



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

وَمَنْ أَحْيَاهَا فَكَأَنَّمَا

أَحْيَا النَّاسَ جَمِيعًا

صدق الله العظيم

المائدة ٣٢

MADE
EASY

RADIOLOGICAL GUIDE OF POLY TRAUMATIZED PATIENT

RADIOLOGY DEPARTMENT
FACULTY OF MEDICINE
SOHAG UNIVERSITY
2022

BASICS of RADIOLOGY

For Medical Students & house officers

1 st Day – 18 May 2022				
Introduction To Imaging Modalities	10	11	Session 1	Dr. Ahmad Mokhtar
Basics of GIT Imaging	11	12		Dr. AbdelRahman Foda
Break	12	12.15		
Basics of Chest Imaging	12.15	1	Session 2	Dr. Ahmad Mokhtar
Basics of UT Imaging	1	1.30		Dr. Ebtesam AbdelBarey
Open Discussion	1.30	2.00		Dr. Ahmad Mokhtar

2 nd Day – 19 May 2022				
Basics of Brain Imaging	10	11	Session 1	Dr. Ahmad Mokhtar
Basics of MSK Imaging	11	12		Dr. Mohammed Ezzeddin
Break	12	12.15		
Imaging of Poly traumatized Patient	12.15	1	Session 2	Dr. Ahmad Mokhtar
Quiz Cases	1	1.30		Dr. Ahmad Mokhtar
Open Discussion	1.30	2		Dr. A. Mokhtar - Dr. M. Ezzeddin

Scientific coordinator

Dr. Ahmad Mokhtar Abodahab.

Head of Department

Prof. Mohammed Zaki



AHMAD MOKHTAR ABODAHAB – MD

Lecturer ,Training & Teaching Co-ordinator , PACS Unit Admin

Radiology Department Faculty of Medicine – Sohag University

Certified Trainer – Supreme Council of Egyptian Universities

Consultant of Radiology - Sohag Police Clinics & Military Hospital

Lecturer at Virtual Medical Academy – KSA

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Consultant of Radiology - Sohag Police Clinics & Military Hospital



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IMAGING MODALITIES



✓ **X – Ray**

✓ **US**

✓ **Doppler**

✓ **CT**

✓ **MRI**





KEYS OF CHOOSING IMAGING MODALITIES



1ST KEY

GOOD CLINICAL ASSESSMENT



Ex. CT Abdomen *To Be done For Stable Patient*

While Unstable Patient For Direct Exploration

- **Site of Trauma**

- **Vital Signs**

- **Clinical Finding**

- **Others : as Associated diseases**

& Availability of more indicated modality



General Finding OF Trauma



➤ **Fracture**

➤ **Organ Injury**

(**Contusion / Laceration / De-vascularization**)

