

# Cervical Cancer

**Dr Lorand SLAIMAN**

# Cervical cancer

- Risk Factor

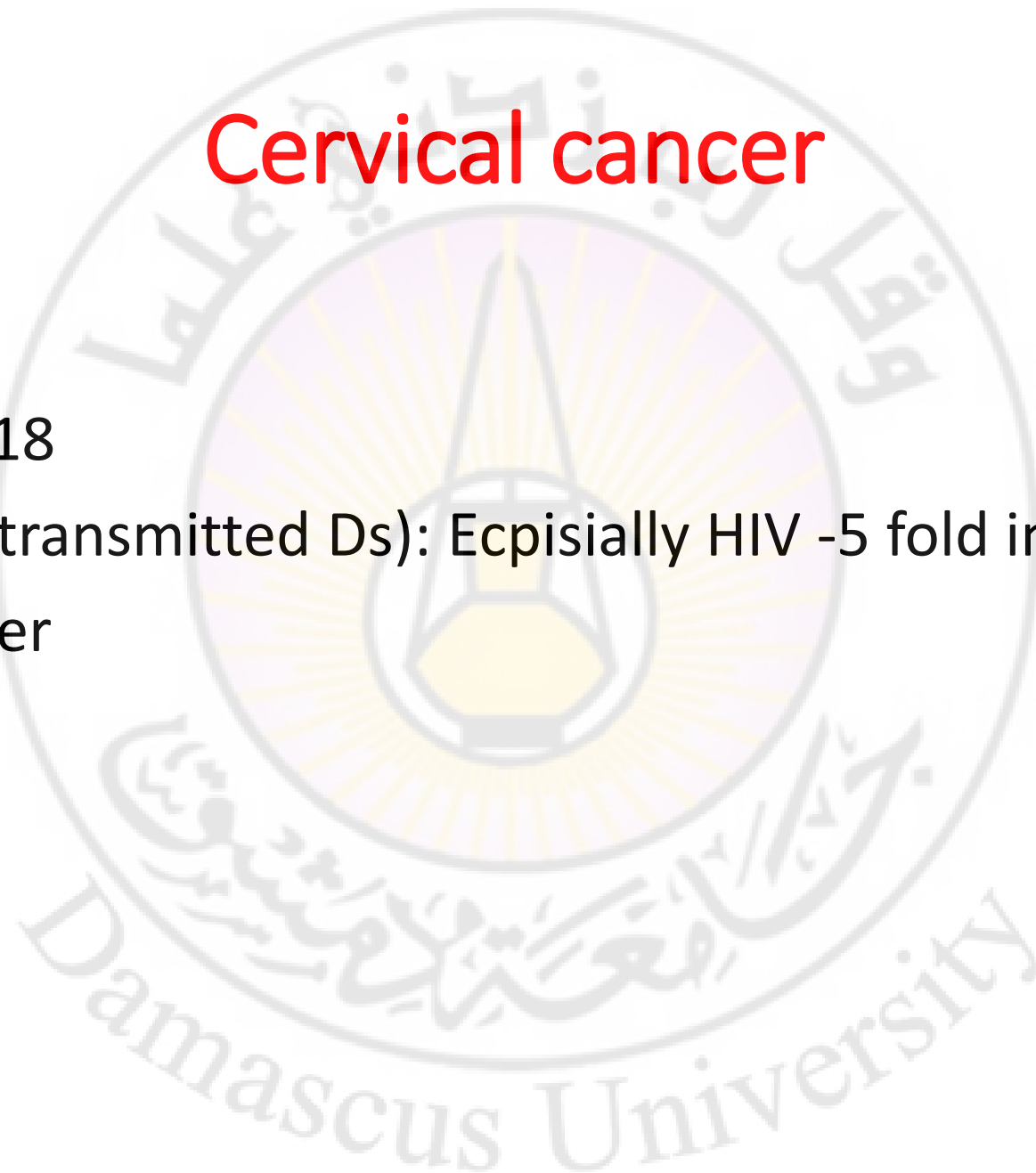
1-HPV: Type 16, 18

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

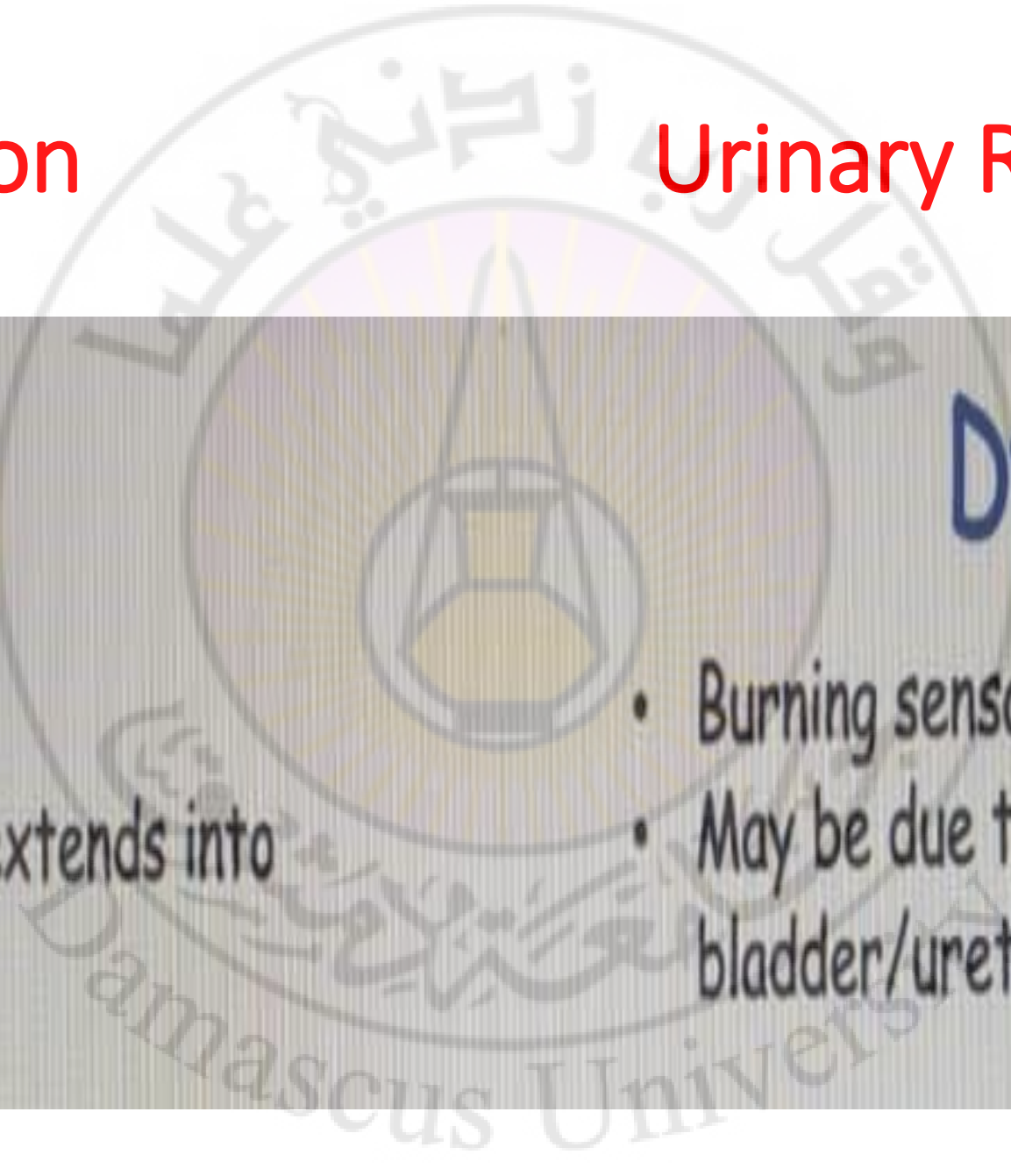
# Urinary Retention

## 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

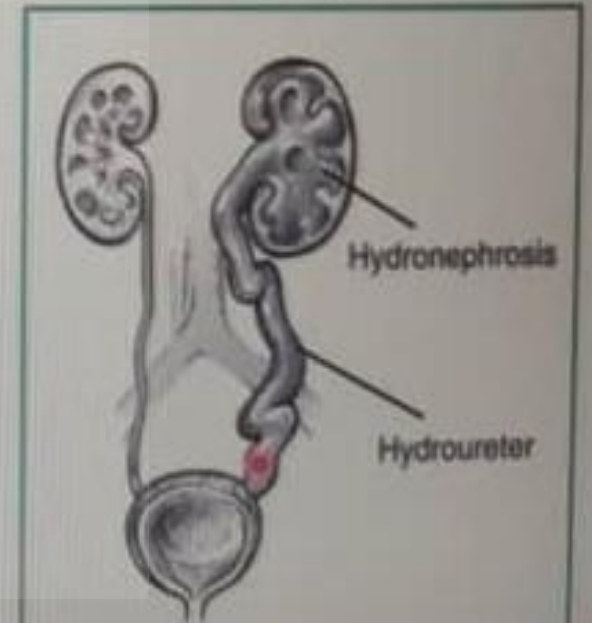


### Pain



### Hydronephrosis

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



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# Cervical Cancer: Screening & Diagnosis

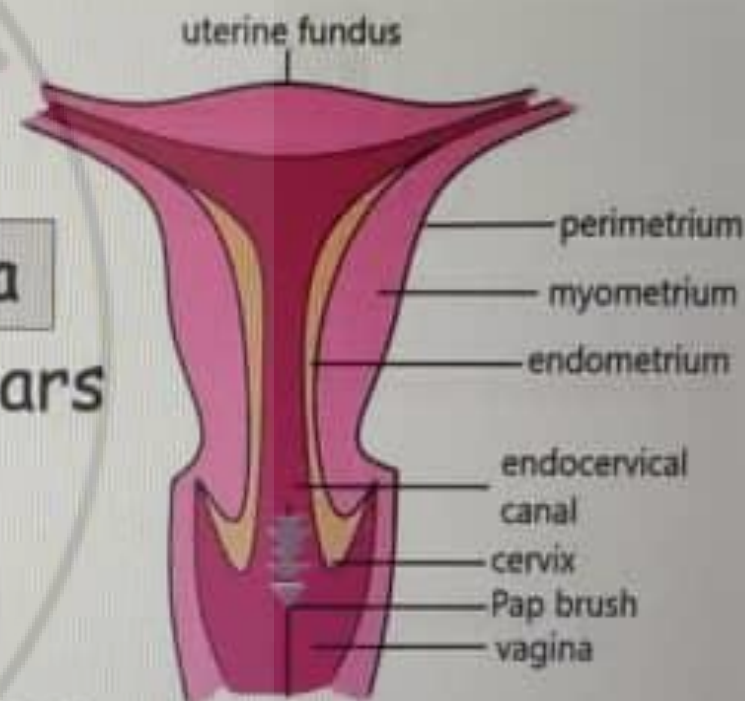
## Pap (Papanicolaou) Smear

- *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)**

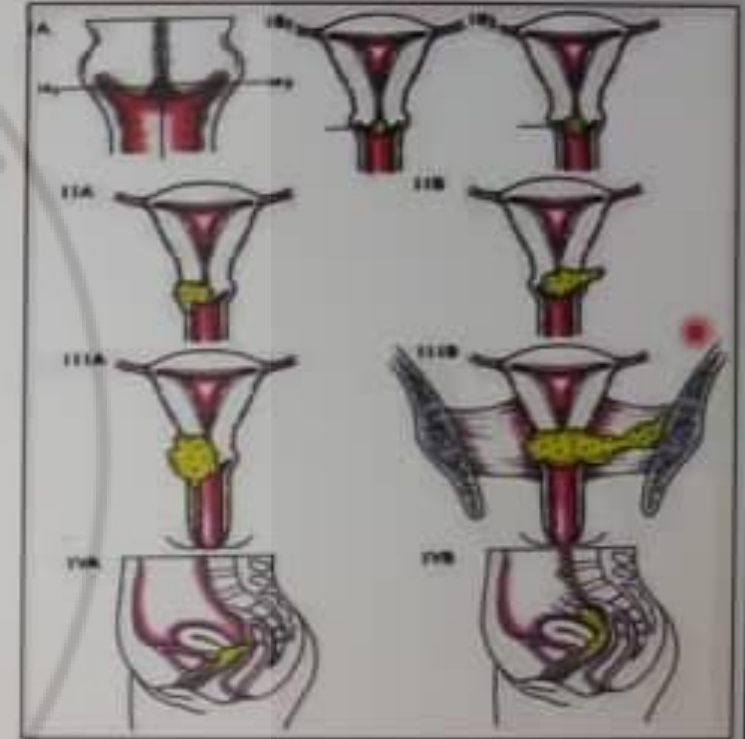
- IIA: Parametrium not involved
- IIB: Parametrium involved

- **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

CIIB2 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
- Signs and symptoms: 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

