

Three Phase CEUs &
SCS Continuing Education Presents:

*The Essentials of
Radiographic Anatomy*

by

John Fleming M.Ed. RT(R)(MR)(CT)

Forward

The premise behind the creation of this partnership is to provide imaging professionals with access to high quality yet affordable continuing education units (CEUs). Please feel free to share this with your colleagues and have them contact John Fleming at (727) 796-0397 for information regarding the submission of these 12 CEUs for credit with the Florida Department of Health and the American Registry of Radiologic Technologists. Thanks for your support and be sure to look for additional courses to be developed in the near future by Three Phase CEUs and SCS Continuing Education.

Course Abstract & Objectives:

Course Abstract:

The objective of this home study course is to provide the learner with a computer based tutorial that will provide them with the means to learn the radiographic anatomy of the major radiographic examinations performed on the body. After completion of this home study course, the participant will be able to identify the radiographic anatomy that is covered. A 100 question mastery test will be administered at the end of the tutorial to ensure that competency of the material was achieved.

Chapters:

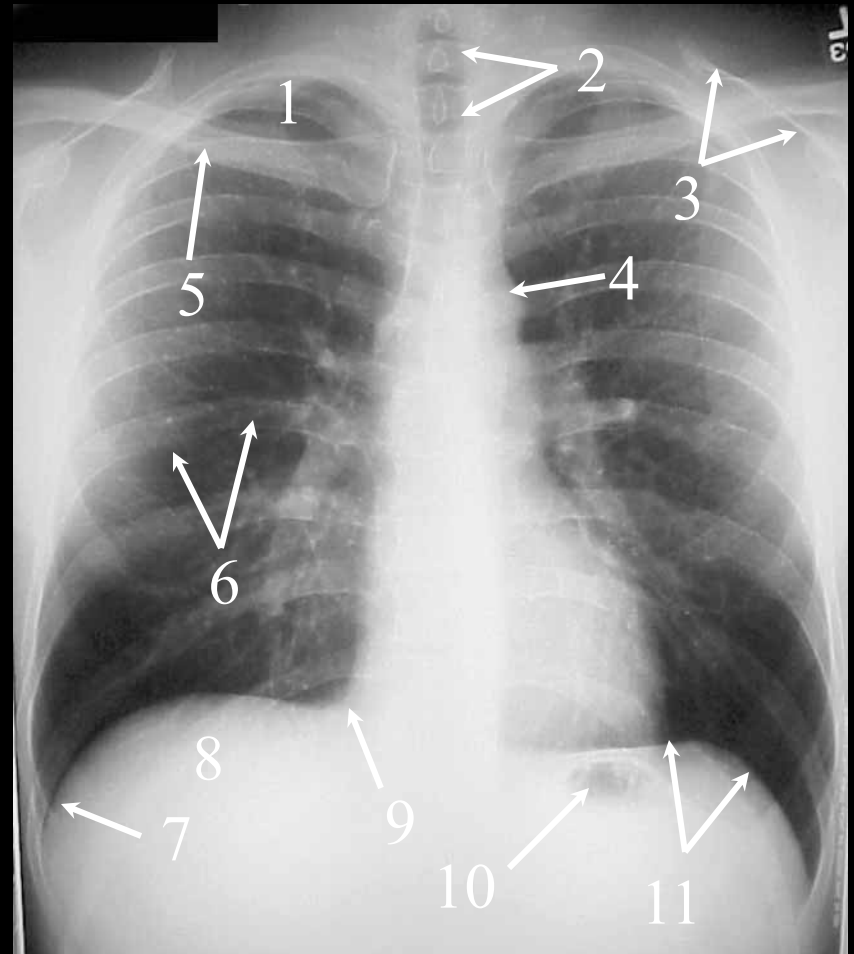
1. Chest & Abdomen.....	pg 5
2. Upper Extremity.....	pg 19
3. Shoulder Girdle.....	pg 52
4. Foot, Ankle & Heel.....	pg 72
5. Hip, Knee & Patella.....	pg 93
6. C & T-Spine.....	pg 123
7. L-Spine & Sacrum.....	pg 145
8. Sternum & Ribs.....	pg 162
9. Skull & Mandible.....	pg 176
10. Facial Bones, Sinuses & Orbits.....	pg 194
11. Upper Gastrointestinal System.....	pg 215
12. Lower Gastrointestinal System.....	pg 237
13. Intravenous Pyelogram.....	pg 265
14. Myelogram.....	pg 282
15. Parotid Sialogram.....	pg 291
16. Hysterosalpingogram.....	pg 295
17. About the Author.....	pg 299
18. References.....	pg 300
19. Contact Information.....	pg 301

Routine PA Chest:



Routine PA Chest:

1. Apex of the Lung
2. Trachea
3. Spine of the Scapula
4. Aortic Arch
5. Clavicle
6. 8th Posterior Rib
7. Costophrenic Angle
8. Liver
9. Cardiophrenic Angle
10. Air in the Fundus of the Stomach
11. Left Hemidiaphragm

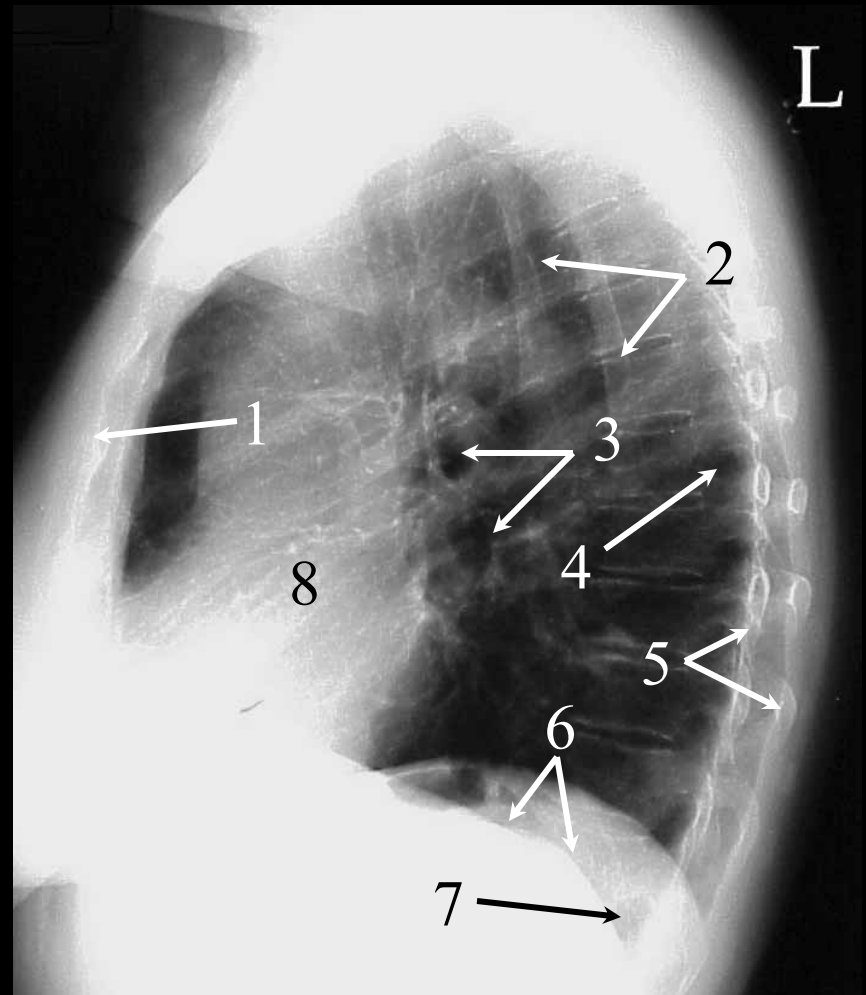


Routine Lateral Chest:

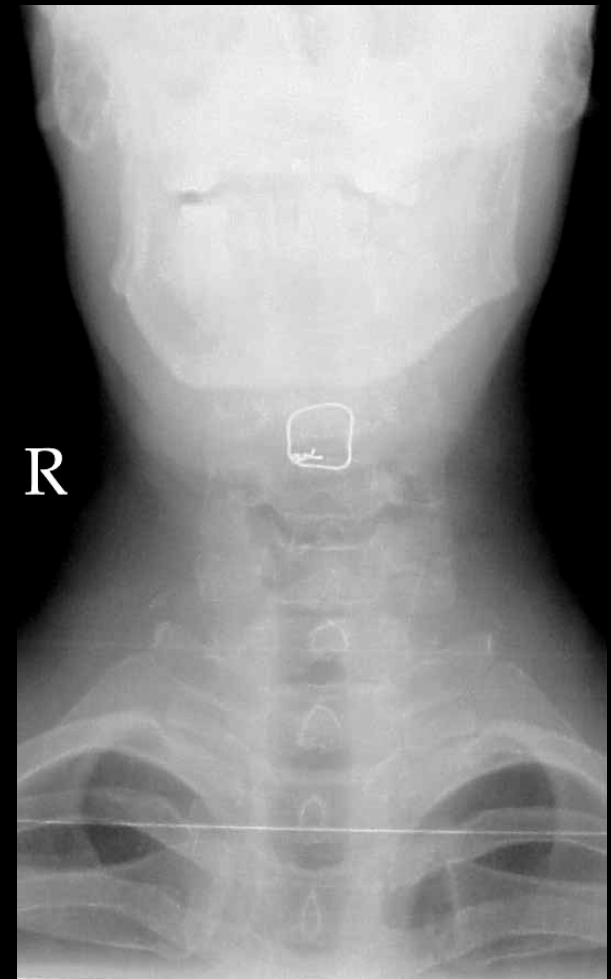


Routine Lateral Chest:

1. Body of the Sternum
2. Right & Left Scapula
3. Primary Bronchi Seen on End
4. Thoracic Intervertebral Foramen
5. Slightly Rotated Posterior Ribs
6. Left Diaphragm
7. Left Costophrenic Angle
8. Shadow of the Heart



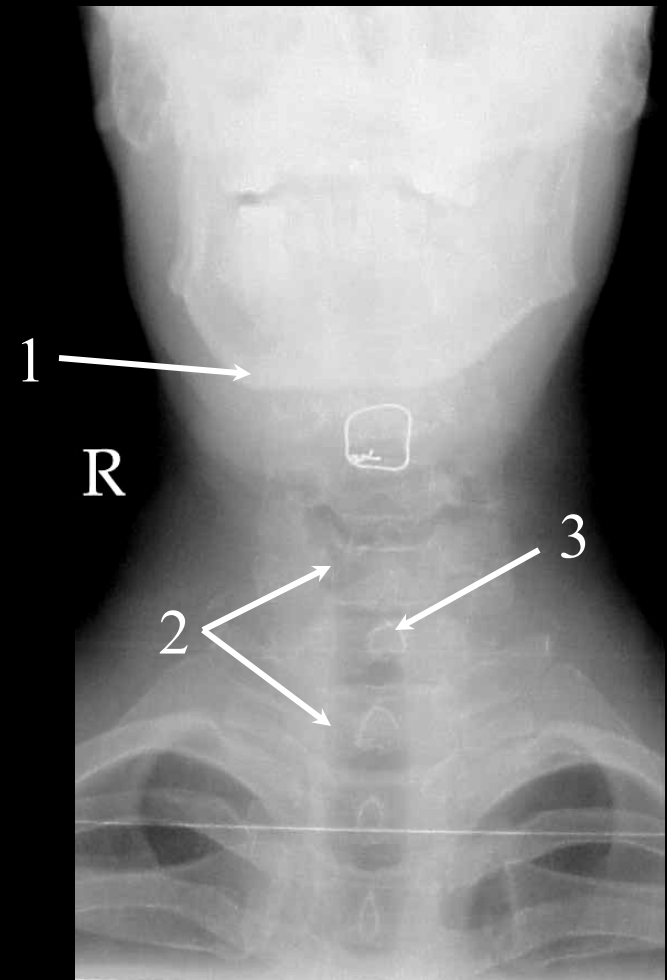
Soft Tissue of the Neck: AP



Soft Tissue of the Neck: AP

Note: The chin should be elevated in order to facilitate an unobstructed view of the upper air way on this radiograph.

1. Mandible
2. Air in the Trachea
3. Spinous Process

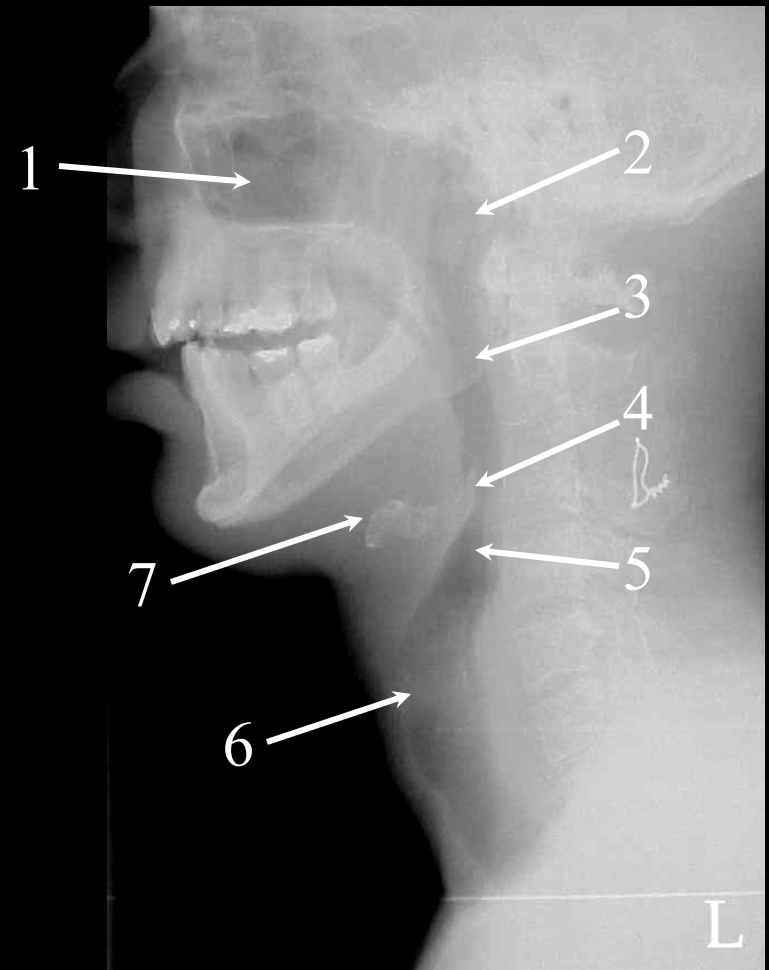


Soft Tissue of the Neck: Lateral



Soft Tissue of the Neck: Lateral

1. Maxillary Sinus
2. Nasopharynx
3. Oropharynx
4. Epiglottis
5. Laryngopharynx
6. Larynx
7. Hyoid Bone

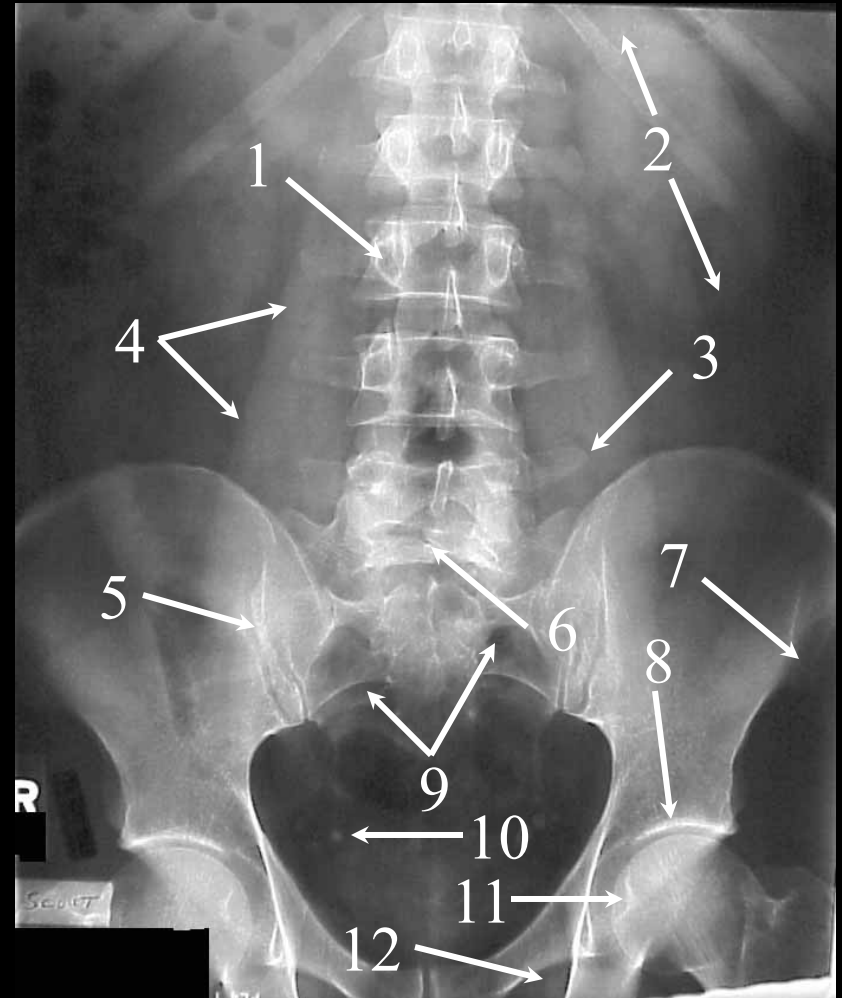


Supine Abdomen or KUB:

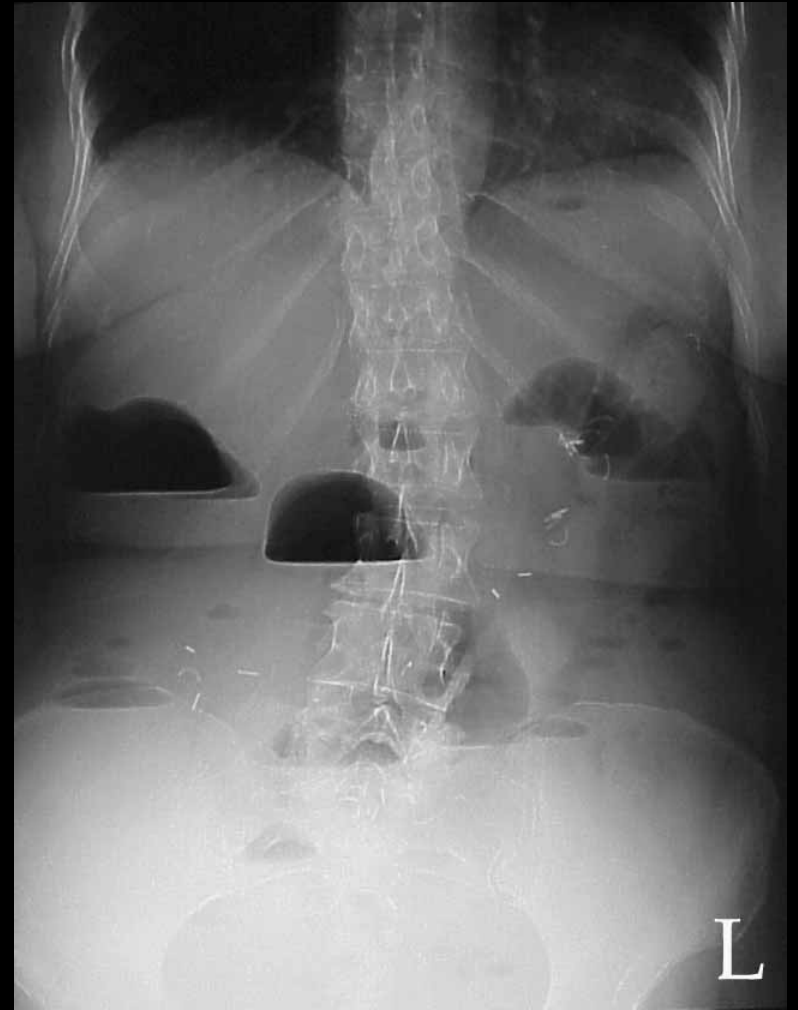


Supine Abdomen or KUB:

1. Pedicle of L3
2. Shadow of the Kidney
3. Transverse Process of L5
4. Psoas Muscle
5. Sacroiliac Joint
6. Spina Bifida
7. ASIS
8. Acetabulum
9. Anterior Sacral Foramen
10. Phlebolith
11. Fovea Capitus
12. Obturator Foramen

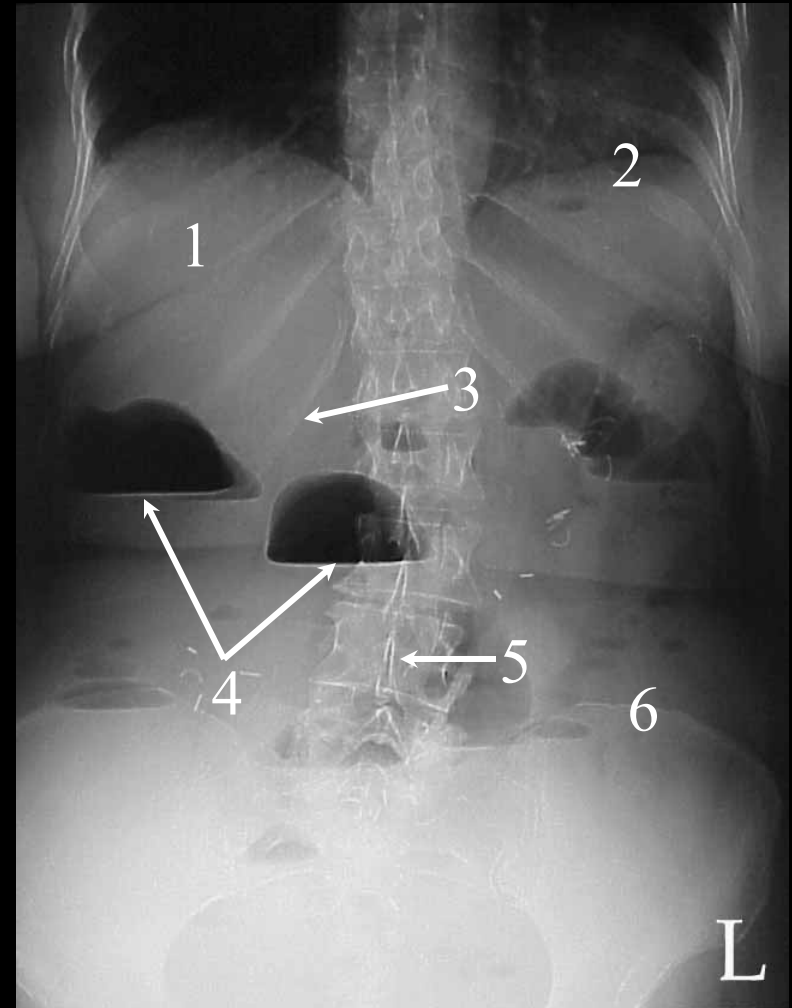


Upright Abdomen:



Upright Abdomen:

1. Liver
2. Left Hemidiaphragm
3. 12th Rib
4. Air/Fluid Levels
5. Spinous Process of L4
6. Top of the Iliac Crest

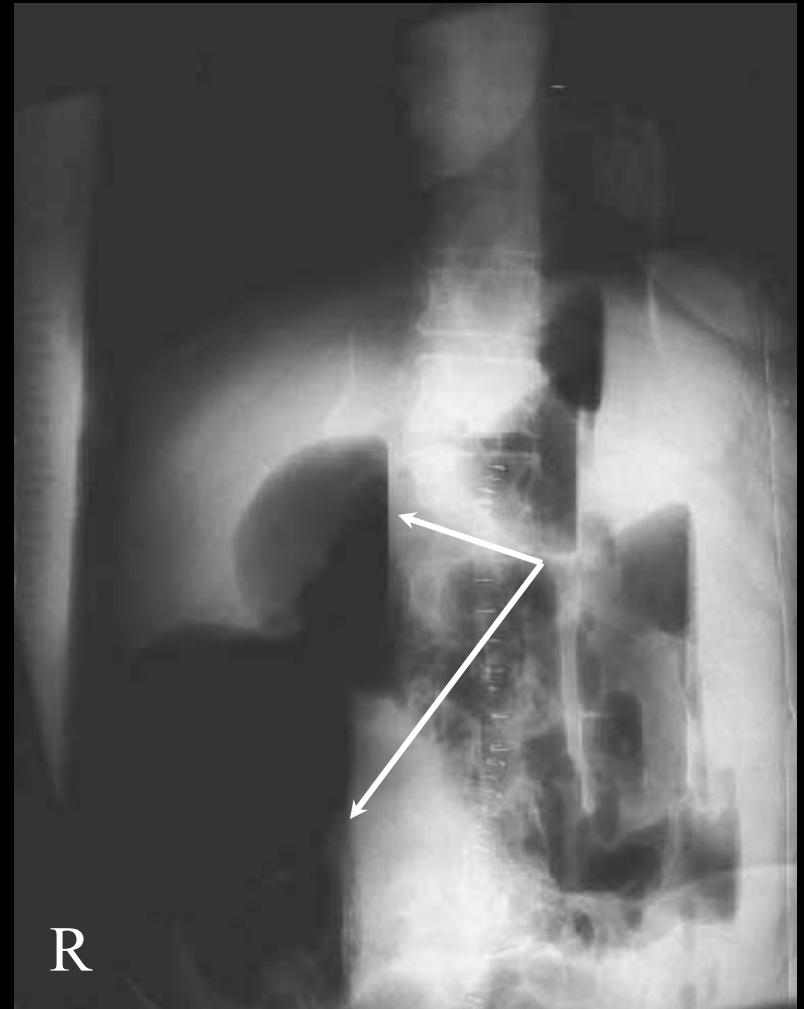


Decubitus Abdomen:



Decubitus Abdomen:

The arrows are pointing to vertical air/fluid levels that can only be obtained when a decubitus position of the abdomen is performed. The upright and decubitus abdomen positions are performed in order to best demonstrate air/fluid levels and free air within the abdominal cavity.



Upper Extremity

Thumb

**AP, Oblique,
& Lateral**

Finger

**PA, Oblique,
& Lateral**

Hand

- 1. PA**
- 2. Oblique**
- 3. Lateral**

Wrist

- 1. PA**
- 2. PA Oblique**
- 3. Lateral**
- 4. AP Oblique**
- 5. Navicular**
- 6. Carpal Canal**

Elbow

- 1. AP**
- 2. Internal Oblique**
- 3. External Oblique**
- 4. Lateral**

Routine Thumb:



AP



Oblique



Lateral

Routine Thumb:

1. Tuft (Nail Bed)
2. Soft Tissue of Medial Border of Hand Overlying the 1st Metacarpal
3. Sesamoid Bone
4. Interphalangeal Joint
5. 1st Metacarpophalangeal Joint
6. 1st Metacarpal



AP



Oblique



Lateral

Routine Finger:



PA



Oblique



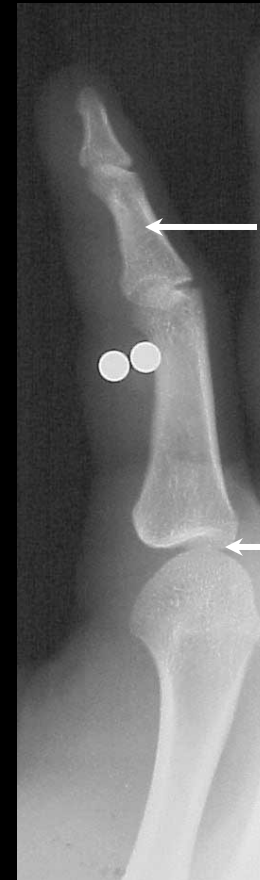
Lateral

Routine Finger:

1. Tuft (Nail Bed)
2. Proximal Interphalangeal Joint
3. Middle Phalanx
4. BBs x 2
5. Metacarpophalangeal Joint



PA



Oblique



Lateral

PA Hand:



PA Hand:

1. Proximal Interphalangeal Joint (PIP)
2. 3rd Metacarpophalangeal Joint (MP)
3. Sesamoid Bone
4. Interphalangeal Joint of the 1st Digit
5. Shaft of the 3rd Metacarpal
6. Base of the 1st Metacarpal
7. Greater Multangular or Trapezium
8. Navicular or Scaphoid
9. Capitate or Os Magnum



Oblique Hand: Too Steep



Oblique Hand: Too Steep

This hand is improperly positioned because the midshafts of the 3rd, 4th and 5th metacarpals should not overlap as indicated by the arrows.



Oblique Hand: Properly Positioned



Oblique Hand: Properly Positioned

This oblique hand is positioned better but it is still slightly too steep.

1. Head of the 2nd Metacarpal
2. 1st Metacarpophalangeal Joint (MP)
3. Greater Multangular or Trapezium
4. Navicular or Scaphoid
5. Styloid Process of the Ulna
6. Capitate or Os Magnum

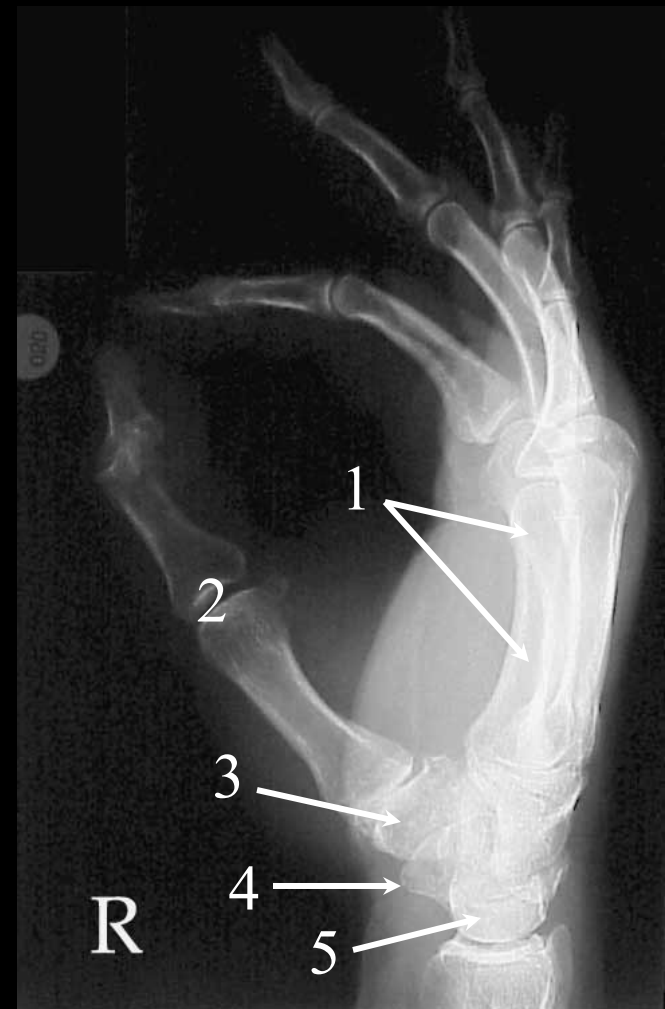


Lateral Hand:



Lateral Hand:

1. Superimposed Metacarpals
2. 1st Metacarpophalangeal Joint (MP)
3. Greater Multangular or Trapezium
4. Navicular or Scaphoid
5. Lunate or Semilunar



PA Wrist:



PA Wrist:

1. Greater Multangular or Trapezium
2. Navicular or Scaphoid
3. Capitate or Os Magnum
4. Lunate or Semilunar
5. Triquetrum, Triangular or Cuneiform
6. Pisiform
7. Hamate or Unciform
8. Shaft of the 5th Metacarpal



PA Oblique Wrist:



PA Oblique Wrist:

1. Lesser Multangular or Trapezoid
2. Capitate or Os Magnum
3. Styloid Process of the Ulna
4. Lunate or Semilunar
5. Navicular or Scaphoid
6. Greater Multangular or Trapezium
7. Shaft of the 1st Metacarpal



AP Oblique Wrist:



AP Oblique Wrist:

This position best demonstrates the pisiform free from bony superimposition.

1. Shaft of the 5th Metacarpal
2. Hamulus of Hamate (Unciform)
3. Pisiform
4. Styloid Process of the Ulna
5. Styloid Process of the Radius



Lateral Wrist:



Lateral Wrist:

1. 1st Metacarpophalangeal Joint (MP)
2. Greater Multangular or Trapezium
3. Pisiform
4. Navicular or Scaphoid
5. Lunate or Semilunar



Ulnar Flexion or “Navicular” Wrist:



Ulnar Flexion or “Navicular” Wrist:

As the name indicates, this position is primarily done to best demonstrate the navicular bone (arrow). It requires an ulnar deviation of the wrist and a 10 to 15 degree cephalic angle of the tube.

