



GHADIALI

General Surgery

P R E S E N T S

Dr. Mufa T. Ghadiali is skilled in all aspects of General Surgery.
His General Surgery Services include:

- General Surgery
- Advanced Laparoscopic Surgery
- Surgical Oncology
- Gastrointestinal Surgery
- Hernia Surgery
- Endoscopy

BONE SCAN

Multimedia Health Education

Disclaimer

This film is an educational resource only and should not be used to make a decision on **Bone Scan**. All such decisions must be made in consultation with a physician or licensed healthcare provider.

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GHADIALI

MULTIMEDIA HEALTH EDUCATION MANUAL

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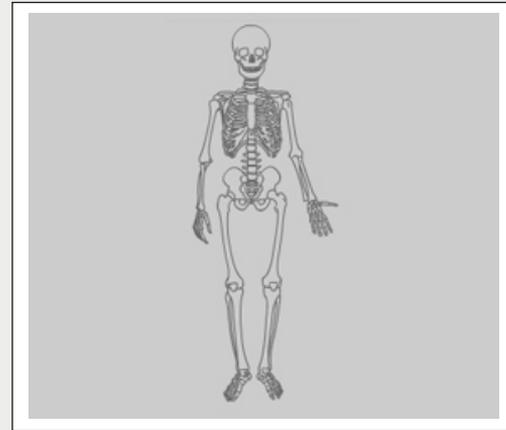
What is a Bone Scan?

A bone scan is an imaging test that detects areas of increased or decreased bone metabolism.

Bone Scans assist in identifying tumors, infection, or fractures. The radiopharmaceutical most commonly used is ^{99m}Tc -Medronate (MDP).

MDP is injected into a vein, usually in the arm, where it is transported by the bloodstream to the bones.

(Refer fig. 1)



(Fig.1)

Why is a Bone Scan Performed?

A bone scan is used to identify abnormalities involving the bone. Some abnormalities that can be assessed include:

- Arthritis
- Bone tumors
- Fractures
- Bone Infection (osteomyelitis)
- Degenerative disorders
- Metabolic disorders
- Cancer

Arthritis

(Refer fig. 2)



Arthritis

(Fig.2)

Bone tumors

(Refer fig. 3)

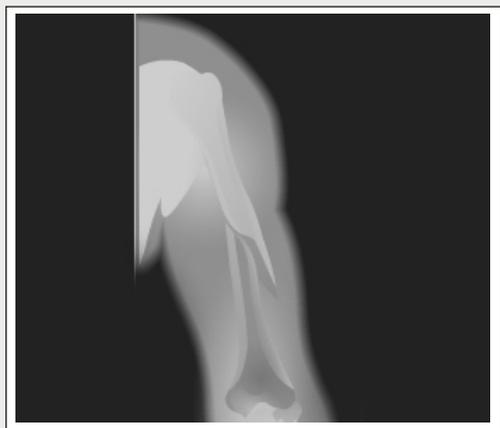


Bone tumors

(Fig.3)

Fractures

(Refer fig. 4)



Fracture

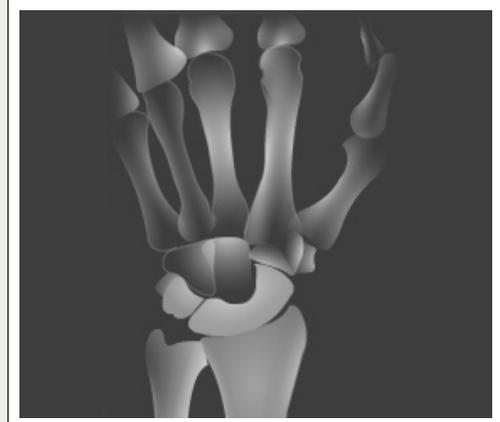
(Fig.4)

Unit 2:

Purpose of Bone Scan

Bone Infection (osteomyelitis)

(Refer fig. 5)



Bone Infection (osteomyelitis)

(Fig.5)

Degenerative disorders

(Refer fig. 6)



Degenerative disorders

(Fig.6)

Metabolic disorders

(Refer fig. 7)

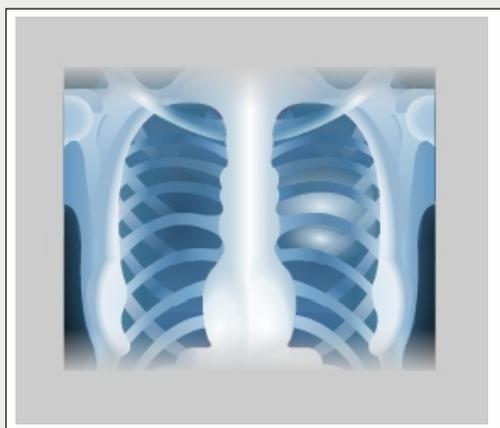


Metabolic disorders

(Fig.7)

Cancer

(Refer fig. 8)



Cancer

(Fig.8)

Unit 2:

Purpose of Bone Scan

Results of the Scan

Bone Scan results include the following descriptions:

- Normal distribution :

Areas where the radioactive substance has been distributed normally will appear uniform and gray throughout all the bones in the body.

(Refer fig. 9)

- Hot spots :

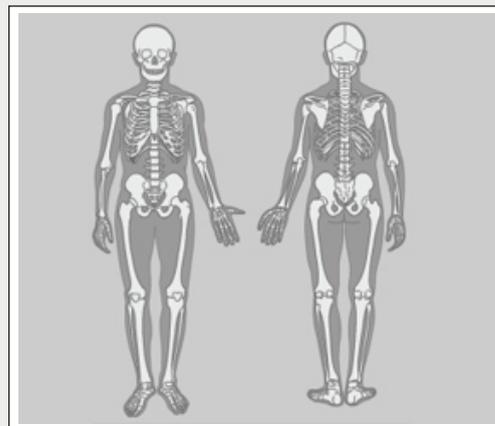
Areas where there is increased accumulation of the radioactive substance appear black on the scan. Hot spots may be caused by a fracture, bone cancer, infection, arthritis or other diseases such as Paget's disease.