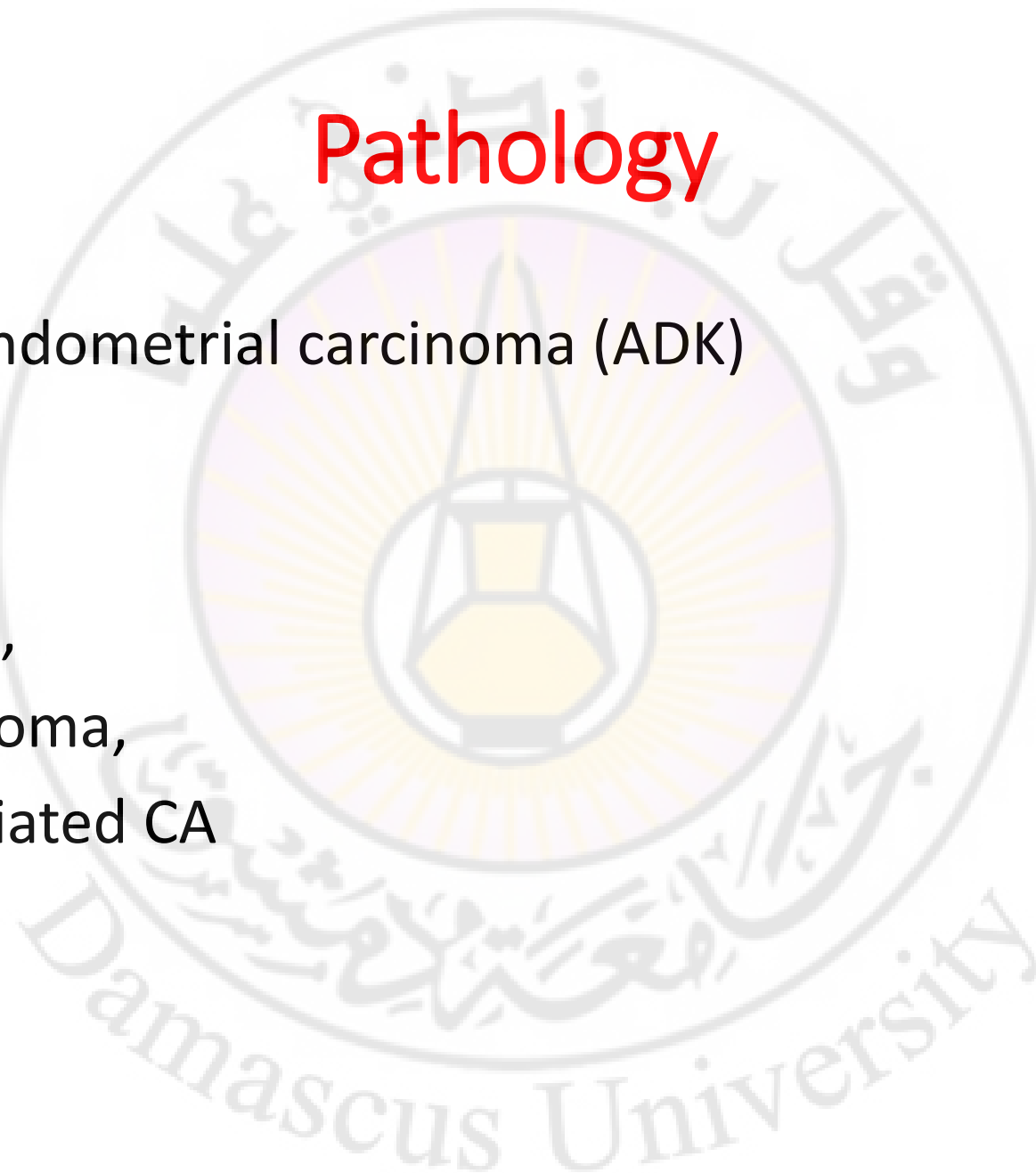


# Pathology

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

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

IIIC: LN+

IVB: M+

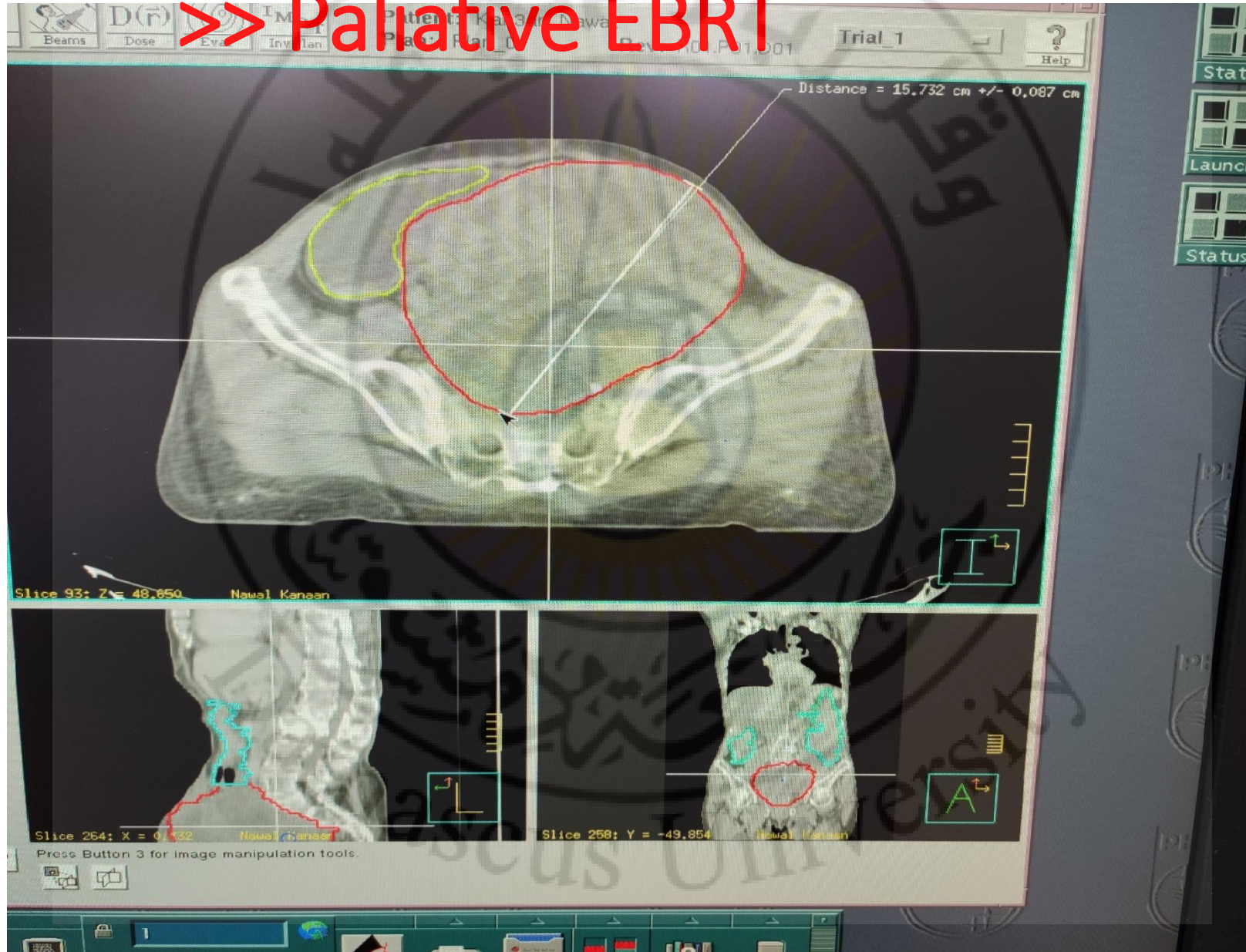
# Treatment

- **Uterus Limited** --Surgery: Total Hysterectomy and bilateral salpingo-oophorectomy (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

>> Palliative EBRT





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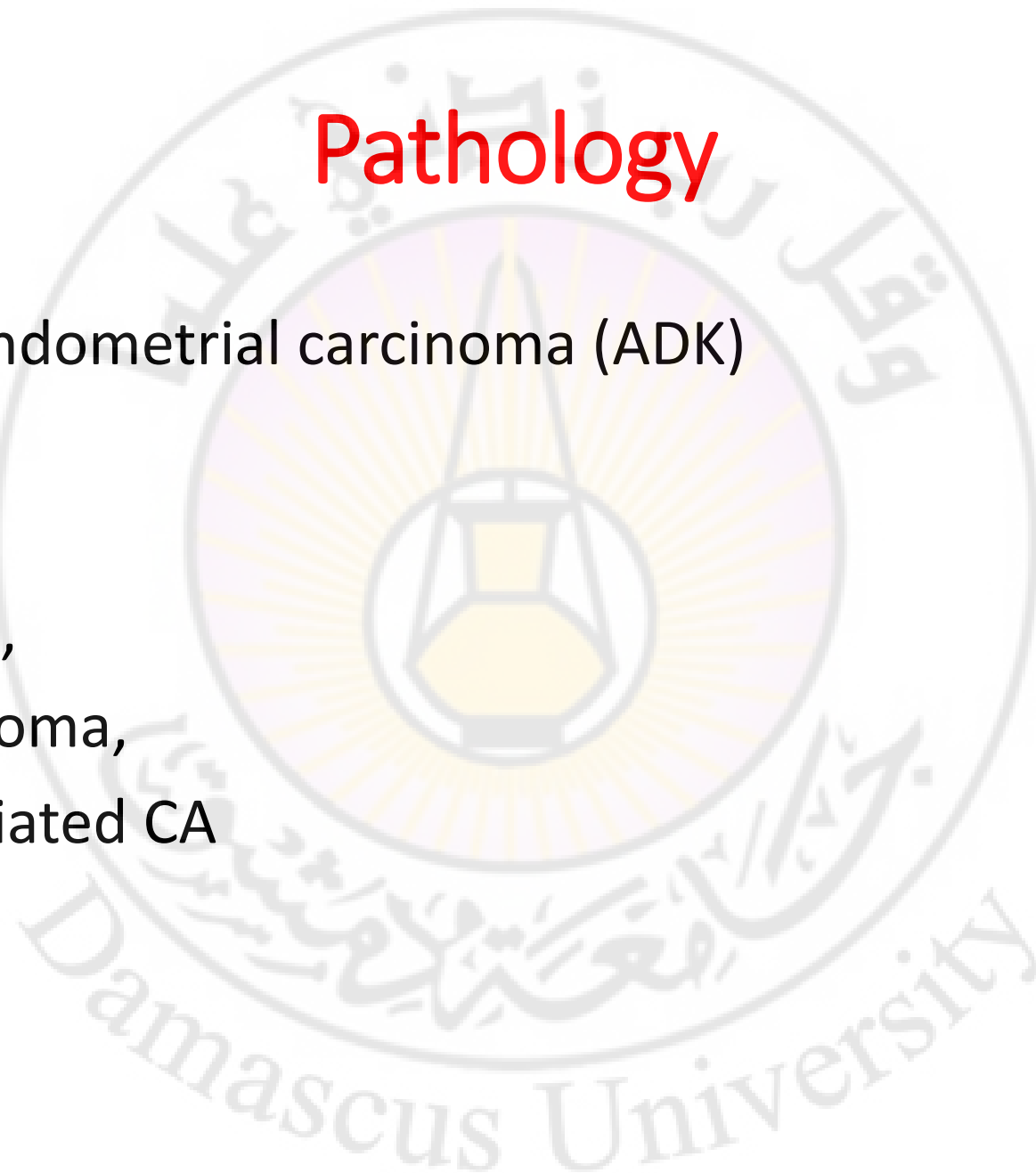


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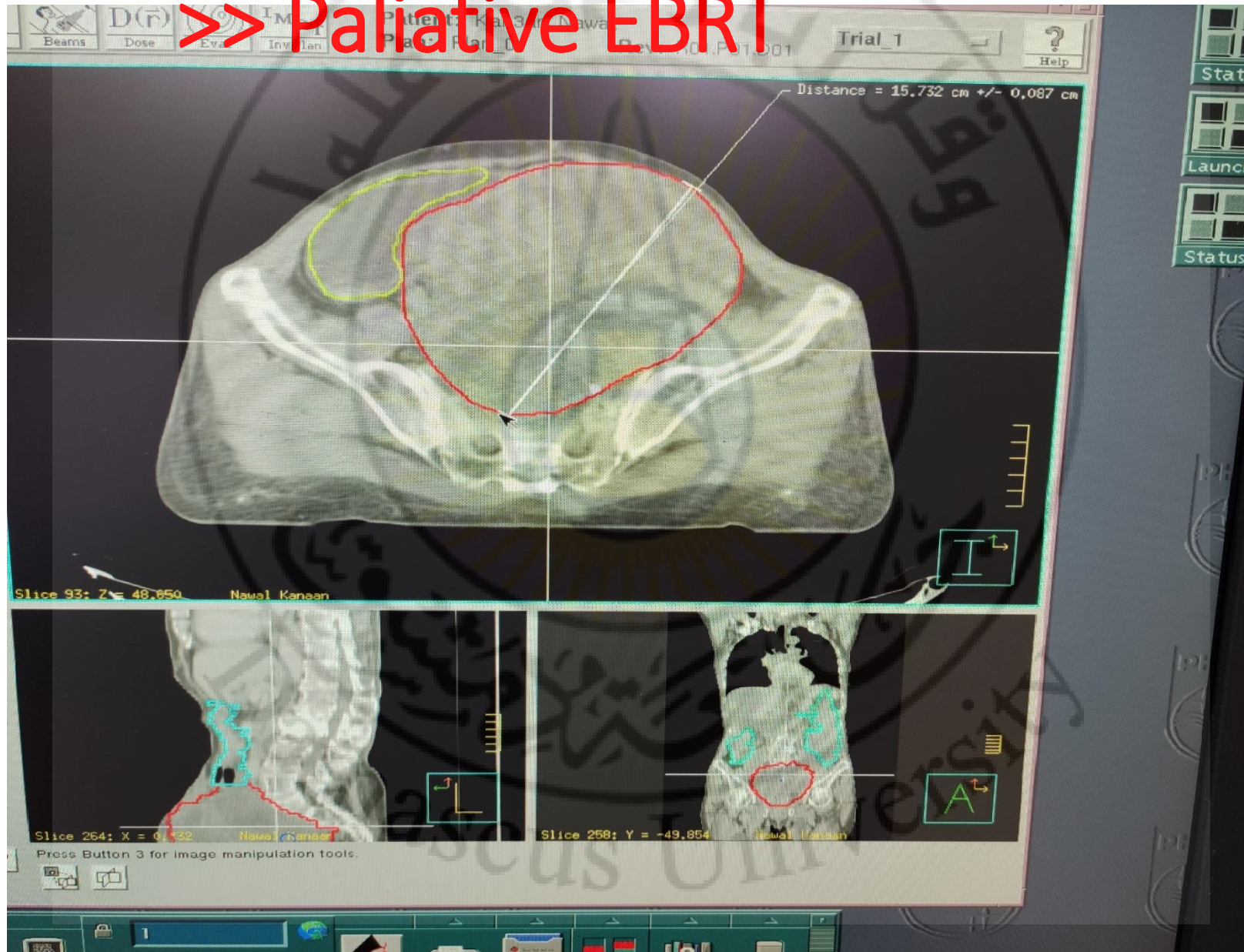
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# المعالجة الشعاعية