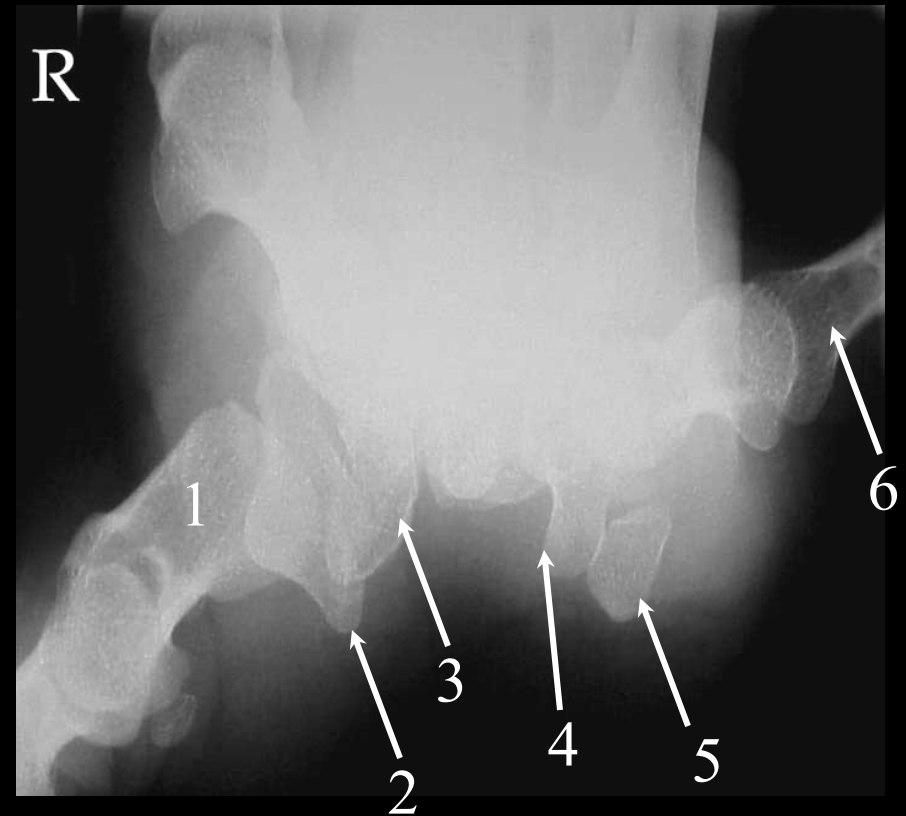


Carpal Canal (Gaynor-Hart) Wrist:



Carpal Canal (Gaynor-Hart) Wrist:

1. 1st Metacarpal
2. Greater Multangular or Trapezium
3. Navicular or Scaphoid
4. Hamulus of Hamate
5. Pisiform
6. 5th Metacarpal

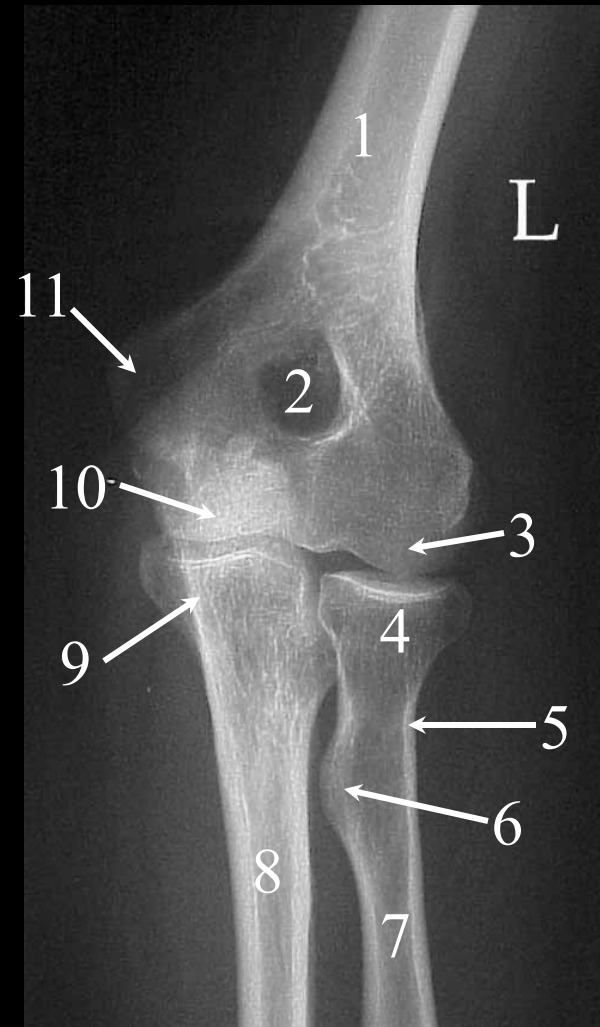


AP Elbow:



AP Elbow:

1. Shaft of the Humerus
2. Olecranon Fossa
3. Capitulum
4. Head of the Radius
5. Neck of the Radius
6. Radial Tuberosity
7. Shaft of the Radius
8. Shaft of the Ulna
9. Coronoid Process
10. Trochlea
11. Epicondyle

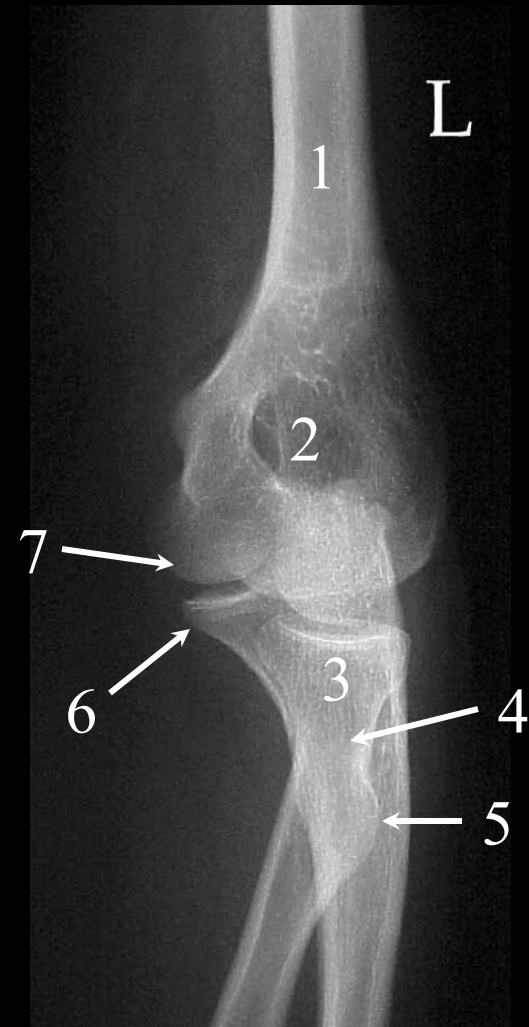


Internal Oblique Elbow:



Internal Oblique Elbow:

1. Shaft of the Humerus
2. Olecranon Fossa
3. Head of the Radius
4. Neck of the Radius
5. Radial Tuberosity
6. Coronoid Process
7. Trochlea



External Oblique Elbow:



External Oblique Elbow:

1. Shaft of the Humerus
2. Olecranon Fossa
3. Trochlea
4. Coronoid Process
5. Radial Tuberosity
6. Neck of the Radius
7. Head of the Radius
8. Capitulum

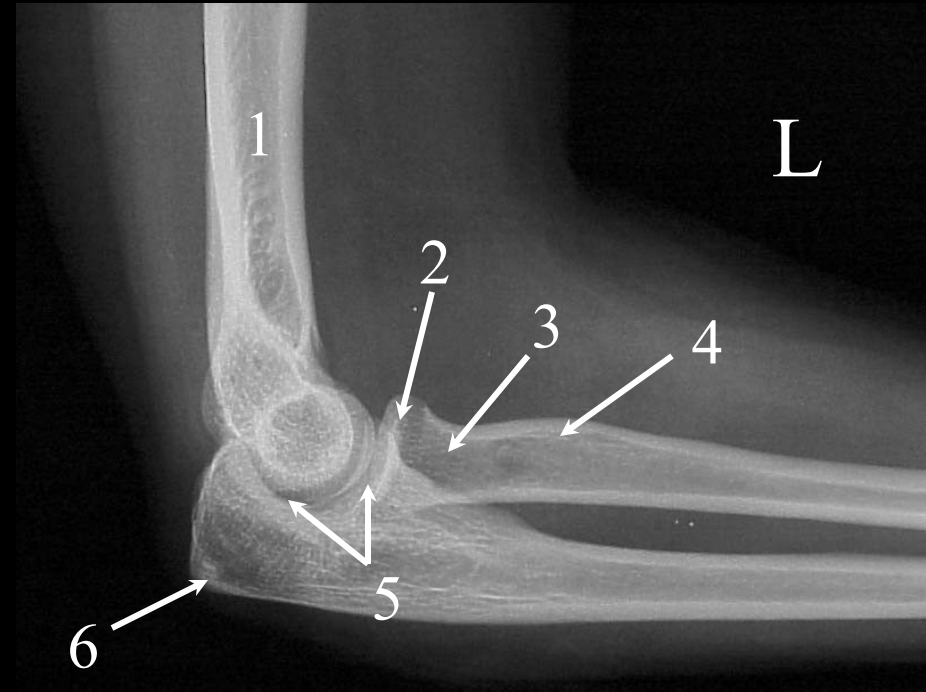


Lateral Elbow:



Lateral Elbow:

1. Shaft of the Humerus
2. Head of the Radius
3. Neck of the Radius
4. Radial Tuberosity
5. Trochlear or Semilunar Notch
6. Olecranon Process



Shoulder Girdle

Shoulder

- 1. External**
- 2. Internal**
- 3. Grashey**
- 4. Transthoracic**
- 5. Axillary**

Scapula

- 1. AP**
- 2. Lateral**

Clavicle

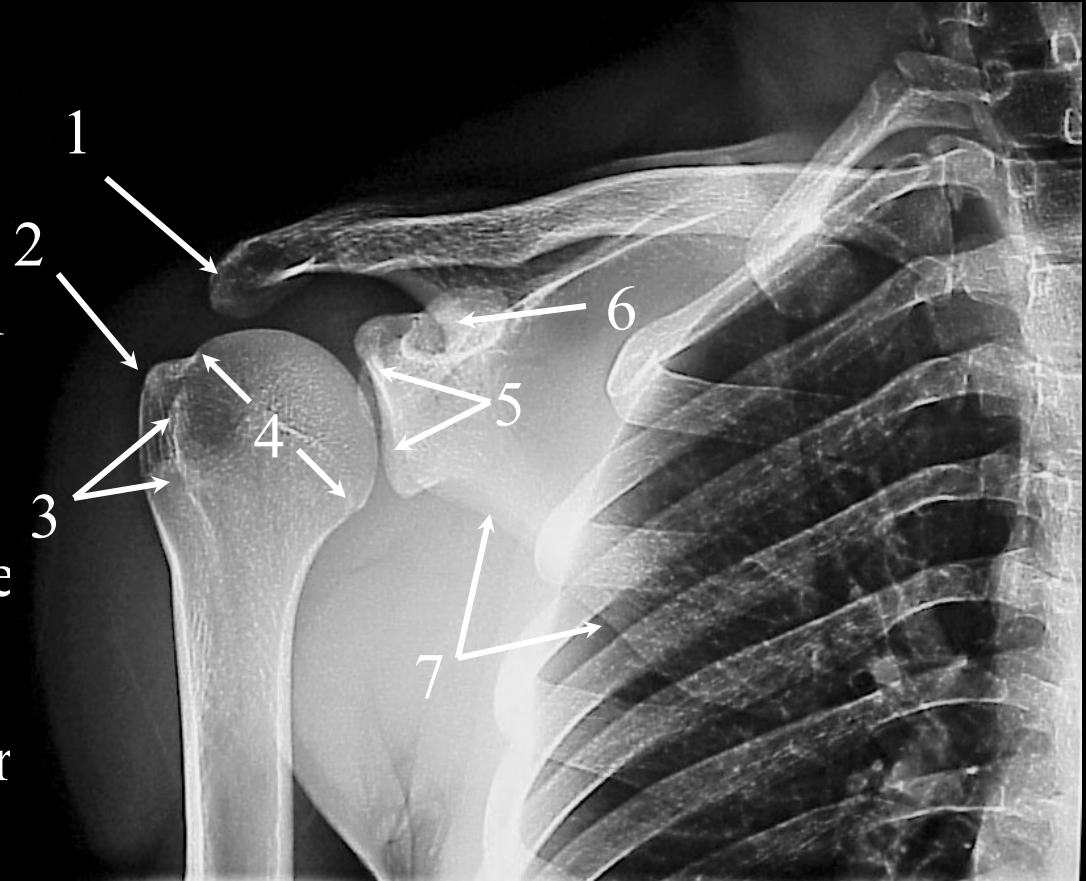
- 1. AP**
- 2. Tangential**

Externally Rotated Shoulder:

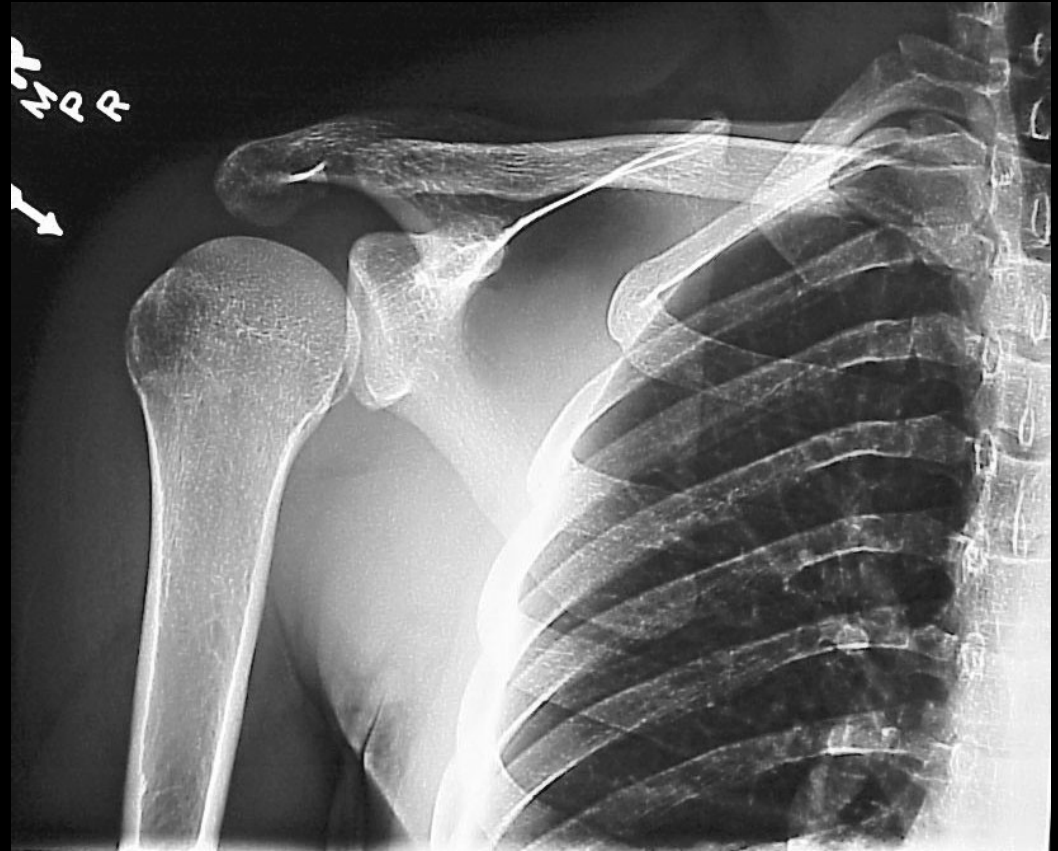


Externally Rotated Shoulder:

1. Acromion Process
2. Greater Tubercle of the Humerus
3. Intertubercular or Bicipital Groove
4. Anatomical Neck
5. Glenohumeral Joint Space
6. Coracoid Process
7. Lateral or Axillary Border of the Scapula

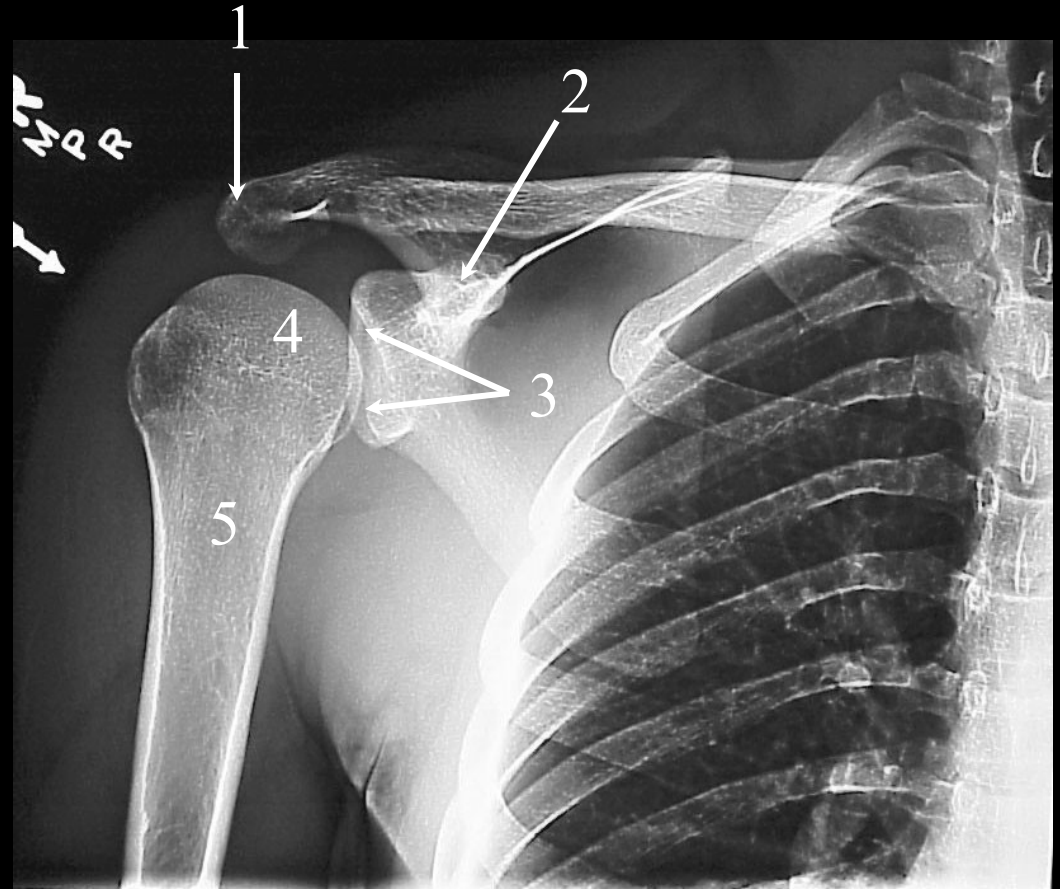


Internally Rotated Shoulder:



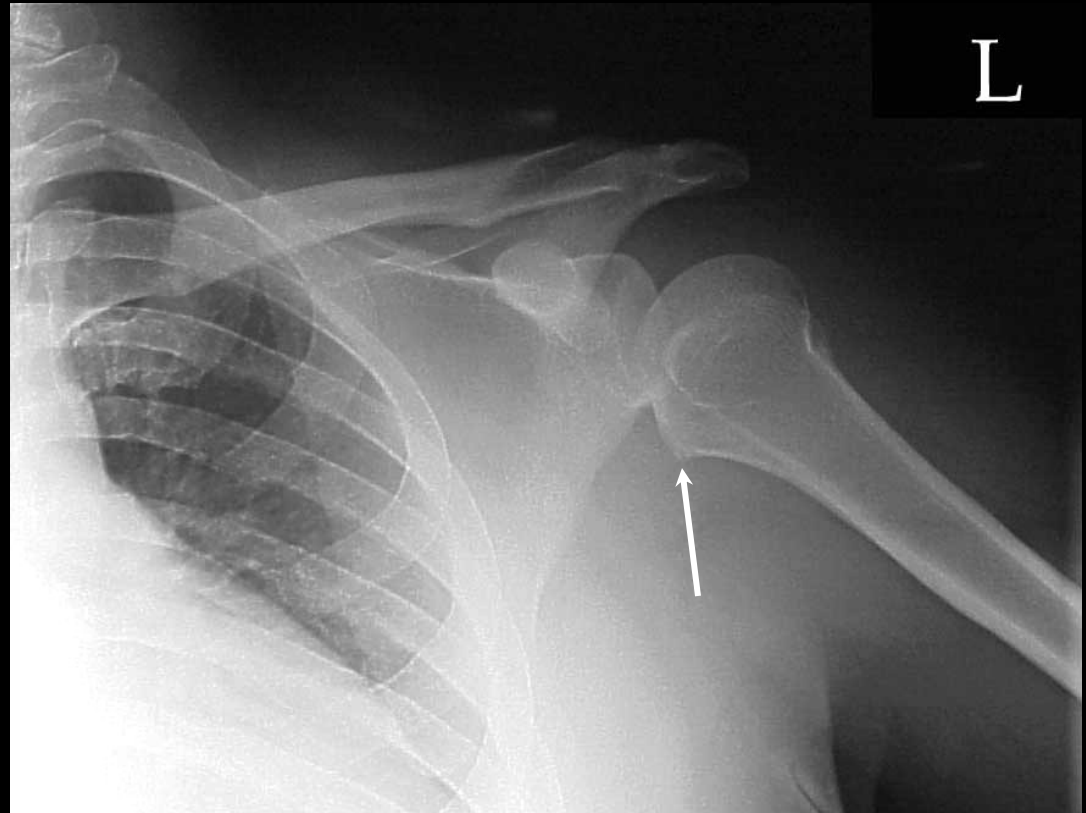
Internally Rotated Shoulder:

1. Acromion Process
2. Coracoid Process
3. Glenoid Fossa
4. Head of the Humerus
5. Surgical Neck



Internally Rotated Shoulder:

The quality of this radiograph is not quite as good as the previous internal oblique. However, it does do a better job of demonstrating the lesser tubercle in profile medially as indicated by the arrow. This is one means of determining the positioning accuracy of this study.

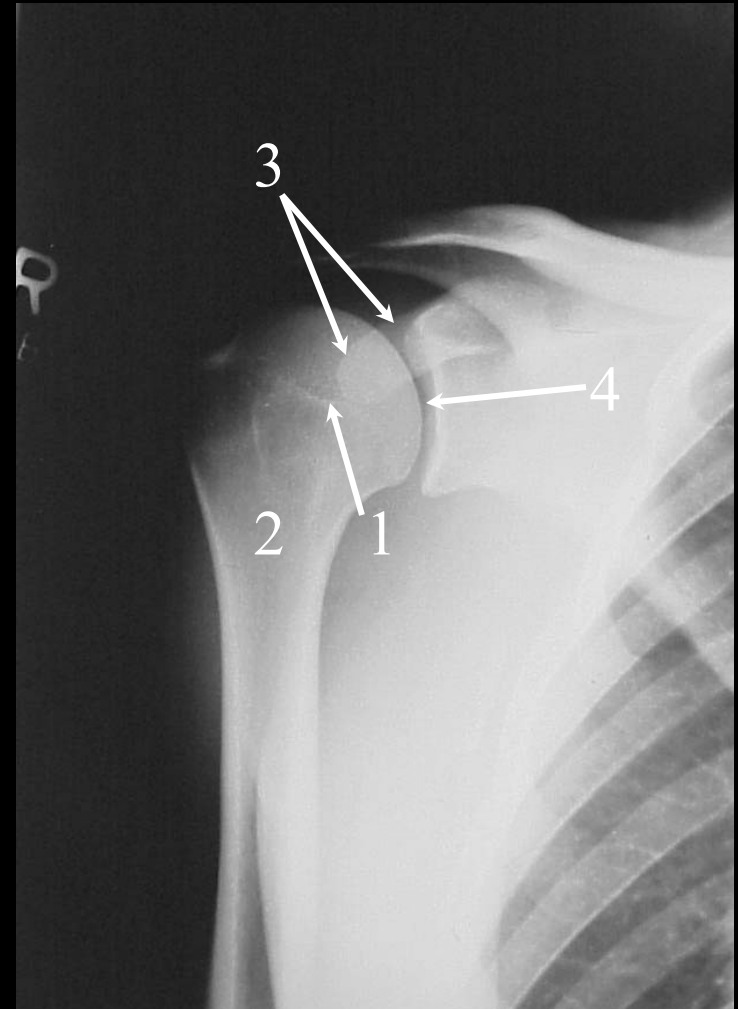


Grashey Shoulder:

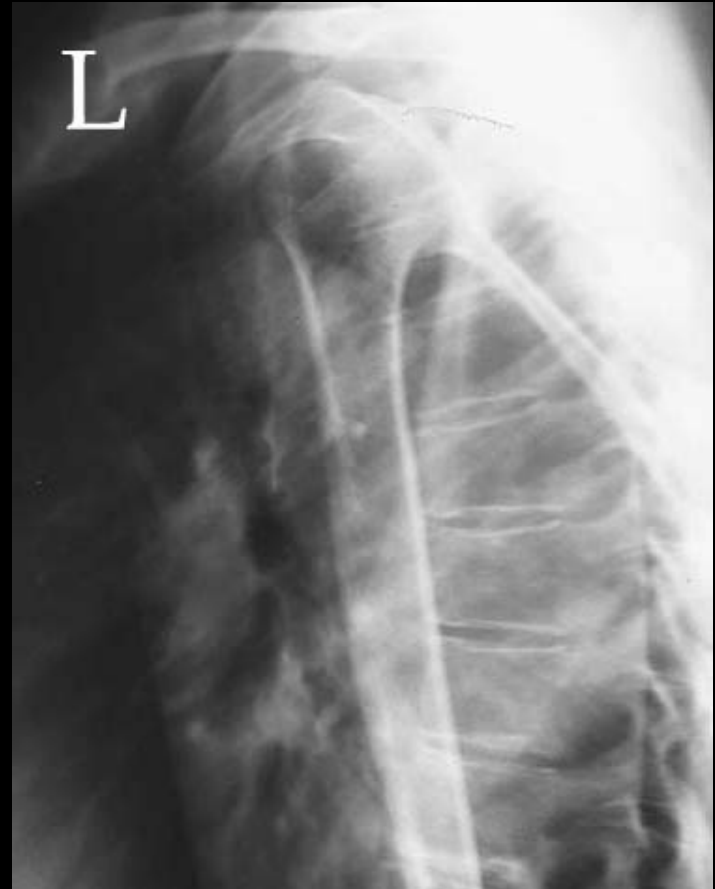


Grashey Shoulder:

1. Anatomical Neck of the Humerus
2. Surgical Neck of the Humerus
3. Coracoid Process
4. Glenohumeral Joint Space (This must be completely free from bony superimposition.)

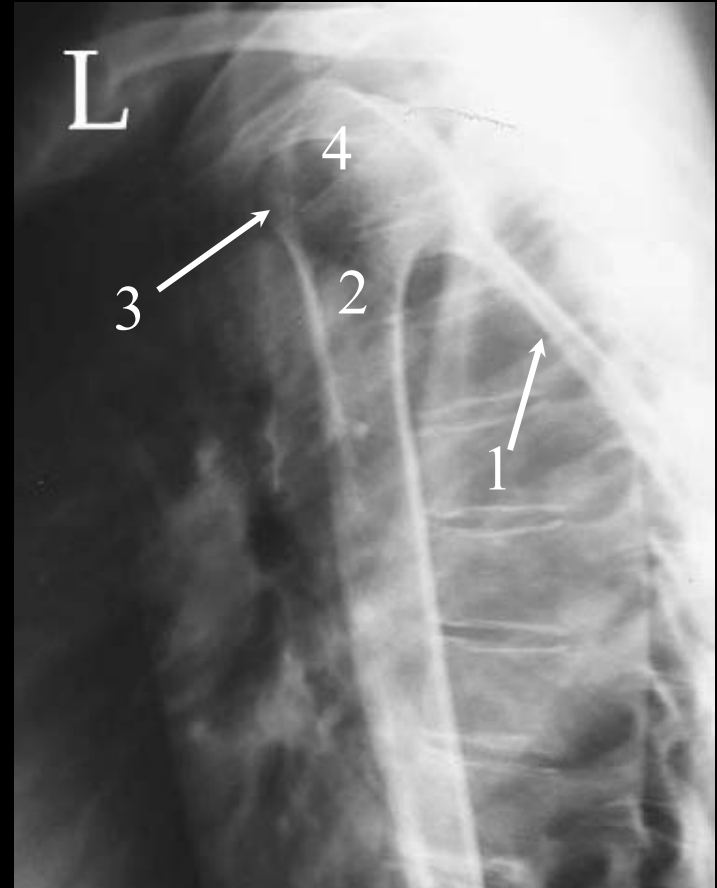


Transthoracic Shoulder:



Transthoracic Shoulder:

1. Scapula
2. Surgical Neck of the Humerus
3. Greater Tubercle of the Humerus
4. Head of the Humerus

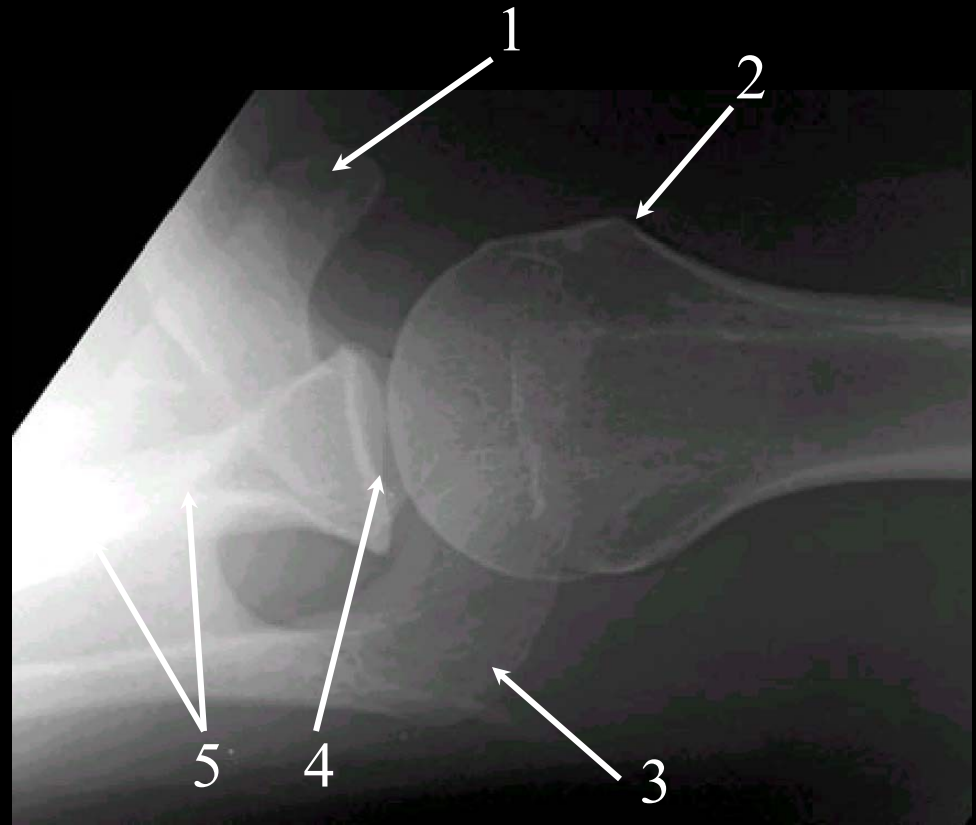


Axillary Shoulder:



Axillary Shoulder:

1. Coracoid Process of the Scapula
2. Lesser Tubercle of the Humerus
3. Acromion Process
4. Glenoid Fossa of the Scapula
5. Spine of the Scapula

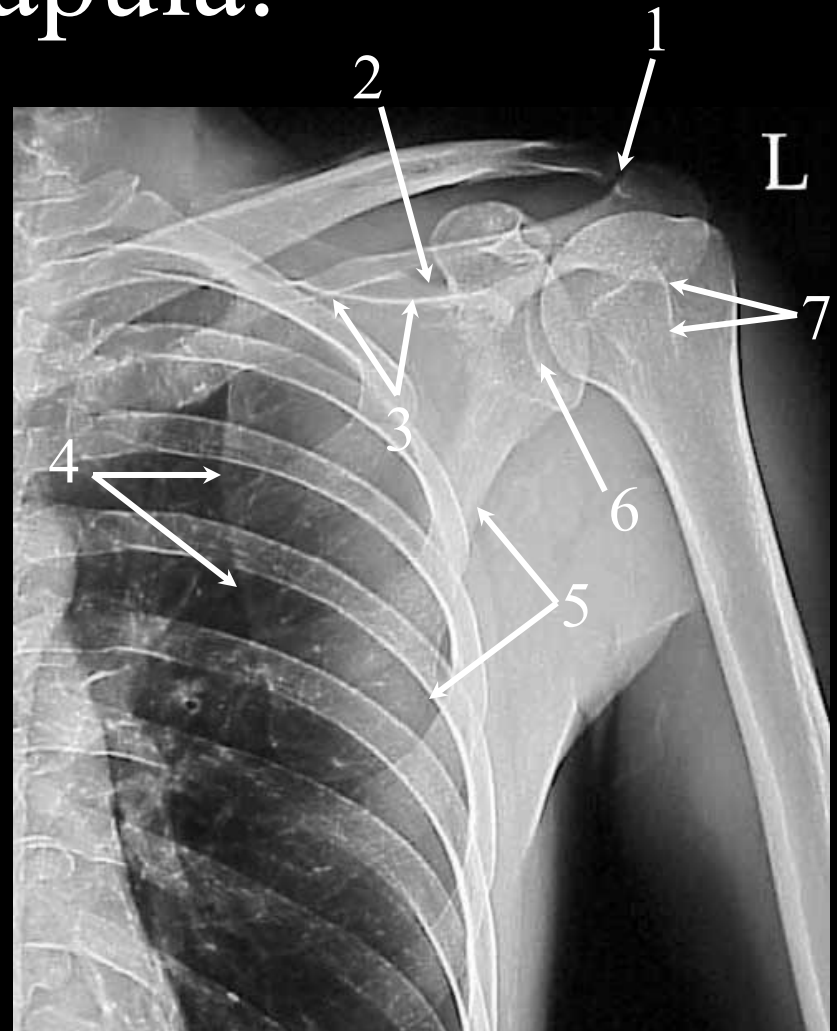


AP Scapula:



AP Scapula:

1. AC Joint
2. Scapular Notch
3. Spine of the Scapula
4. Medial or Vertebral Border
5. Lateral or Axillary Border
6. Glenoid Fossa
7. Intertubercular Groove
(bicipital groove)

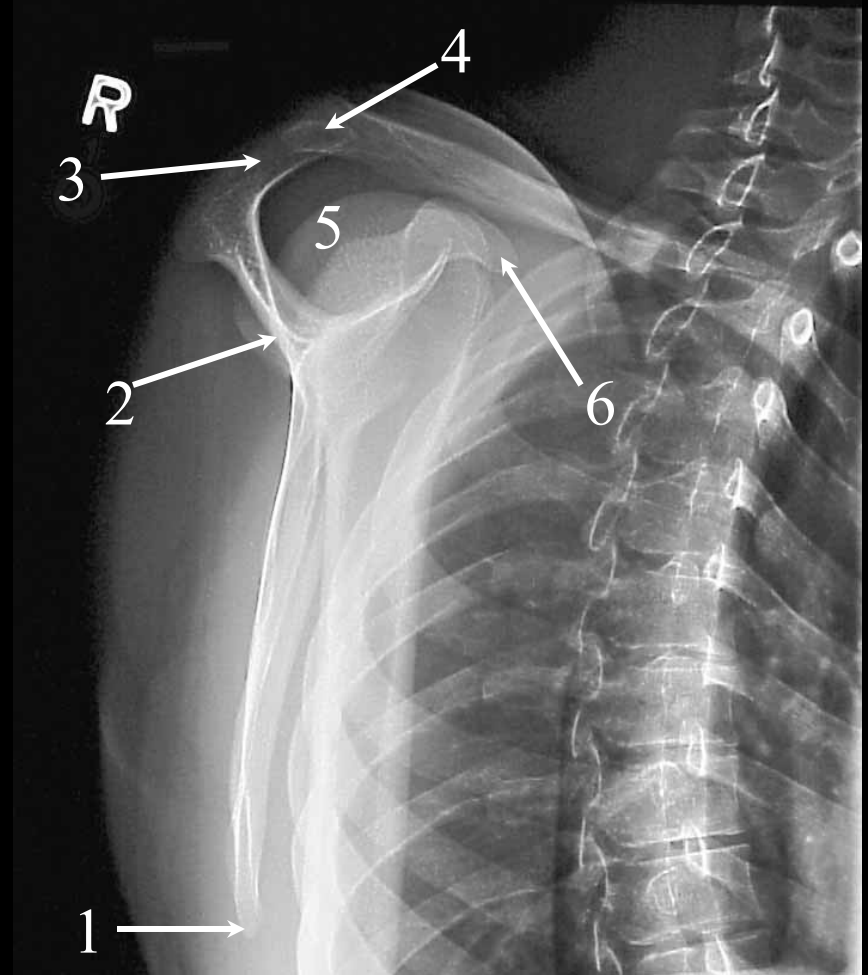


“Y” View of the Shoulder/Scapula:



“Y” View of the Shoulder/Scapula:

1. Inferior Angle of the Scapula
2. Spine of the Scapula
3. Acromion Process
4. AC Joint
5. Head of the Humerus
6. Coracoid Process

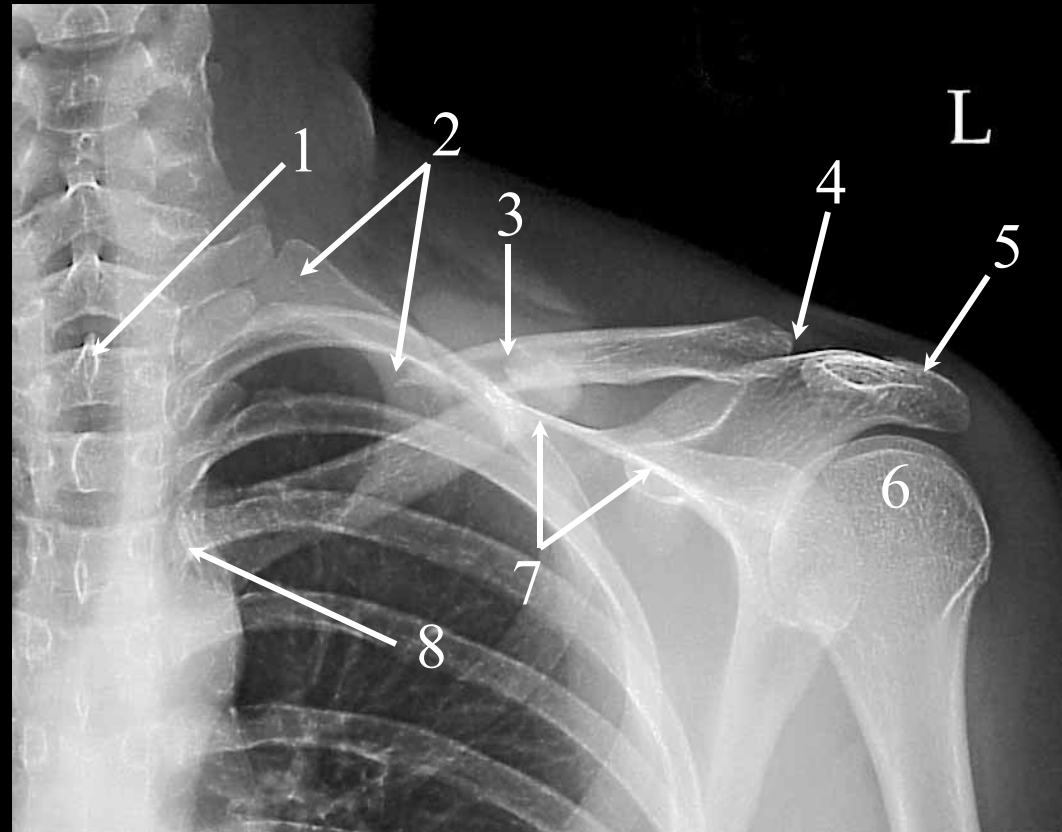


AP Clavicle:



AP Clavicle:

1. Spinous Process
2. 1st Rib
3. Fracture Site
4. AC Joint
5. Acromion Process
6. Head of the Humerus
7. Scapular Spine
8. SC Joint

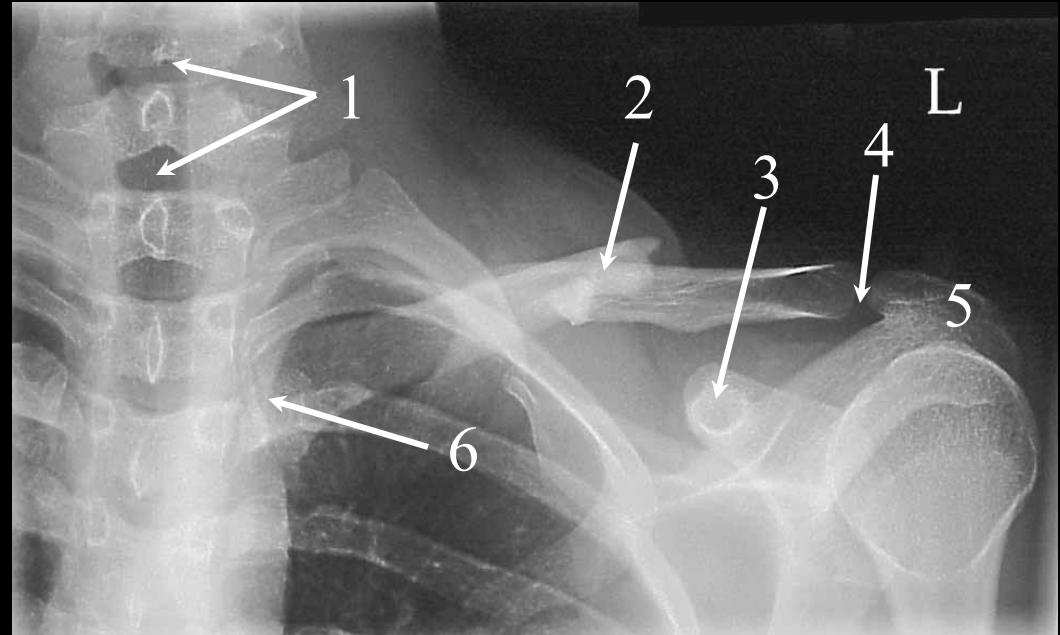


Tangential Clavicle:



Tangential Clavicle:

1. Air in the Trachea
2. Fracture Site
3. Coracoid Process
4. AC Joint
5. Acromion Process
6. SC Joint



Foot, Ankle & Heel

Toes	Foot	Ankle	Calcaneous
PA, Oblique & Lateral	1. AP 2. Oblique 3. Lateral	1. AP 2. Oblique 3. Lateral	1. Lateral 2. Tangential

Routine Toe:



AP



Oblique



Lateral

Routine Toe:



AP



Oblique



Lateral

1. Tuft or Nail Bed
2. Growth Plate
3. Interphalangeal Joint
4. Sesamoid Bones
5. 1st Metatarso-phalangeal Joint

AP Foot:



AP Foot:

1. Lateral Malleolus
2. Cuboid
3. Base of the 5th Metatarsal
4. Head of the 5th Metatarsal
5. 4th Metatarsophalangeal Joint
6. Interphalangeal Joint of the 1st Digit
7. Sesamoid Bone
8. 2nd Metatarsal
9. Medial Cuneiform
10. Navicular



Internal Oblique Foot:



Internal Oblique Foot: (Magnified)



Internal Oblique Foot: (Magnified)

1. Calcaneus or Os Calcis
2. Cuboid
3. Base of the 5th Metatarsal
4. Shaft of the 4th Metatarsal
5. 2nd Metatarsophalangeal Joint
6. Sesamoid Bones
7. Lateral Cuneiform
8. Navicular
9. Talus



Lateral Foot: (Poorly Positioned)

1. The Tibia and Fibula should be aligned to ensure that they are directly superimposed.
2. The Metatarsals should also be directly superimposed.