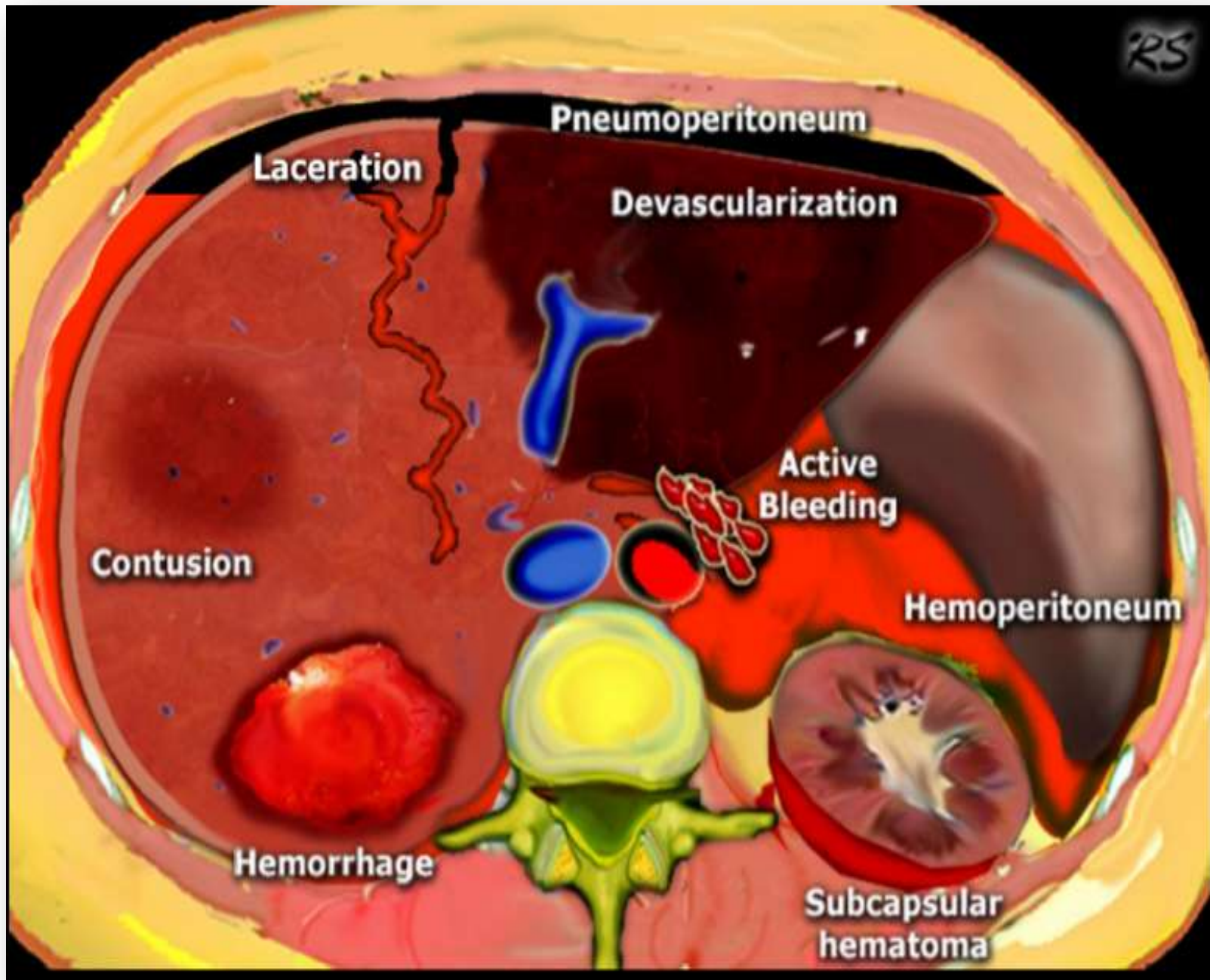
➤ **Bleeding**

(**Active / Hematoma**)

➤ **Air Interance**

(Pneumo) → **cephaly / Thorax / peritonium** /
& Surgical Emphysema







Fracture	X ray / CT
Organ Injury	US / CT +C (.... MRI / Spine Injury) (..... Doppler / Vasc Injury)
Bleeding	US / CT
Air Iterance	X Ray / CT

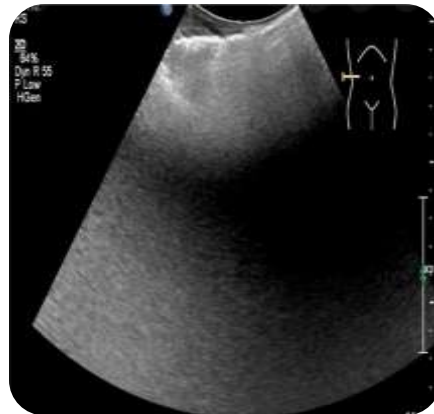


Limitations & Contraindications of Each Modality

Ultrasonography (US)



Limitations	Contraindications
Bandages / Bones	Relatively No contraindications <i>(Except when non informative)</i>
Surgical Emphysema	
Non Co-operative / irritation	
Obesity (Relative)	