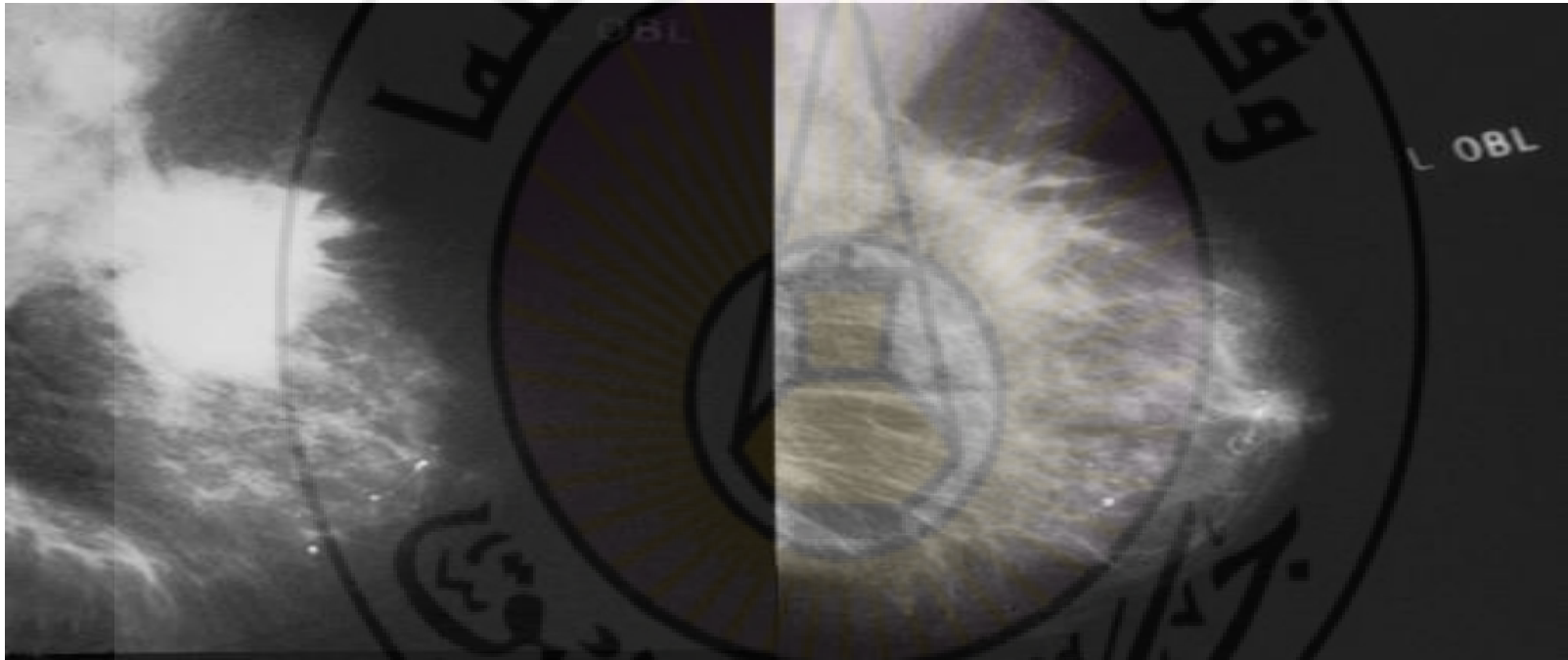
د لورانـد سليمان

Damascus University



# Wommen , 68y , Breast Cancer

## Mamography

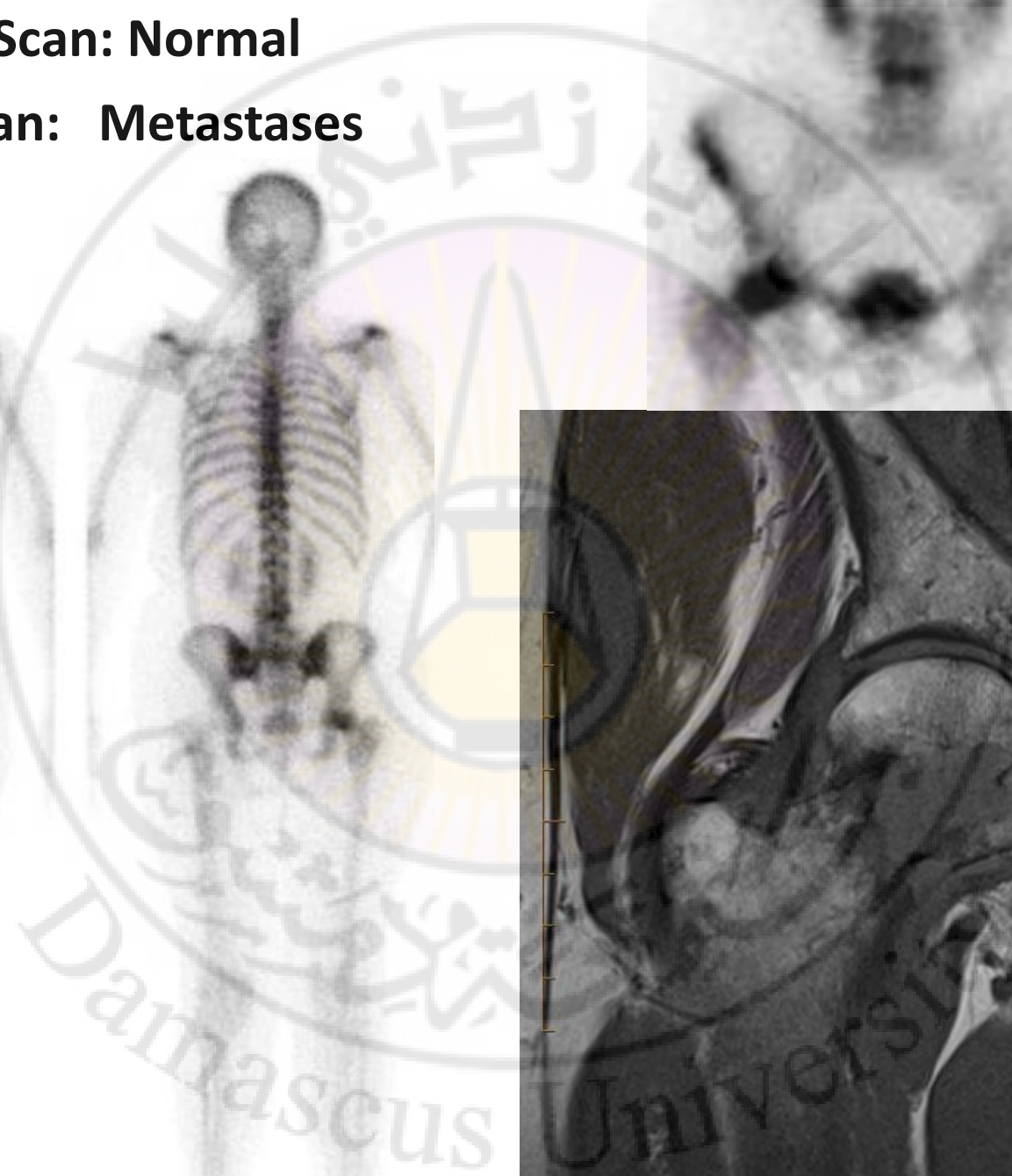
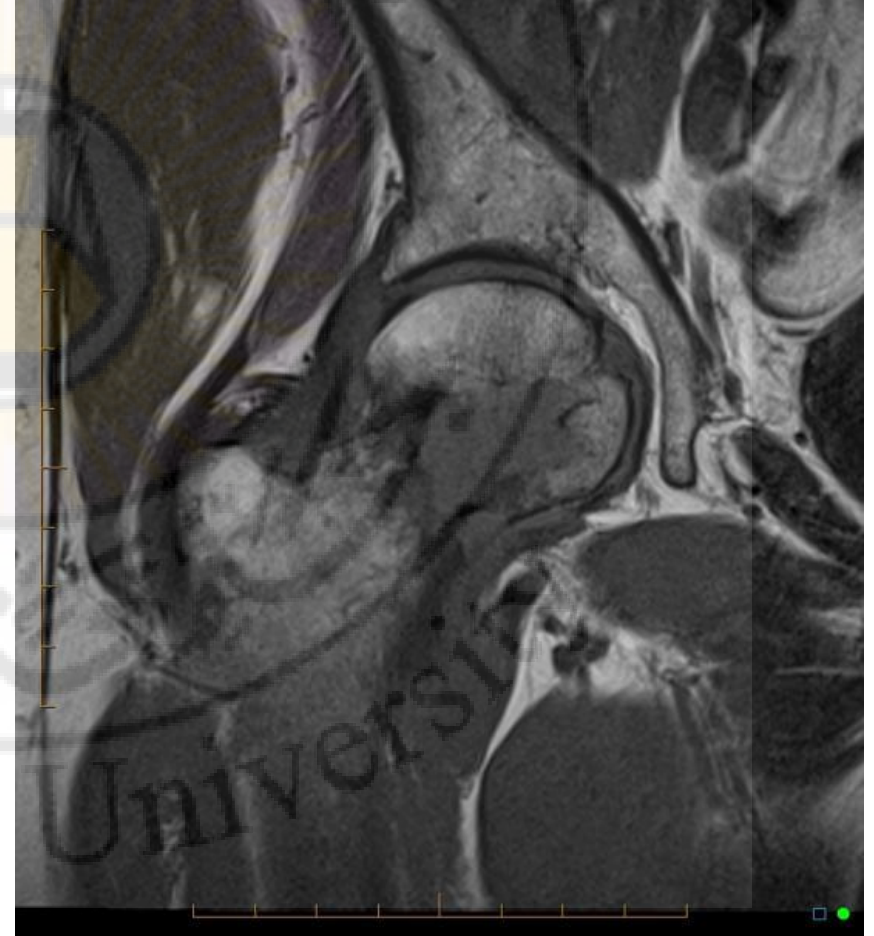
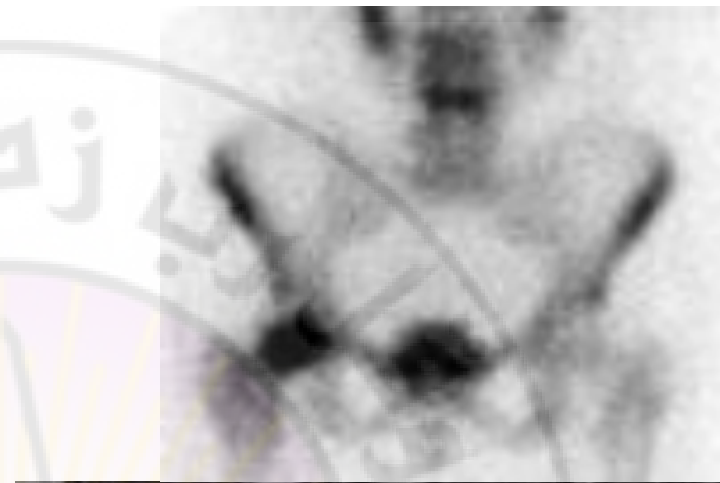


**pT3(7cm) N3(16N+/18N) M1**

**Stage IV**

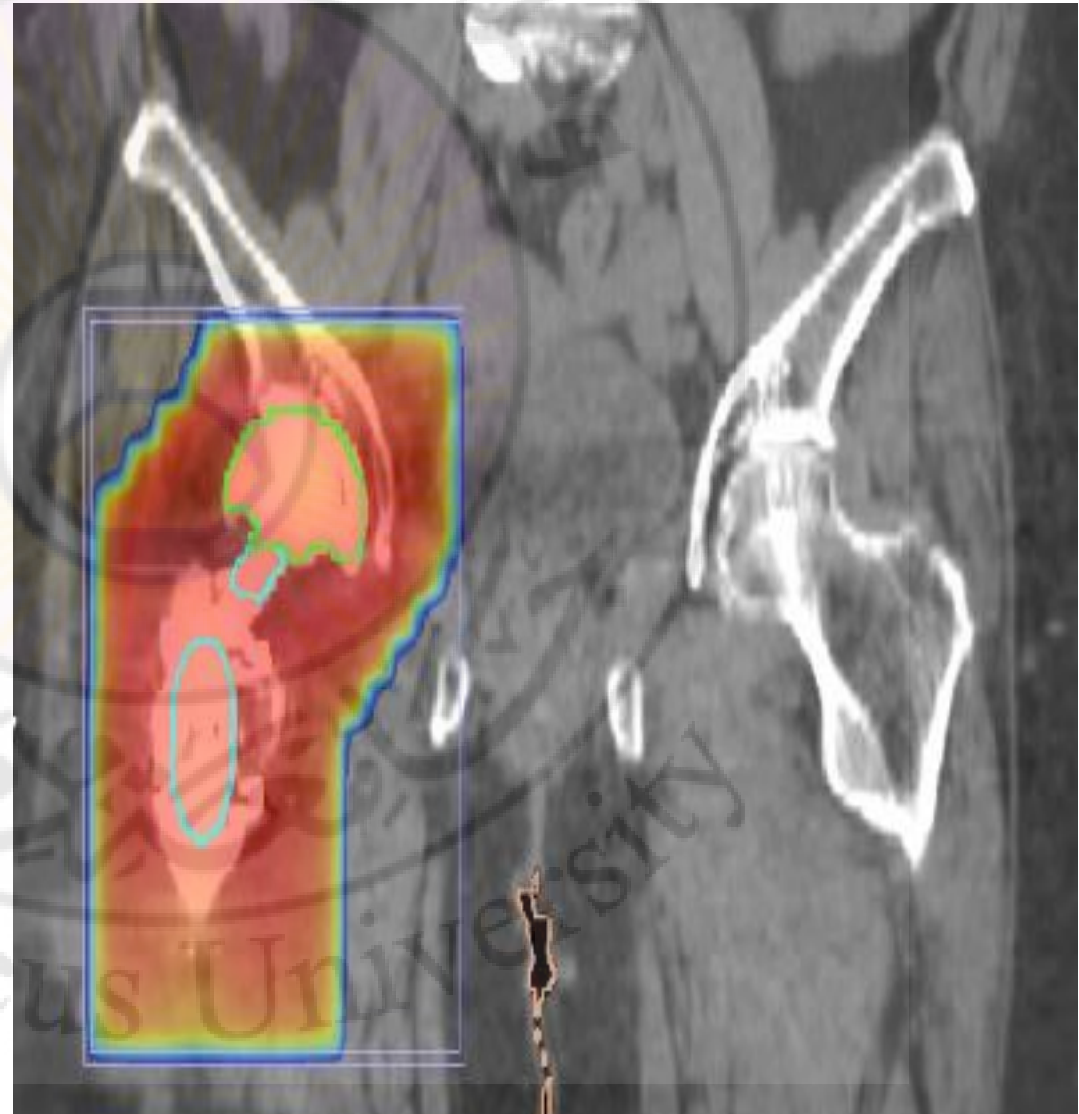
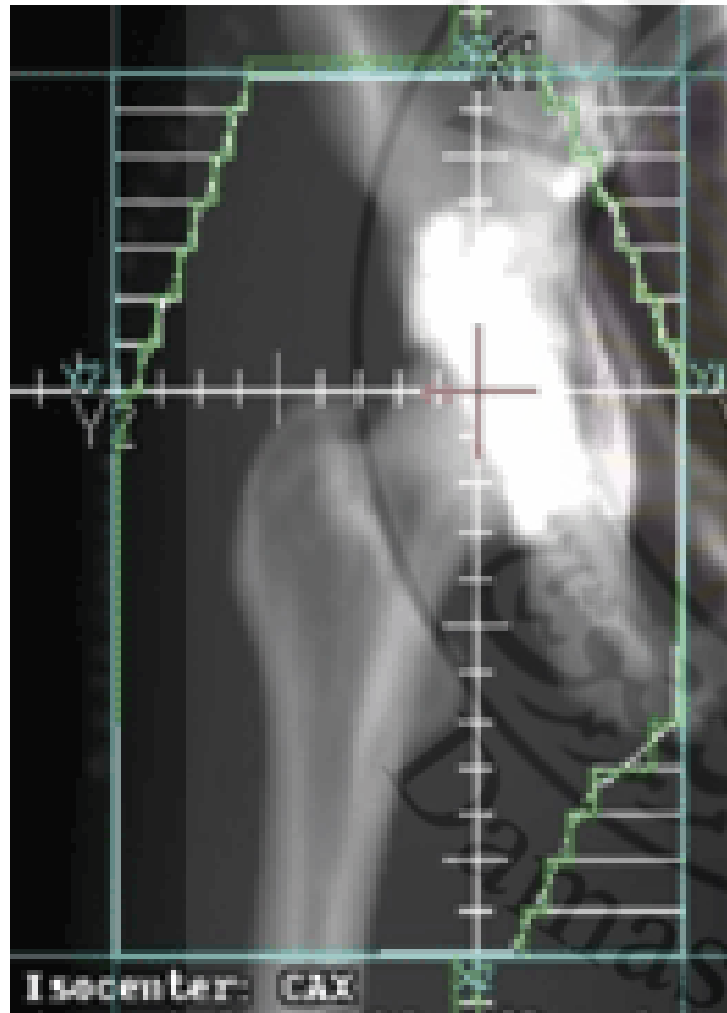
**CA- CT Scan: Normal**