Lateral Foot: (Properly Positioned)



Lateral Foot: (Properly Positioned)

1. Shaft of the Tibia
2. Talus
3. Navicular
4. Superimposed Cuneiforms
5. Superimposed Metatarsals
6. Sesamoid Bones
7. Base of the 5th Metatarsal
8. Cuboid
9. Calcaneus or Os Calcis

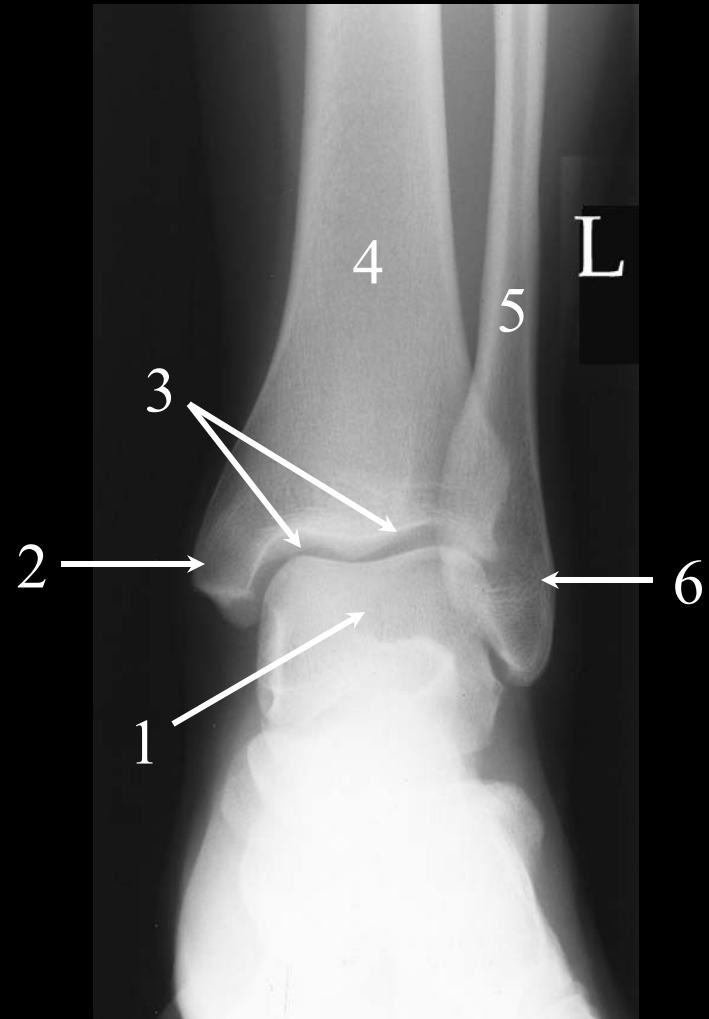


AP Ankle:



AP Ankle:

1. Talus
2. Medial Malleolus
3. Ankle Joint or Mortise
4. Shaft of the Tibia
5. Shaft of the Fibula
6. Lateral Malleolus



Internal Oblique Ankle:



Internal Oblique Ankle:

1. Navicular
2. Tarsal Sinus
3. Medial Malleolus
4. Shaft of the Tibia
5. Lateral Malleolus
6. Talus
7. Calcaneus or Os Calcis



Lateral Ankle:



Lateral Ankle:

1. Shaft of the Fibula
2. Shaft of the Tibia
3. Talus
4. Navicular
5. Cuboid
6. Calcaneus or Os Calcis

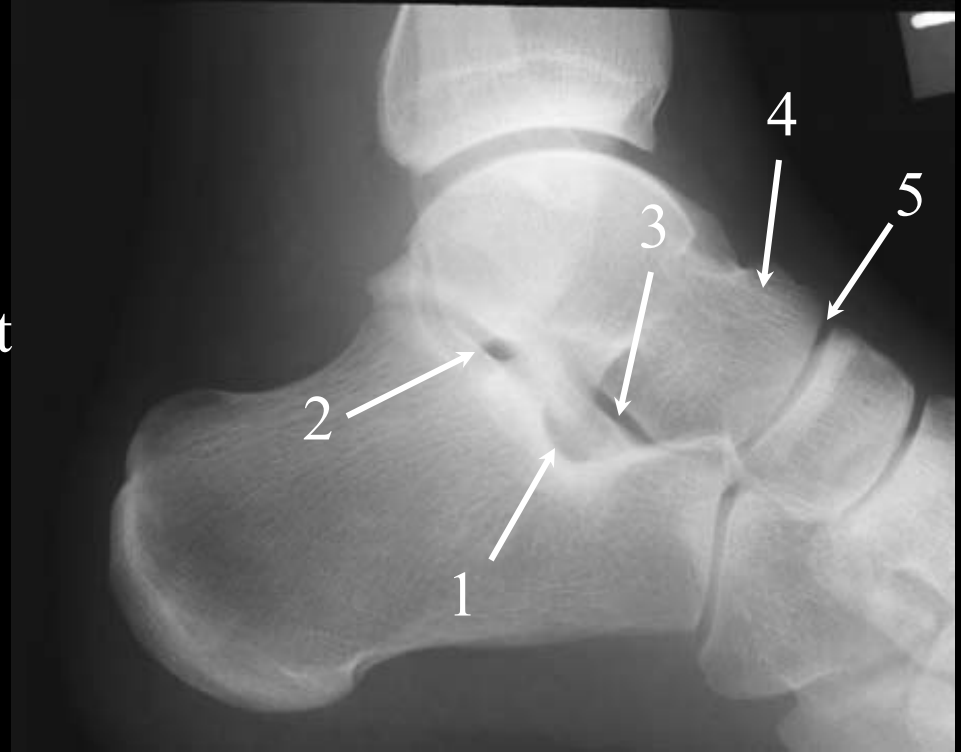


Calcaneus: Lateral



Calcaneus: Lateral

1. Tarsal Sinus
2. Subtalar Joint
3. Talocalcaneonavicular Joint
4. Head of the Talus
5. Talonavicular Joint



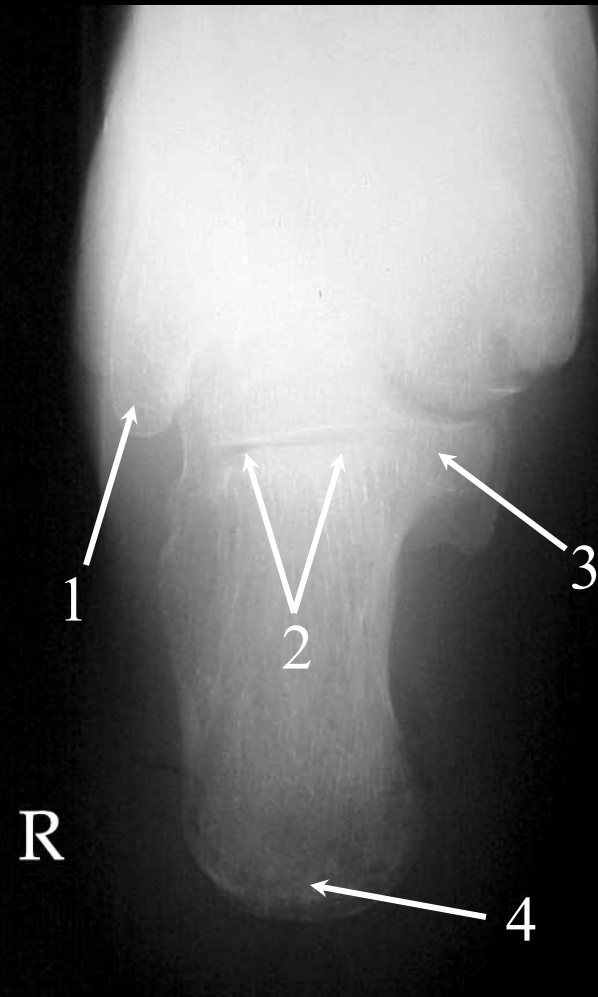
Calcaneus: Tangential



R

Calcaneus: Tangential

1. Fibula
2. Talocalcaneal Joint
3. Sustentaculum Tali
4. Tuberosity of the Calcaneus



Hip, Knee & Patella

Hip

- 1. AP Pelvis**
- 2. AP Hip**
- 3. Frog Hip**
- 4. X-Table Lateral Hip**

Sacroiliac Joints

- 1. AP Axial Projection**
- 2. Posterior Oblique**

Knee

- 1. AP**
- 2. Internal Oblique**
- 3. External Oblique**
- 4. Lateral**
- 5. Tunnel**

Patella

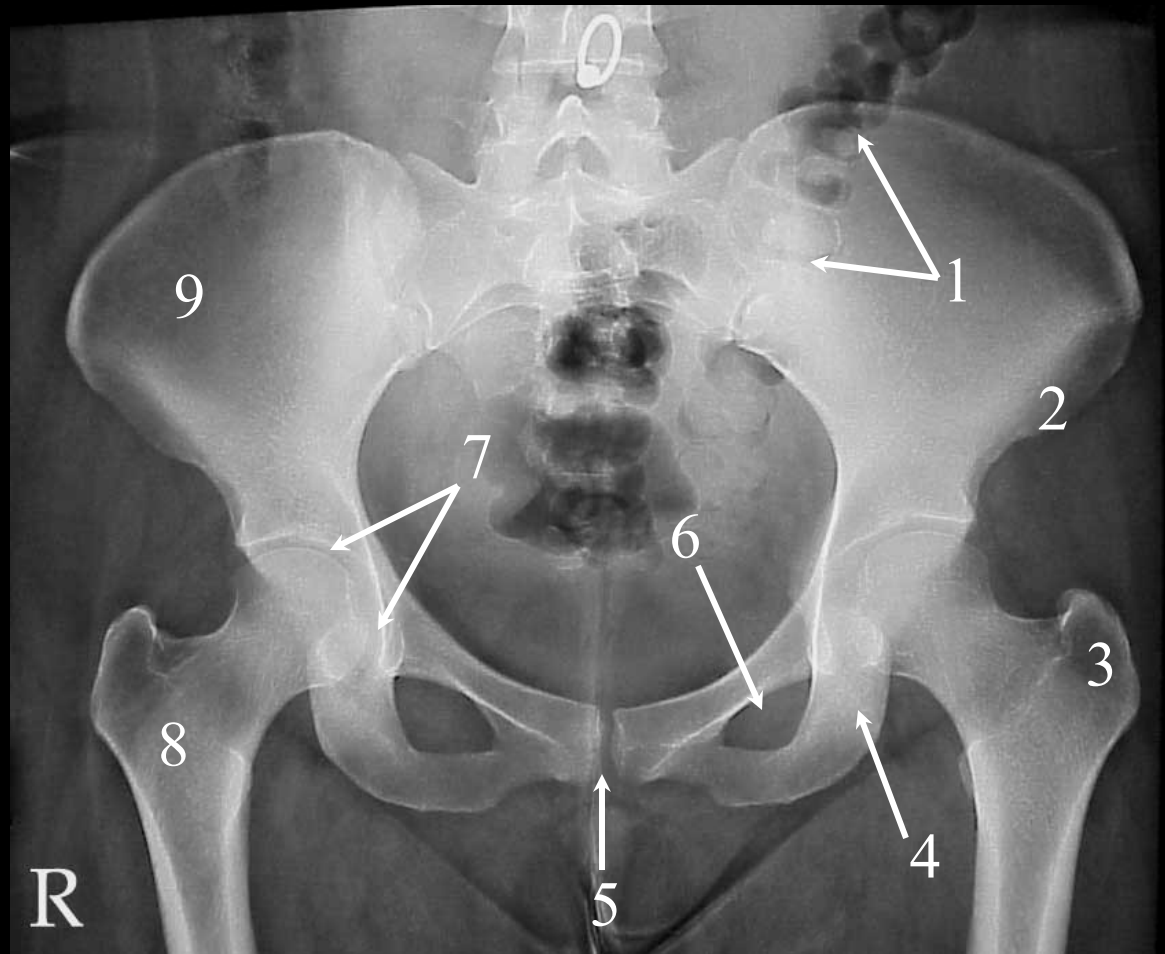
- 1. PA**
- 2. Lateral**
- 3. Tangential**

AP Pelvis:



AP Pelvis:

1. Air in the Descending Colon
2. ASIS
3. Greater Trochanter
4. Body of the Ischium
5. Symphysis Pubis
6. Obturator Foramen
7. Acetabulum
8. Intertrochanteric Crest
9. Ala or Wing of the Ilium

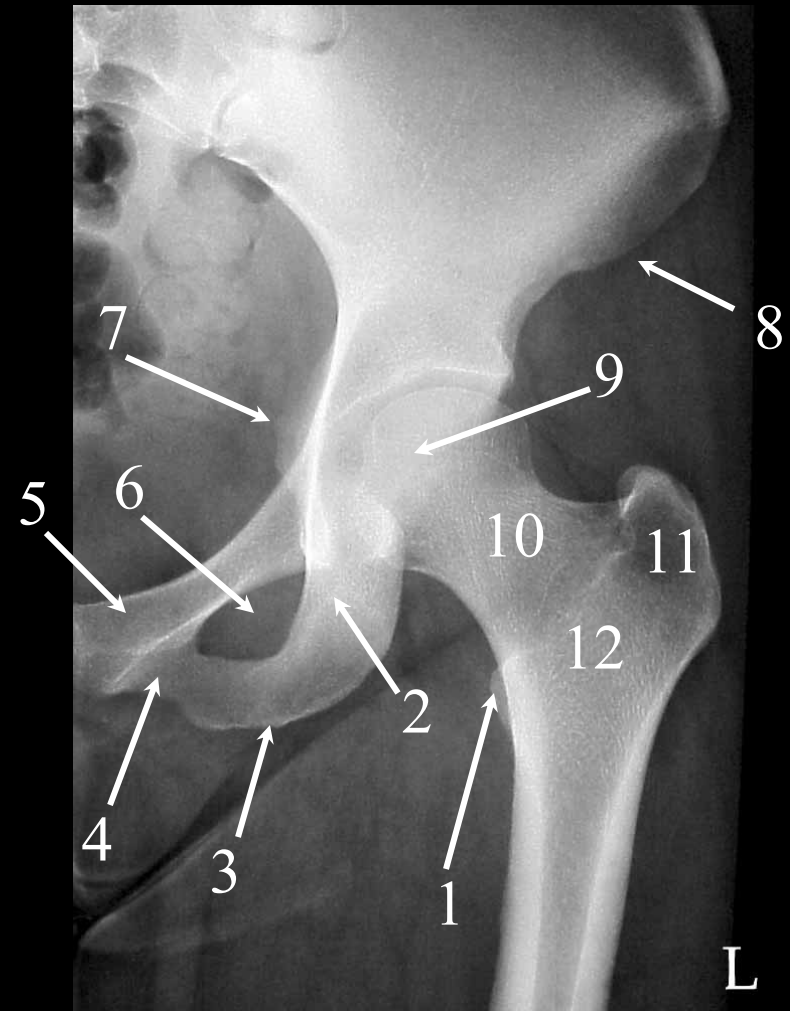


AP Hip:



AP Hip:

1. Lesser Trochanter
2. Body of the Ischium
3. Ischial Tuberosity
4. Inferior Ramus of the Pubis
5. Superior Ramus of the Pubis
6. Obturator Foramen
7. Ischial Spine
8. ASIS
9. Head of the Femur
10. Neck of the Femur
11. Greater Trochanter
12. Intertrochanteric Crest

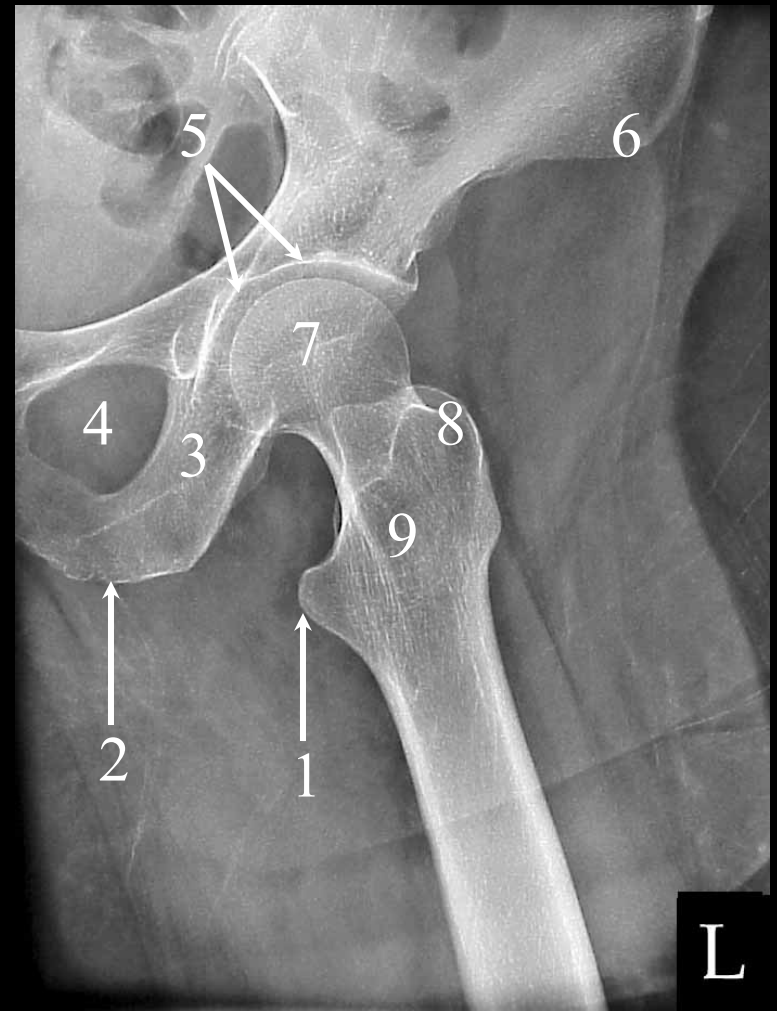


Frog Hip:

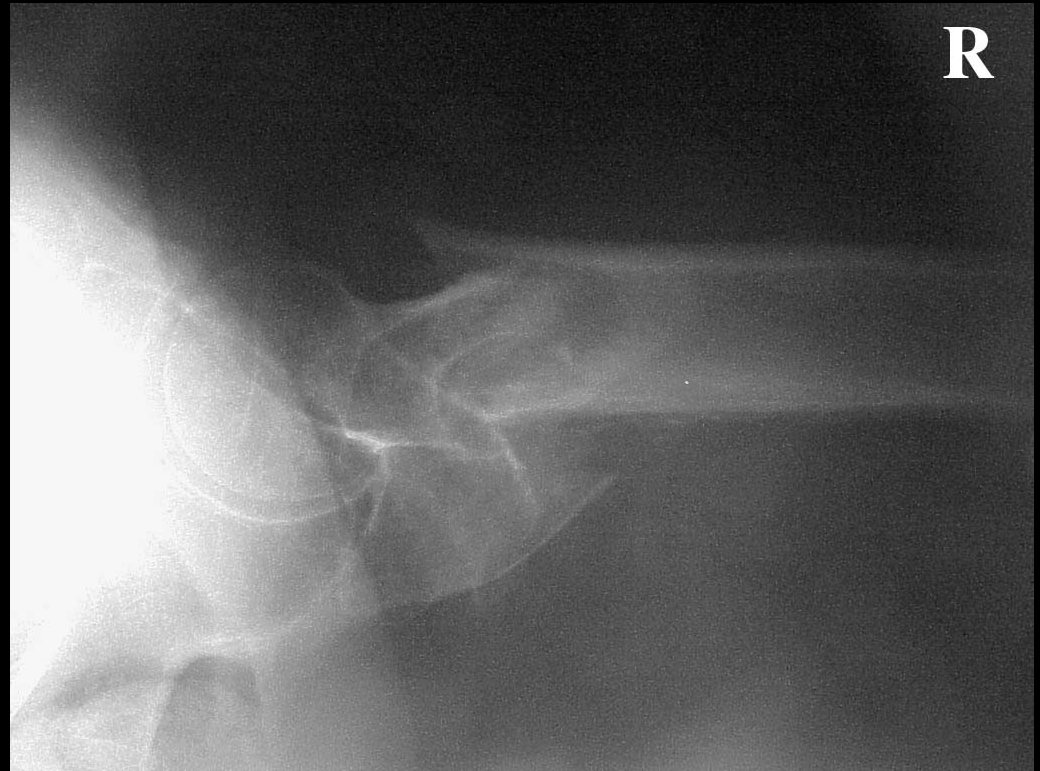


Frog Hip:

1. Lesser Trochanter
2. Ischial Tuberosity
3. Body of the Ischium
4. Obturator Foramen
5. Acetabulum
6. ASIS
7. Head of the Femur
8. Greater Trochanter
9. Intertrochanteric Crest

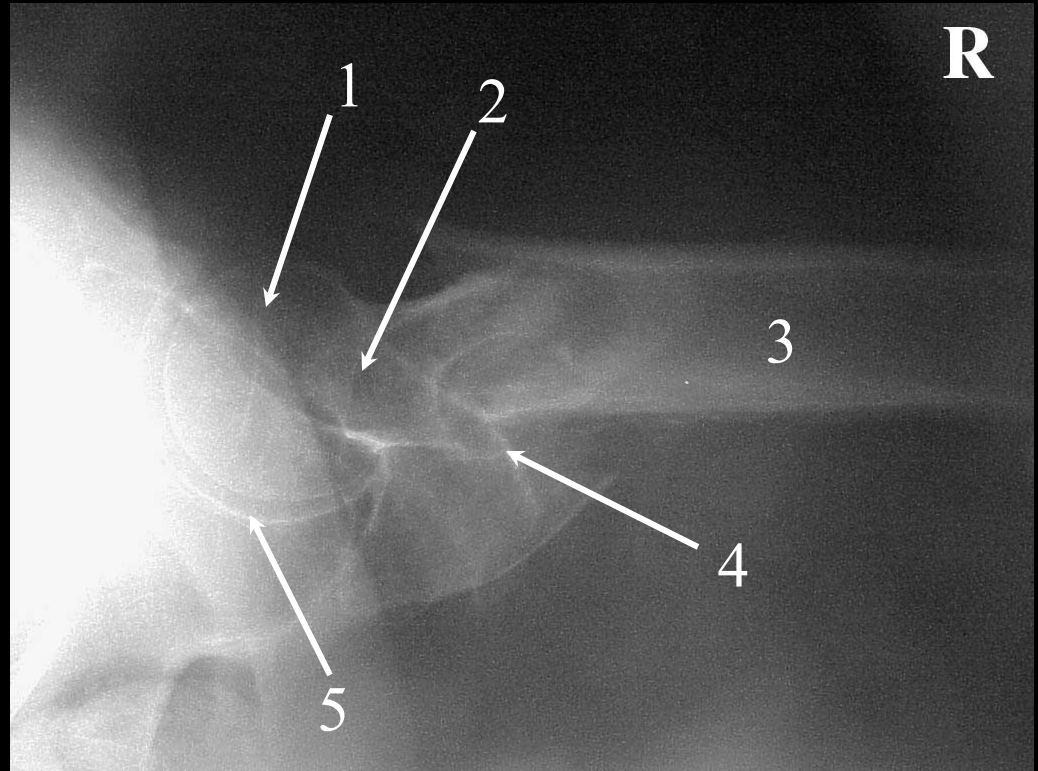


X-Table Lateral Hip:



X-Table Lateral Hip:

1. Head of the Femur
2. Neck of the Femur
3. Shaft
4. Fracture
5. Acetabulum

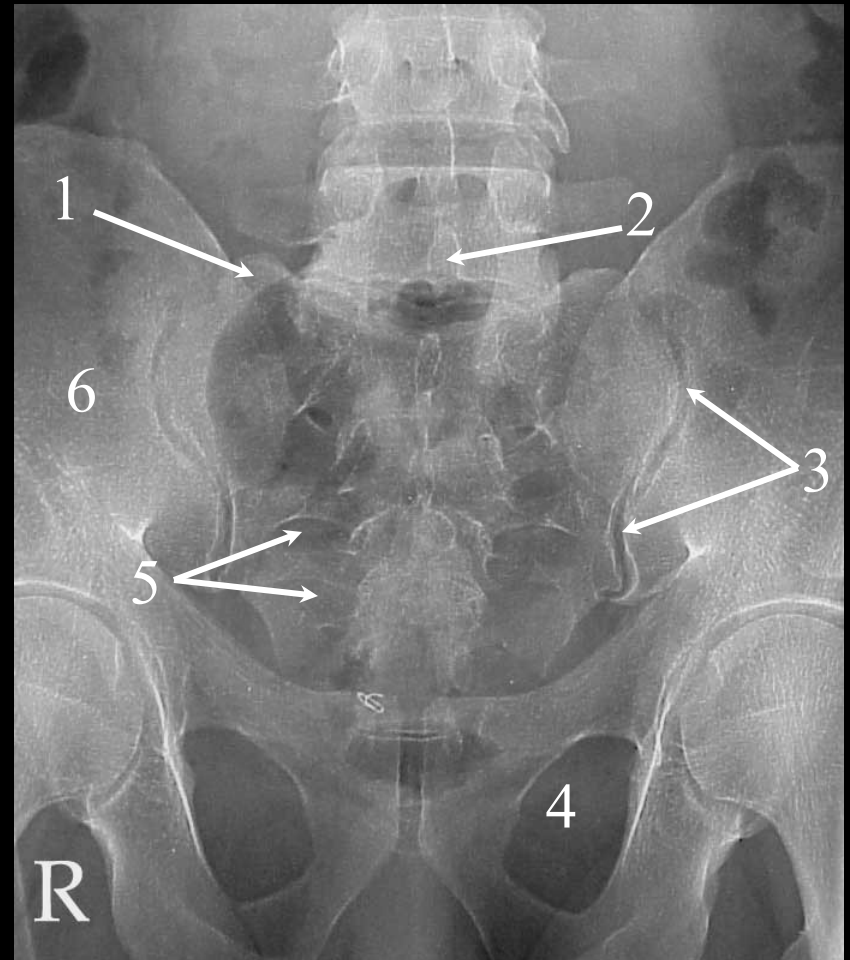


Sacroiliac Joints: AP Axial Projection



Sacroiliac Joints: AP Axial Projection

1. Superior Articular Process of the Sacrum
2. Spinous Process of L5
3. Left S.I. Joint
4. Obturator Foramen
5. Anterior Sacral Foramina
6. Right Ala of the Ilium

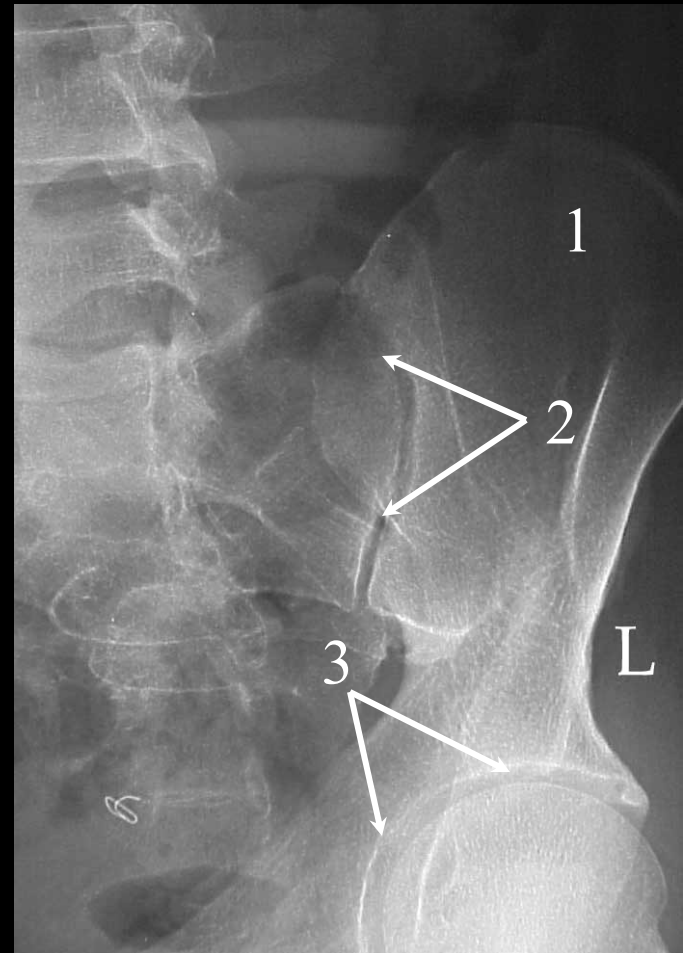


Sacroiliac Joints: RPO



Sacroiliac Joints: RPO

1. Left Ala of the Ilium
2. Left S.I. Joint
3. Left Acetabulum

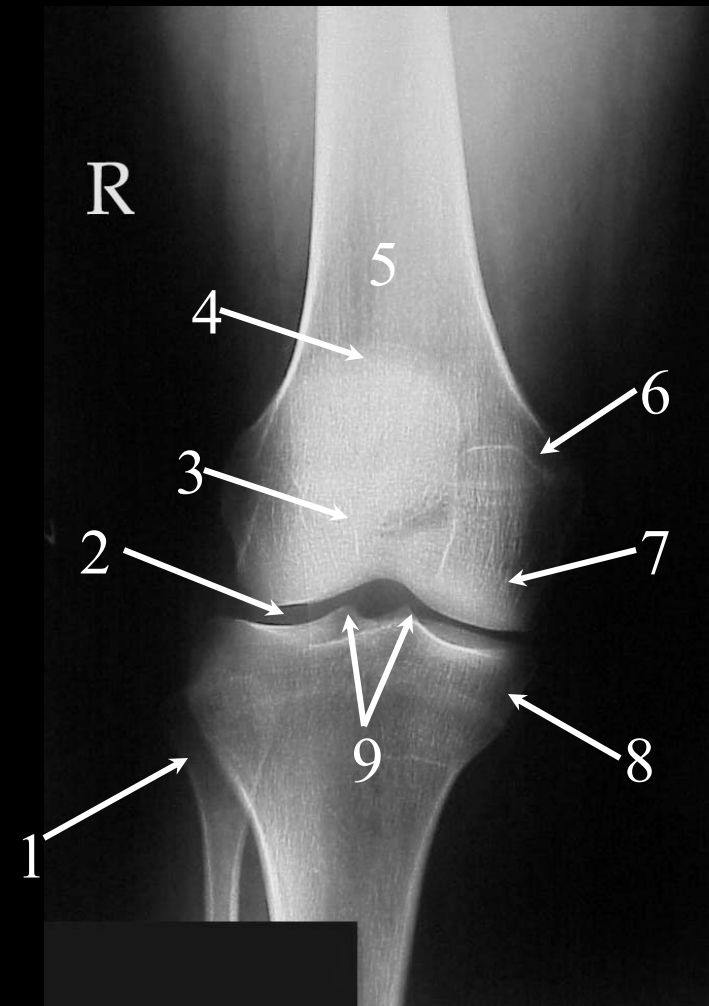


AP Knee:



AP Knee:

1. Head of the Fibula
2. Tibial Plateau
3. Apex of the Patella
4. Base of the Patella
5. Shaft of the Femur
6. Medial Epicondyle of the Femur
7. Medial Condyle of the Femur
8. Medial Condyle of the Tibia
9. Intercondylar Eminence

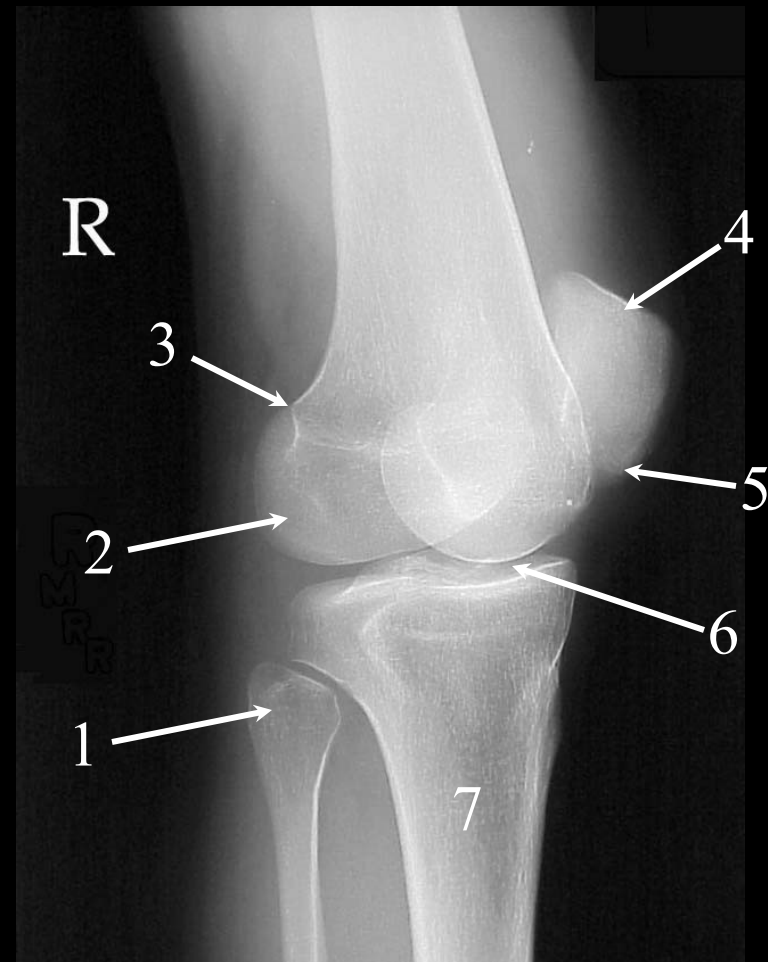


Internal Oblique Knee:



Internal Oblique Knee:

1. Head of the Fibula
2. Lateral Condyle of the Femur
3. Lateral Epicondyle of the Femur
4. Base of the Patella
5. Apex of the Patella
6. Intercondylar Eminence
7. Shaft of the Tibia

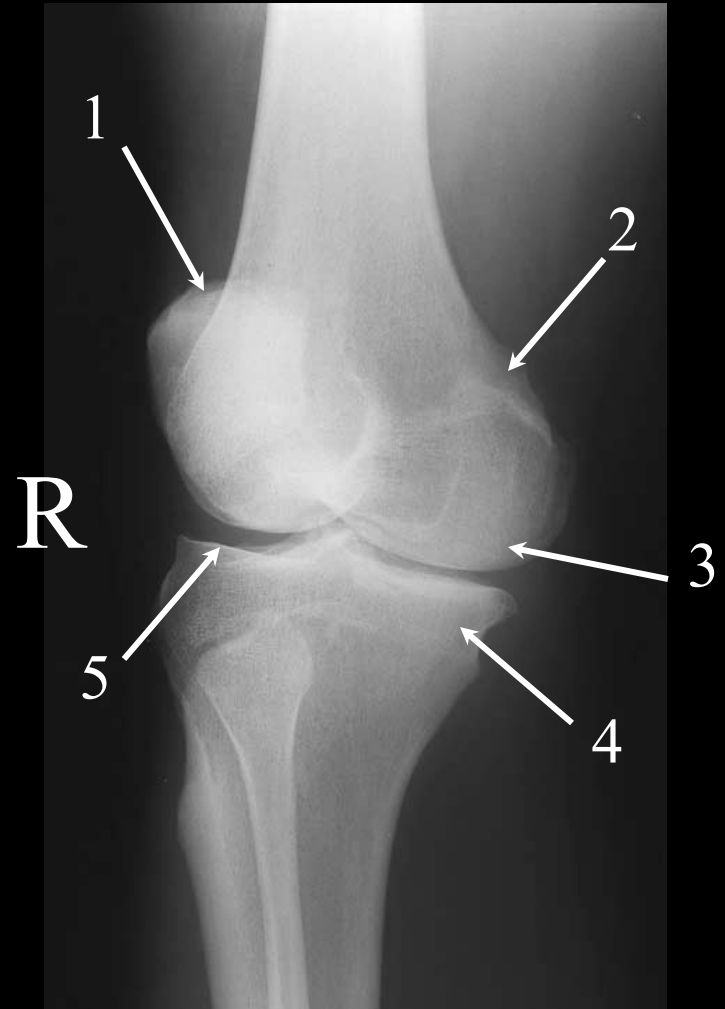


External Oblique Knee:



External Oblique Knee:

1. Base of the Patella
2. Medial Epicondyle of the Femur
3. Medial Condyle of the Femur
4. Medial Condyle of the Tibia
5. Lateral Tibial Plateau



Lateral Knee: (Poorly Positioned)

The arrows are pointing to the medial and lateral condyles of the femur. They should be perfectly superimposed on a true lateral of the knee.