COMPUTED TOMOGRAPHY (CT)



Limitations	Contraindications
Contrast contraindication : Creat > 1.5 DM ttt by metformine	PREGNANCY (Esp. Early – 1 st Trim)
Minimal Collections	Contrast Hypersensitivity
	Contrast in Hyper thyroidism

X ray



Limitations

FOR Assess Fractures (2 Views) /
Pneumo

Soft Organs

Contraindications

Early Pregnancy

Unstable Motility (Ex. ? Cord Injury)



**DONOT
FORGET**

**X ray
Contraindicated
IN Pregnancy**



ESPECIALLY EARLY

Magnetic Resonance Imaging (MRI)



Limitations	Contraindications
<p>Non VISUALIZATION of :</p> <ul style="list-style-type: none">-Cortical BONE-Lungs	<p>FERROMAGNETIC OBJECTS</p> <p>ANY IRON OR MAGNETICS</p>

DANGER



STRONG MAGNETIC FIELD

Magnet is always on.

Notify the MRI technologist or radiologist if:

- 1) You have any metallic, electronic or magnetic implants or devices in your body
- 2) You have been exposed to metal shavings from operations like grinding or sawing as part of your occupation
- 3) You have metal embedded in your body due to injury
- 4) You have any object which may contain metal or metallic parts (cell phones, scissors, watches, hearing aids, tools or keys)

Failure to follow these instructions could result in serious injury or death.







WHAT IS THE 1ST CHOICE MODALITY ?





CT

**1-CXR
2- CT**

**1-X ray
2- CT**

(Bone Assess)

3- MRI

(soft Assess)