**Bone Scan: Metastases**



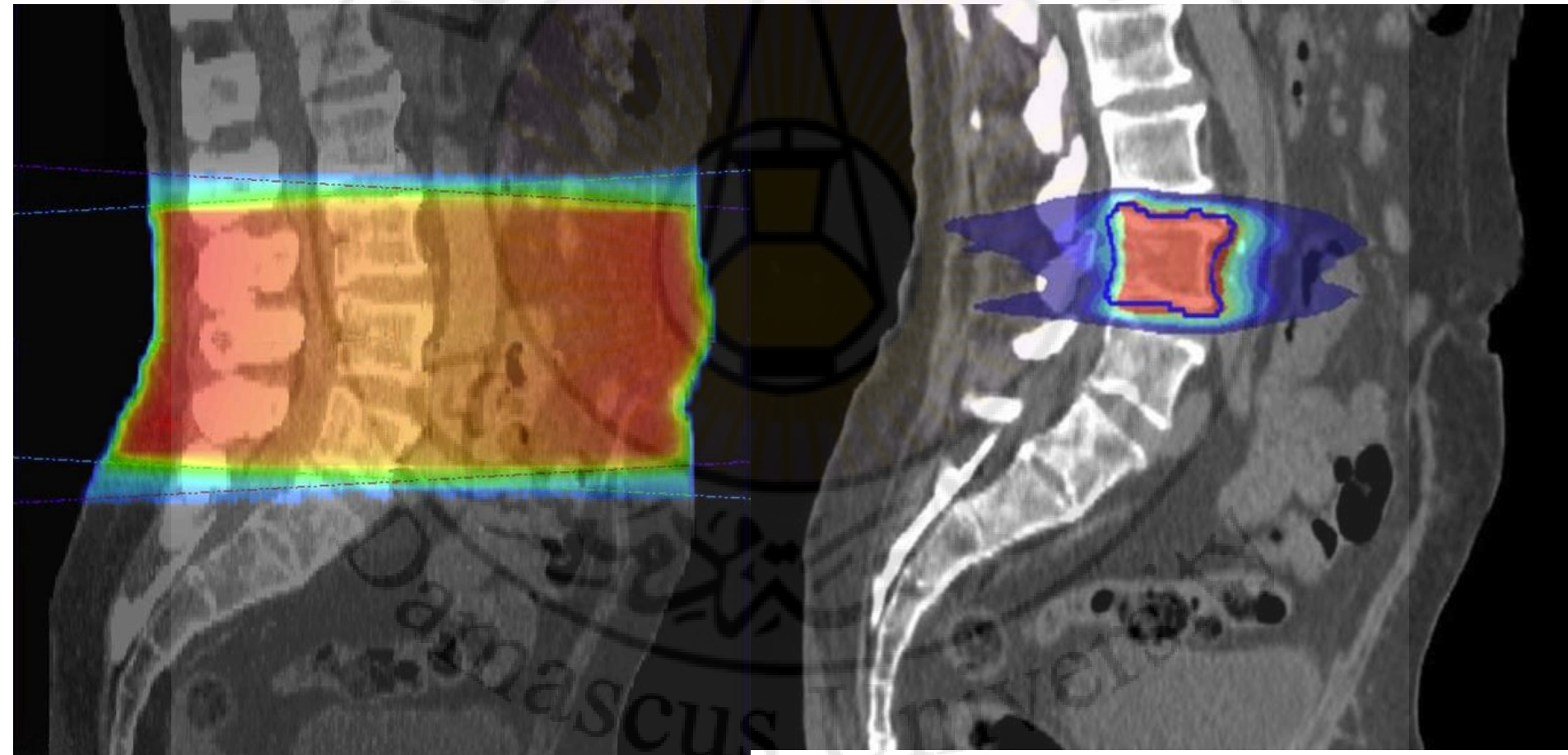
2D RT

3D RT



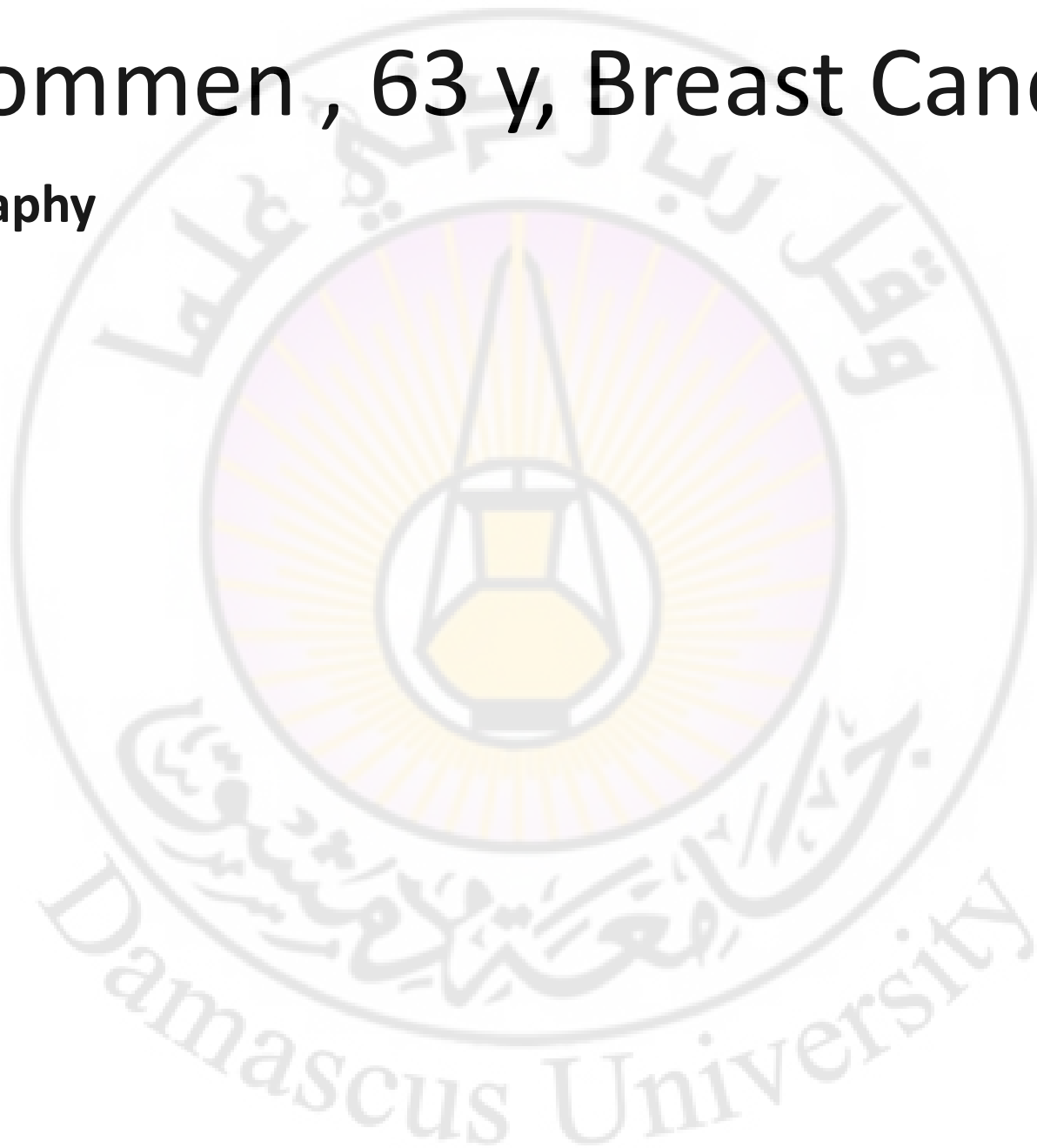


# 3D-Radiation therapy



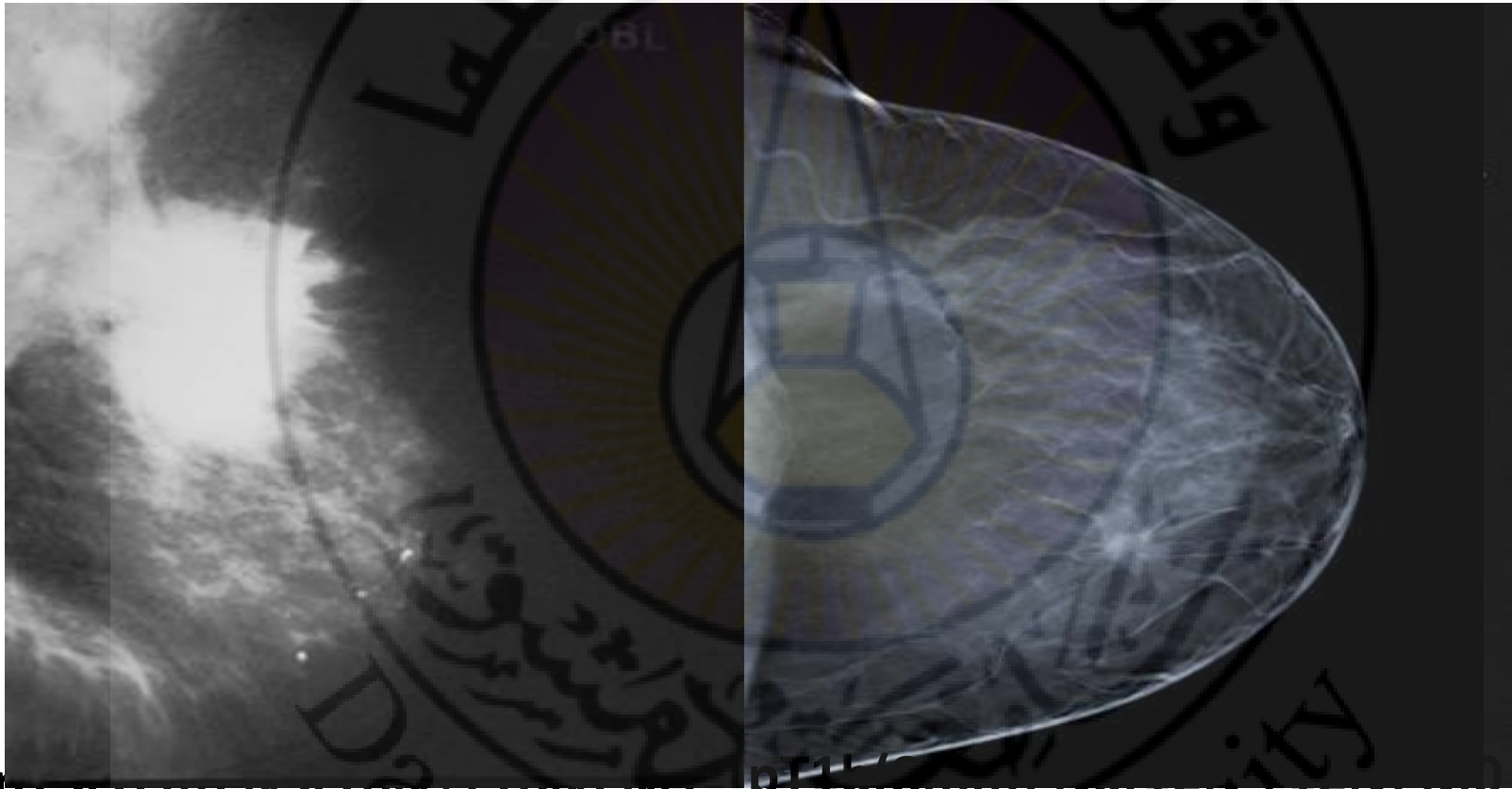
# Wommen , 63 y, Breast Cancer

**Mamography**



# Wommen , 63 y, Breast Cancer

## Mamography



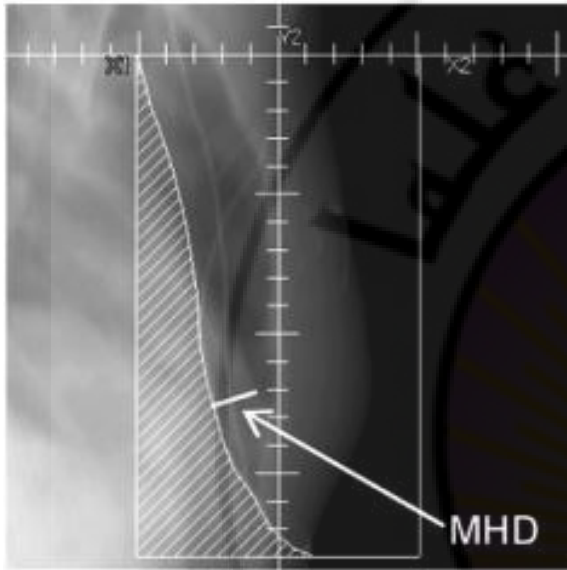
Stage IV

Stage IA

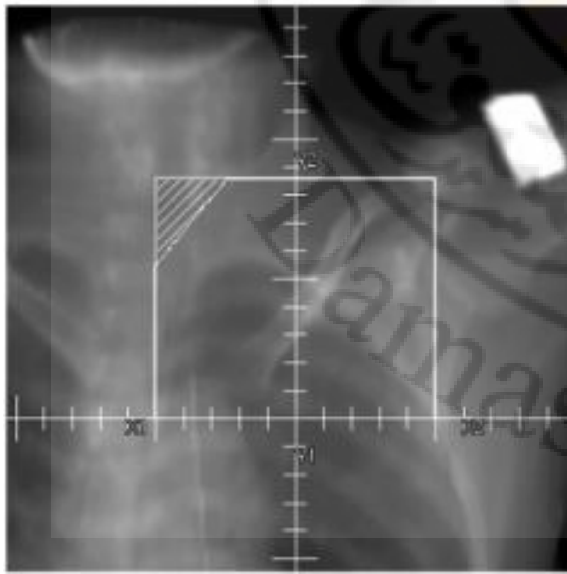


# 2 Dimensions Radiotherapy (2DRT)

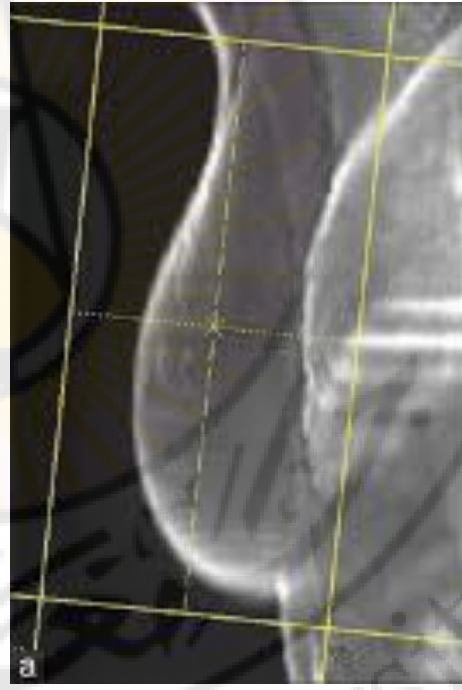
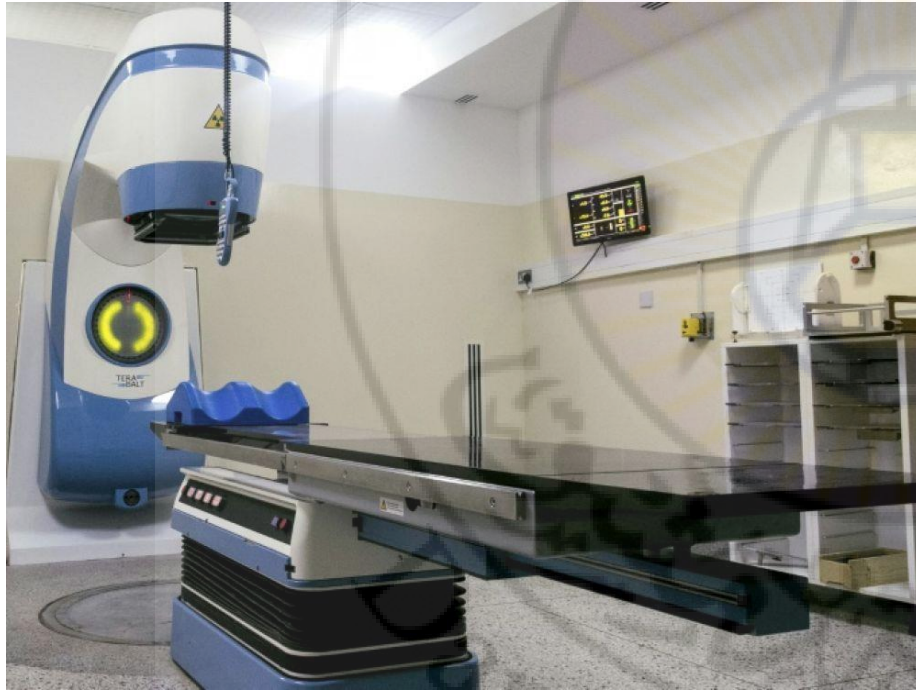
(a) Regimen A/B tangential field