Lateral Knee: (Properly Positioned)



Lateral Knee: (Properly Positioned)

1. Tibial Tuberosity
2. Apex of the Patella
3. Base of the Patella
4. Shaft of the Femur
5. Superimposed Condyles of the Femur
6. Fabella (sesamoid bone)
7. Intercondylar Eminence

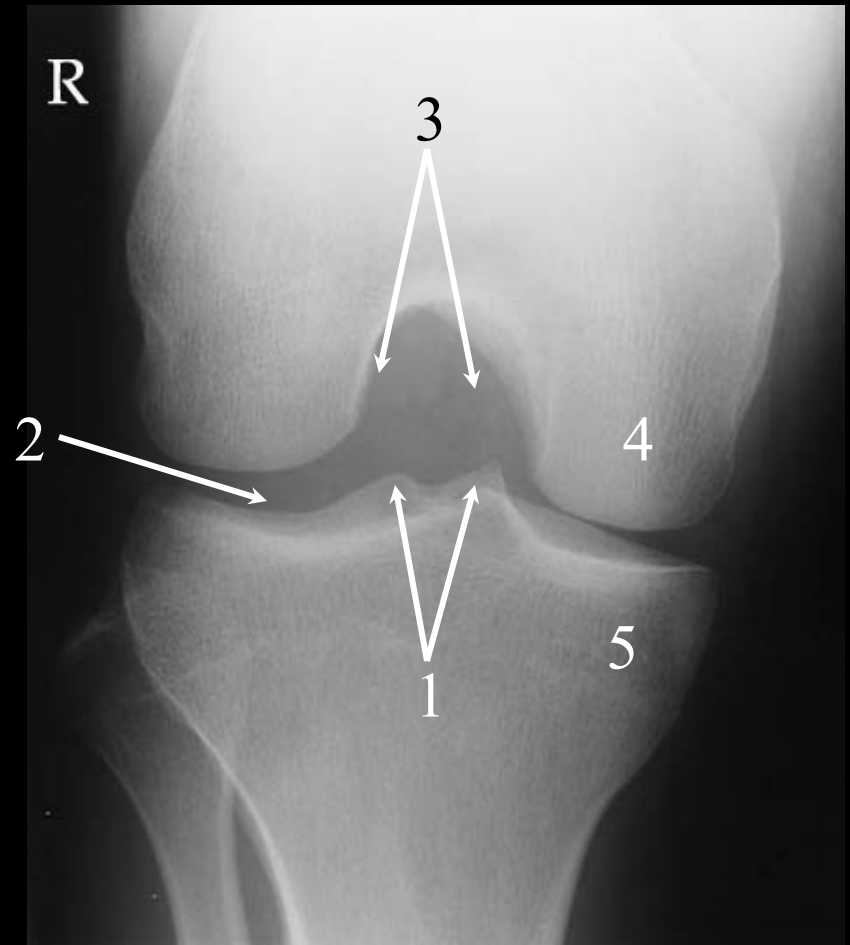


Intercondyloid Fossa or Tunnel Knee:



Intercondyloid Fossa or Tunnel Knee:

1. Intercondylar Eminence
2. Tibial Plateau
3. Intercondylar Fossa
4. Medial Condyle of the Femur
5. Medial Condyle of the Tibia



PA Patella:



PA Patella:

1. Base of the Patella
2. Apex of the Patella

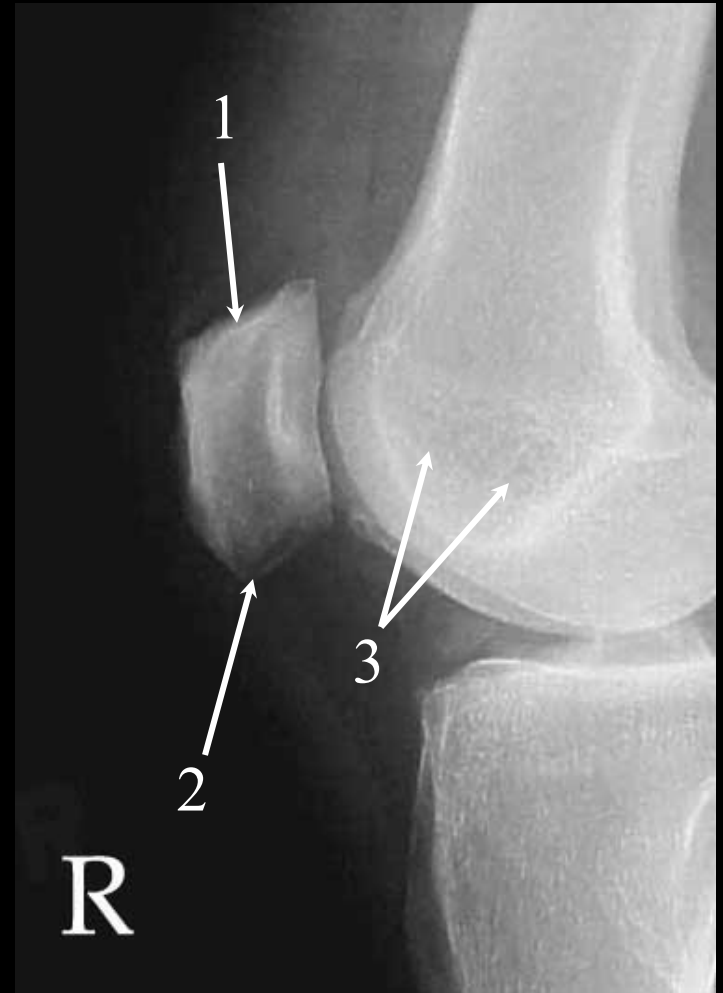


Lateral Patella:



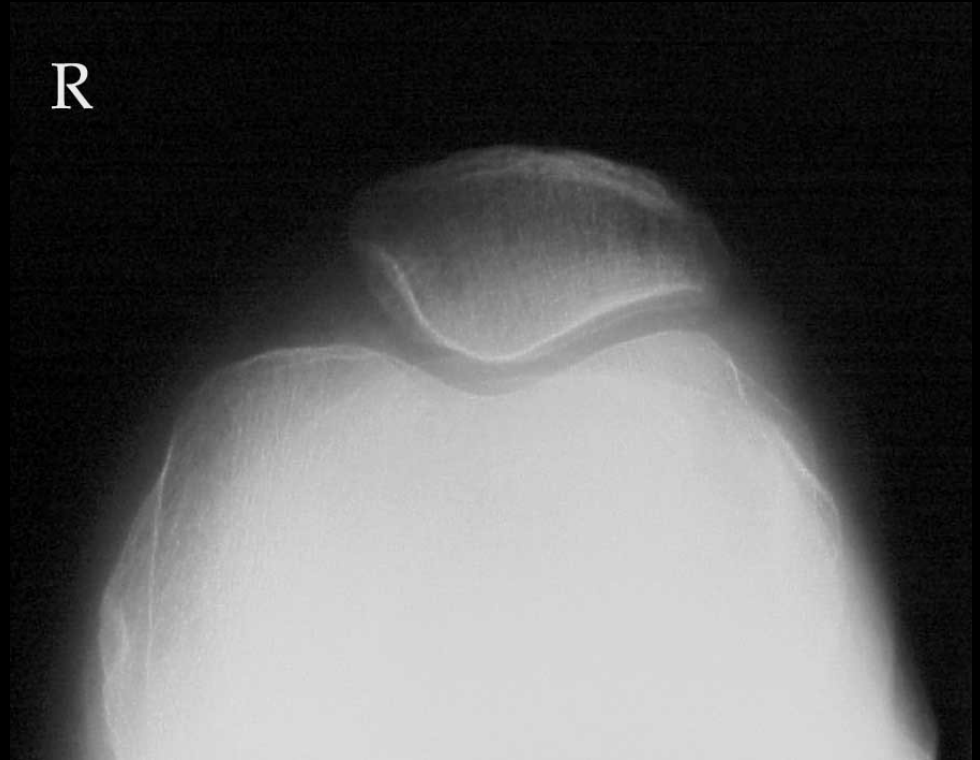
Lateral Patella:

1. Base of the Patella
2. Apex of the Patella
3. Ludloff's Spot



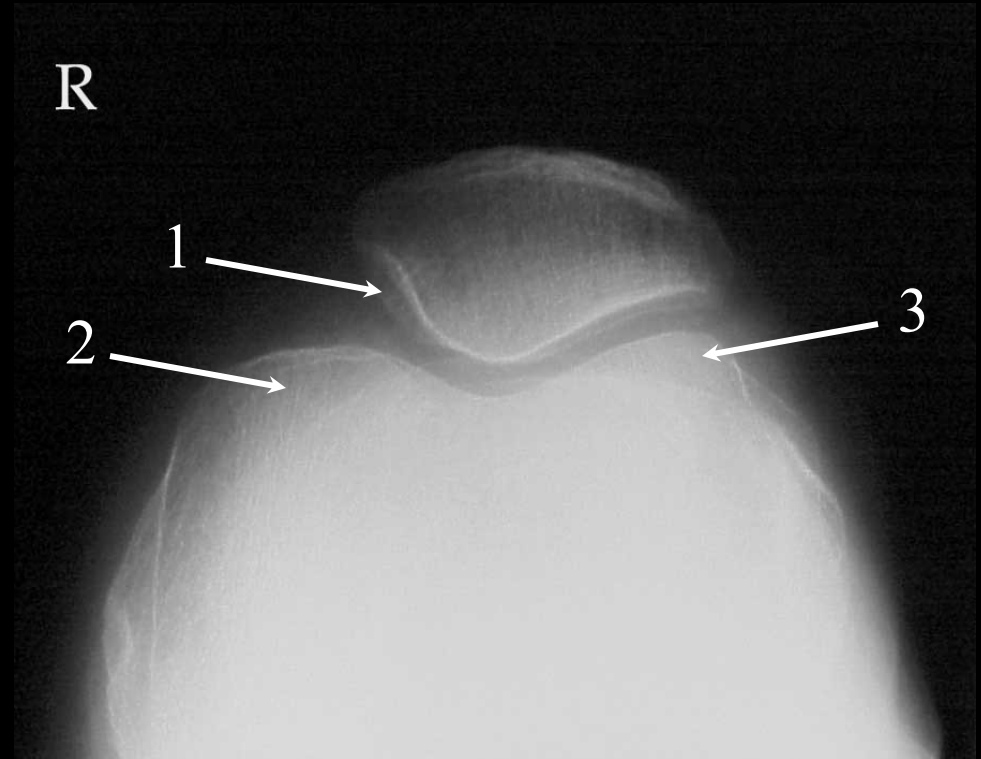
Tangential Patella:

R



Tangential Patella:

1. Medial Articulation Facet
2. Medial Condyle of the Femur
3. Lateral Condyle of the Femur



C & T Spine

Cervical Spine

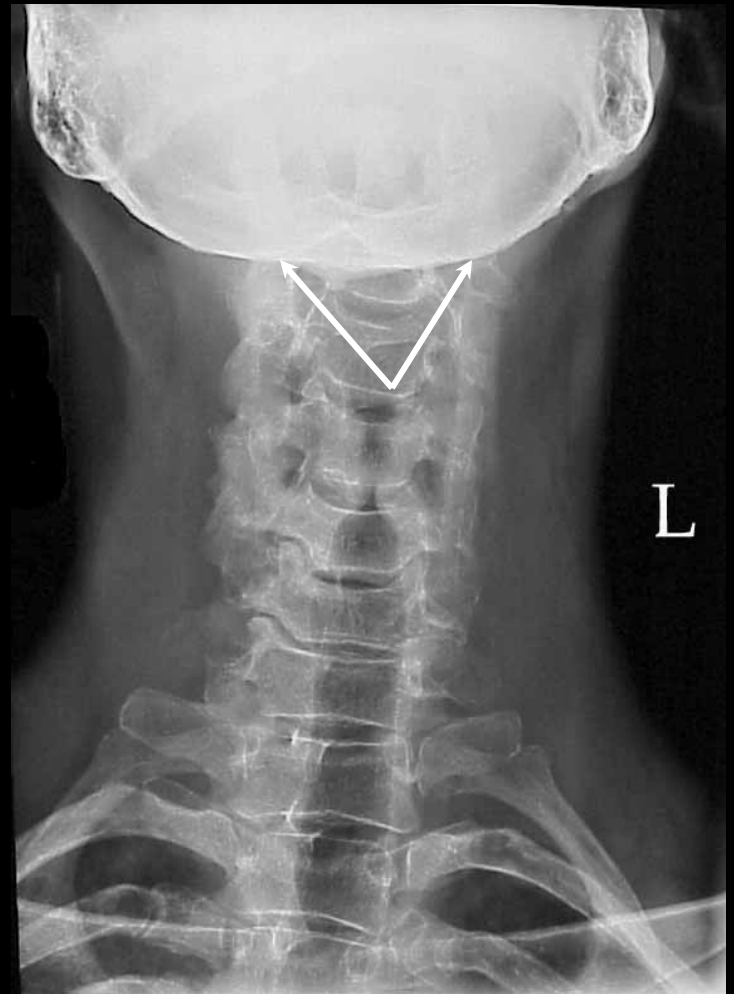
- 1. AP**
- 2. Open Mouth or Odontoid**
- 3. Oblique**
- 4. Lateral**
- 5. Fuch Method**
- 6. Flexion & Extension**

Thoracic Spine

- 1. AP**
- 2. Lateral**
- 3. Cervicothoracic**

Cervical Spine: AP

It is imperative on an AP projection of the cervical spine that the chin be raised to a point where the inferior border of the mandible and the base of the skull are aligned. On this particular radiograph, however, the chin was raised to a point where the occipital bone (arrows) became superimposed over the anatomy of interest.

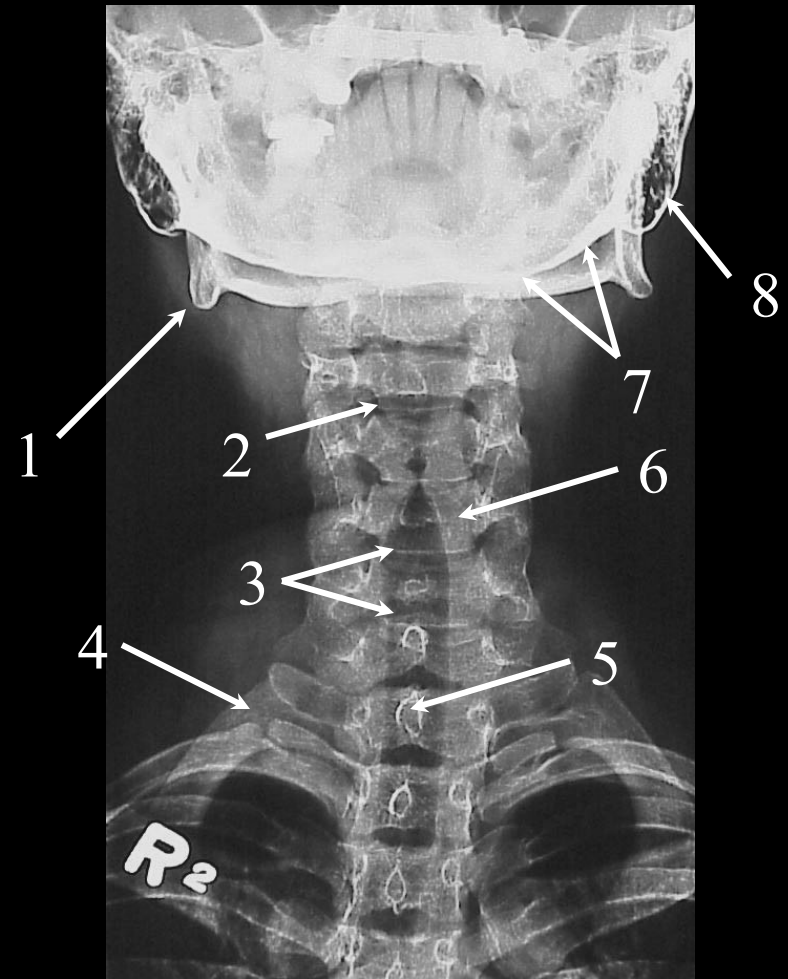


Cervical Spine: AP Properly Positioned



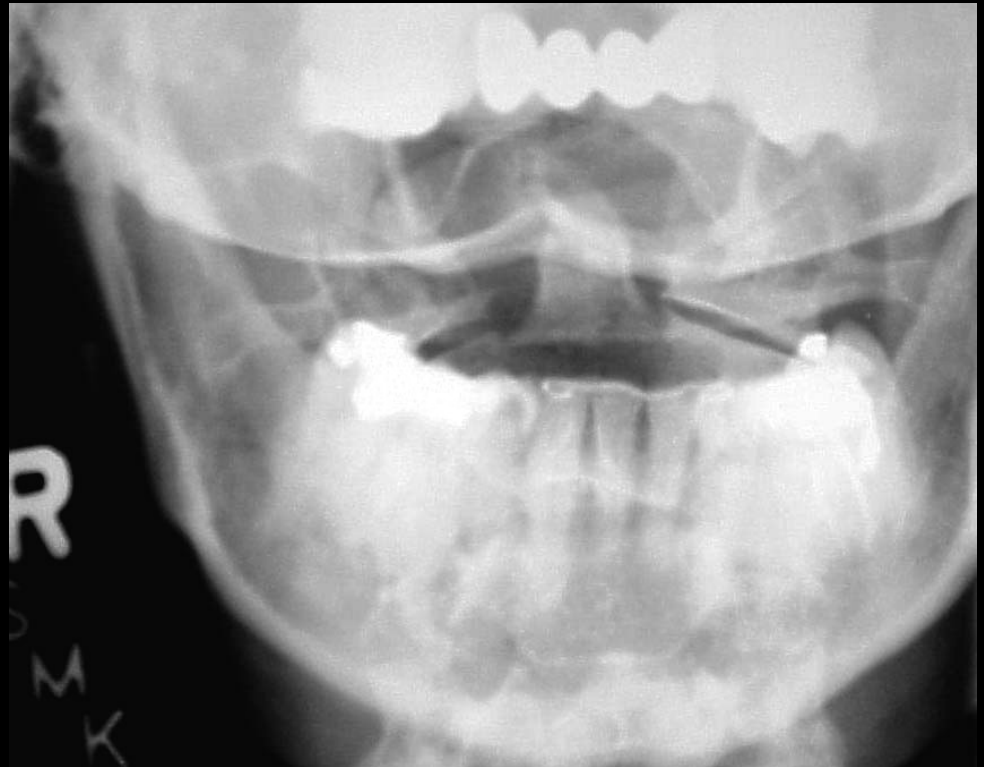
Cervical Spine: AP Properly Positioned

1. Angle of the Mandible
2. Intervertebral Disc of C3-C4
3. Air in the Trachea
4. 1st Rib
5. Spinous Process of T1
6. Body of C5
7. Occipital Bone
8. Mastoid Tip



Cervical Spine: AP “Open Mouth”

This is a poorly positioned “Open Mouth” position of the odontoid. The arrows are pointing to the occipital bone which is overlying the tip of the odontoid. The patient must tuck their chin in order to achieve the proper position.



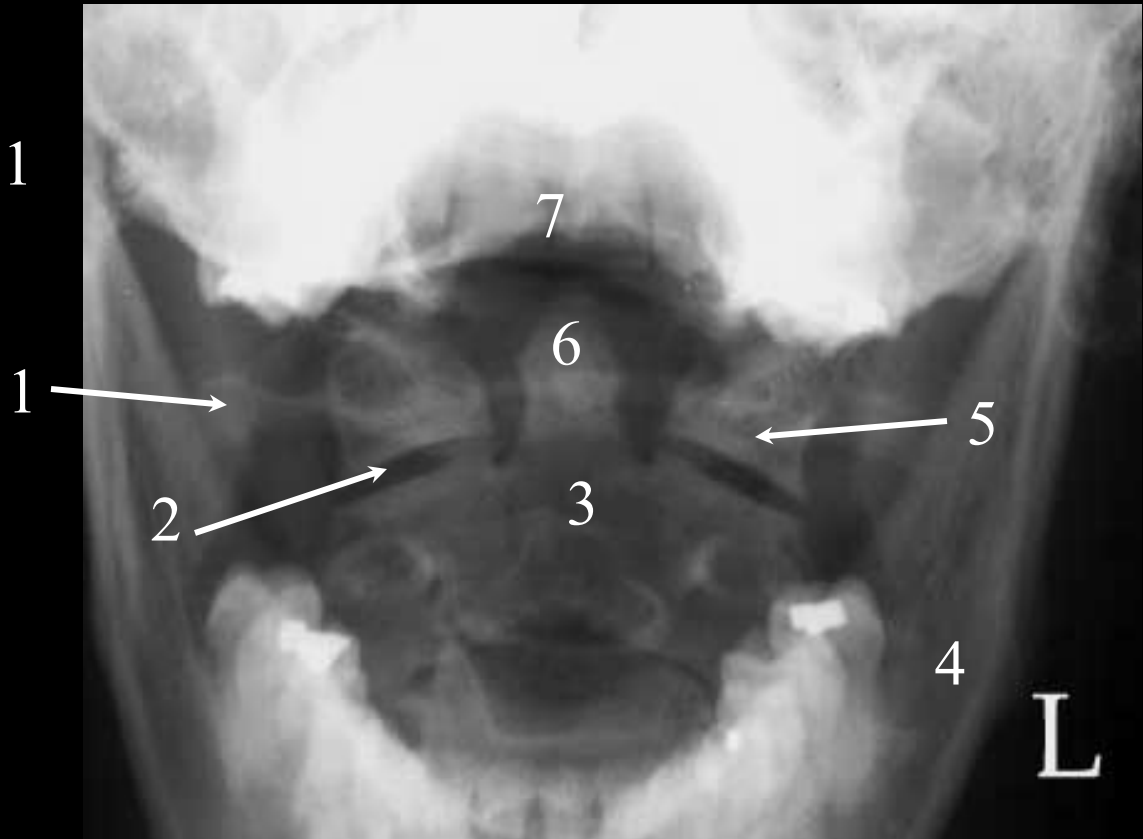
Cervical Spine: AP “Open Mouth”



Cervical Spine: AP “Open Mouth”

Properly Positioned

1. Transverse Process of C1
2. Zygapophyseal Joint of C1-C2
3. Body of C2
4. Body of the Mandible
5. Lateral Mass of C1
6. Odontoid or Dens
7. Upper Incisors



Cervical Spine: LPO

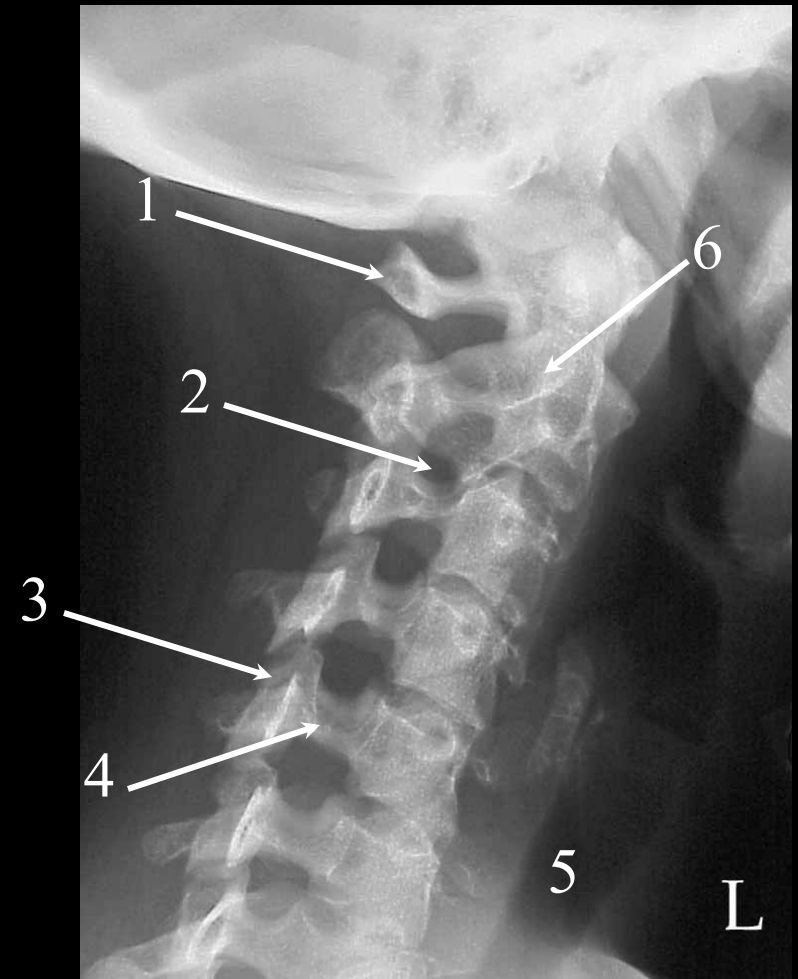


Cervical Spine: LPO Magnified



Cervical Spine: LPO Magnified

1. Posterior Arch of C1
2. Intervertebral Foramen of C2-C3
3. Superior Articulating Process of C5
4. Pedicle of C5
5. Trachea
6. Body of the Dens

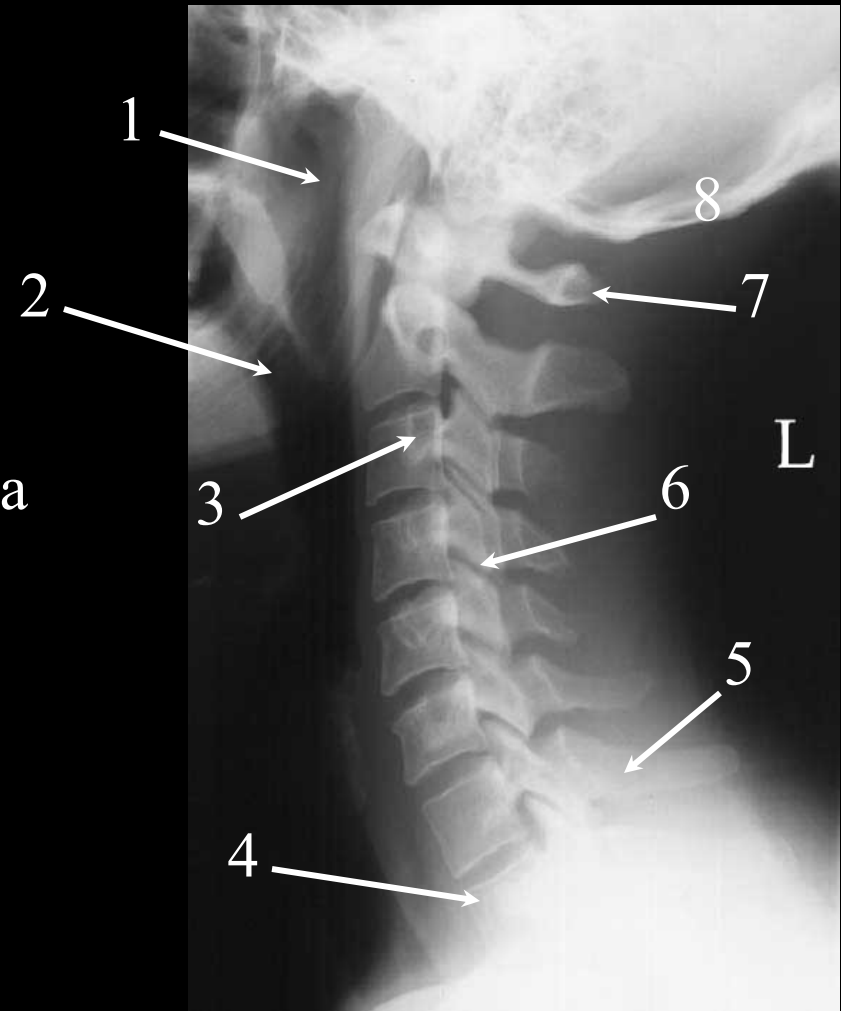


Cervical Spine: Lateral



Cervical Spine: Lateral

1. Nasopharynx
2. Oropharynx
3. Transverse Process of C3
4. Body of T1
5. Spinous Process of C7 (vertebra prominens)
6. Zygapophyseal Joint of C4-C5
7. Posterior Arch of C1
8. Occipital Bone



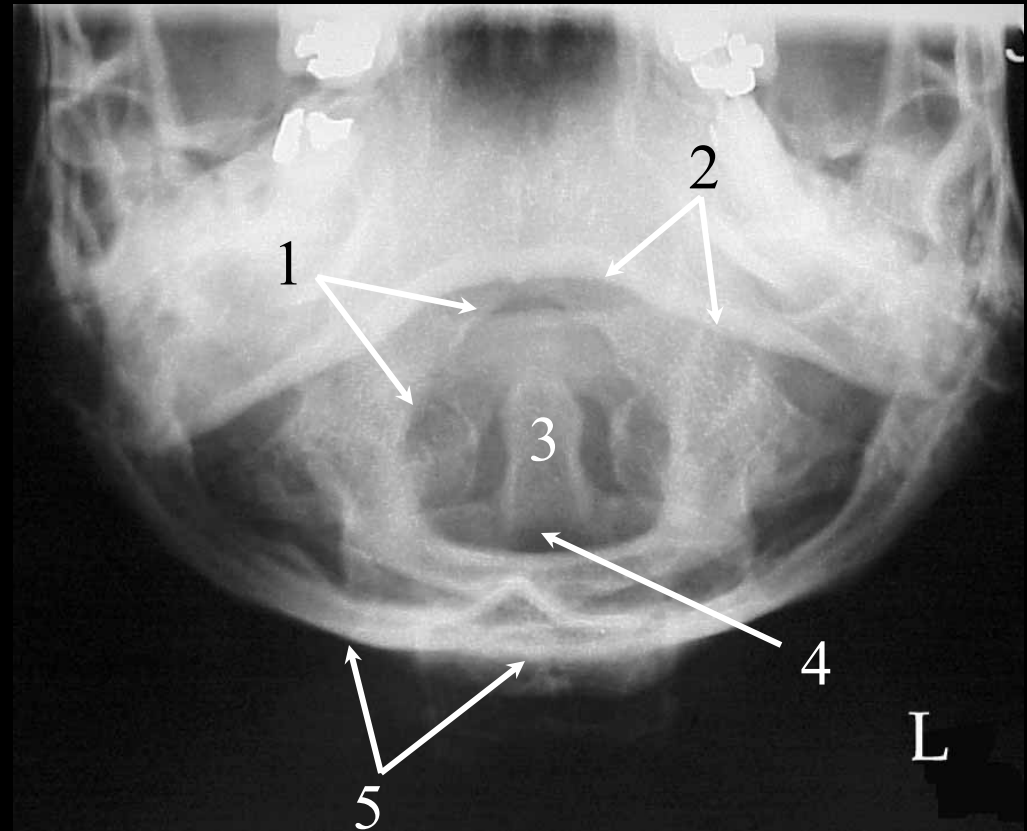
Cervical Spine: Fuch (Judd) Method

This is an optional position to be done if the dens cannot be visualized on the open mouth projection.



Cervical Spine: Fuch (Judd) Method

1. Foramen Magnum
2. Mandible
3. Odontoid or Dens
4. Body of C2
5. Occipital Bone



Cervical Spine: Flexion & Extension



This is an optional position that is usually ordered to rule out whiplash injuries. It is a functional study used to demonstrate the patient's range of motion.

Thoracic Spine: AP

It is difficult to acquire the proper density on this position because the heart overlies the distal portion of the T-spine. A wedge filter or a saline bag placed over the upper T-spine is very helpful in compensating for this difference in tissue thickness. Some radiographers prefer to shoot an extra film of just the upper T-spine with a lower technique as demonstrated on the next slide.