**1-US
2- Doppler**

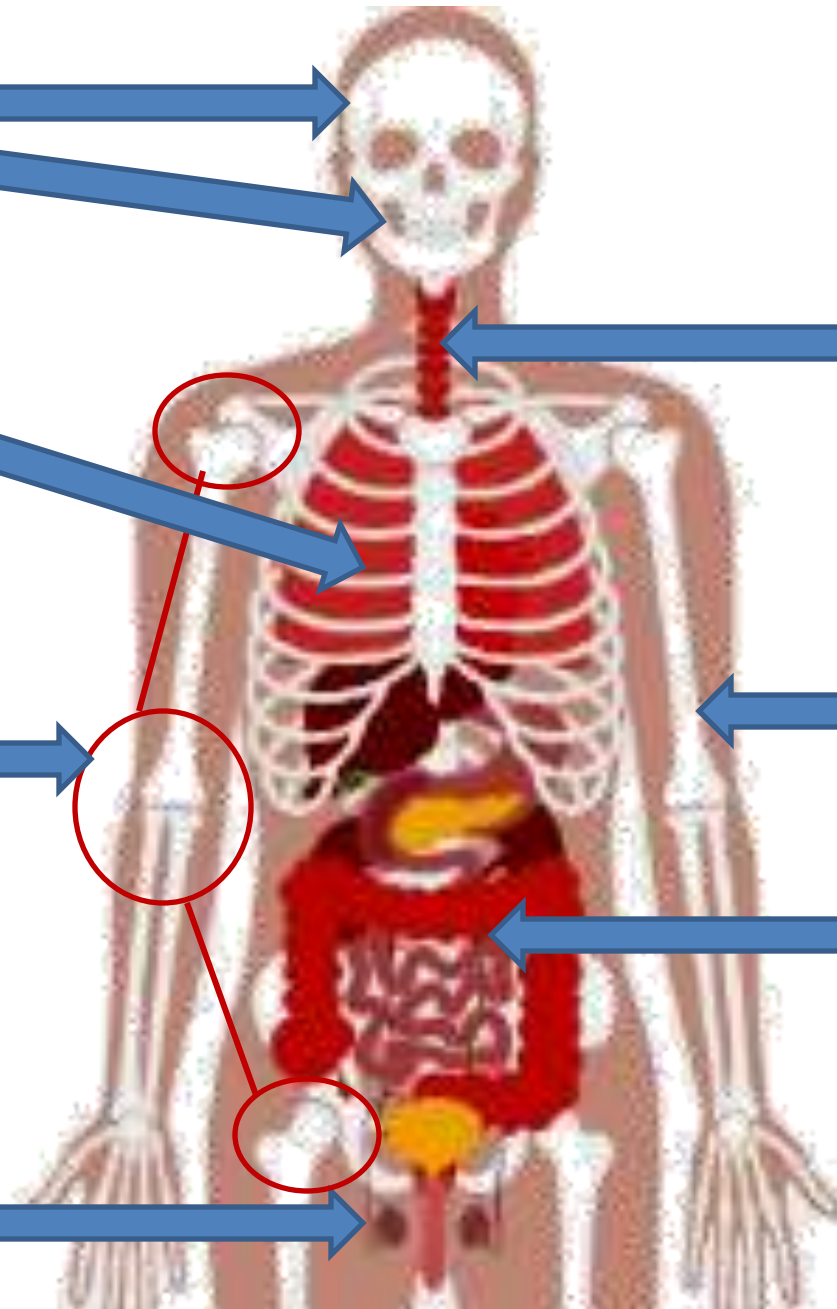
1- X ray

2- CT (Bone Assess)

3- MRI (soft Assess)

**1- X ray
2- CT**

**1- US
2- CT**



1ST CHOICE MODALITY



**HEAD
TRAUMA**



CT BRAIN

Bone & Soft tissue
windows

**NO
Contrast**

- **INDICATIONS :**

- ➡ **DCL**
- ➡ **Vomiting**
- ➡ **Fainting**
- ➡ **Active Bleeding**
- ➡ **Deformity**
- ➡ **!! Vague History**