(c) Regimen B preclavicular field



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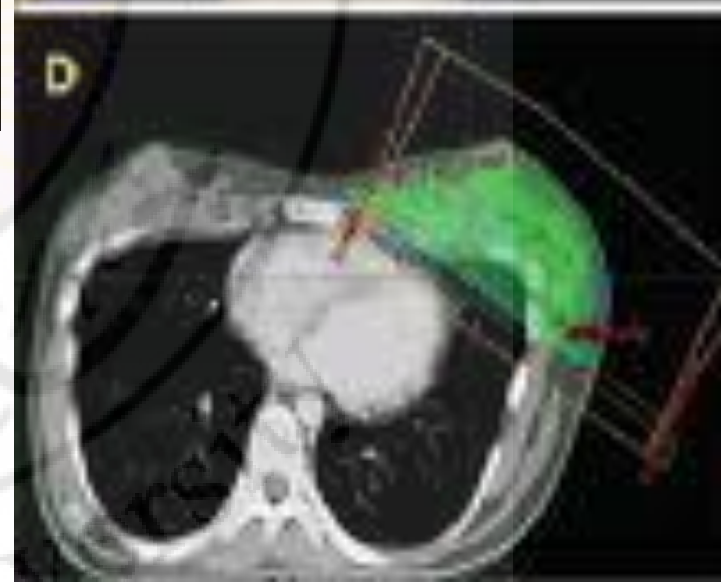
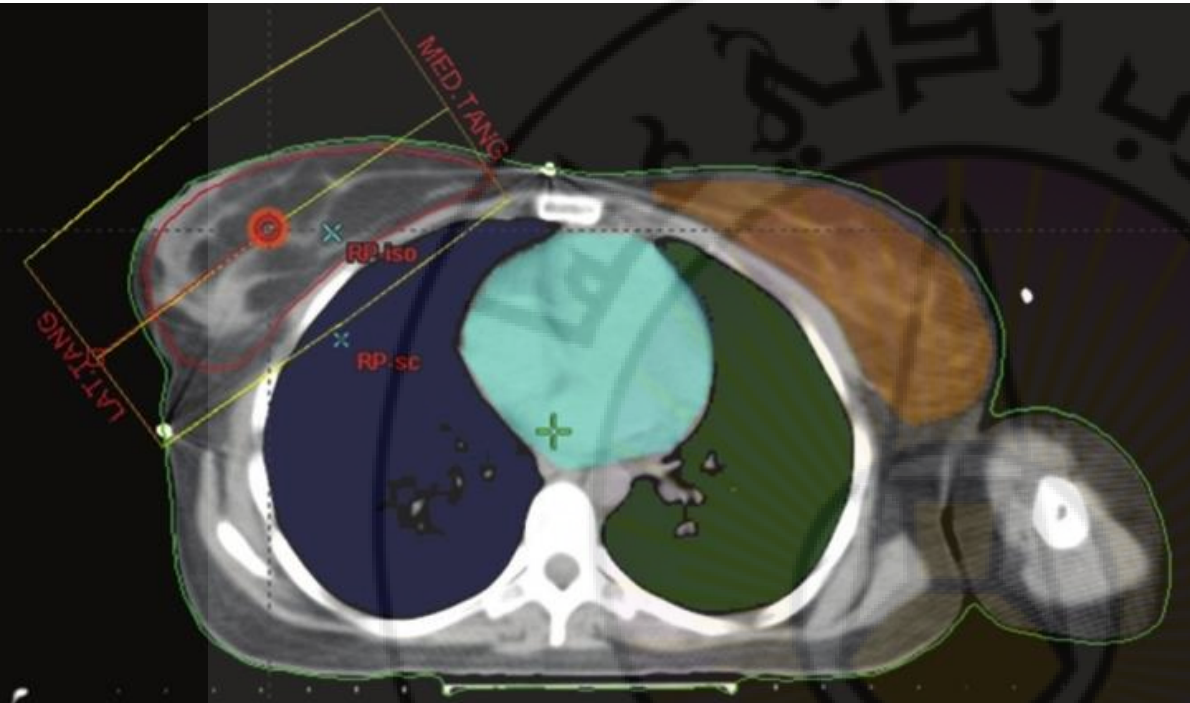


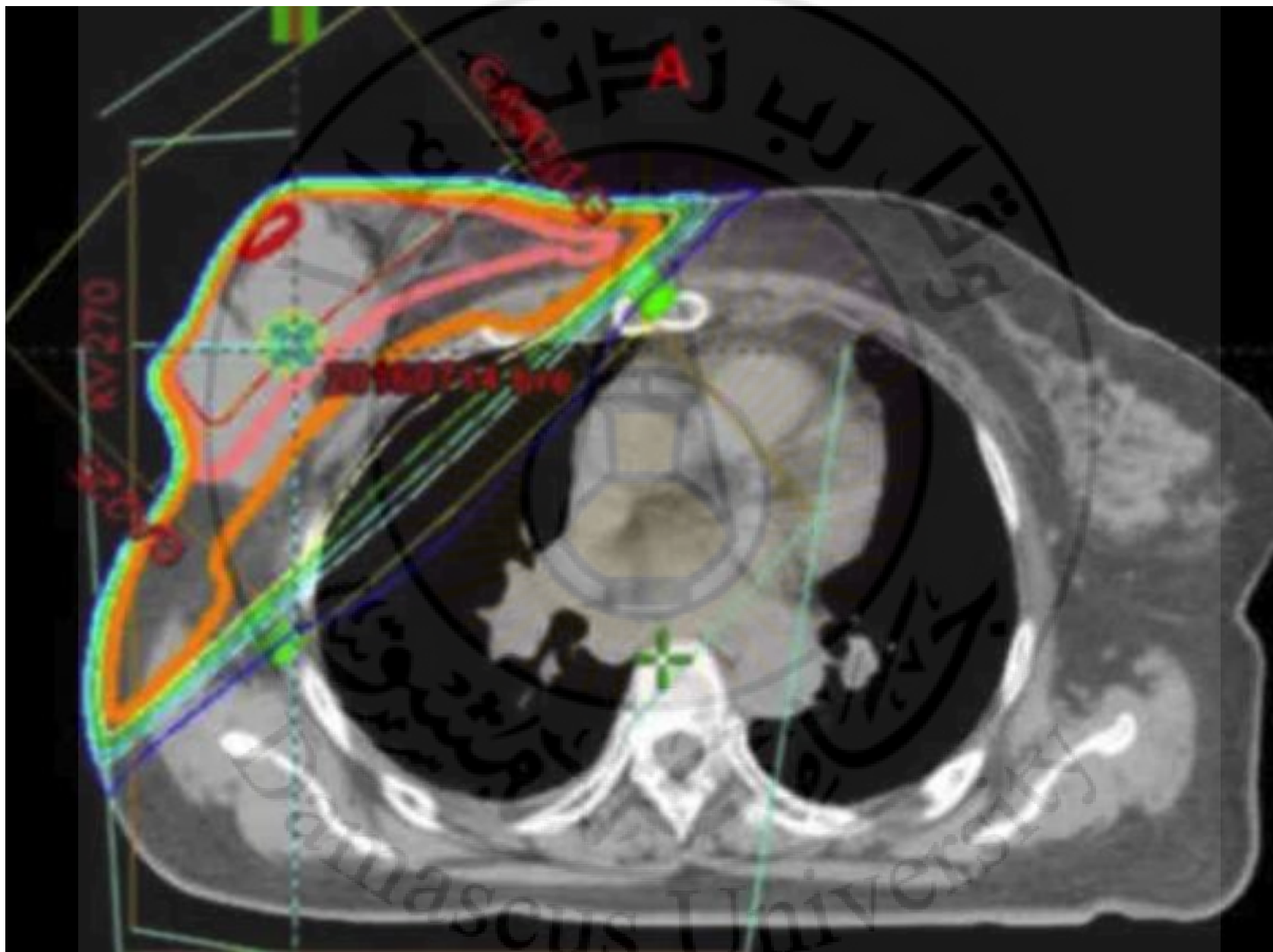
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# 3 Dimensions RT