(Refer fig. 10)

- Cold spots :

Areas where there is a lack of radioactive substance appear light or white on the scan. Cold spots may be caused by a certain type of cancer such as multiple myeloma, or lack of blood supply to the bone.

(Refer fig. 11)



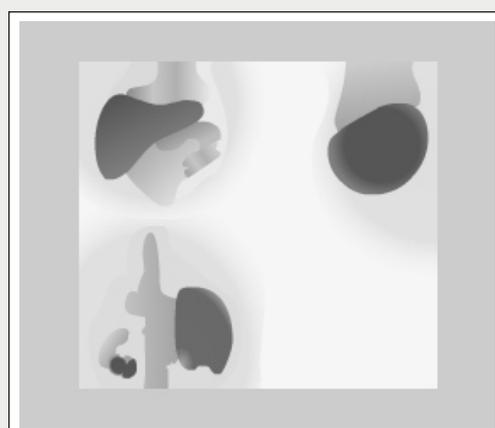
Normal distribution

(Fig.9)



Hot spots

(Fig.10)



Cold spots

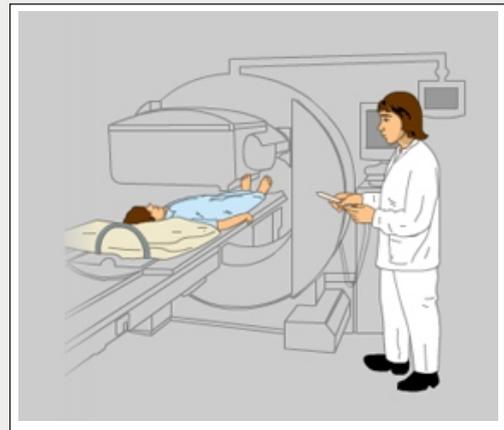
(Fig.11)

Unit 3:

Procedure

How to Prepare for a Bone Scan

- You will be asked to remove all jewelry and other metal objects. You may be asked to wear a hospital gown.
- Women who are pregnant or think they could be pregnant should inform their physicians of their condition prior to the test due to the potentially adverse effects of radiation exposure to the unborn child.
- Drinking plenty of fluids before and after the injection of the MDP often helps to give better pictures of your bones.
- You will be instructed to urinate prior to the exam to ensure that the radioactive substance is not concentrated in the bladder.



(Fig.12)

(Refer fig. 12)

How is a Bone Scan Performed?

A bone scan involves injecting a radioactive material called a radiotracer into a vein. The radiotracer travels through the bloodstream and collects in the bones of the body.

As the radiotracer wears off it gives off radiation. This radiation is detected by a camera that slowly scans your body. The camera takes pictures of how much radiotracer collects in the bones.

If a bone scan is done to see if you have a bone infection, images will be taken shortly after the radioactive material is injected and again 3 to 4 hours later, when it has collected in the bones. This is called a 3-phase bone scan.

(Refer fig. 13 to 15)



(Fig.13)



(Fig.14)

Unit 3:

Procedure

How is a Bone Scan Performed?

To evaluate metastatic bone disease, images are taken only after the 3 to 4 hour delay. Normal bone areas will appear gray.

“Hot spots” are areas where there is an increased absorption of the tracer. These areas will appear dark. “Cold spots” are areas where there is less absorption of the tracer. These areas will appear light on the scan. The scanning part of the test will last about 1 hour and may require you to change positions.

(Refer fig. 13 to 15)

How Safe is a Bone Scan?

If the patient is pregnant or nursing a baby, the test will probably be postponed to decrease the chance of radiation exposure affecting the baby.

The amount of radiation injected into your vein is very small, and nearly all radiation is gone from the body within 2-3 days.

Risks related to the bone radiotracer are rare, but may include:

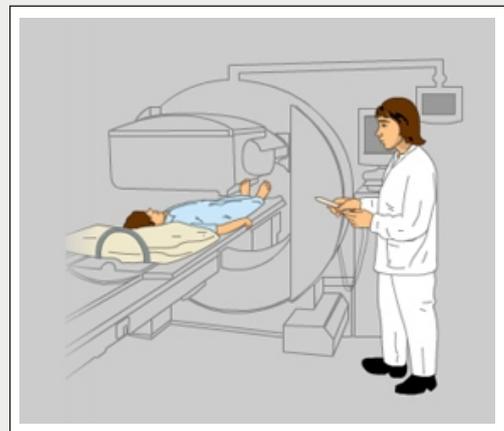
- Anaphylaxis (severe allergic response)
- Rash
- Swelling

There is a slight risk of infection or bleeding when the needle is inserted into a vein.

(Refer fig. 16)



(Fig.15)



(Fig.16)

Although every effort is made to educate you on **BONE SCAN** and take control, there will be specific information that will not be discussed. Talk to your doctor or health care provider about any concerns you have about **BONE SCAN**.

YOUR SURGERY DATE

READ YOUR BOOK AND MATERIAL

VIEW YOUR VIDEO /CD / DVD / WEBSITE

PRE - HABILITATION

ARRANGE FOR BLOOD

MEDICAL CHECK UP

ADVANCE MEDICAL DIRECTIVE

PRE - ADMISSION TESTING

FAMILY SUPPORT REVIEW

Physician's Name : _____

Patient's Name : _____

Physician's Signature: _____

Patient's Signature: _____

Date : _____

Date : _____