1ST CHOICE MODALITY



**CHEST
TRAUMA**



CXR

Basic Assessment



CT Chest

Lung & Mediastinal
windows

**NO
Contrast**



**Contrast
For Vascular Injury**

➤ **CXR Basic & Initial**

➤ **CT Chest For Much Better details**

➤ **Contrast Mainly For Mediastinal
or Vasc Injury**

1ST CHOICE MODALITY



**ABDOMINAL
TRAUMA**

US

Basic Assessment

CT Abd +C

Organ Injury

**+
Contrast**

**Follow
Protocol**

- **US :**



1st Modality

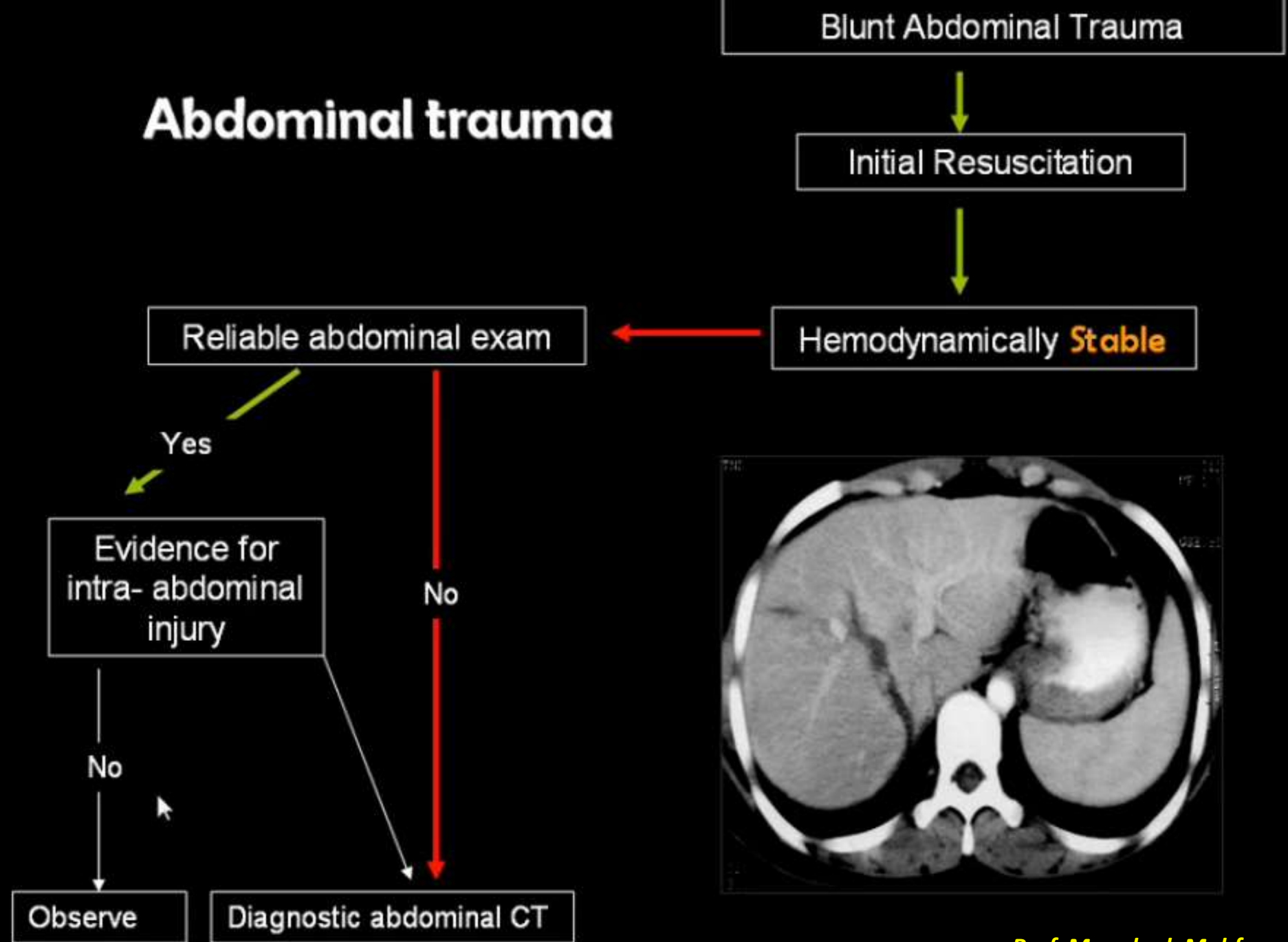


Best To assess Collections

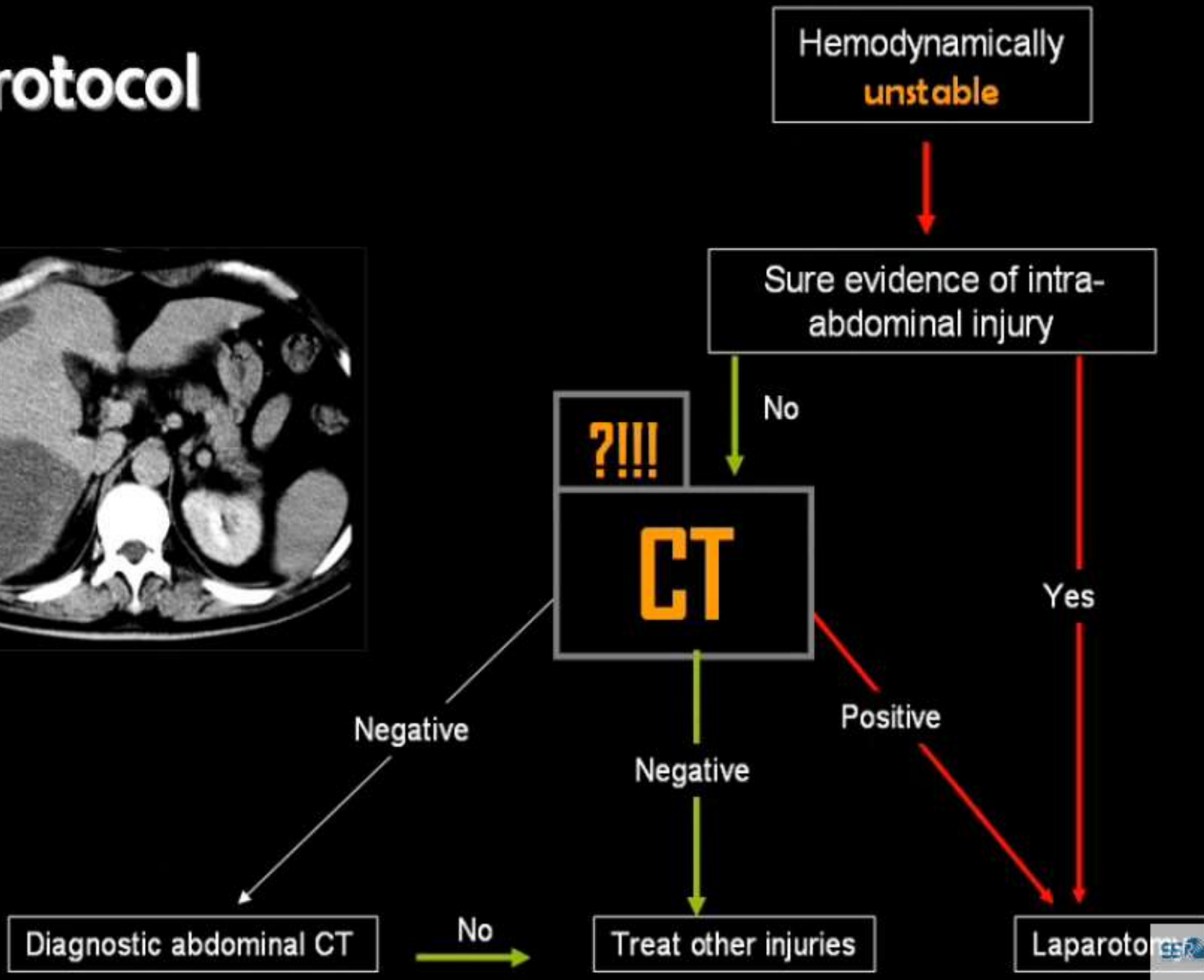


Main for Follow Up

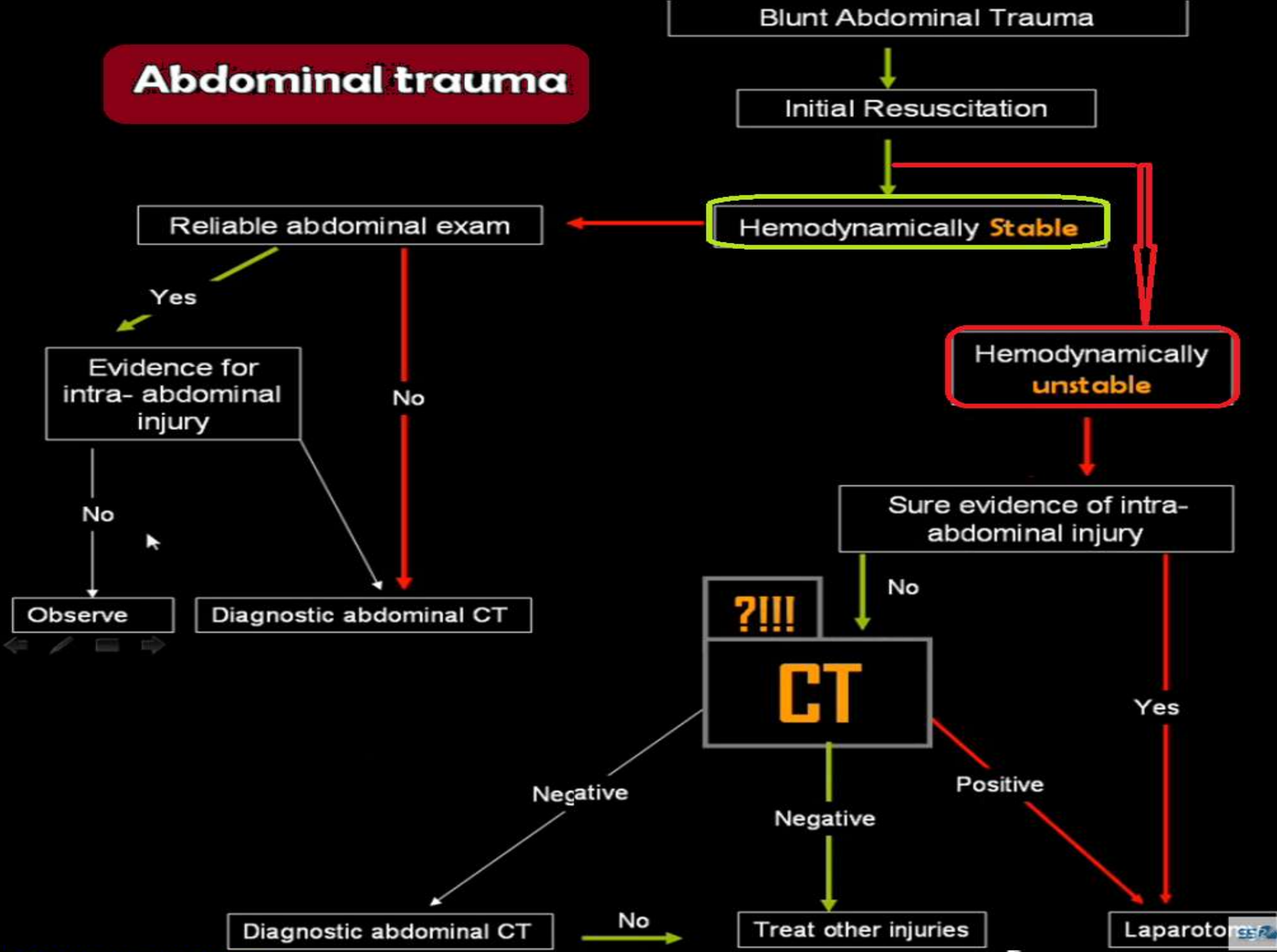
Abdominal trauma



Protocol



Abdominal trauma



Important!