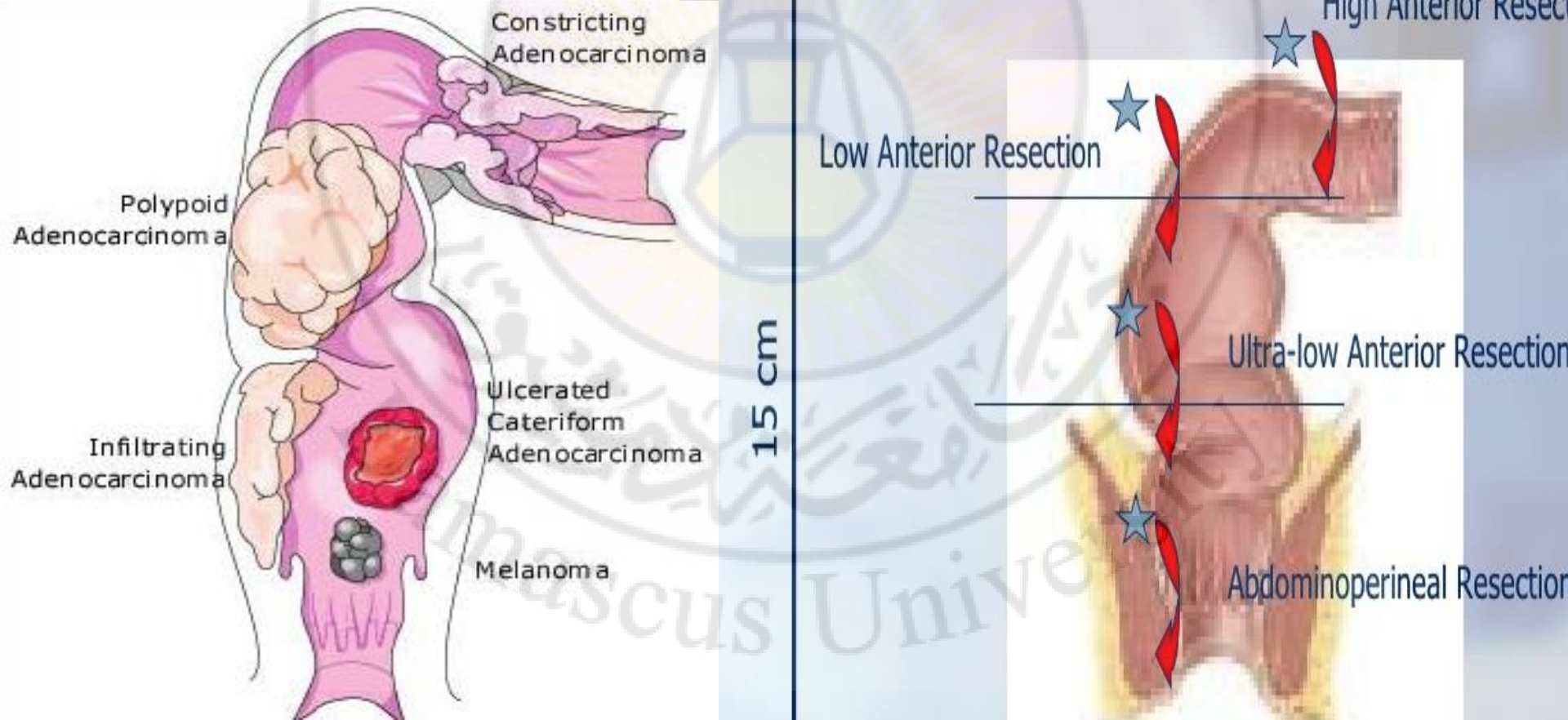




# Rectal Cancer- Neoadjuvant RT

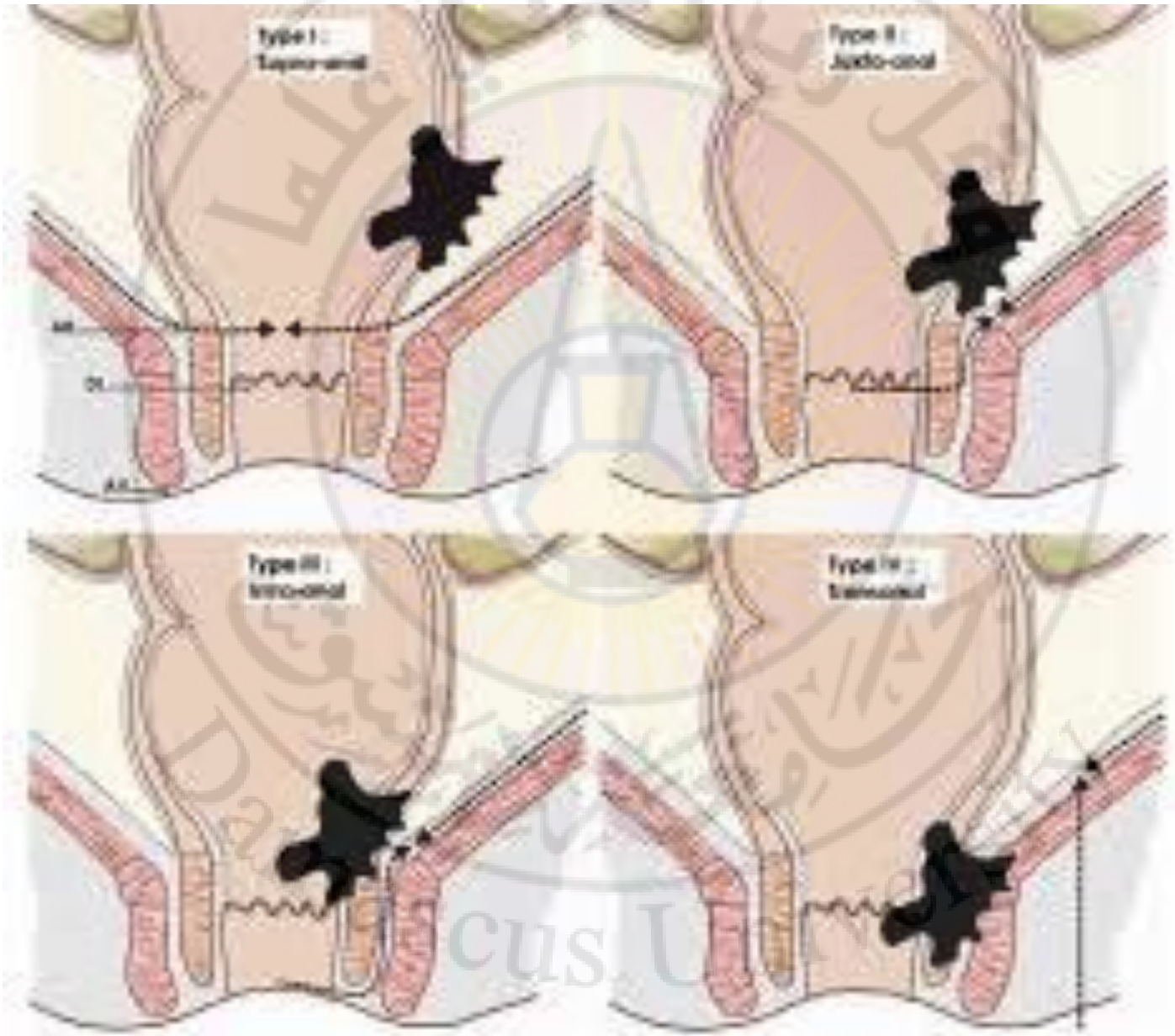


## Rectal Anatomy

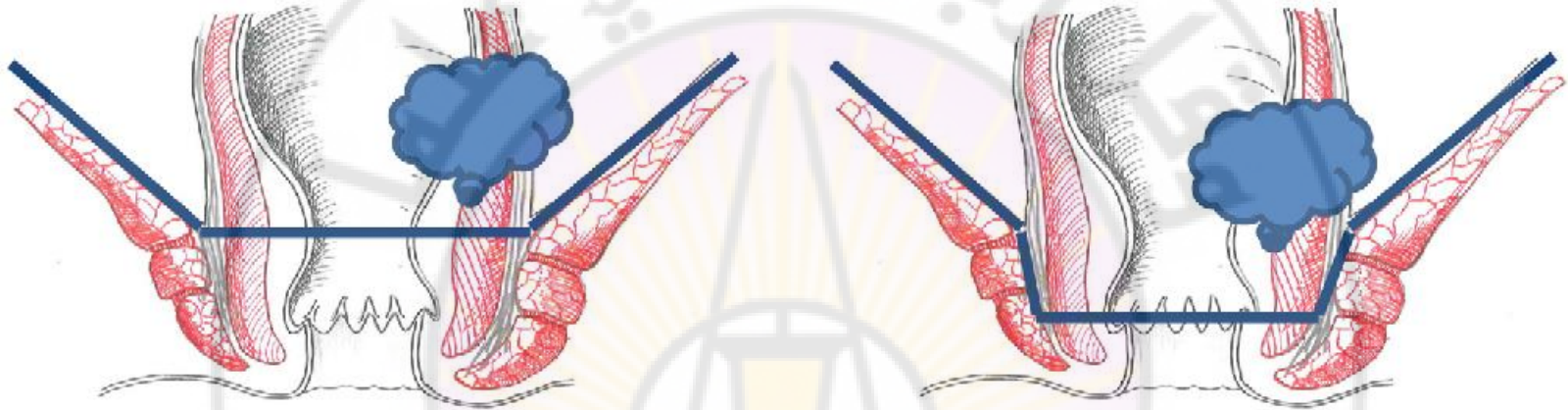




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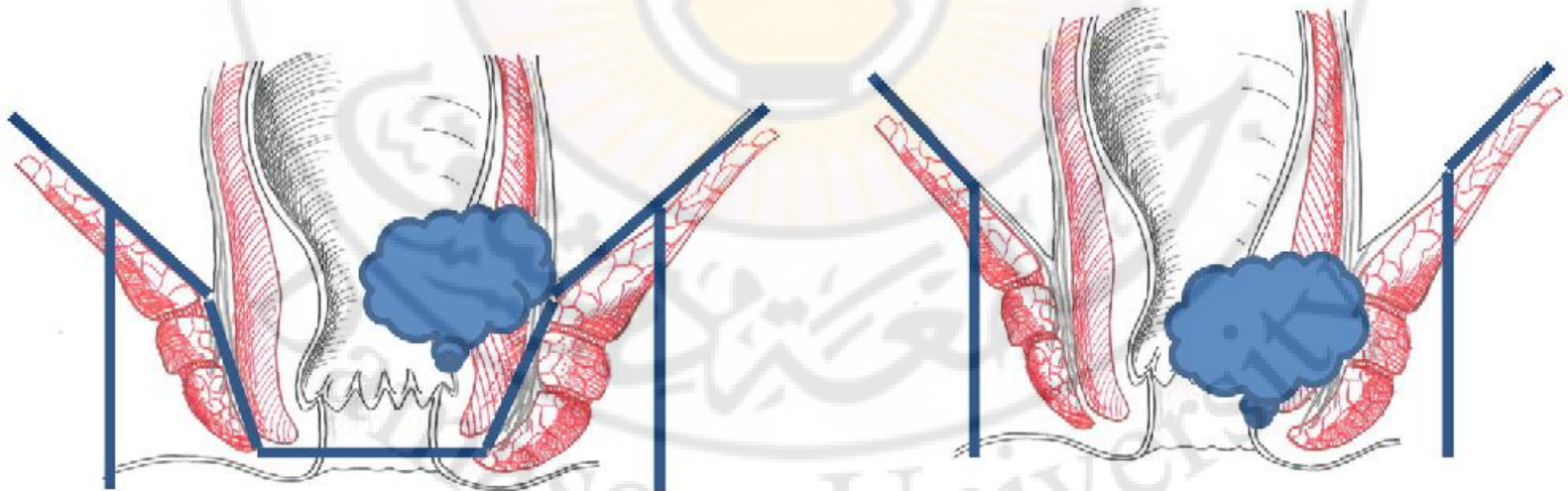


# Rectal Cancer- Neoadjuvant RT



a- Supra-anal tumor

b- Juxta-anal tumor

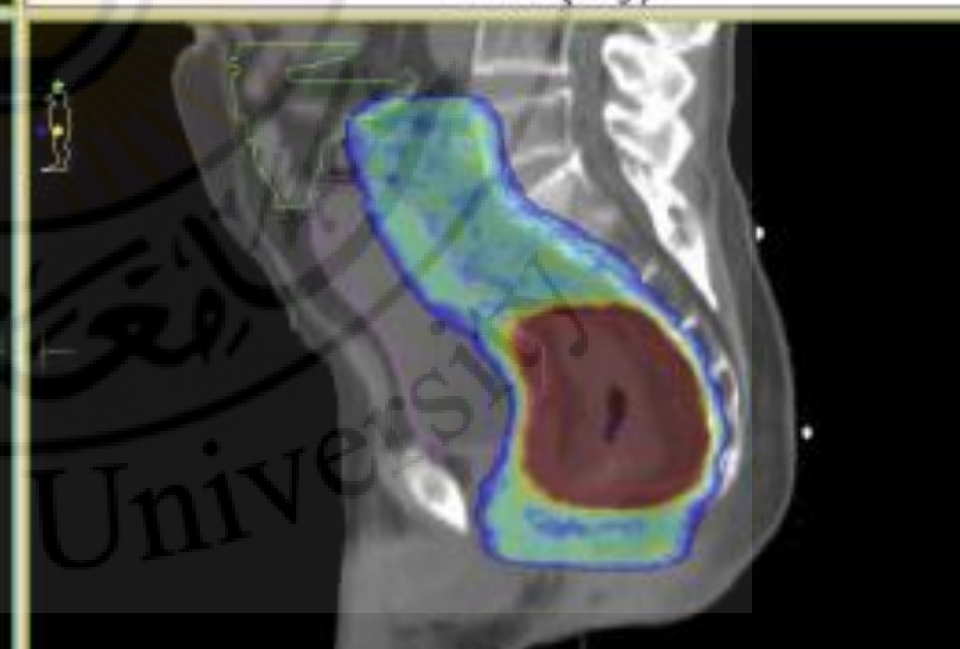
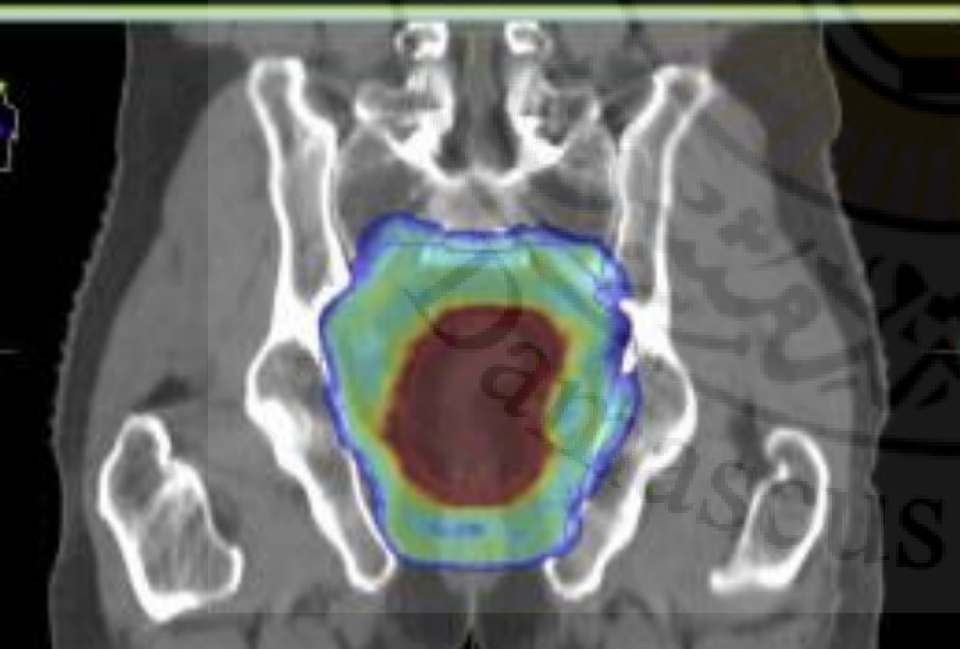
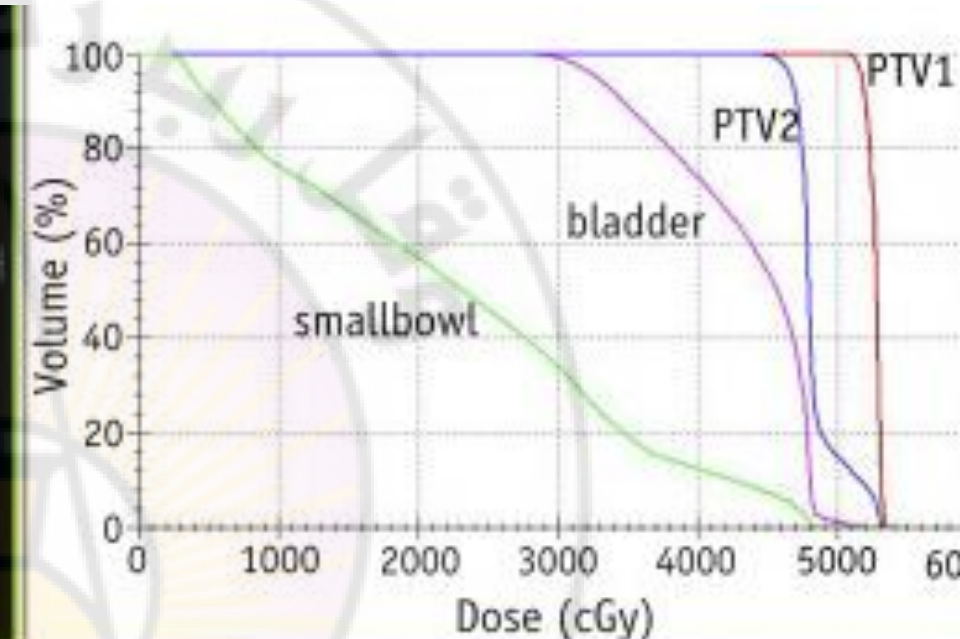
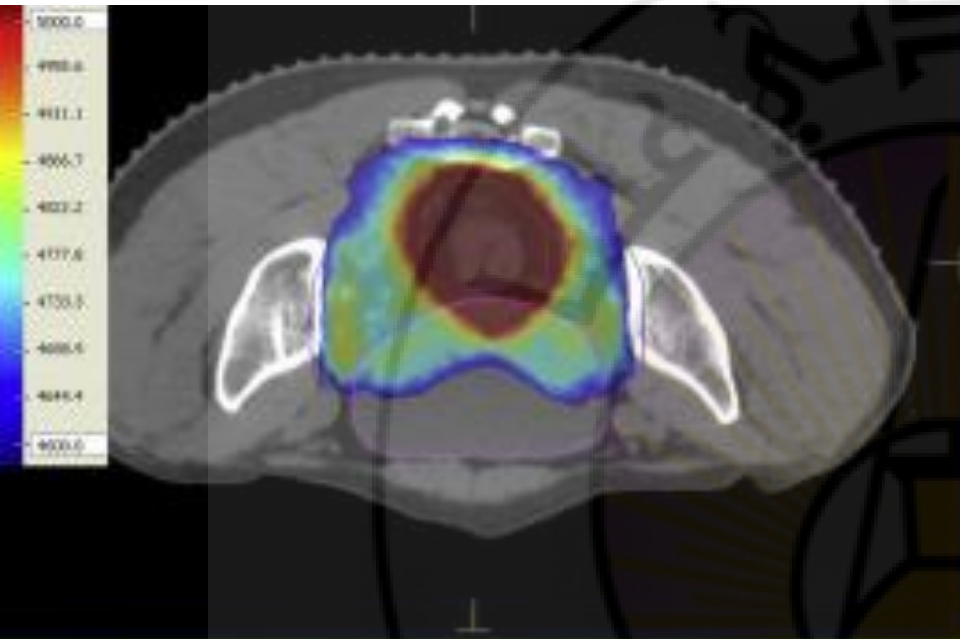