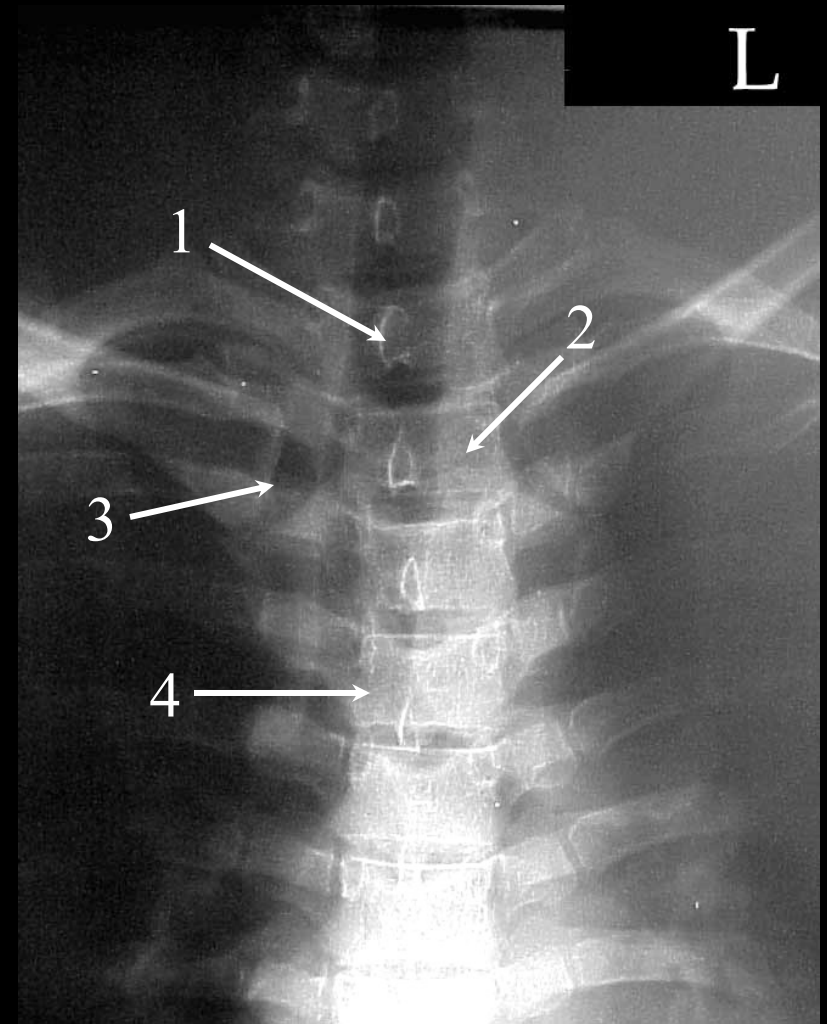


Thoracic Spine: AP Magnified



Thoracic Spine: AP Magnified

1. Spinous Process of T1
2. Body of T2
3. Right Sternoclavicular (SC) Joint
4. Carina of the Trachea



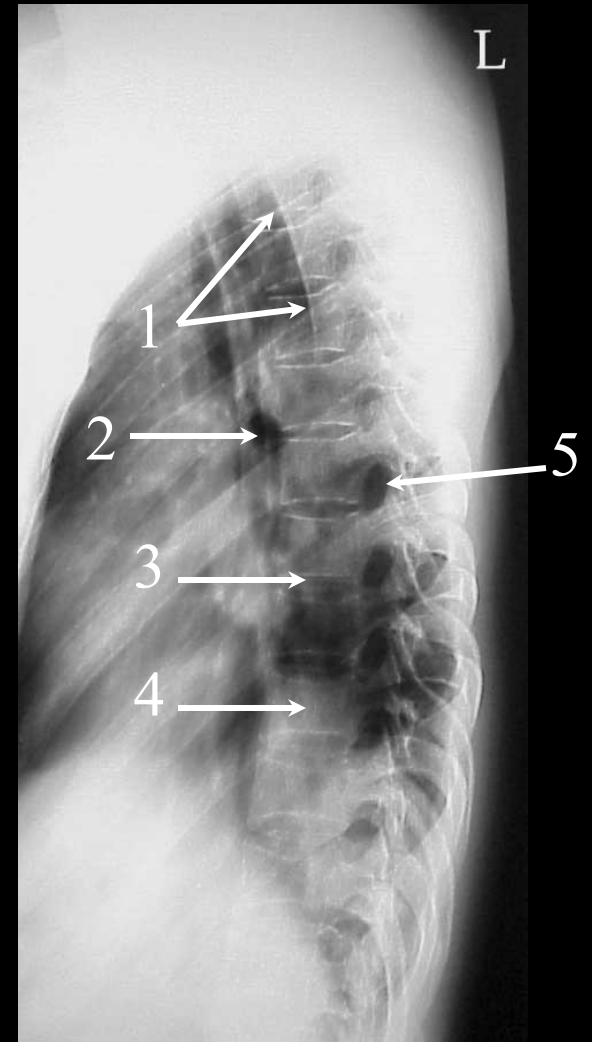
Thoracic Spine: Lateral

This position requires a low mA and a 3 to 4 second exposure to properly blur out the ribs and lung markings. Additionally, the shoulders prevent the visualization of the upper 2 to 3 thoracic vertebra



Thoracic Spine: Lateral

1. Scapula
2. Primary Bronchus
3. Intervertebral Disc
4. Body of Thoracic Vertebra
(with some compression from osteoporosis)
5. Intervertebral Foramen



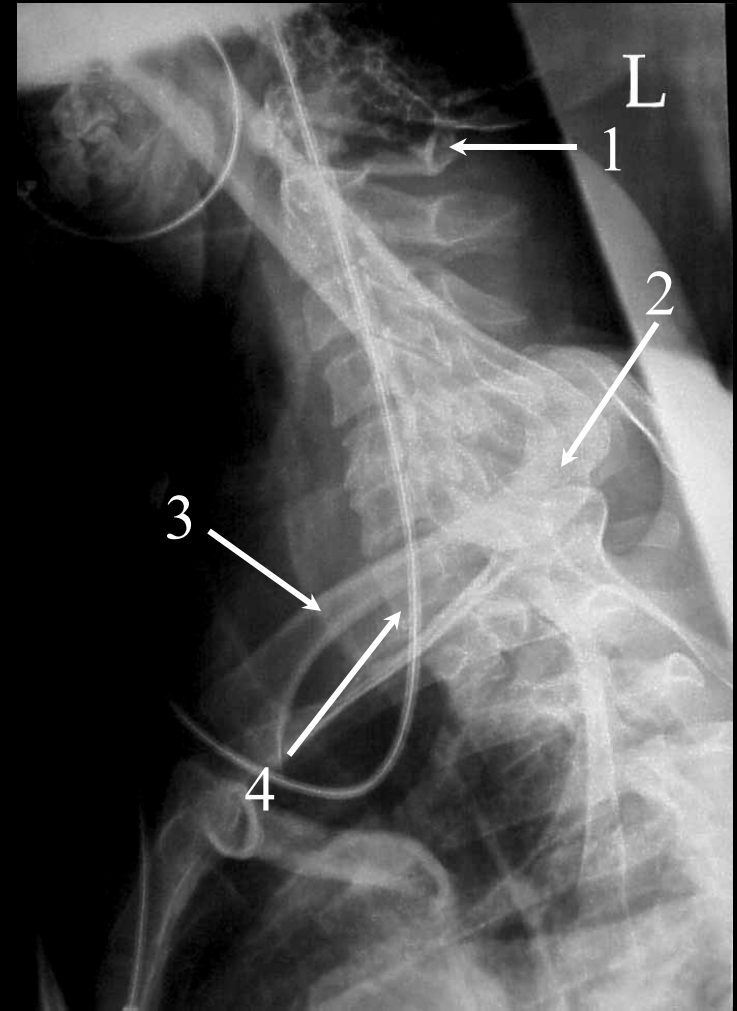
Thoracic Spine: Cervicothoracic

This position is primarily done to best demonstrate the cervicothoracic region of the spine. It may be performed as part of a C-spine series to demonstrate the C7-T1 joint space or to visualize the upper three to four thoracic vertebra that are not visualized on a lateral T-spine.



Thoracic Spine: Cervicothoracic

1. Posterior Arch of C1
2. Head of the Left Humerus
3. Left Clavicle
4. Body of C7



L-Spine & Sacrum

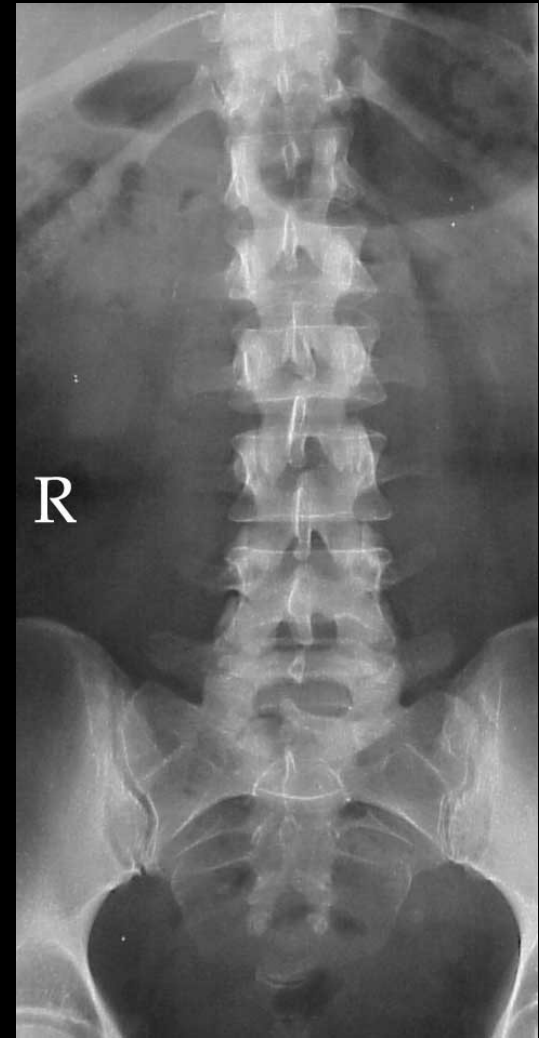
Lumbar Spine

- 1. AP**
- 2. Oblique**
- 3. Lateral**
- 4. Lateral L5/S1 Spot**

Sacrum & Coccyx

- 1. AP Sacrum**
- 2. AP Coccyx**
- 3. Lateral Sacrum & Coccyx**

Lumbar Spine: AP

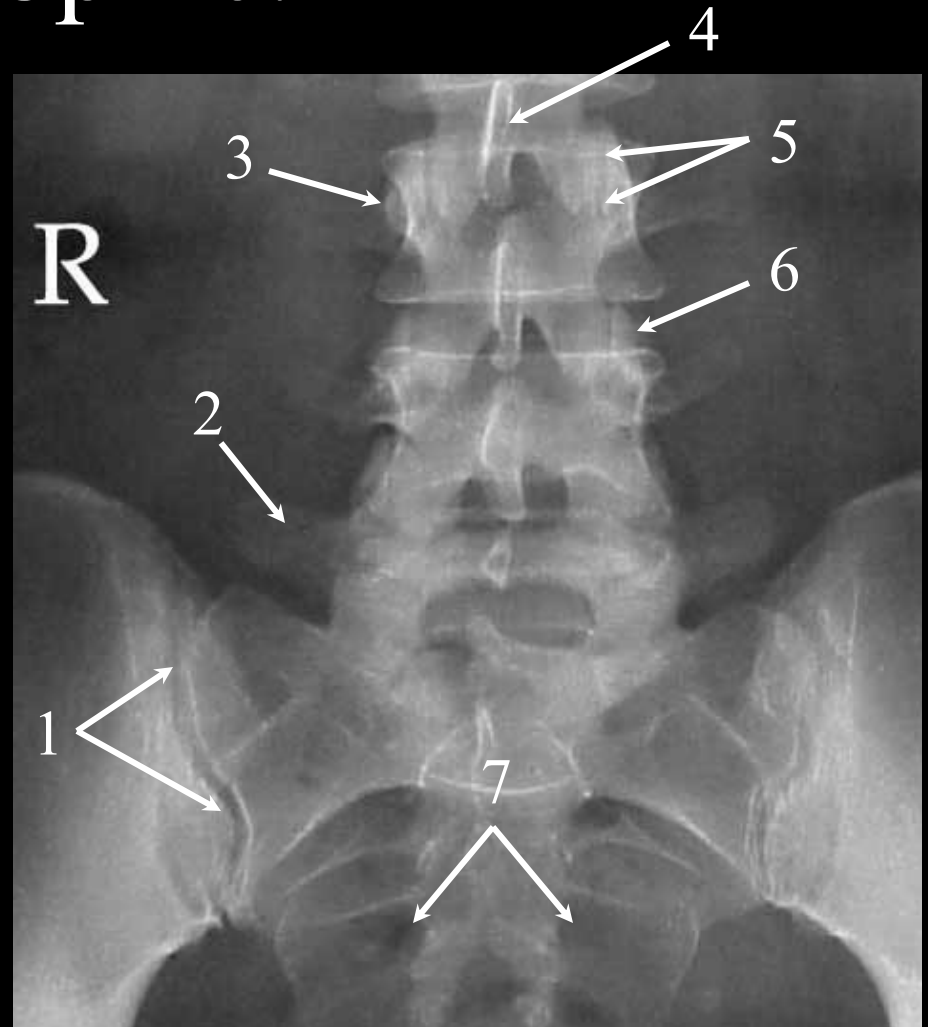


Lumbar Spine: AP Magnified



Lumbar Spine: AP

1. Sacroiliac (SI) Joint
2. Transverse Process of L5
3. Pedicle of L3
4. Spinous Process of L2
5. Zygapophyseal Joint of L2-L3 (vertical black line)
6. Superior Articular Process of L4
7. Anterior Sacral Foramen



Lumbar Spine: LPO

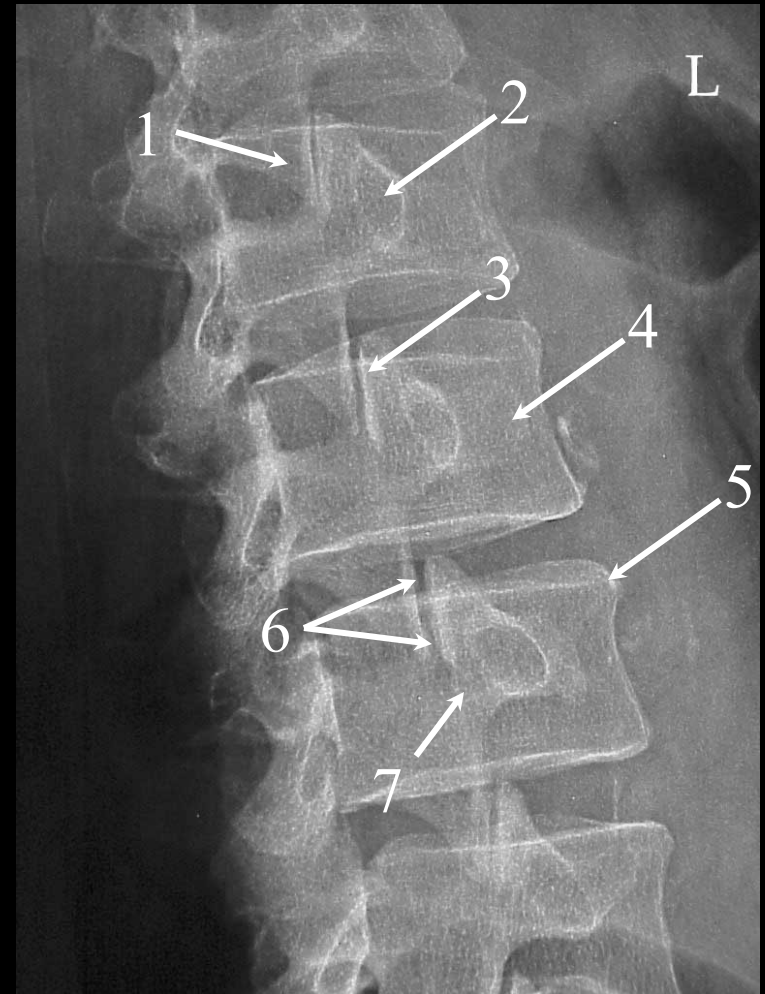


Lumbar Spine: LPO Magnified



Lumbar Spine: LPO Magnified

1. Inferior Articulating Process
2. Pedicle
3. Superior Articulating Process
4. Transverse Process
5. Body
6. Zygapophyseal Joint (vertical black line)
7. Pars Interarticularis

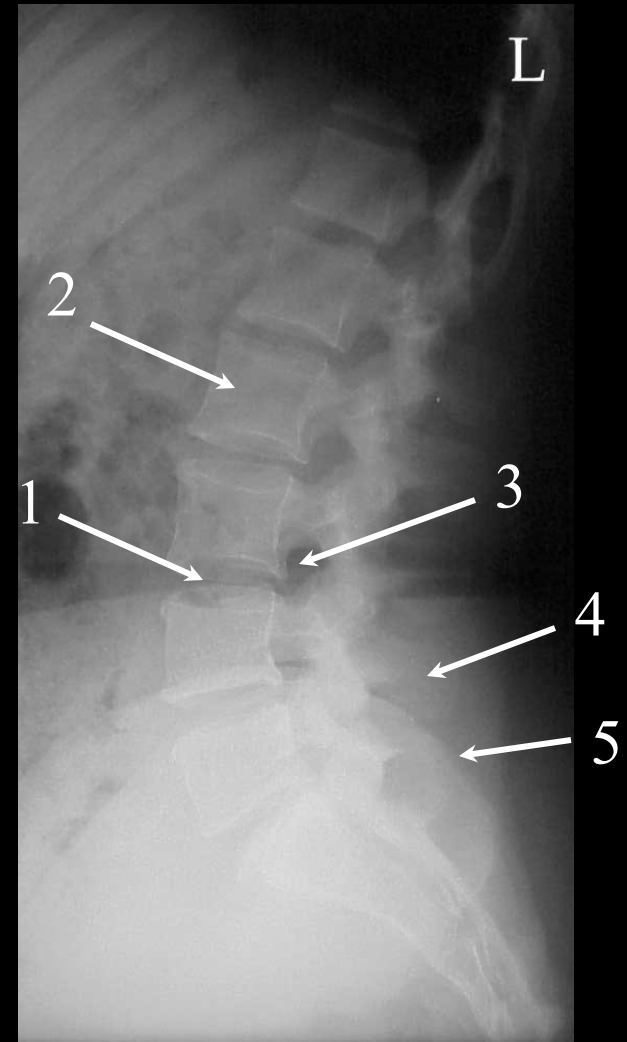


Lumbar Spine: Lateral

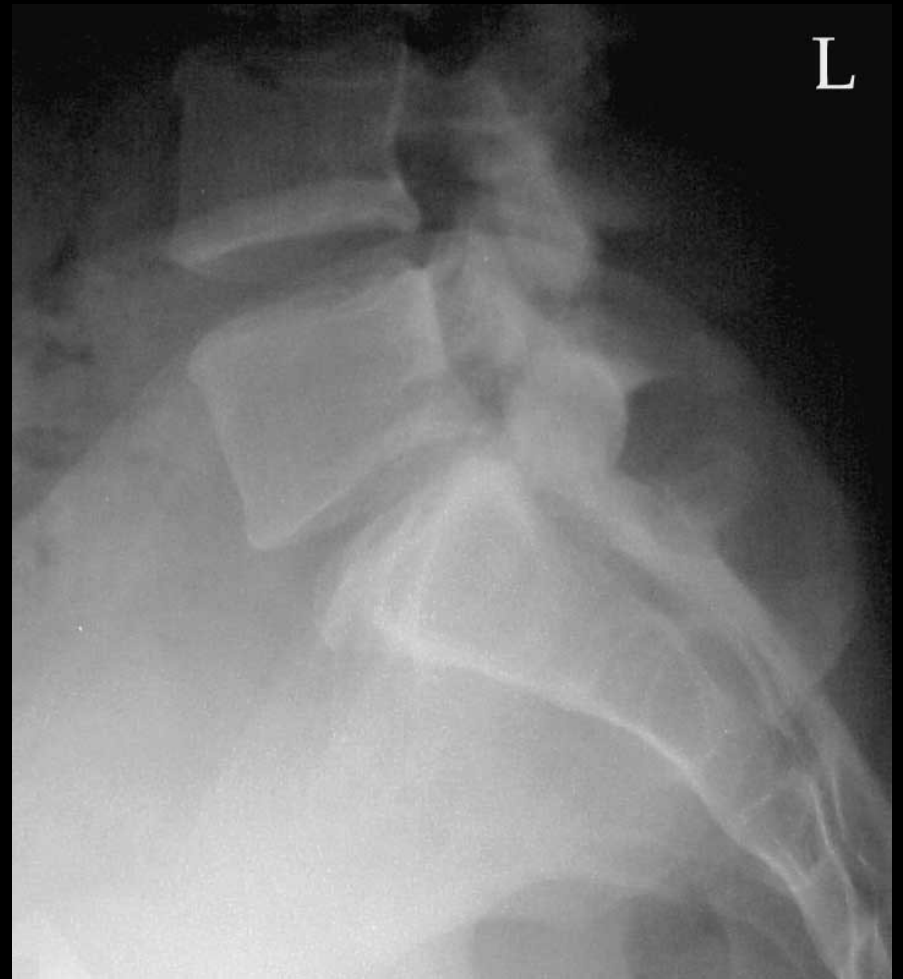


Lumbar Spine: Lateral

1. Intervertebral Disc Space of L3-L4
2. Body of L2
3. Intervertebral Foramen of L3-L4
4. Spinous Process of L4
5. Iliac Crest

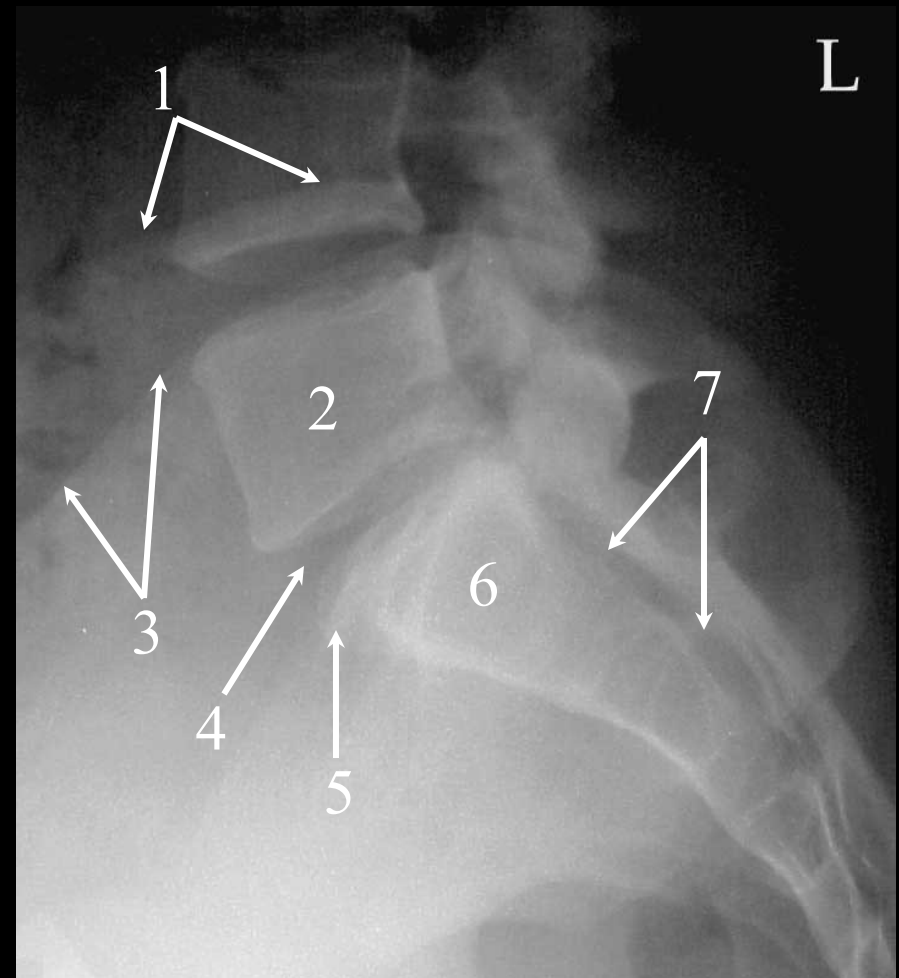


Lumbar Spine: Lateral L5/S1 Spot



Lumbar Spine: Lateral L5/S1 Spot

1. Top of the Right Iliac Crest (magnified due to OID)
2. Body of L5
3. Top of the Left Iliac Crest
4. L5-S1 Joint Space
5. Sacral Promontory
6. 1st Sacral Segment
7. Sacral Canal

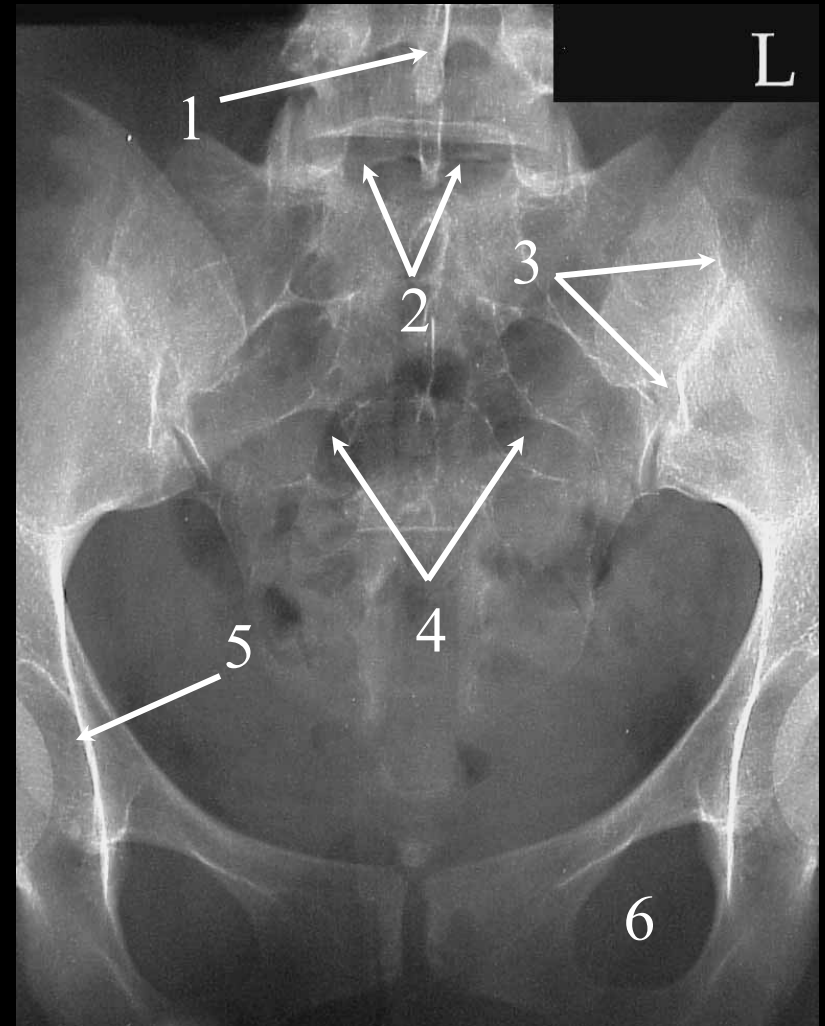


AP Sacrum

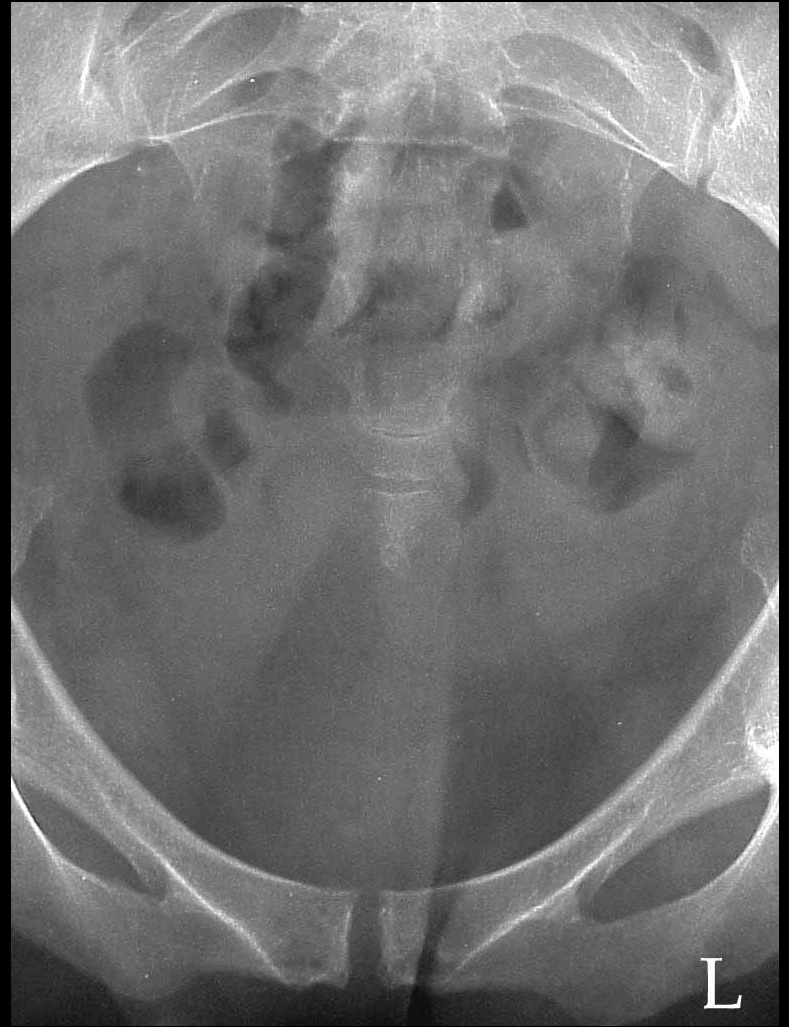


AP Sacrum

1. Spinous Process of L5
2. L5-S1 Joint Space
3. Sacroiliac (SI) Joint
4. Anterior Sacral Foramen
5. Acetabulum
6. Obturator Foramen

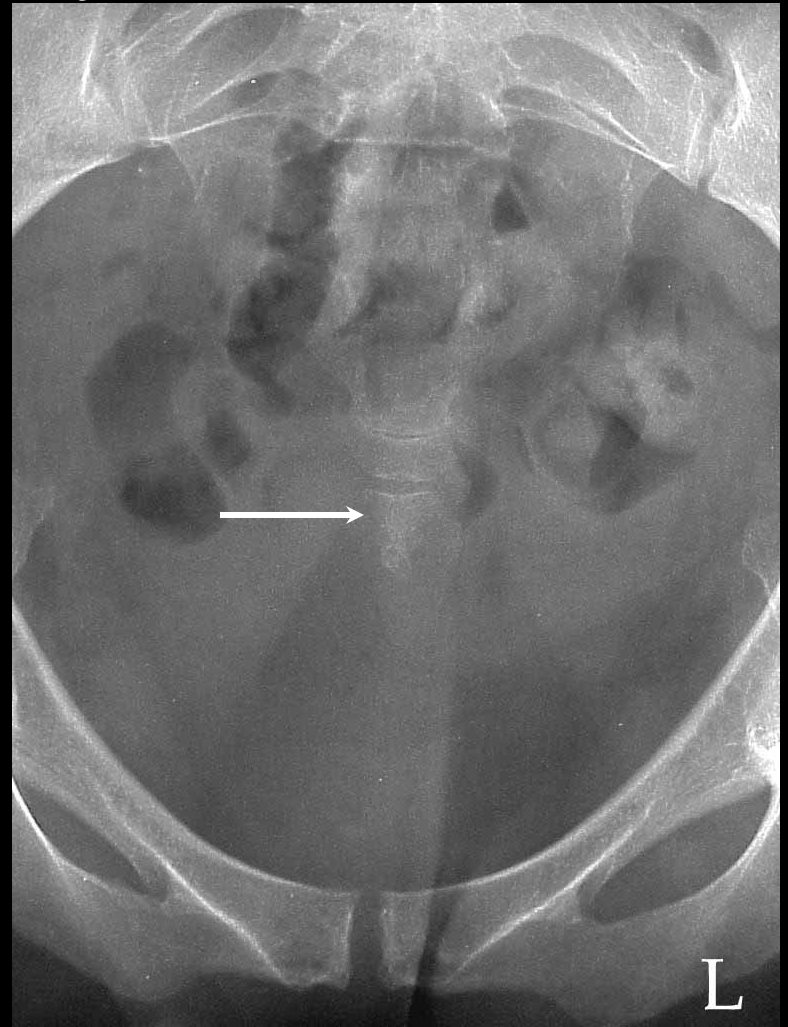


AP Coccyx



AP Coccyx

A 10 degree caudal tube angle will desuperimpose the symphysis pubis and the coccyx as indicated by the arrow. This position will best demonstrate a lateral displacement of the coccyx.