**DONOT
FORGET**

USE OF CONTRAST



**IS THE CHOICE
OF
RADIOLOGIST**

So Let Him Do His JOB well



1ST KEY OF CHOOSING IMAGING MODALITY

**GOOD CLINICAL
ASSESSMENT**





RADIOLOGIST IS YOUR COLLEAGUE IN EMERGENCY TEAM



**Consult
&
Cooperate**



DON'T CONSUME



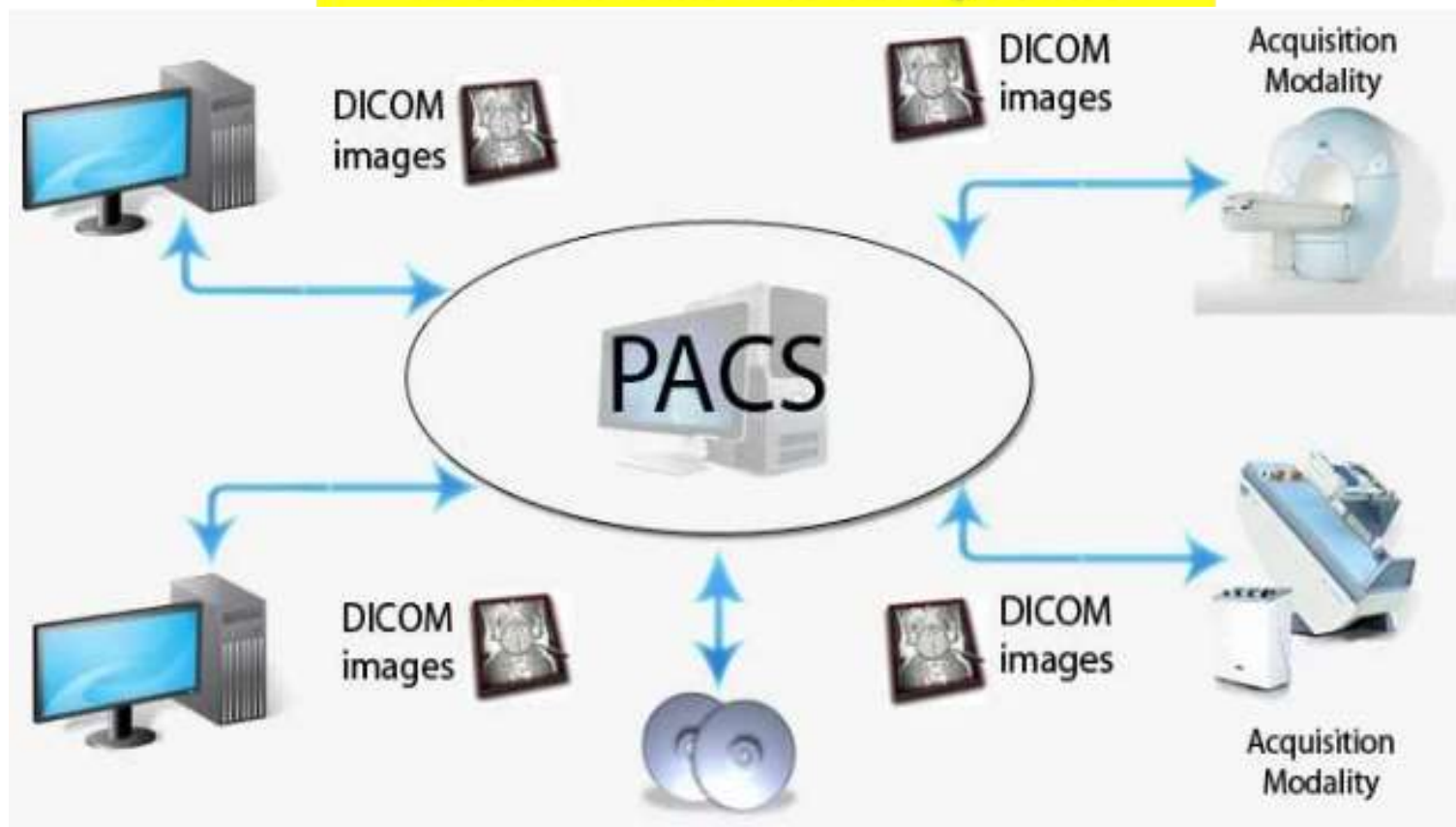
- ✓ Patient Money
- ✓ Hospital Machines
- ✓ Colleagues Efforts





PACS FOR TELERADIOLOGY

✓ Picture Archiving & Communication System



Consider The Patient is your Relative



**As your Relative
May be a Patient !!**



Link Of lecture Video

https://www.youtube.com/watch?v=iFfuZJDxIZY&list=PLqU6GNJJ8xwkhCDPznBYkvG3_NXZt-B17&index=1

SOURCES & REFERENCES



✓ **European Society of Emergency Radiology: guideline on radiological polytrauma imaging and service.**

✓ **Lectures of Prof. Mamdouh Mahfouz**

✓ **Abdominal Trauma - Andrew Dixon (Featured Video)**

<https://www.youtube.com/watch?v=ldM11iWwMck>

✓ <https://radiologyassistant.nl/abdomen/acute-abdomen/ct-in-trauma>



Thank You

AHMAD MOKHTAR ABODAHAB – MD

Dr.AhmadAbodahab@gmail.com

www.linkedin.com/in/dr-ahmad-abodahab/

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