c- Intra-anal tumor

d- Transanal tumor

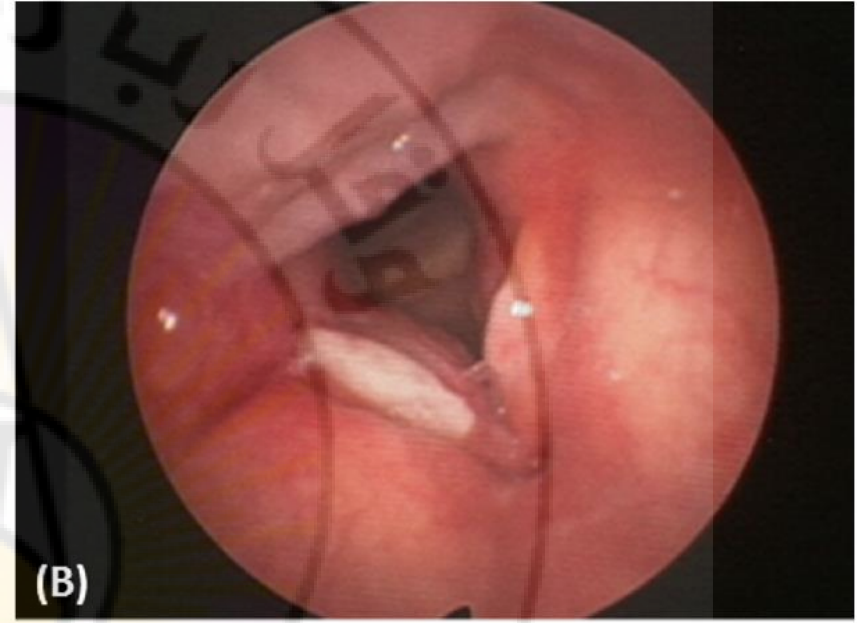
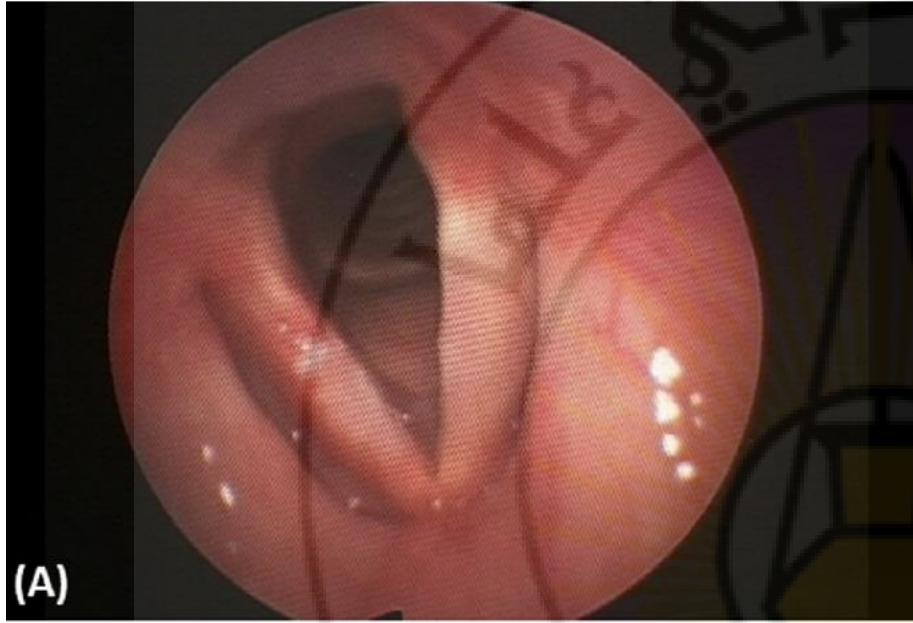


# Rectal Cancer- Neoadjuvant RT

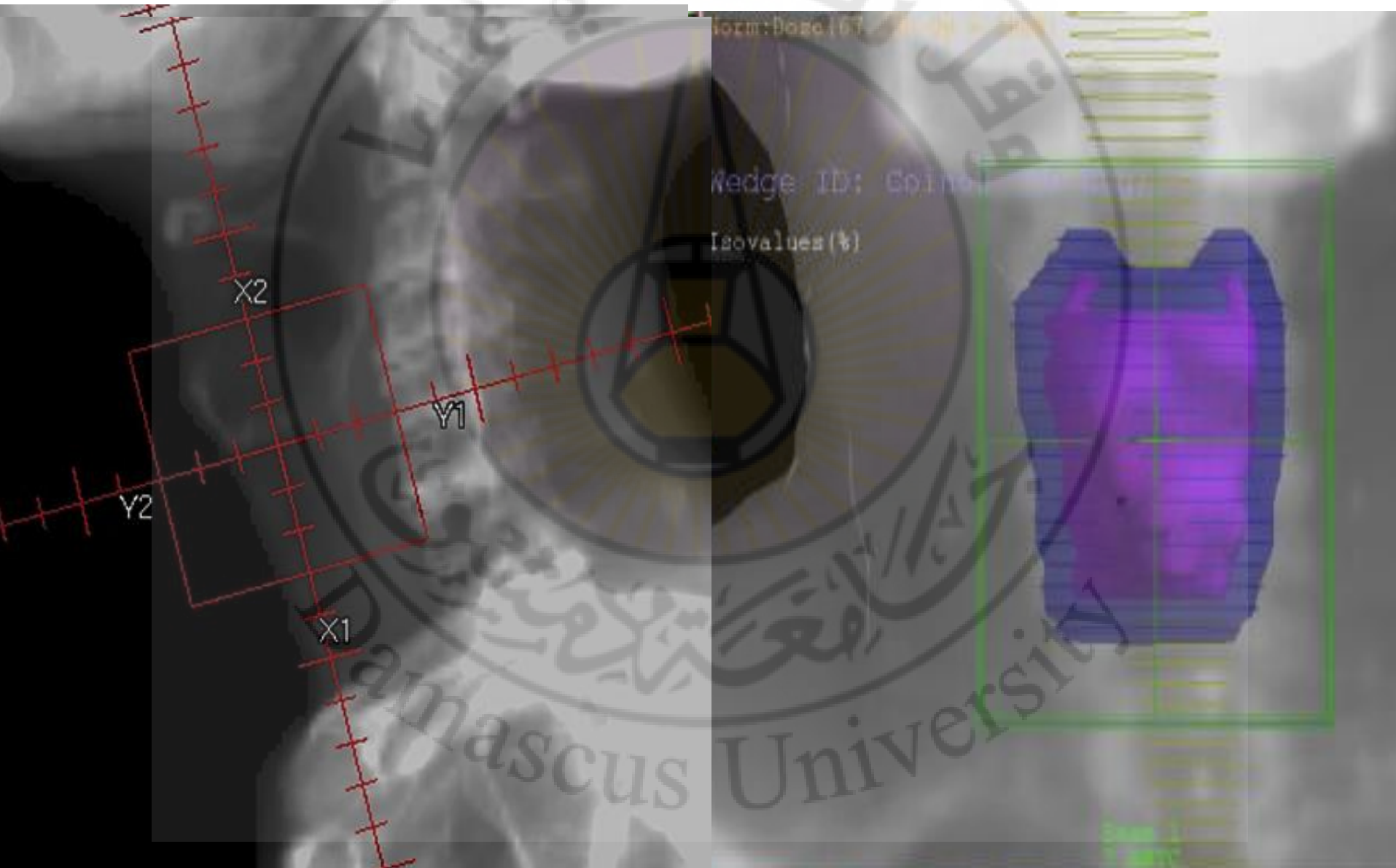




# Larynx Cancer -Definitve RT

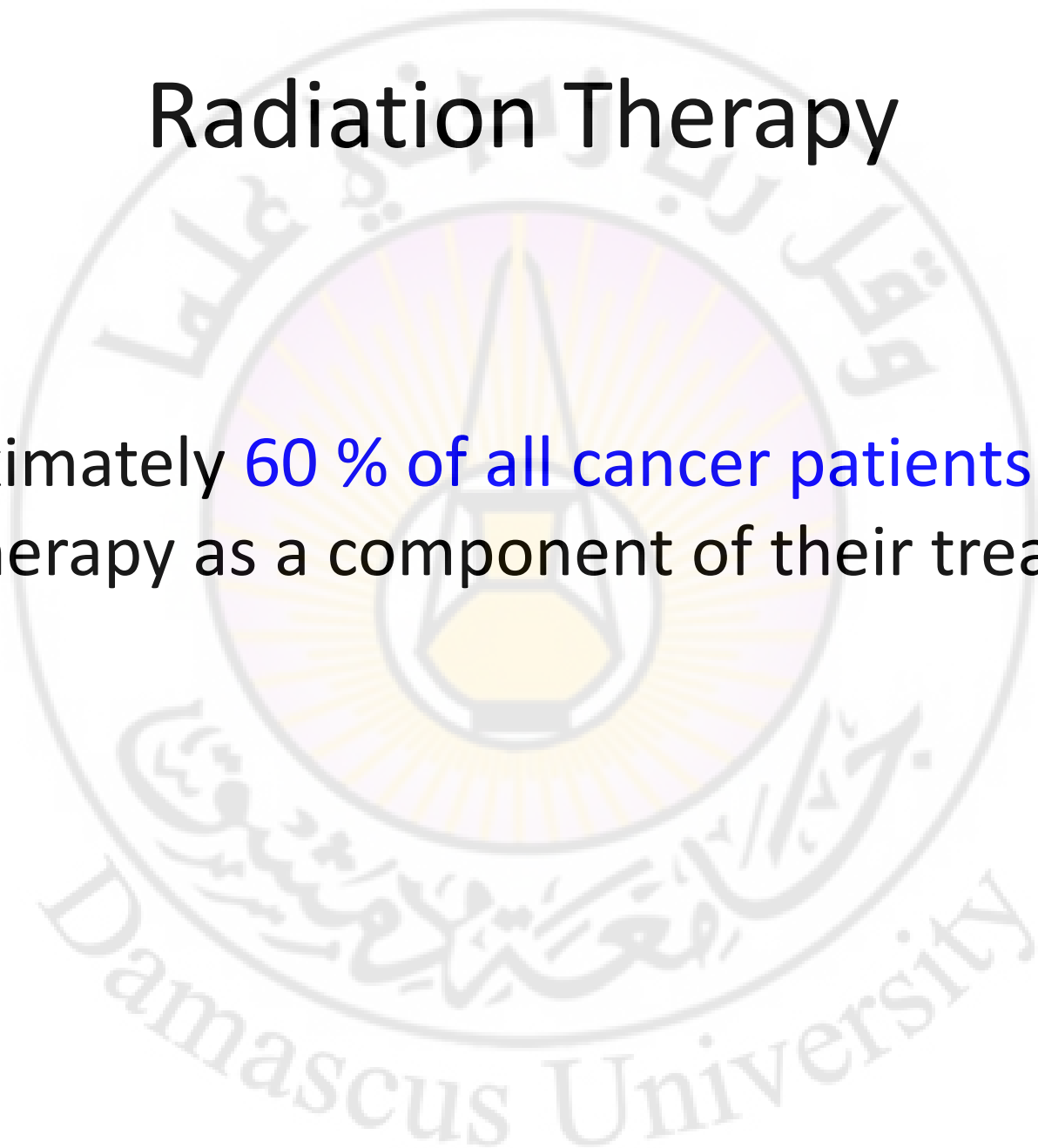


# Larynx RT



# 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.

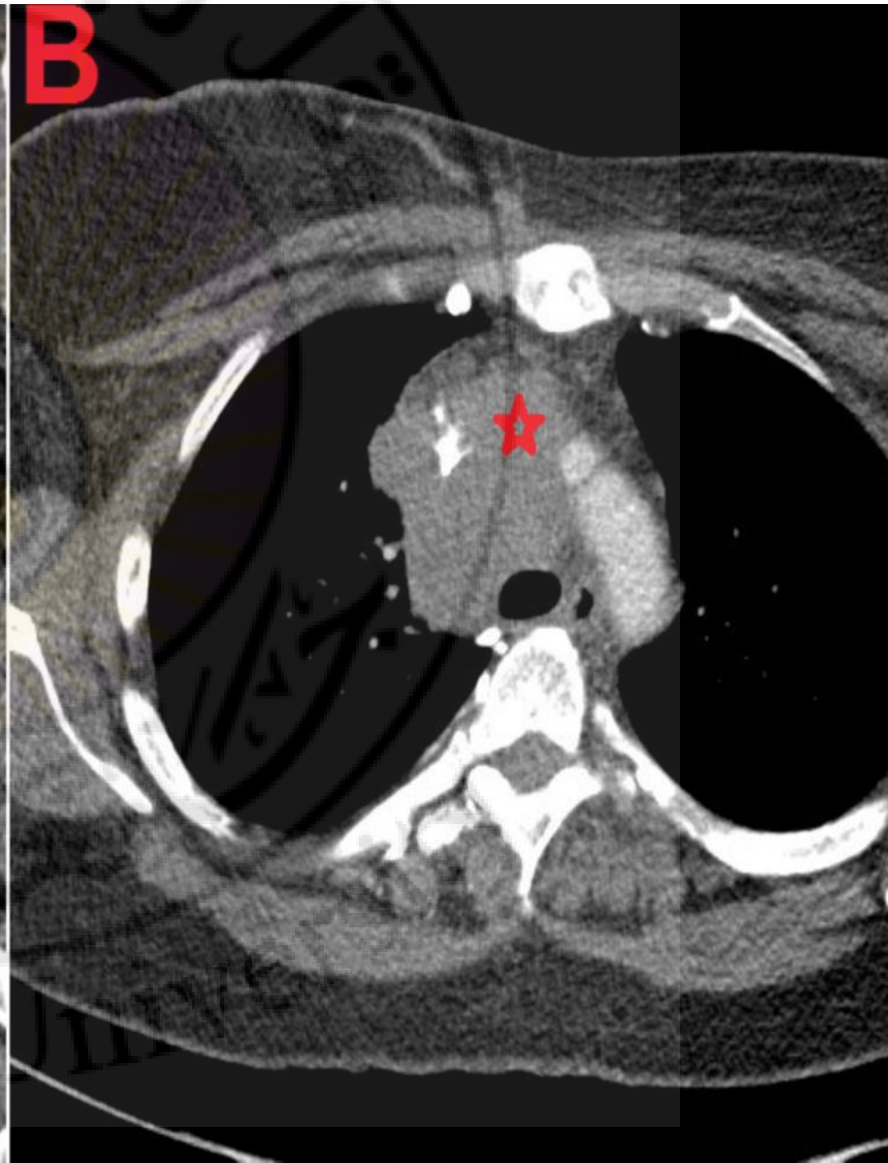
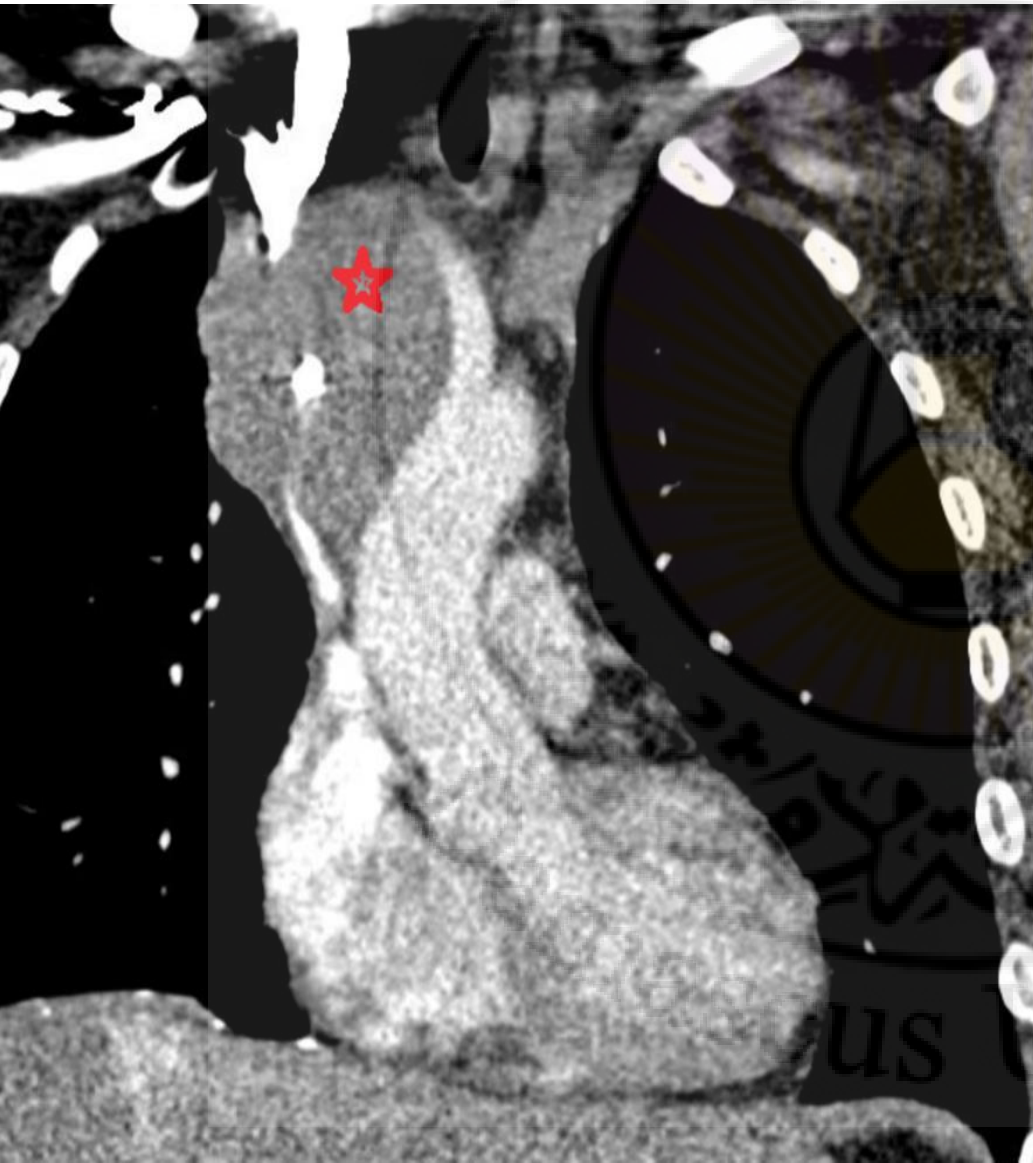
**3-Definitive treatment:** Skin, Brain, nasopharynx, larynx, Lung, esophagus, prostate, cervix