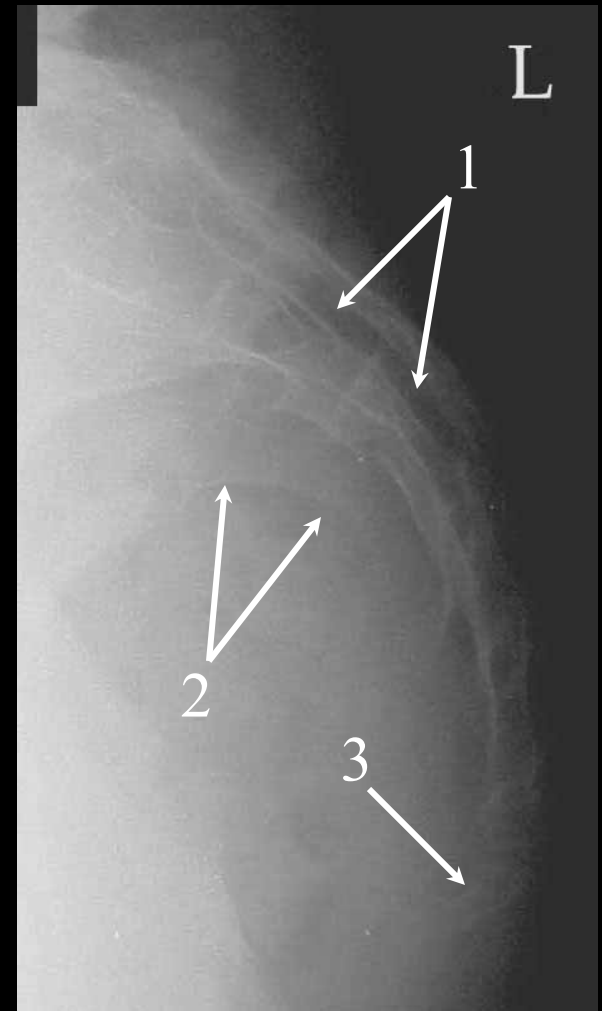


Lateral Sacrum/Coccyx



Lateral Sacrum/Coccyx

1. Sacral Canal
2. Greater Sciatic Notch
3. Coccyx



Sternum & Ribs

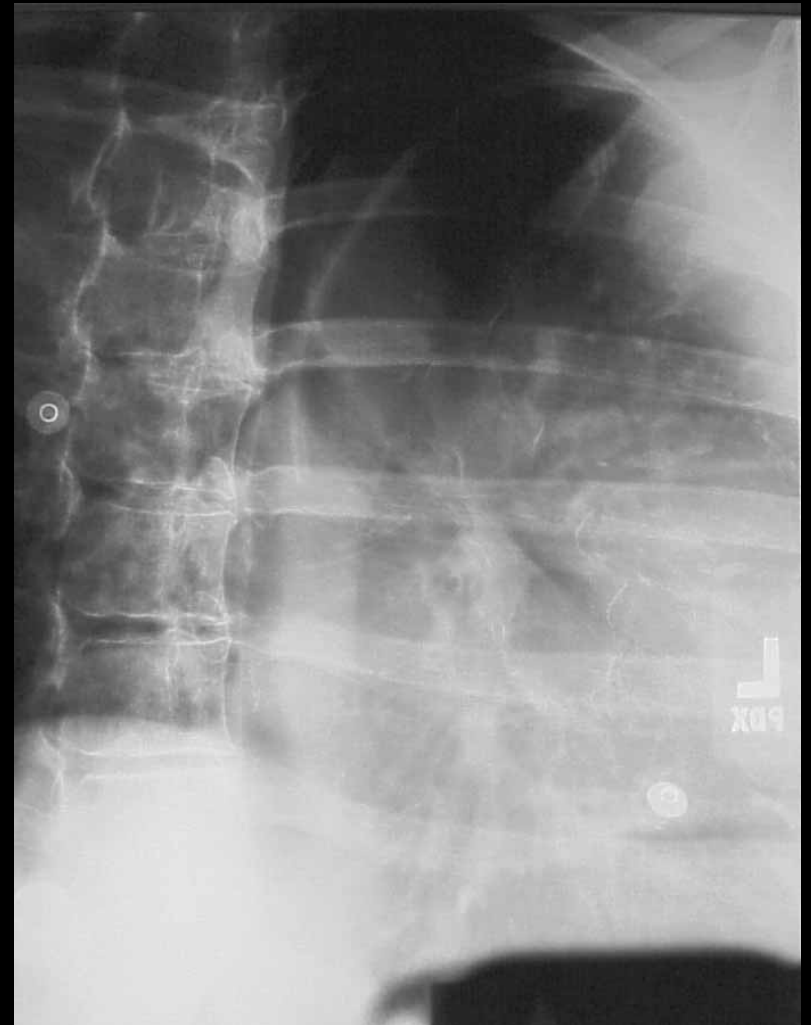
Sternum

- 1. RAO**
- 2. Lateral**

Ribs

- 1. AP Upper**
- 2. AP Lower**
- 3. Oblique Upper**
- 4. Oblique Lower**

RAO Sternum

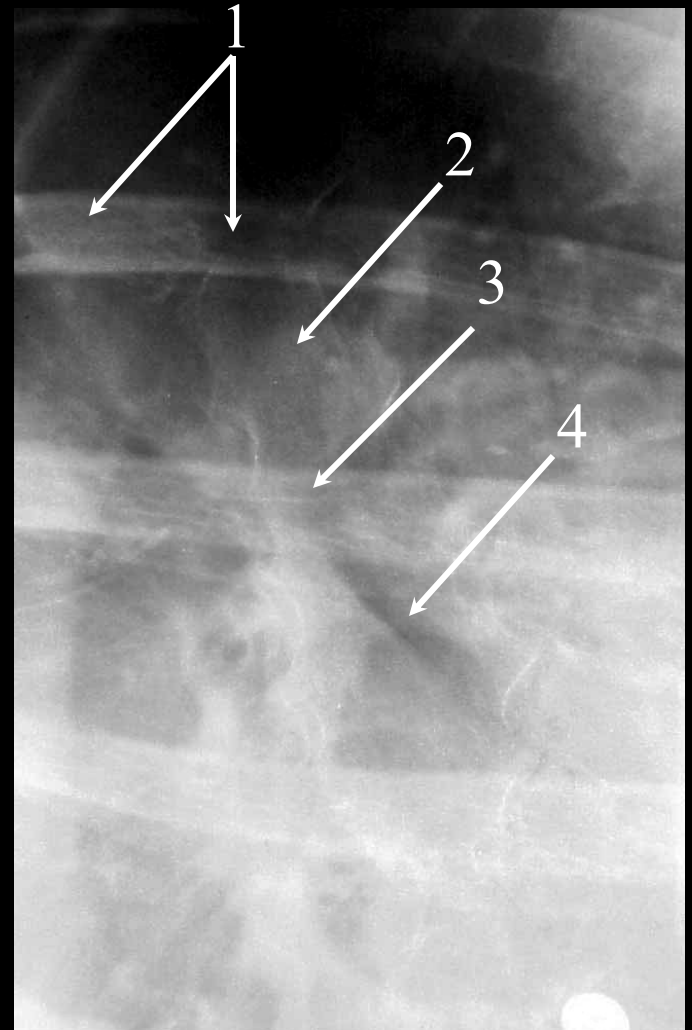


RAO Sternum: Magnified

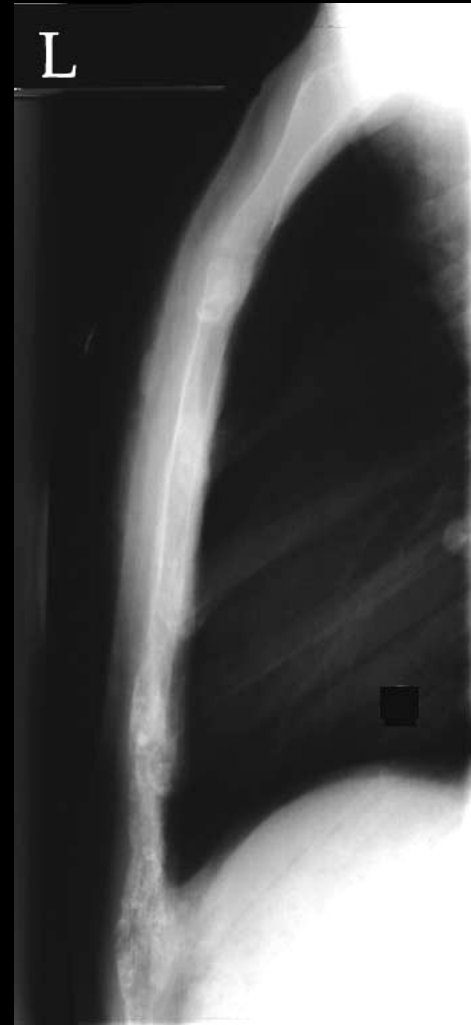


RAO Sternum: Magnified

1. Overlying Posterior Rib
2. Manubrium
3. Sternal Angle
4. Body



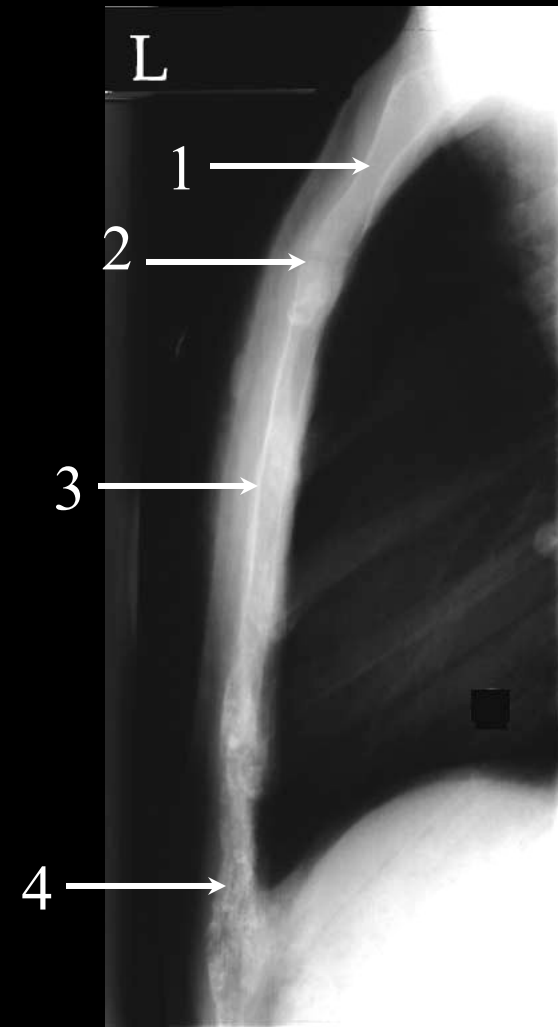
Lateral Sternum



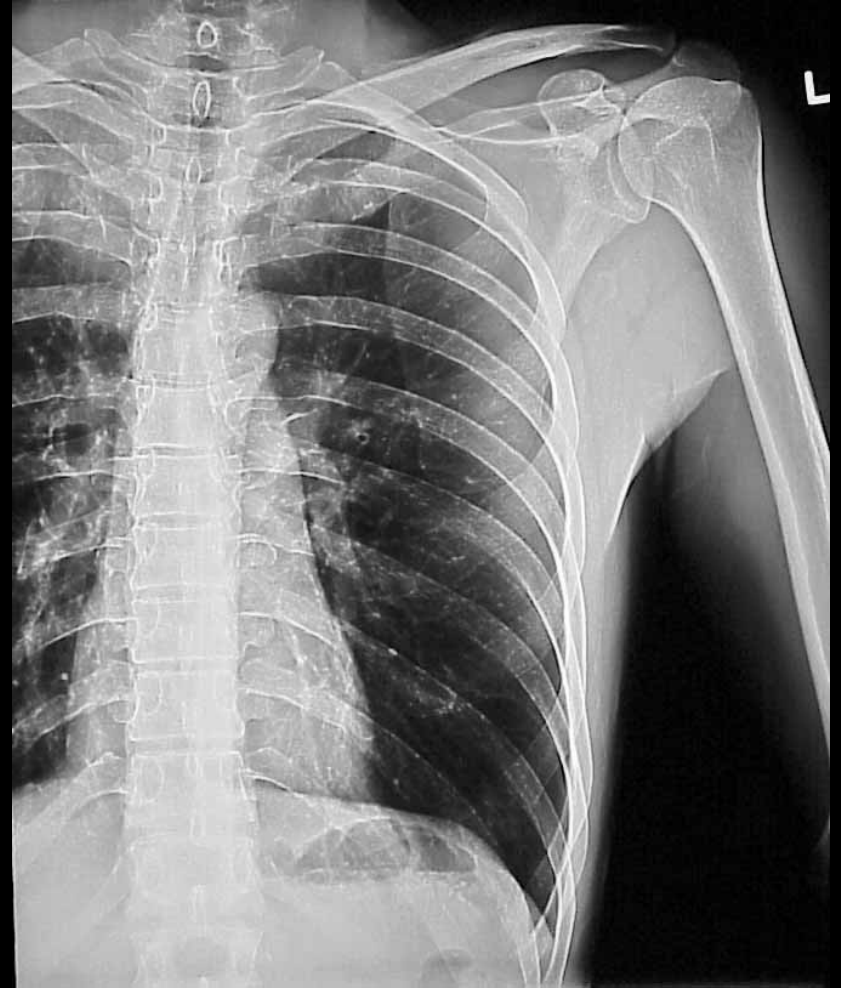
Lateral Sternum

This radiograph is generally considered the most important film used to diagnose a depressed fracture of the sternum.

1. Manubrium
2. Sternal Angle
3. Body
4. Calcified Cartilage



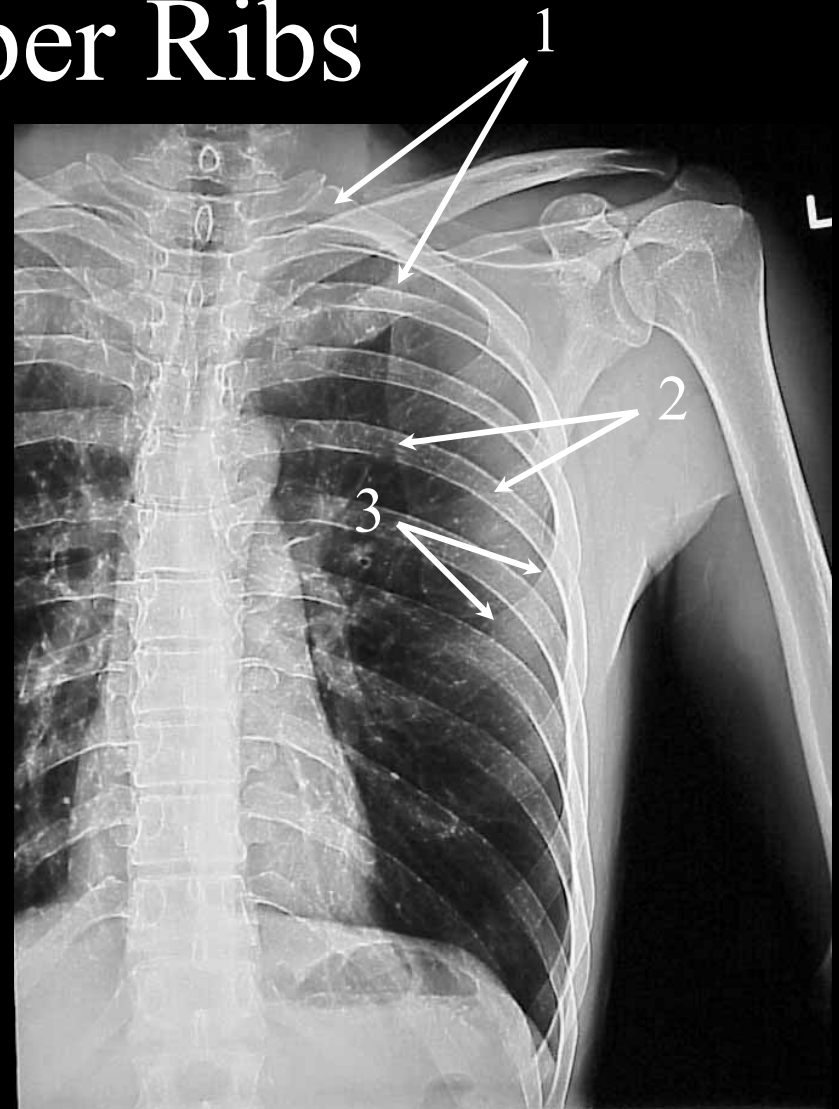
AP Upper Ribs



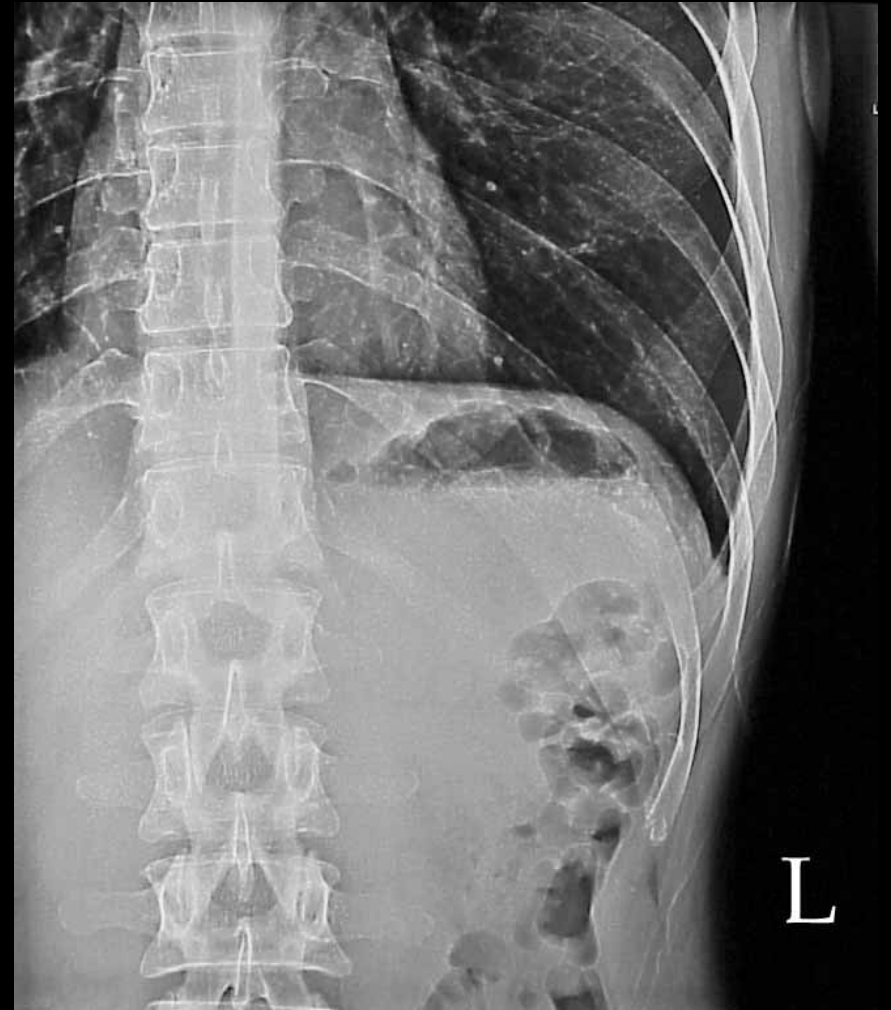
AP Upper Ribs

Above the diaphragm rib technique includes using 65 to 75 kVp and the film must be taken on inspiration.

1. 1st Rib
2. Posterior Aspect of the 5th Rib
3. Axillary Aspect of the 4th Rib



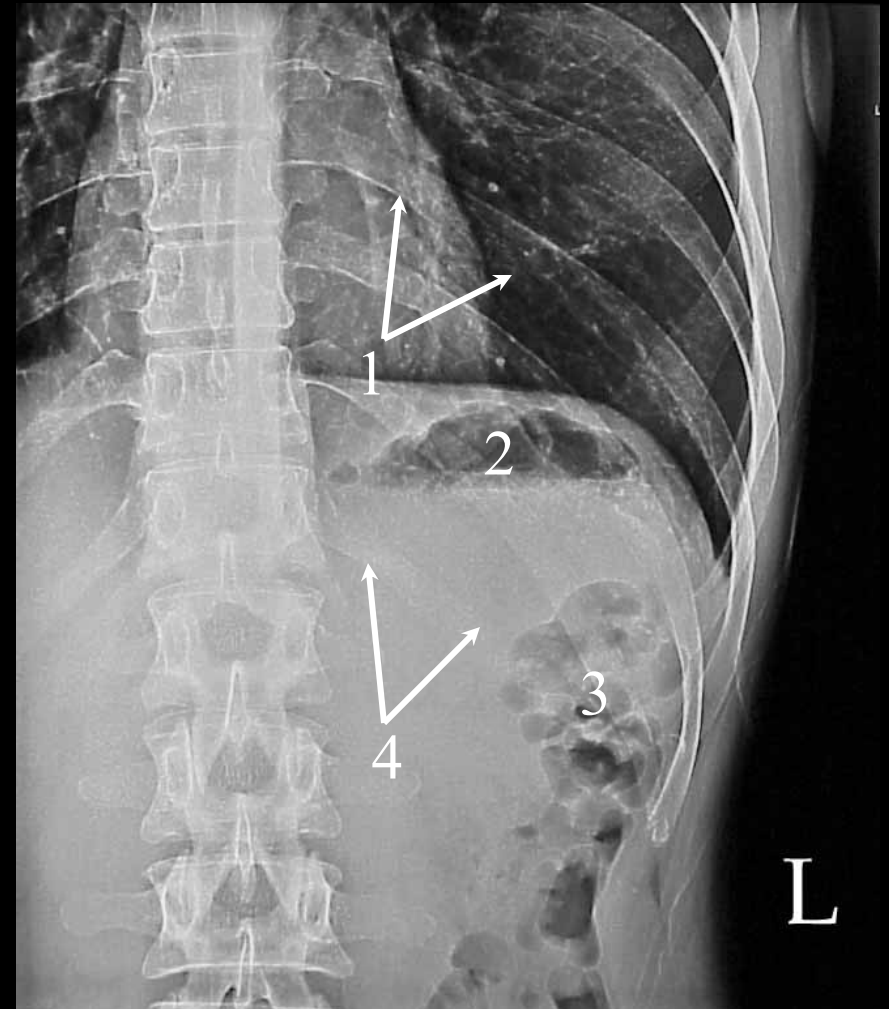
AP Lower Ribs



AP Lower Ribs

Below the diaphragm technique includes using 75 to 85 kVp and the film must be taken on expiration.

1. Posterior Aspect of the 9th Rib
2. Air in the Fundus of the Stomach
3. Air in the Left Colic Flexure
4. 12th Rib (floating)



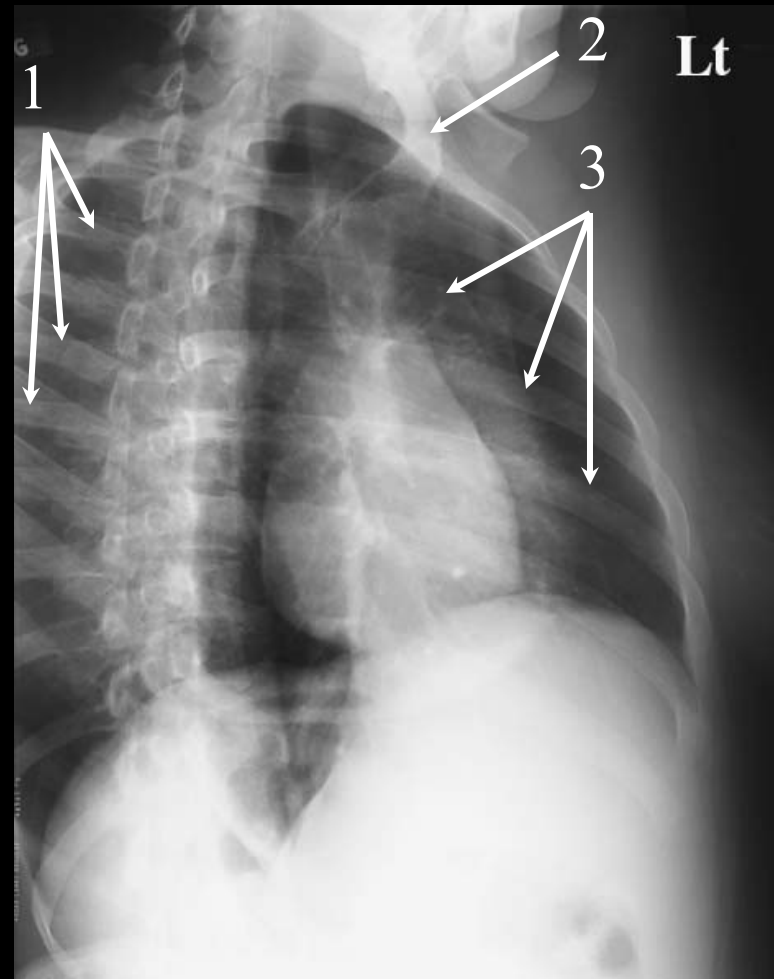
LPO or RAO Upper Ribs



LPO or RAO Upper Ribs

LPO ribs will best demonstrate the axillary or anterior aspect of the left ribs and the posterior aspect of the right ribs.

1. Posterior Aspect of the Right Ribs
2. Left Clavicle
3. Axillary or Anterior Aspect of the Left Ribs

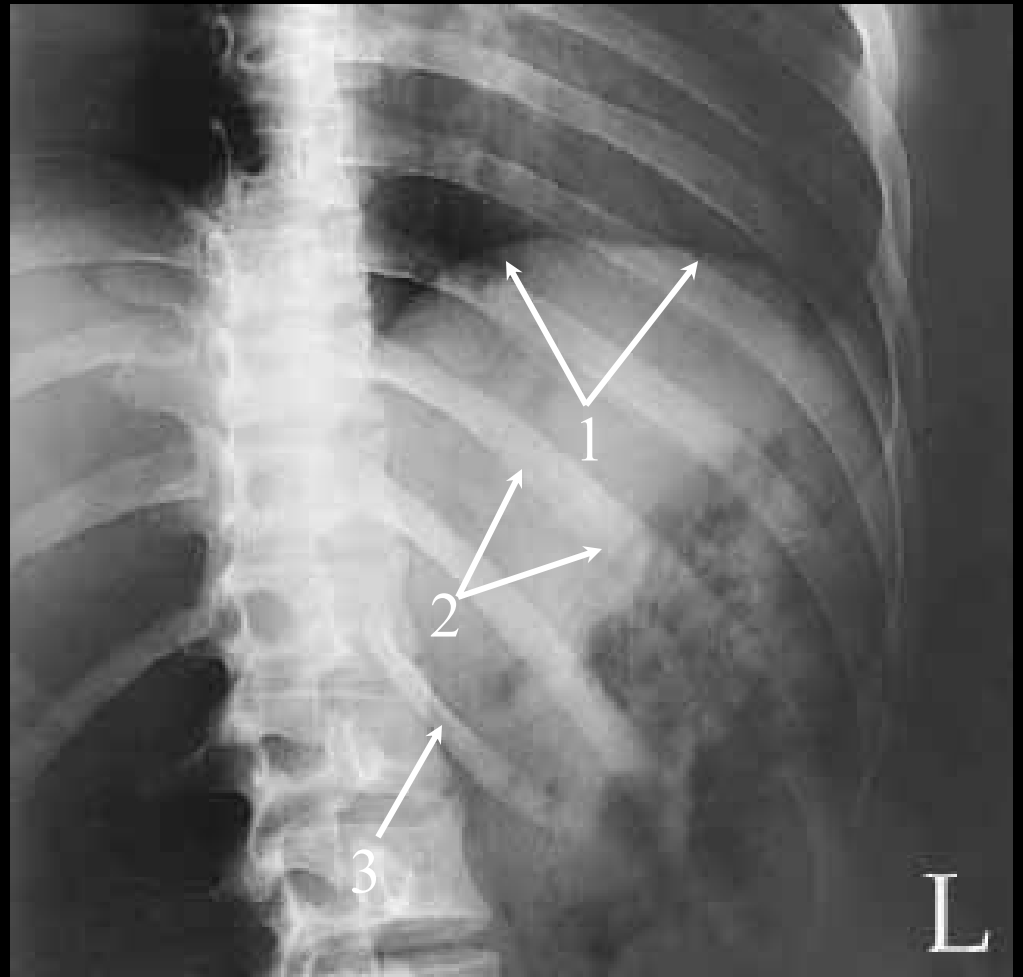


LPO or RAO Lower Ribs



LPO or RAO Lower Ribs

1. Left Diaphragm
2. 10th Rib
3. 12th Rib (floating)



Skull & Mandible

Routine Skull

- 1. PA**
- 2. PA Caldwell**
- 3. Towne's**
- 4. Lateral**

Mandible

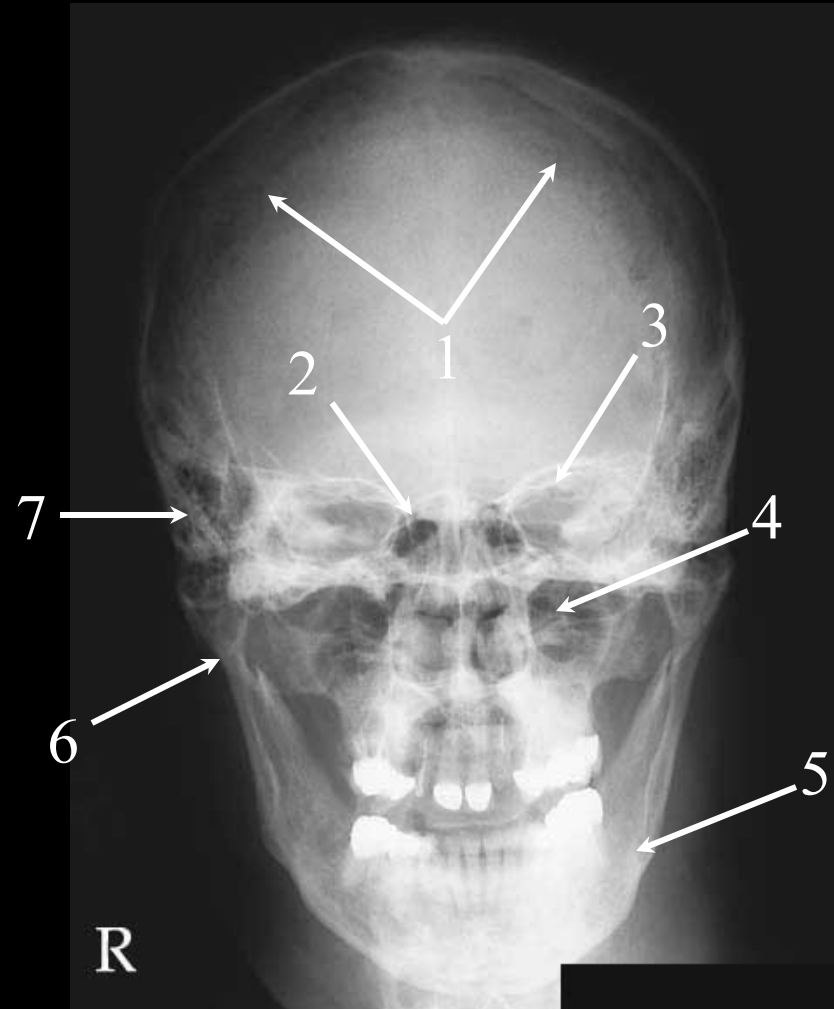
- 1. PA**
- 2. Towne's**
- 3. Axialateral Oblique**

PA Skull:



PA Skull:

1. Lambdoidal Suture
2. Ethmoid Sinus
3. Petrous Ridge
4. Maxillary Sinus
5. Body of the Mandible
6. Condyle of the Mandible
7. Mastoid Air Cells

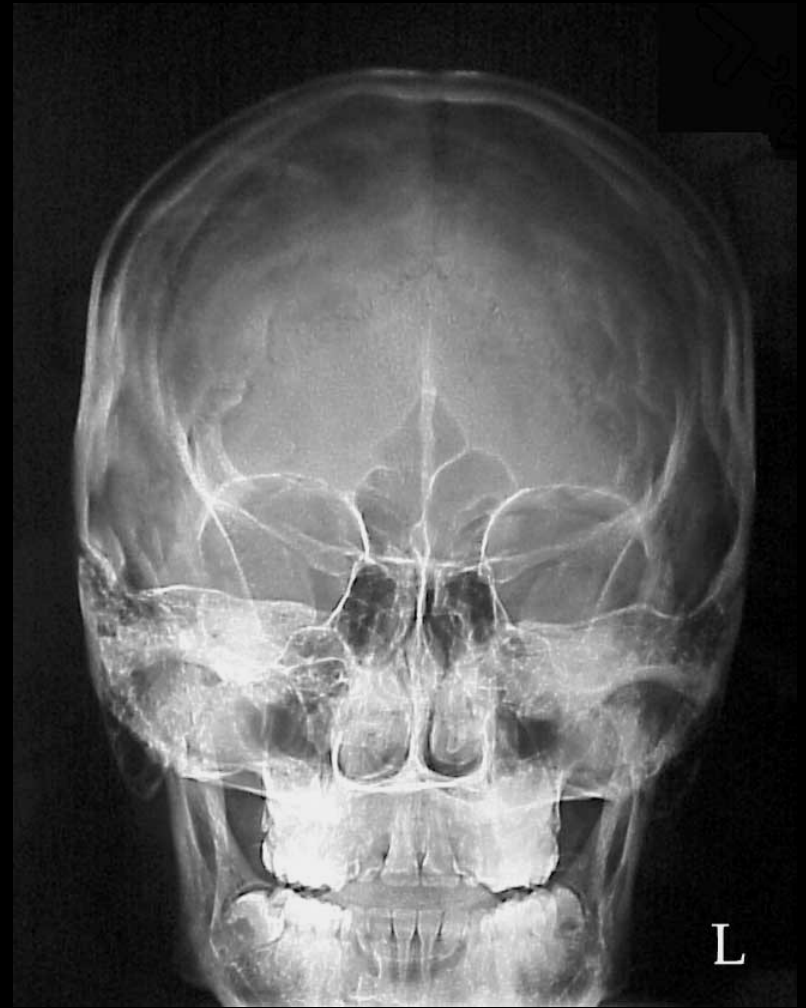


PA Caldwell Skull:

Somebody was either in a hurry or looking for a little Devine Intervention!!

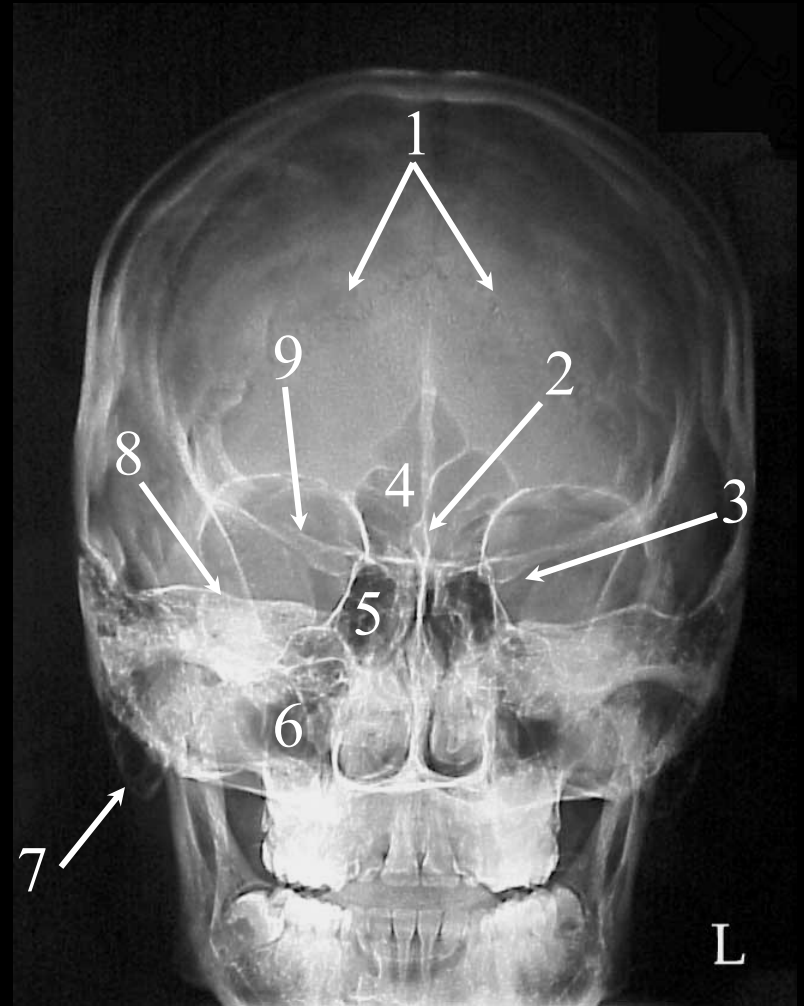


PA Caldwell Skull:



PA Caldwell Skull:

1. Lambdoidal Suture
2. Crista Galli
3. Superior Orbital Fissure
4. Frontal Sinuses
5. Ethmoid Sinuses
6. Maxillary Sinus
7. Mastoid Tip
8. Petrous Ridge
9. Lesser Wing of the Sphenoid



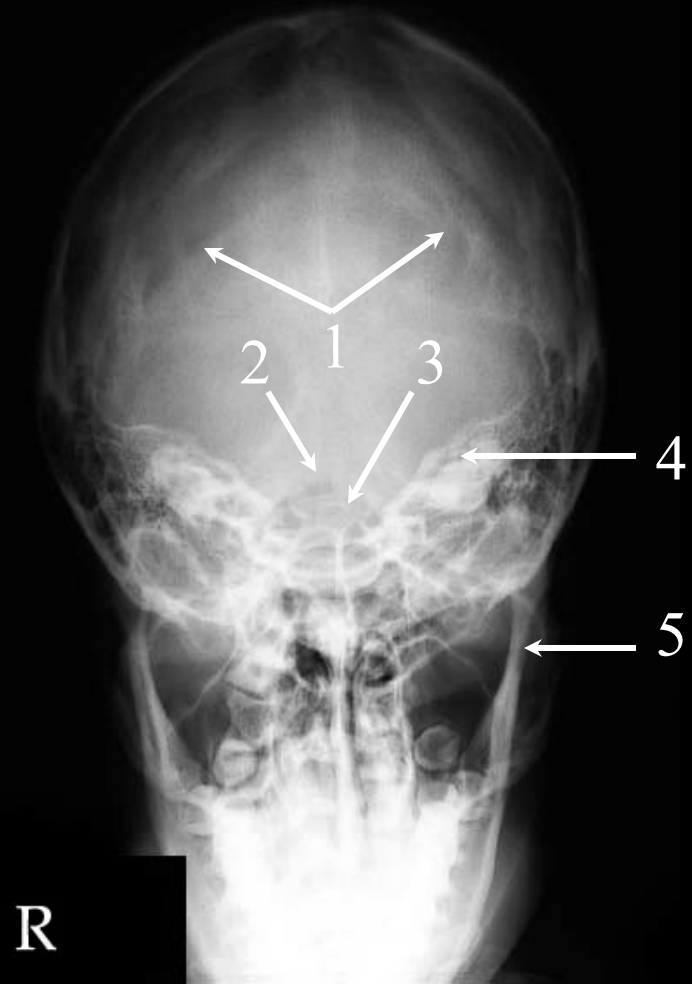
Towne's Skull:



R

Towne's Skull:

1. Lambdoidal Suture
2. Foramen Magnum
3. Dorsum Sella
4. Petrous Ridge
5. Condyle of the Mandible

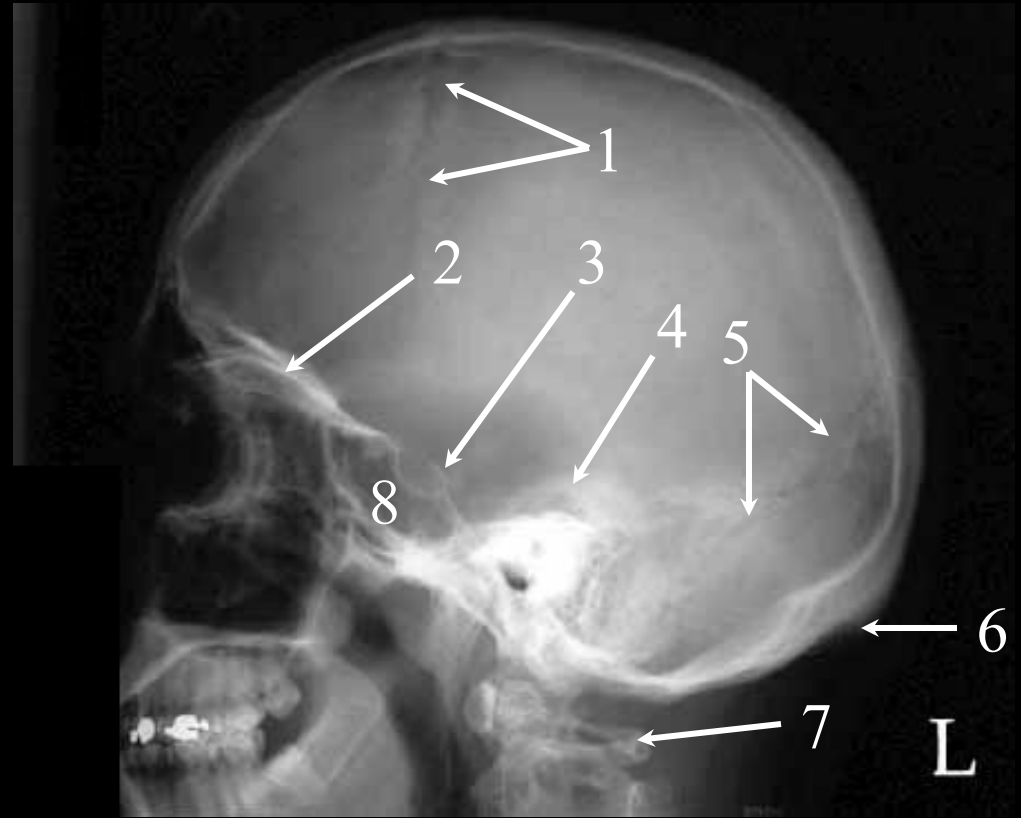


Lateral Skull:

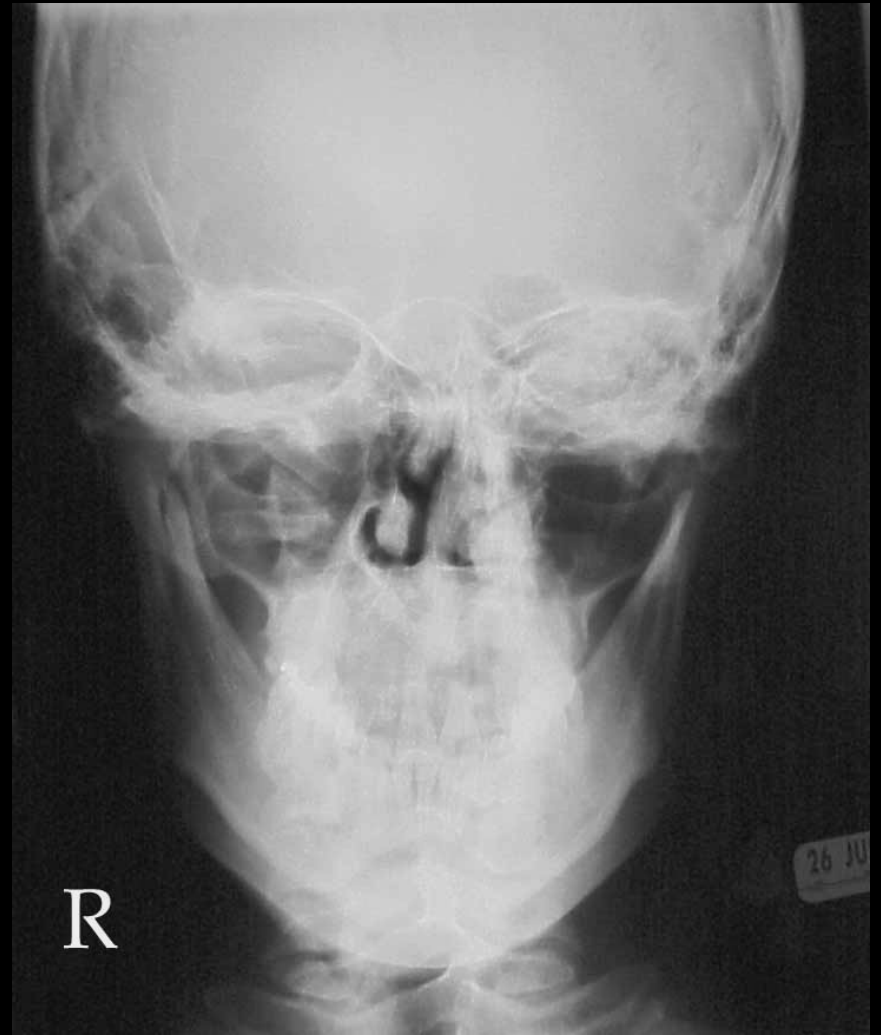


Lateral Skull:

1. Coronal Suture
2. Orbital Plates of the Frontal Bone
3. Posterior Clinoid Process
4. Auricle or Pinna (Ear)
5. Lambdoidal Suture
6. External Occipital Protuberance
7. Posterior Arch of C1
8. Sphenoid Sinus



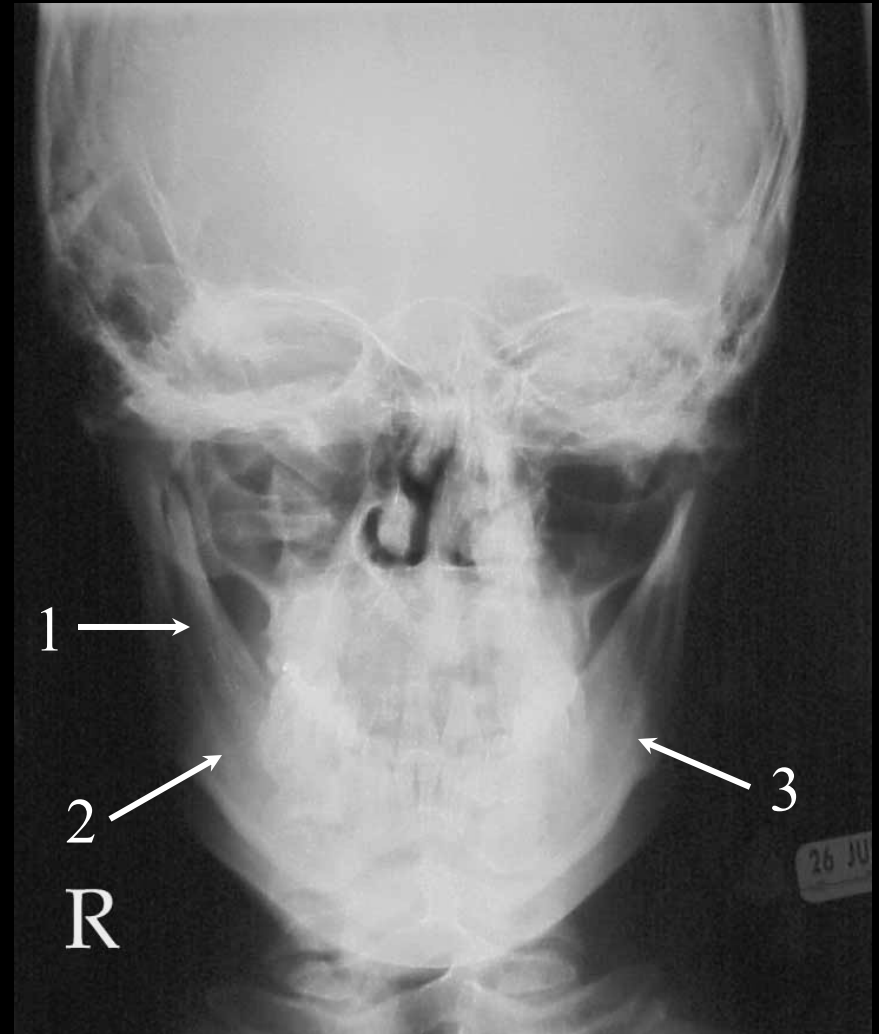
PA Mandible:



PA Mandible:

This position is primarily done to best demonstrate the ramus and body of the mandible bilaterally. The mentum is not well demonstrated as it is superimposed on the C-spine.

1. Ramus
2. Body
3. Angle of the Mandible



Towne's Mandible:

This position is primarily done to best demonstrate the condyles of the mandible bilaterally. Some departments require that the mentum be included on this radiograph. However, as you can see, it is not well demonstrated as it is superimposed on the C-spine. Also, partials must be removed prior to taking this film.

R



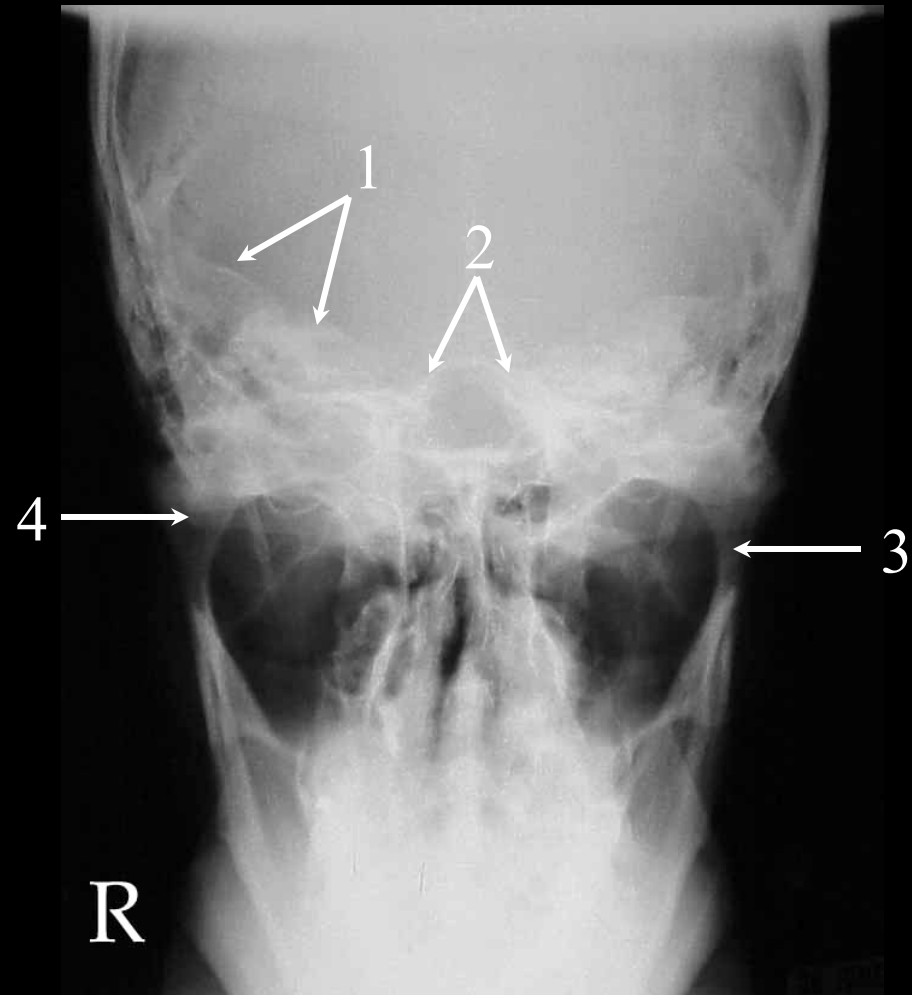
Towne's Mandible:



Towne's Mandible:

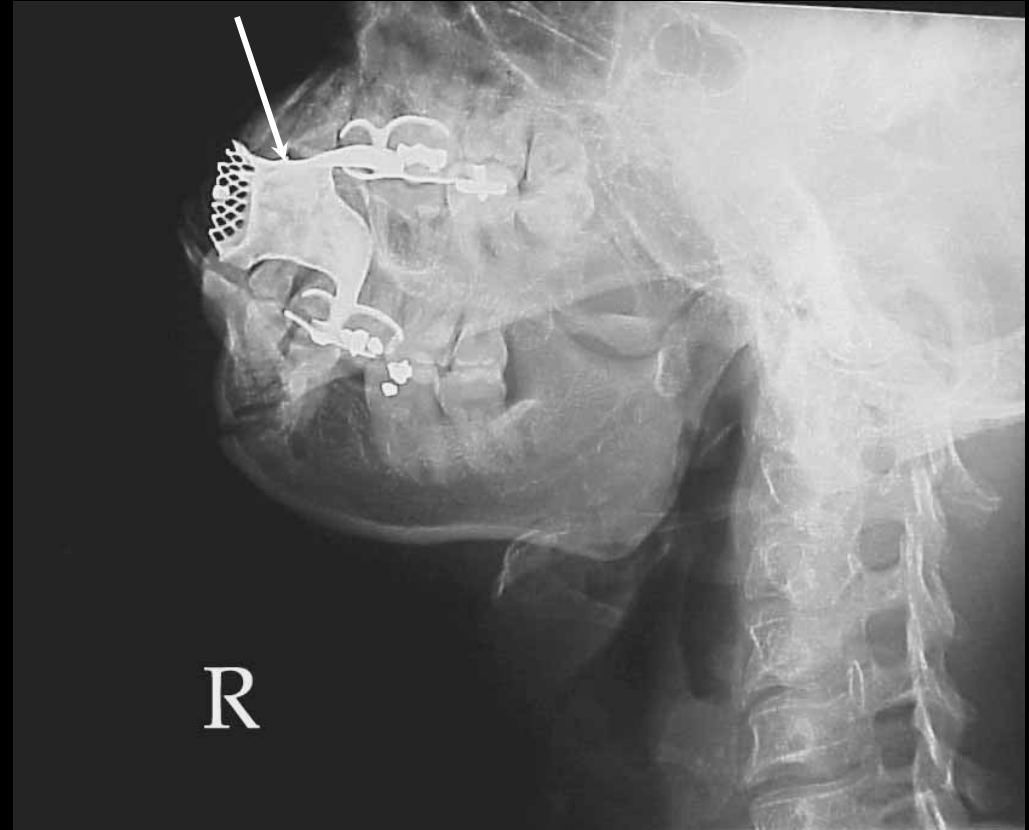
This radiograph is properly positioned. The partial has been removed and the mentum has been collimated off.

1. Petrous Ridges
2. Shadow of the Foramen Magnum
3. Neck of the Condyle
4. Head of the Condyle



Axiolateral Oblique Mandible: RPO

When performing mandible radiography, it is imperative that the patient take out any removable dental work such as the partial that the arrow is pointing to on this radiograph.



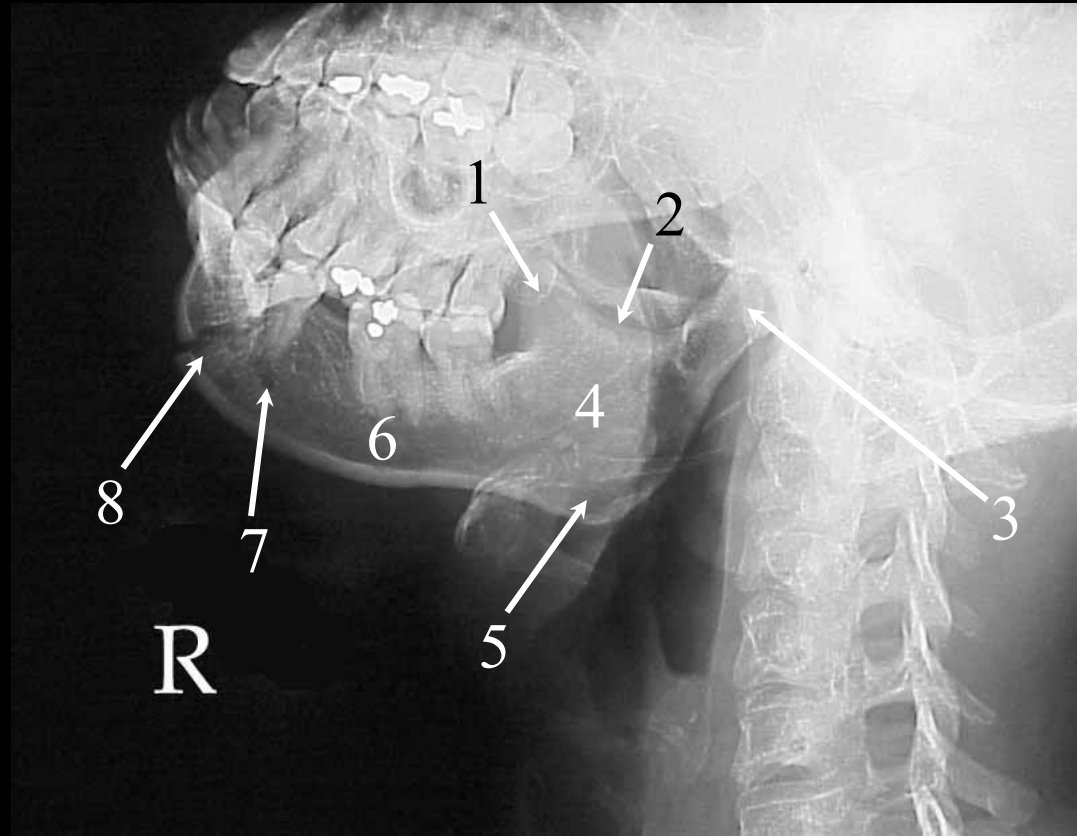
Axiolateral Oblique Mandible: RPO



Axiolateral Oblique Mandible: RPO

This is the same patient
minus the partial

1. Coronoid Process
2. Mandibular Notch
3. Condyle of the Mandible
4. Ramus
5. Angle of the Mandible
6. Body
7. Mental Foramen
8. Fracture of the Mentum



Facial Bones, Sinuses & Orbits

Facial Bones/Sinuses

1. Water's
2. Open Mouth Waters
3. Caldwell
4. Lateral
5. SMV

Nasal Bones

1. Waters
2. Lateral

Orbits

1. Rhese for Pathology
2. Rhese for Trauma

Arches

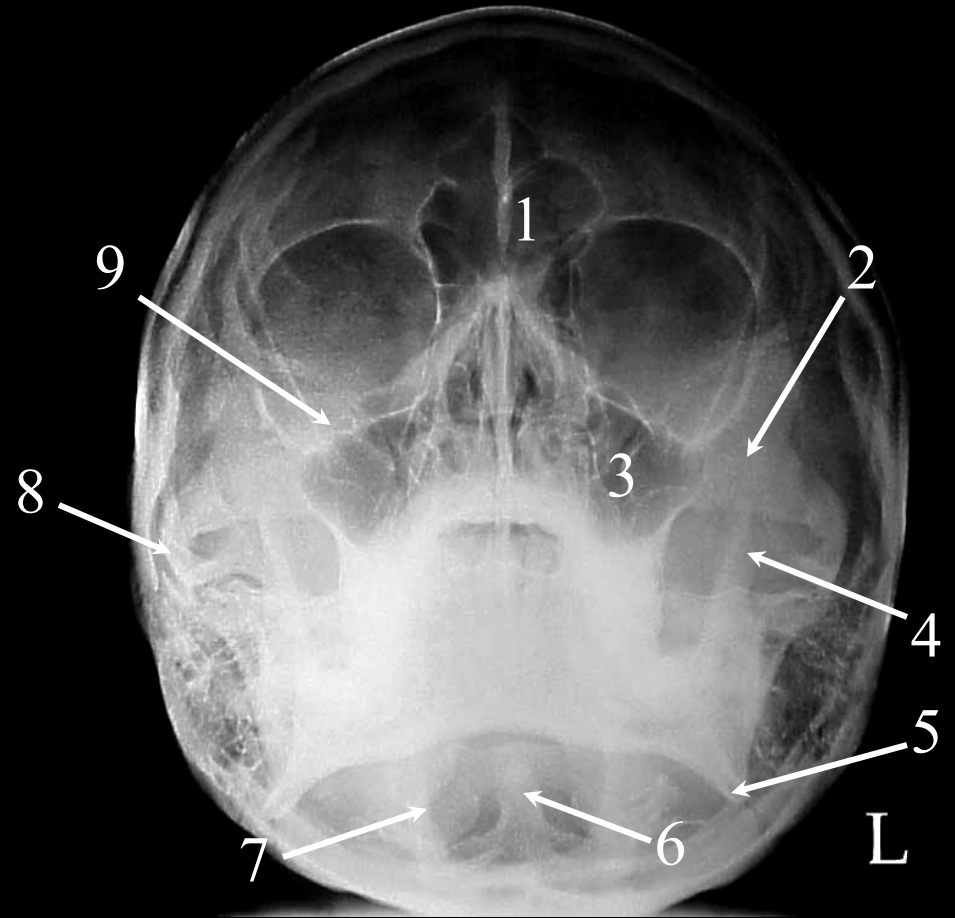
1. SMV
2. Tangential SMV
3. Towne's

Water's Facial Facial Bones & Sinuses:



Water's Facial Facial Bones & Sinuses:

1. Frontal Sinus
2. Zygoma or Malar Bone
3. Maxillary Sinus
4. Coronoid Process of the Mandible
5. Angle of the Mandible
6. Dens or Odontoid
7. Foramen Magnum
8. Zygomatic Arch
9. Infraorbital Foramen



Open Mouth Water's Sinuses:

This is an optional position of the sinuses that is done by simply positioning the patient for a Water's Method and then instructing them to open their mouth. A PA projection of the sphenoid sinus is demonstrated within the boundaries of their mouth.

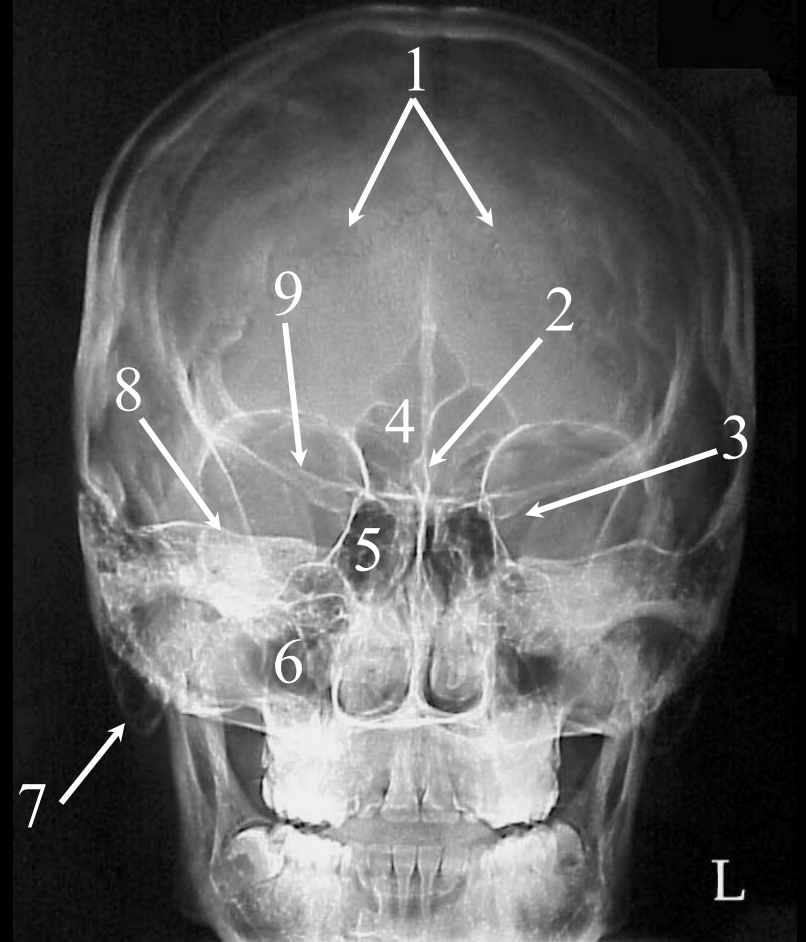


PA Caldwell Facial Bones & Sinuses:



PA Caldwell Facial Bones & Sinuses:

1. Lambdoidal Suture
2. Crista Galli
3. Superior Orbital Fissure
4. Frontal Sinuses
5. Ethmoid Sinuses
6. Maxillary Sinus
7. Mastoid Tip
8. Petrous Ridge
9. Lesser Wing of the Sphenoid



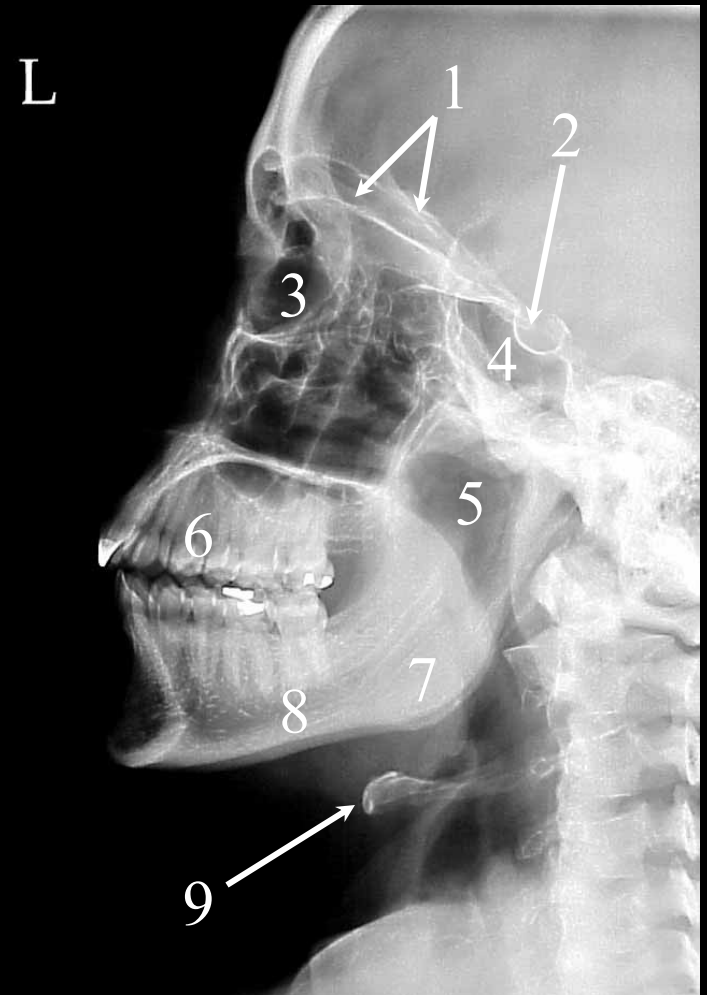
Lateral Facial Bones & Sinuses:

L



Lateral Facial Bones & Sinuses:

1. Orbital Plates of the Frontal Bone
2. Sella Turcica
3. Ethmoid Sinus
4. Sphenoid Sinus
5. Oropharynx
6. Alveolar Process of the Maxillary Bone
7. Angle of the Mandible
8. Body of the Mandible
9. Hyoid Bone

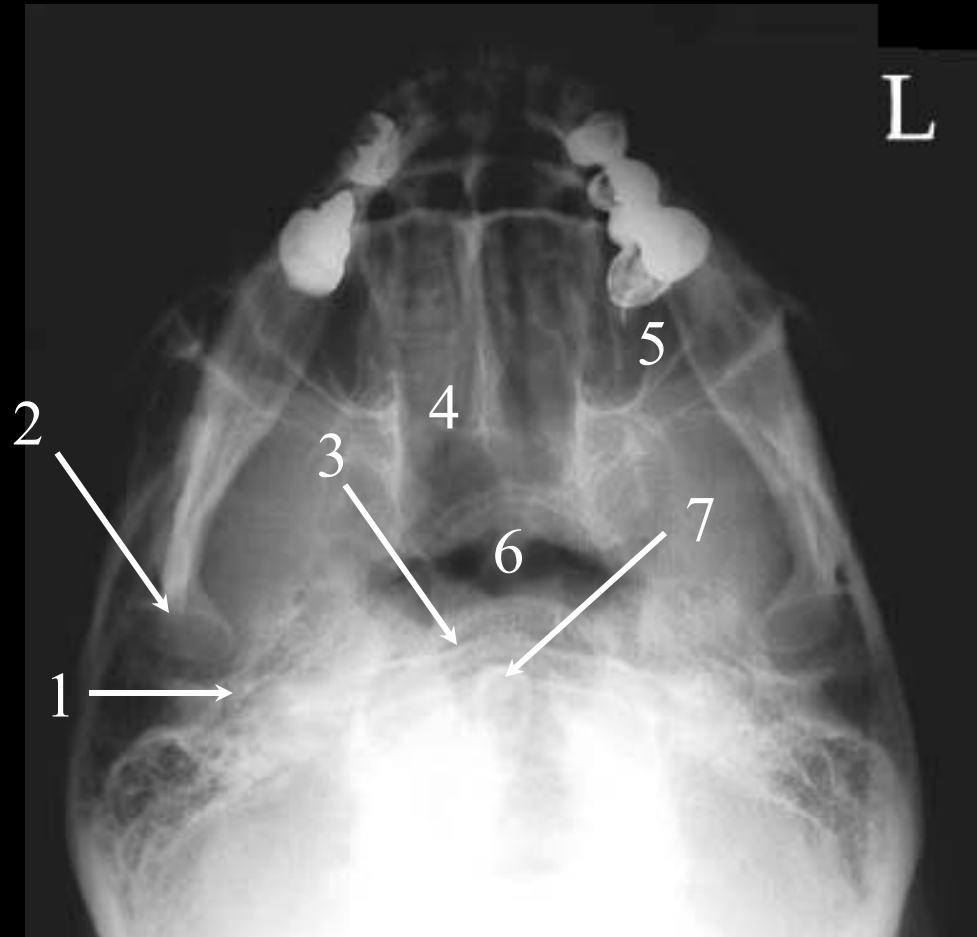


SMV Sinuses:



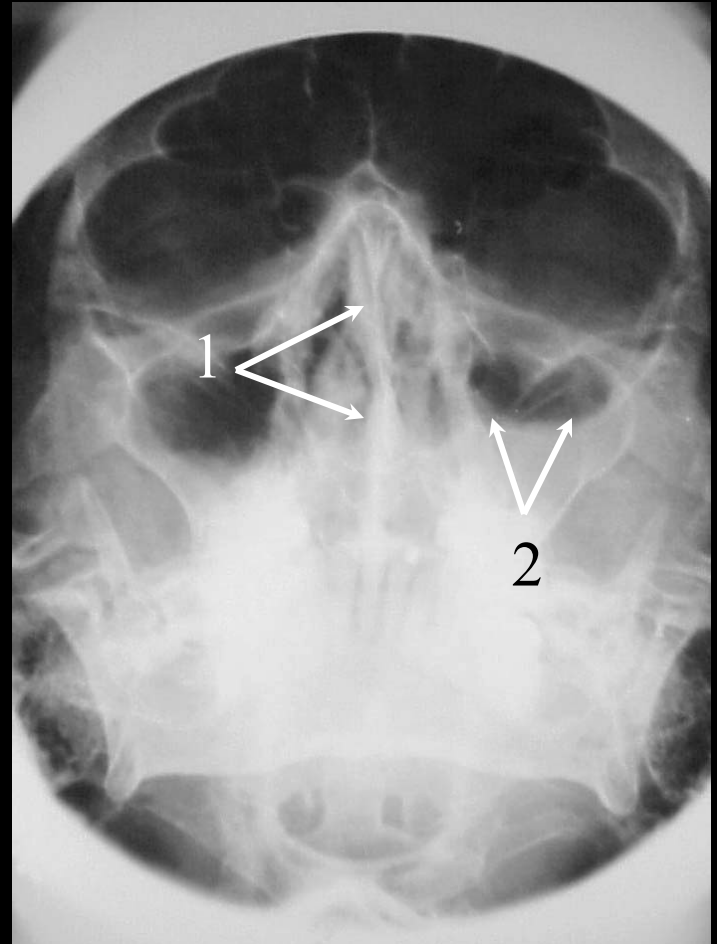
SMV Sinuses:

1. Petrous Ridge
2. Head of the Condyle of the Mandible
3. Anterior Arch of C1
4. Ethmoid Sinus
5. Maxillary Sinus
6. Sphenoid Sinus
7. Dens or Odontoid



Water's Nasal Bones:

This position is done to determine if the patient has a deviated bony nasal septum (1). Additionally, if the patient does have a trauma to the nose, the maxillary sinuses may fill with blood (2).

