anorexia

3- Anemia, Neutropenia & Thrombocytopenia

4- Depression..etc

*** Location:**

1- Head: →(3H) Hair loss, Hearing loss & Headaches

2- Mouth → Dry mouth

3- Gastrointestinal tract : → Dysphagia, Nausea, Vomiting
Colic & Diarrhia

4- Childhood cancer → 2 end Malignancy (Lymphoma → Breast Cancer)

وقل رب زدني علما
جامعة دمشق
Damascus University