# 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



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# 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:

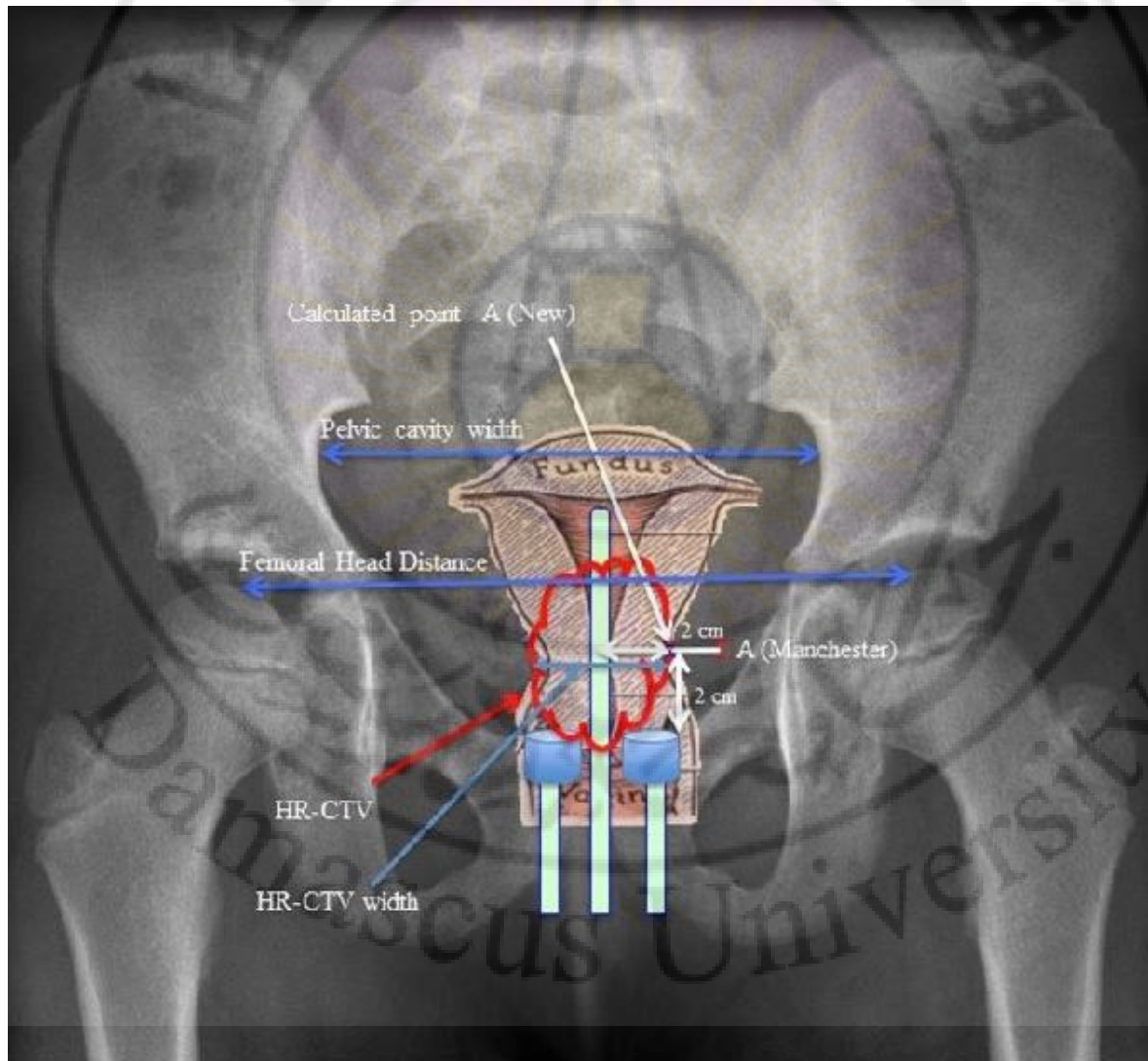
- 1- Orthovoltage **x-ray** machines.
- 2- **Cobalt-60** machines.
- 3- **Gamma knife**(stereotactic radiosurgery)192,201 sources
- 4- **Linear accelerators**.
- 5- **Tomotherapy**
- 6- **Proton** beam machines.
- 7- **Neutron** beam machines.
- 8..??



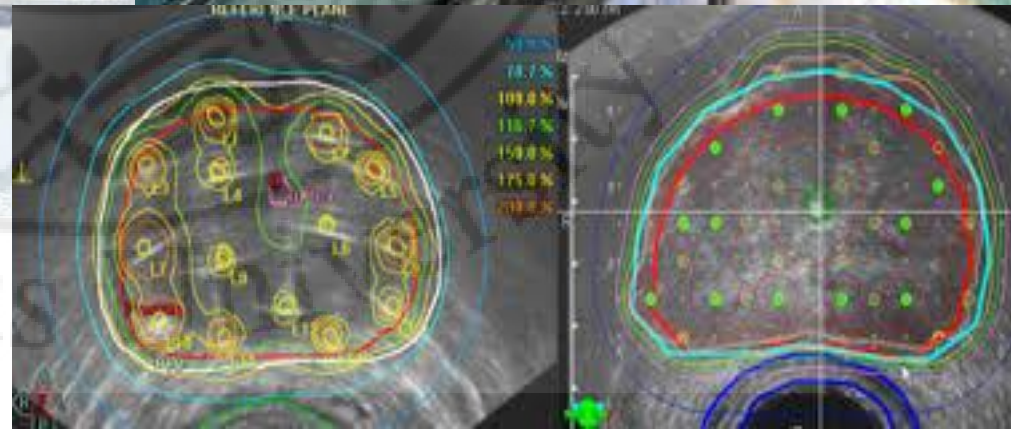
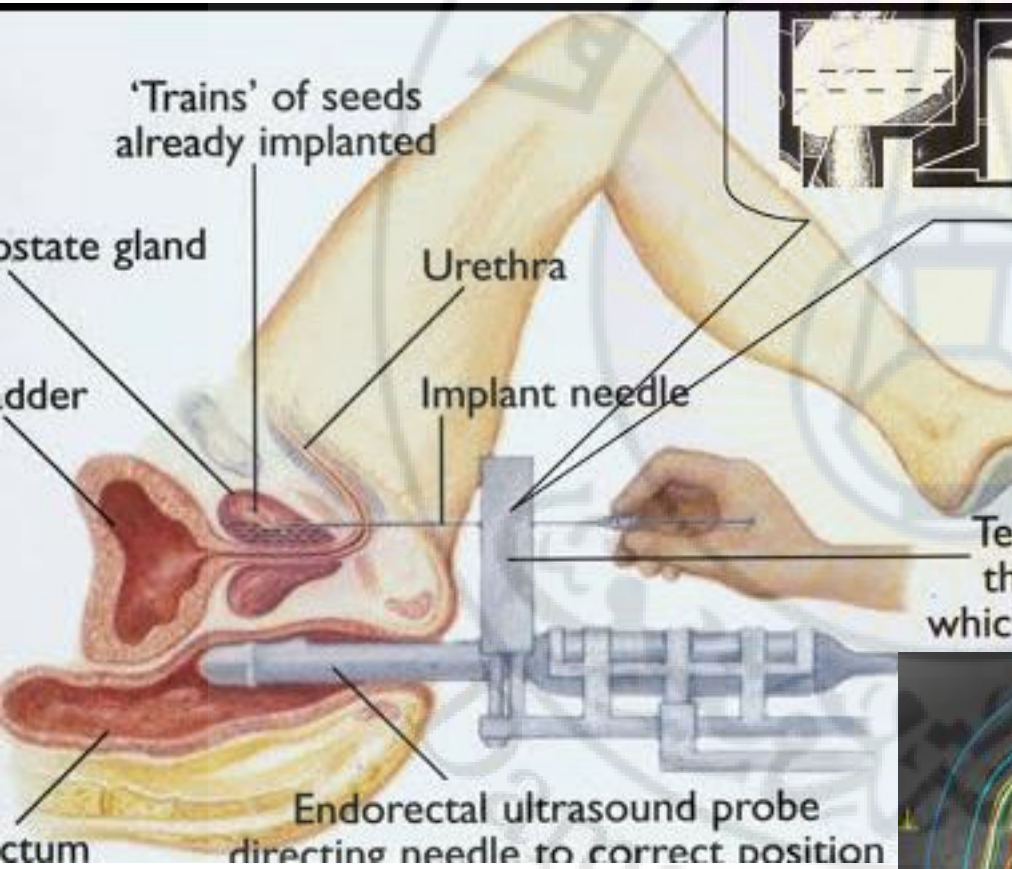
# Types of brachytherapy

- 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..

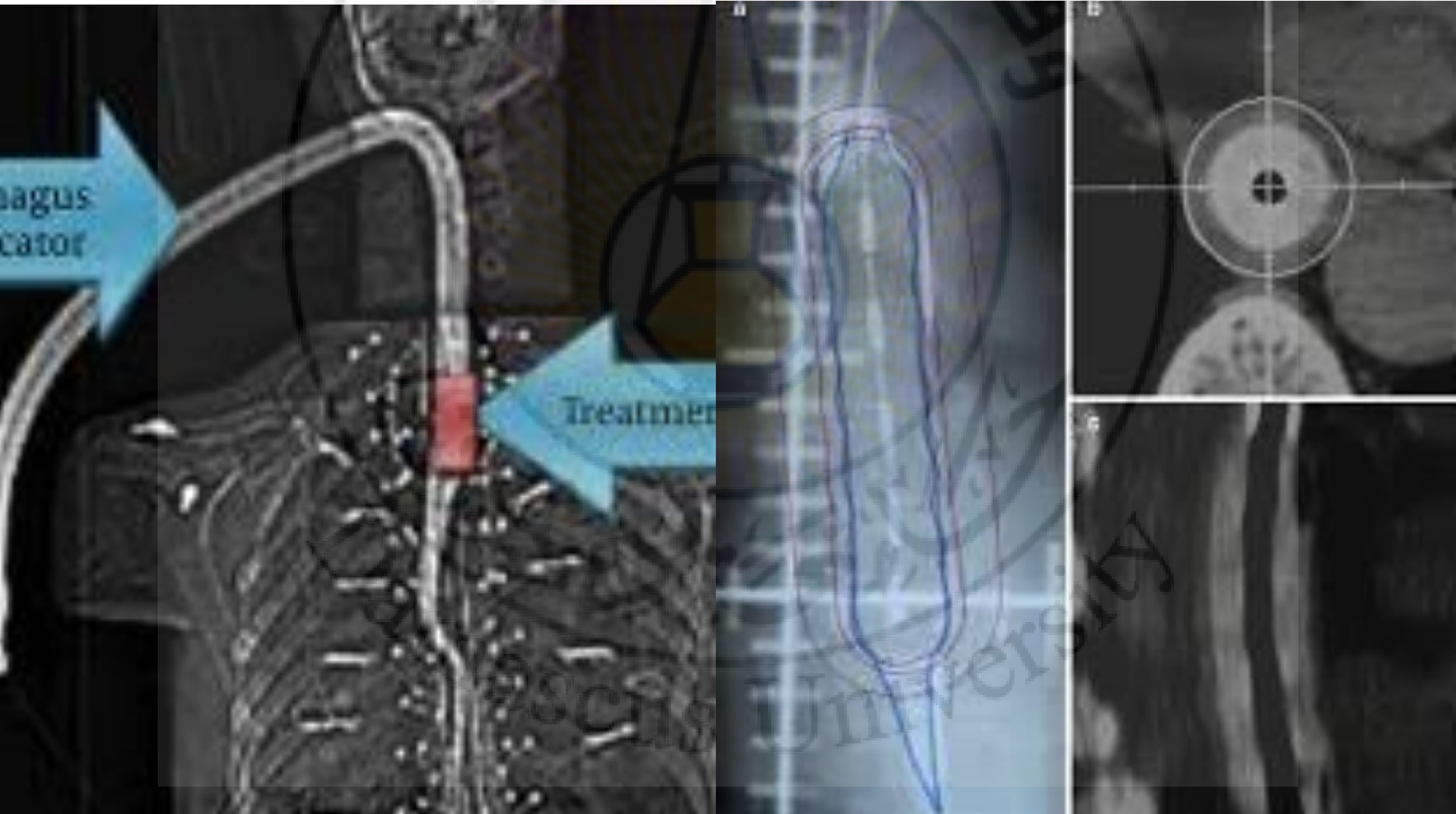




# Interstitial brachytherapy: Prostate, Breast, tongue..



# Intraluminal Brachytherapy: Esophagus, Rectum.



# Radioactive isotope

## Thyroid I-131



'05.8  
30 mCi



TSH 88  
Tg 3.3  
TgAb <60

'05.12  
200 mCi



TSH 212  
Tg <1.0  
TgAb <25

'06.6  
200 mCi



TSH 219  
Tg <1.0  
TgAb <25



# 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)