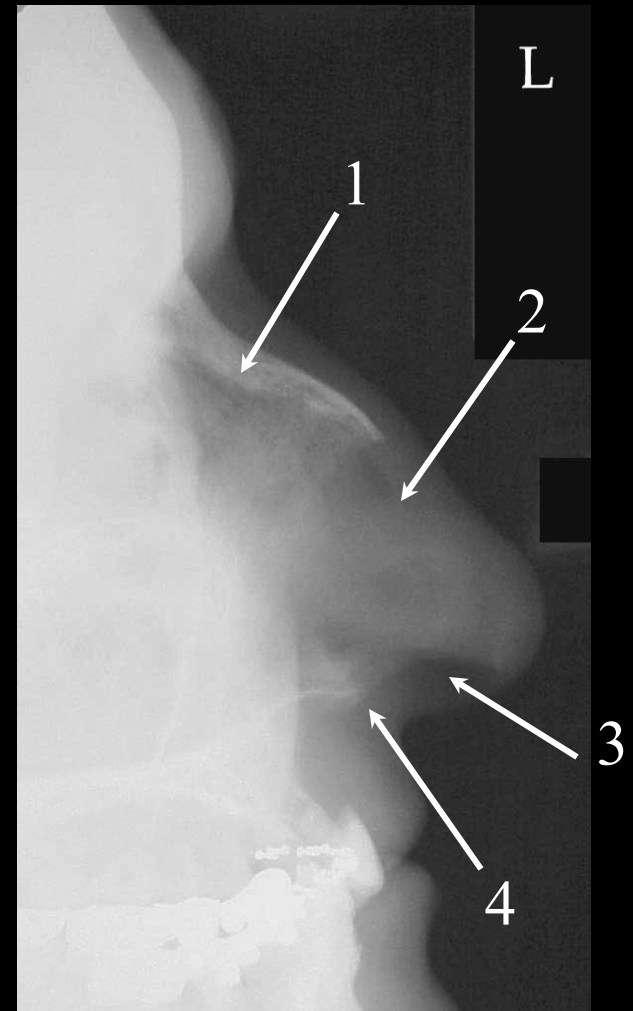


Lateral Nasal Bones:

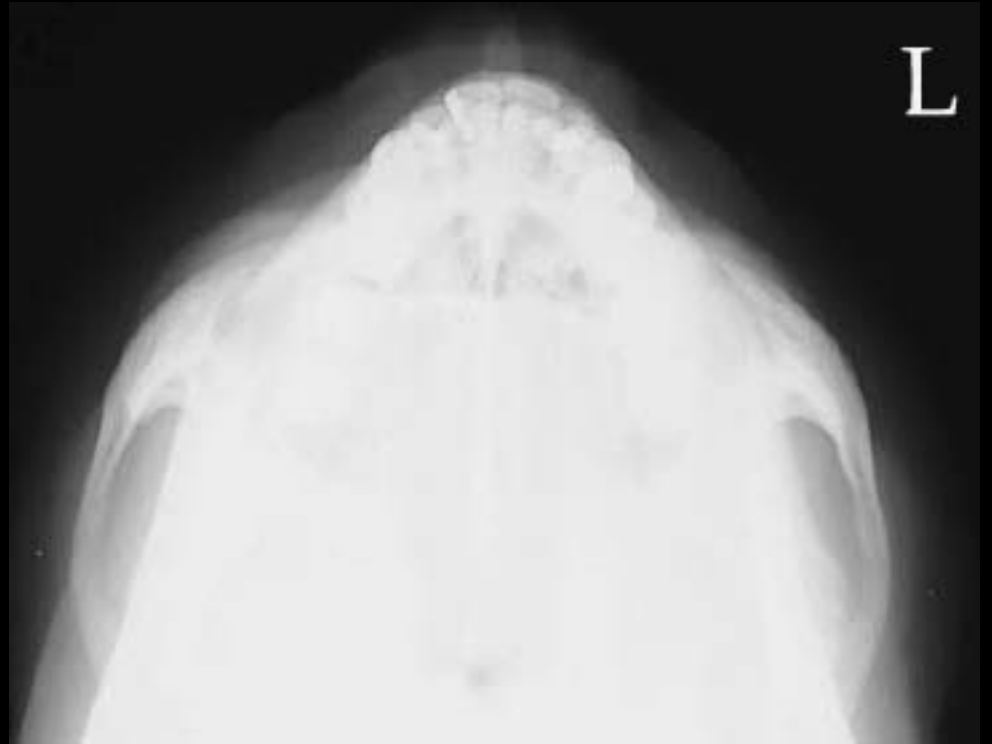


Lateral Nasal Bones:

1. Nasal Bones
2. Nasal Cartilage
3. Naris or Nostril
4. Anterior Nasal Spine

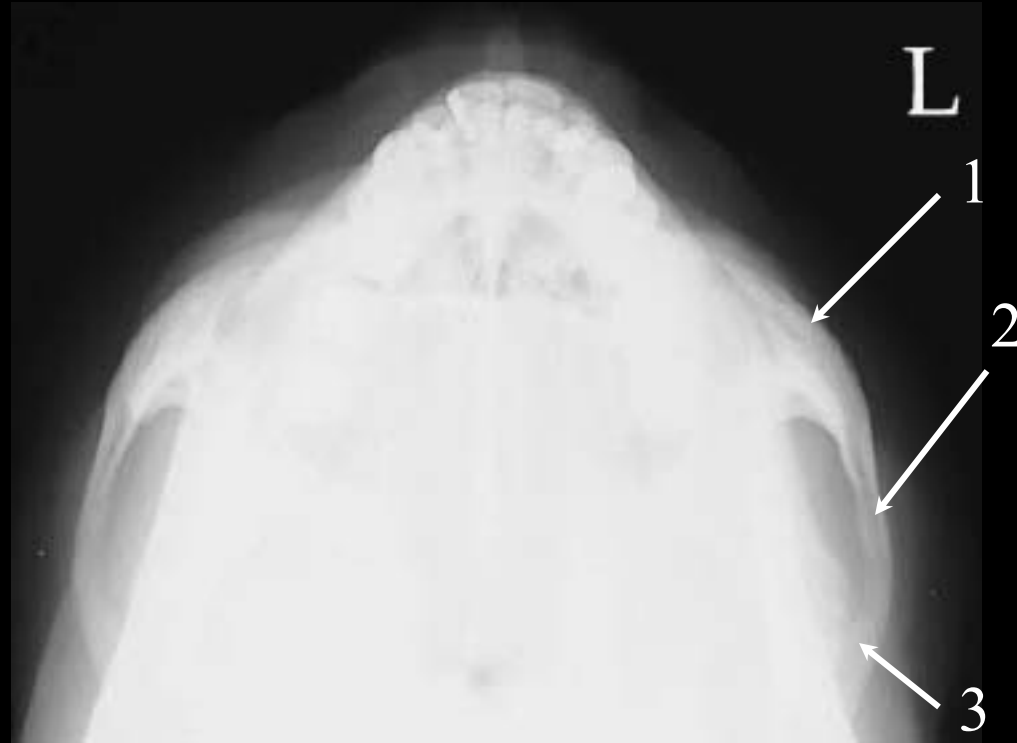


Zygomatic Arches: SMV



Zygomatic Arches: SMV

1. Zygoma or Malar Bone
2. Zygomatic Arch
3. Zygomatic Process of the Temporal Bone

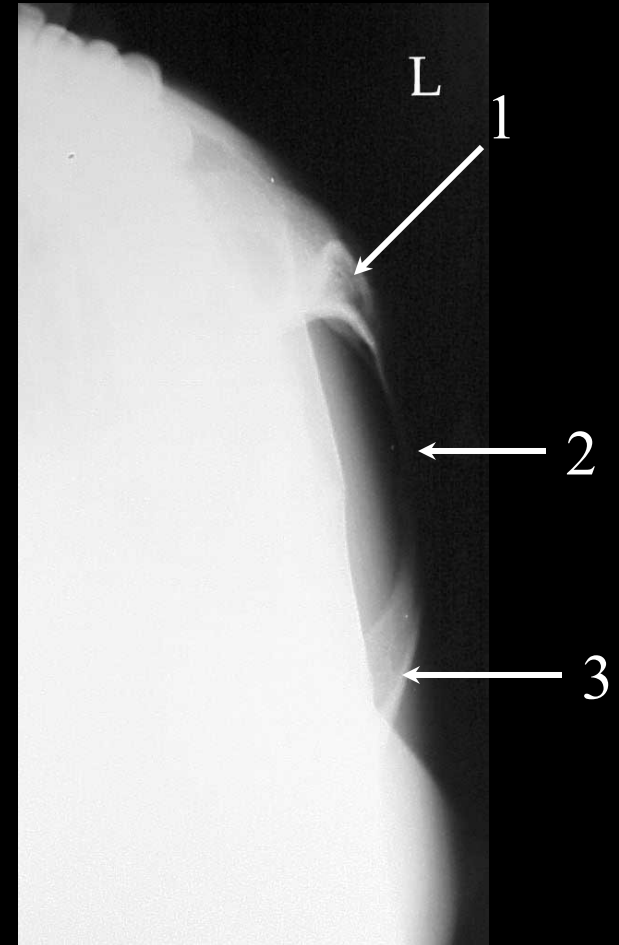


Zygomatic Arches: Tangential



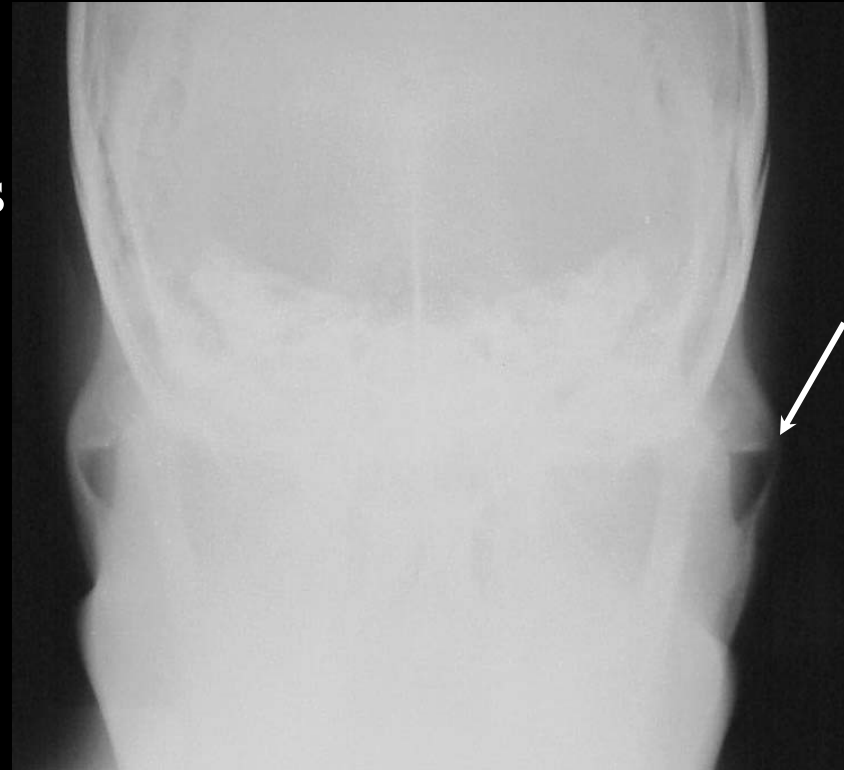
Zygomatic Arches: Tangential

1. Zygoma or Malar Bone
2. Zygomatic Arch
3. Zygomatic Process of the Temporal Bone



Zygomatic Arches: Towne's

This is an optional position of the zygomatic arches and it is usually performed when the routine positions have failed. It is done by positioning the patient for the Towne's method and centering to ensure that the central ray passes through the arches. Additionally, the technical factors must be adjusted down to ensure proper density of the arches.



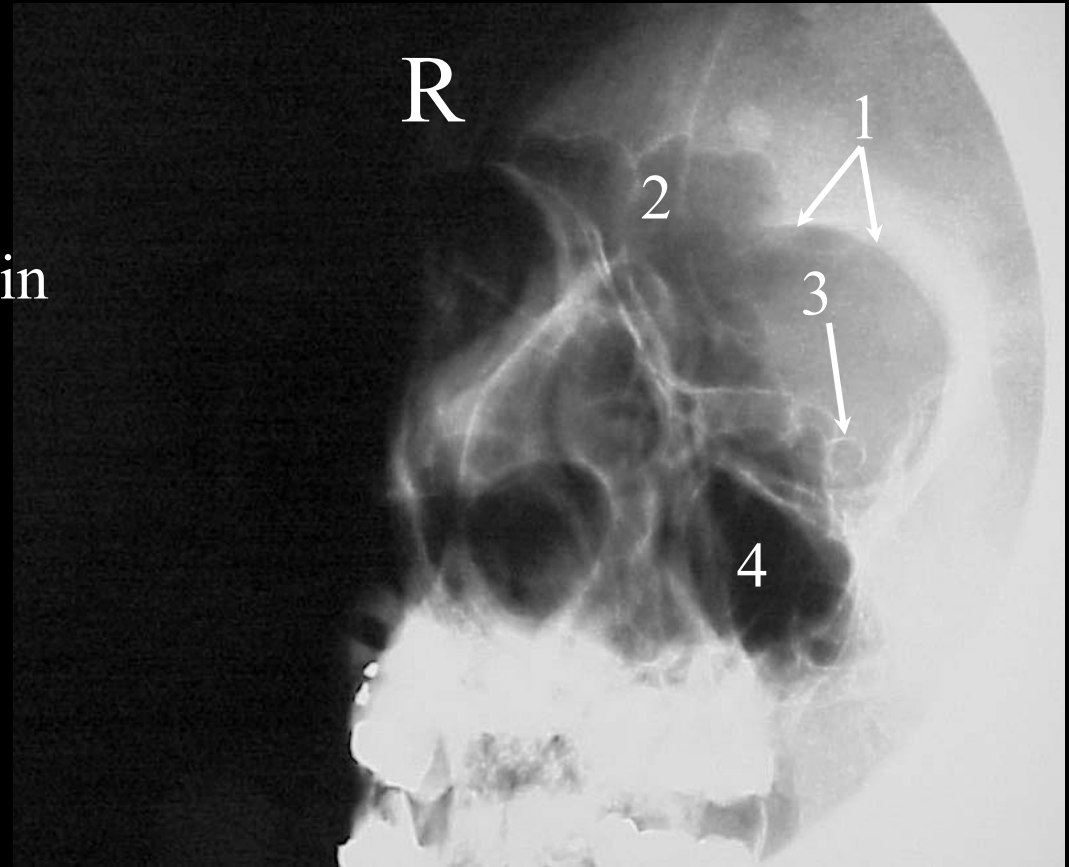
Rhese Orbits: For Pathology

Note: For this position, it is imperative that a proper patient history is acquired. The technique must be set according to the area of interest. The technical factors for this radiograph were set to best demonstrate the side down orbit for pathology to the optic nerve.



Rhese Orbits: For Pathology

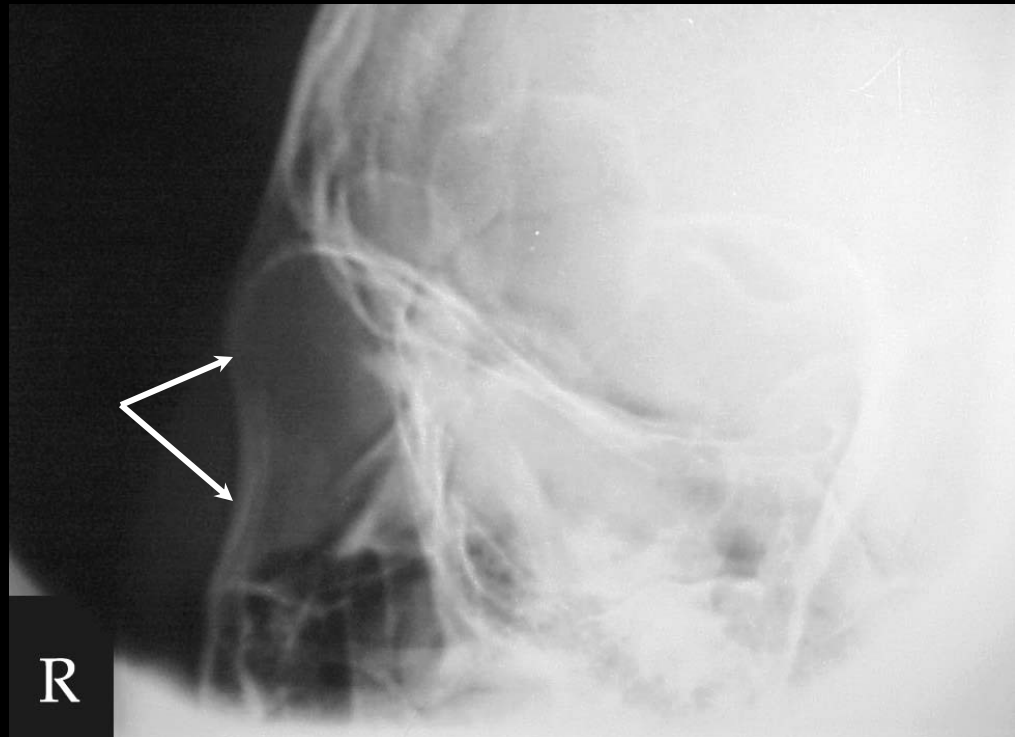
1. Supraorbital Margin
2. Frontal Sinus
3. Optic Canal
4. Maxillary Sinus



These Orbits: For Trauma

Note: The technical factors for this radiograph were reduced to best demonstrate the side up orbit for trauma to the lateral wall of the orbit.

The arrows are pointing to the superior aspect of the malar bone and the lateral aspect of the frontal which together make up the lateral wall of the orbit.



Upper Gastrointestinal System

Upper Gastrointestinal Series

- 1. Description**
- 2. RAO Esophagus**
- 3. RAO Stomach**
- 4. PA Stomach**
- 5. Right Lateral Stomach**
- 6. LPO Stomach**
- 7. AP Stomach**

Small Bowel Series

- 1. Description**
- 2. 20 Minute Delay**
- 3. 40 Minute Delay**
- 4. Terminal Ileum Spot**

Upper Gastrointestinal (UGI) Series

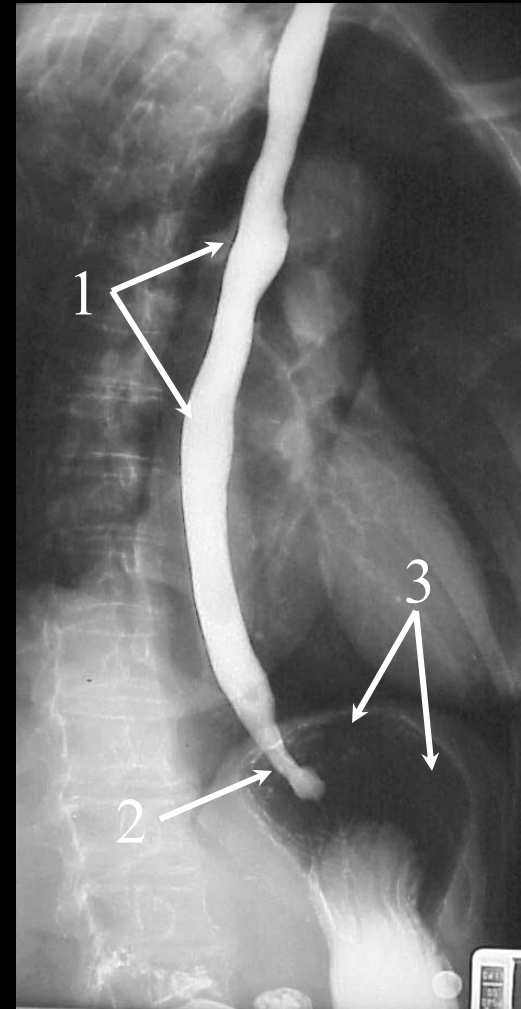
An UGI series is a radiographic examination of the esophagus and stomach. This is generally a double contrast study where the patient is instructed by a radiologist to ingest carbon dioxide gas crystals and barium under fluoroscopy. A series of radiographs is taken under fluoroscopy by the radiologist and sometimes at the end of the exam by the radiographer.

UGI: RAO Esophagus



UGI: RAO Esophagus

1. Esophagus
2. Lower Esophageal Sphincter (LES)
3. Air in the Fundus

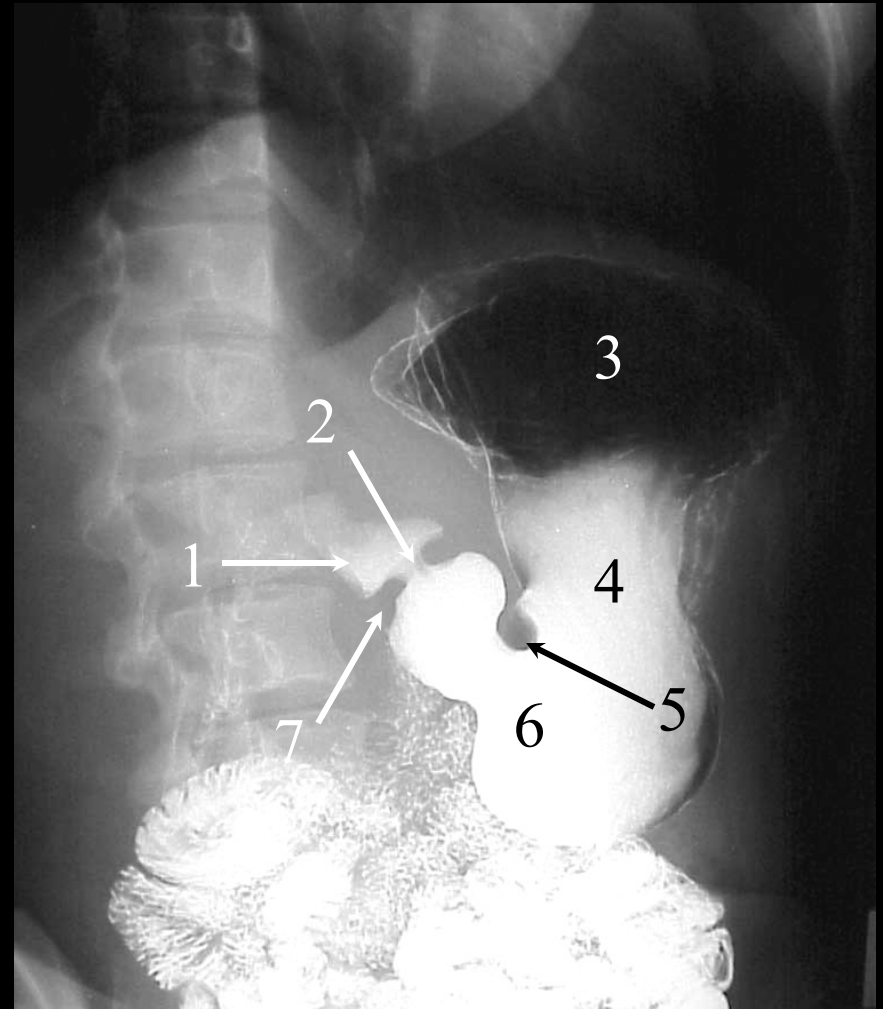


UGI: RAO Stomach



UGI: RAO Stomach

1. Duodenal Bulb or Ampulla
2. Pyloric Orifice
3. Air in the Fundus
4. Body of the Stomach
5. Angular Notch
6. Pyloric Antrum
7. Muscular Sphincter of Pylorus

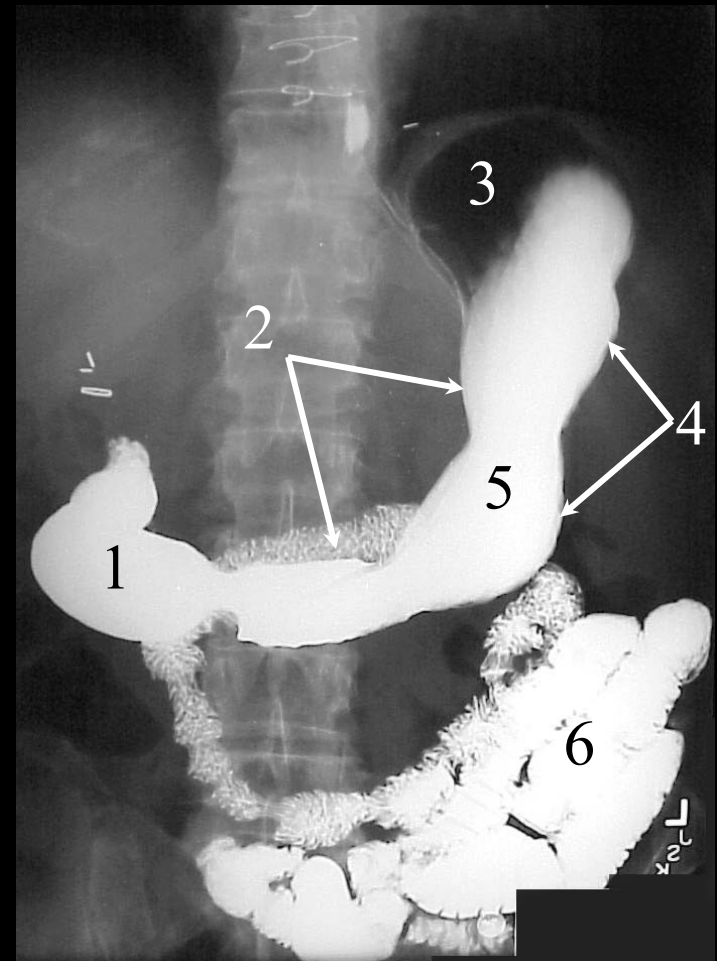


UGI: PA Stomach

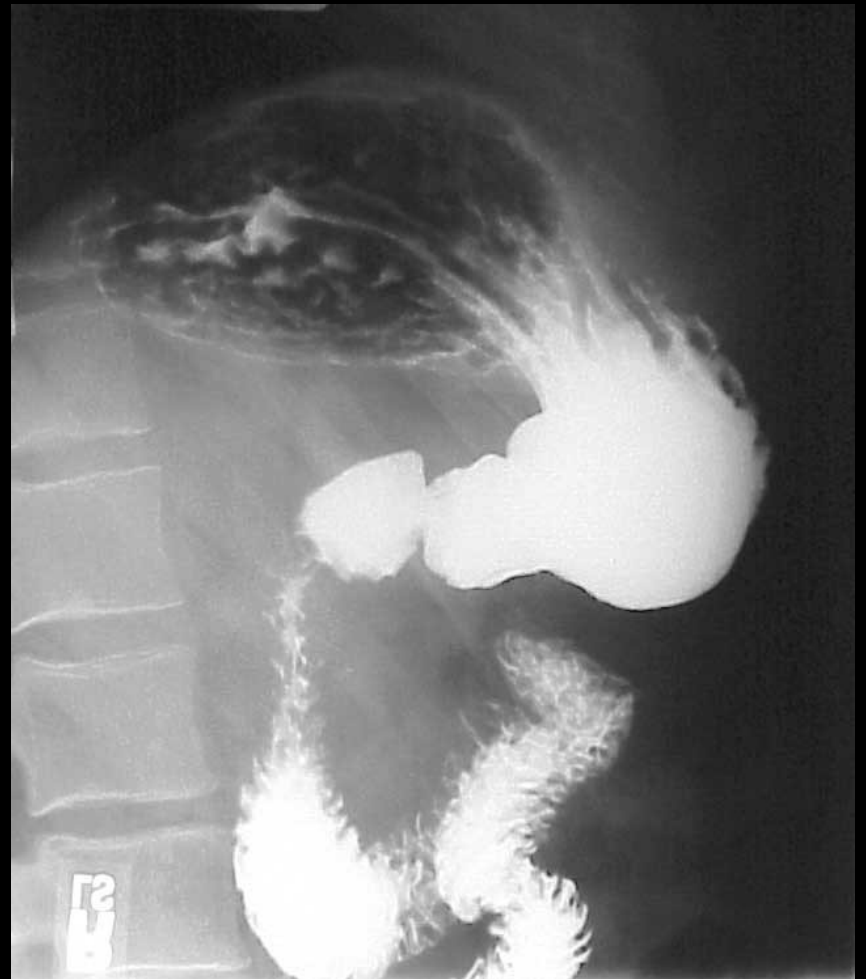


UGI: PA Stomach

1. Pyloric Antrum of the Stomach
2. Lesser Curvature of the Stomach
3. Air in the Fundus
4. Greater Curvature of the Stomach
5. Body of the Stomach
6. Jejunum

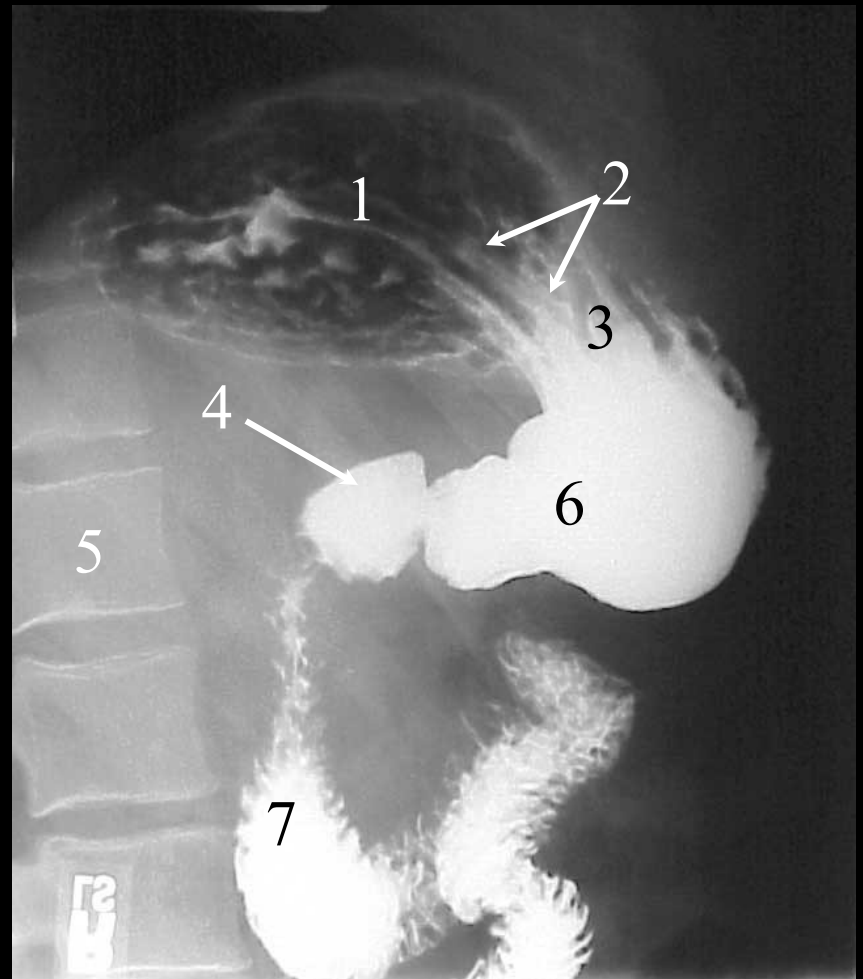


UGI: Right Lateral Stomach

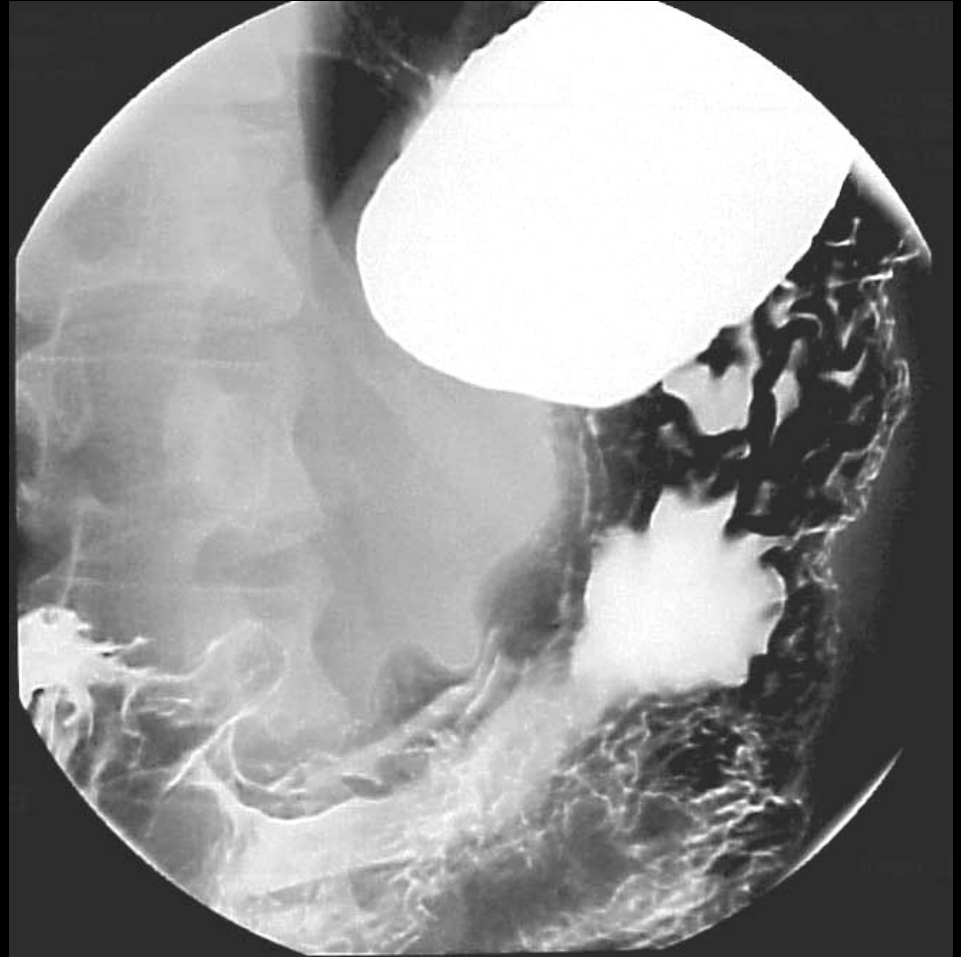


UGI: Right Lateral Stomach

1. Air in the Fundus
2. Rugae (Mucosal Folds)
3. Body of the Stomach
4. Bulb of the Duodenum
5. Body of a Lumbar Vertebrae
(note that it is in the lateral position)
6. Pyloric Antrum
7. Descending Portion of the Duodenum

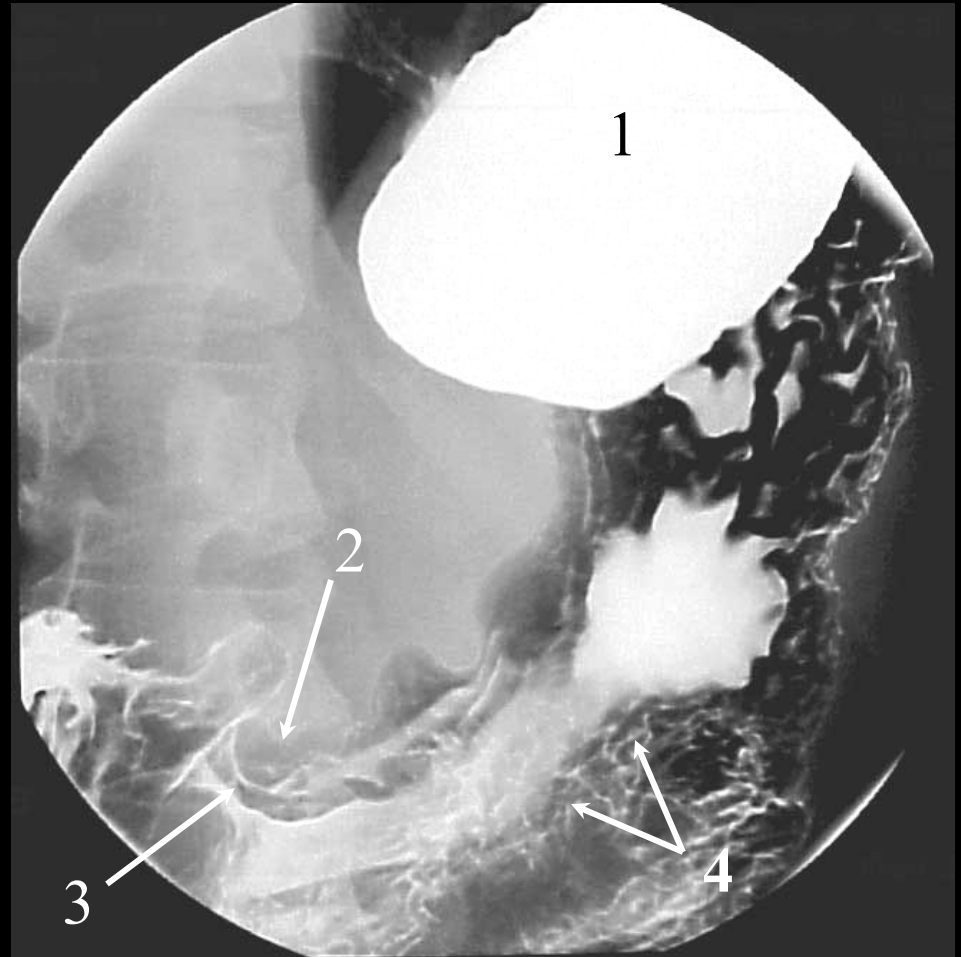


UGI: LPO Stomach

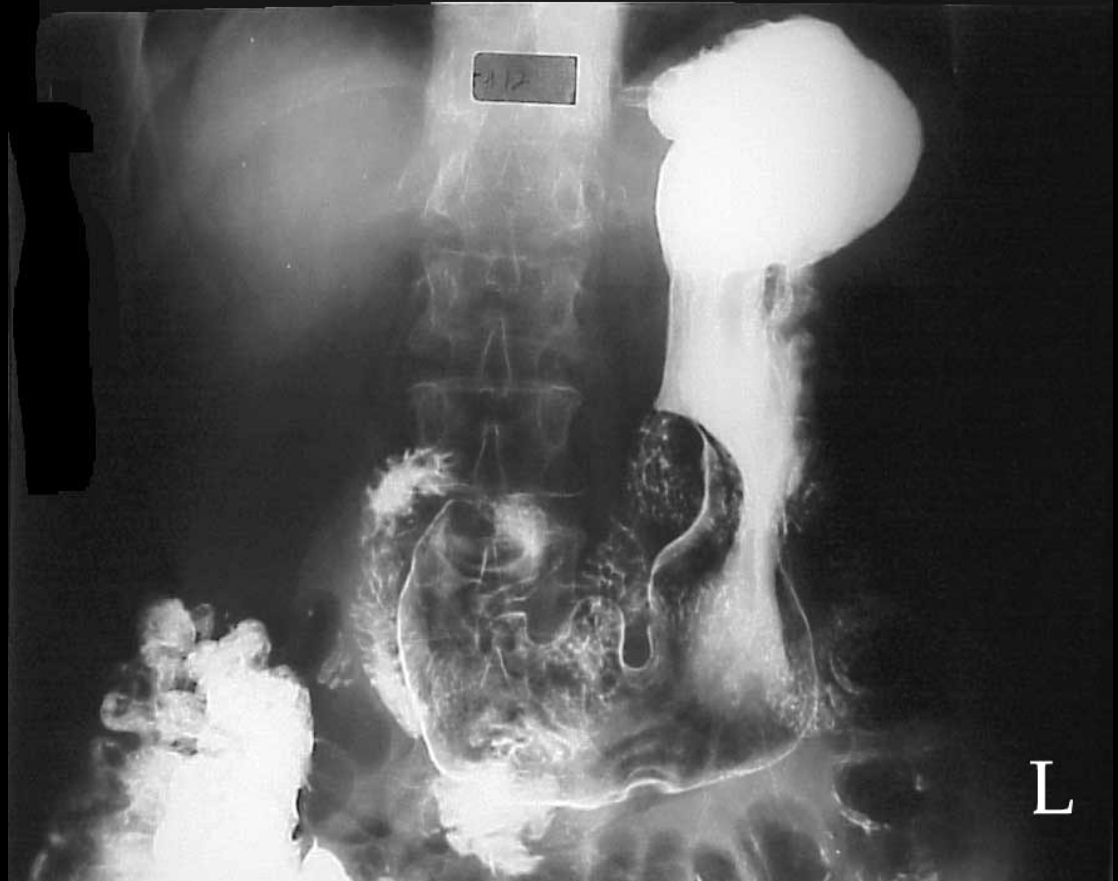


UGI: LPO Stomach

1. Barium in the Fundus
2. Muscular Sphincter of Pylorus
3. Pyloric Orifice
4. Gastric Areolae

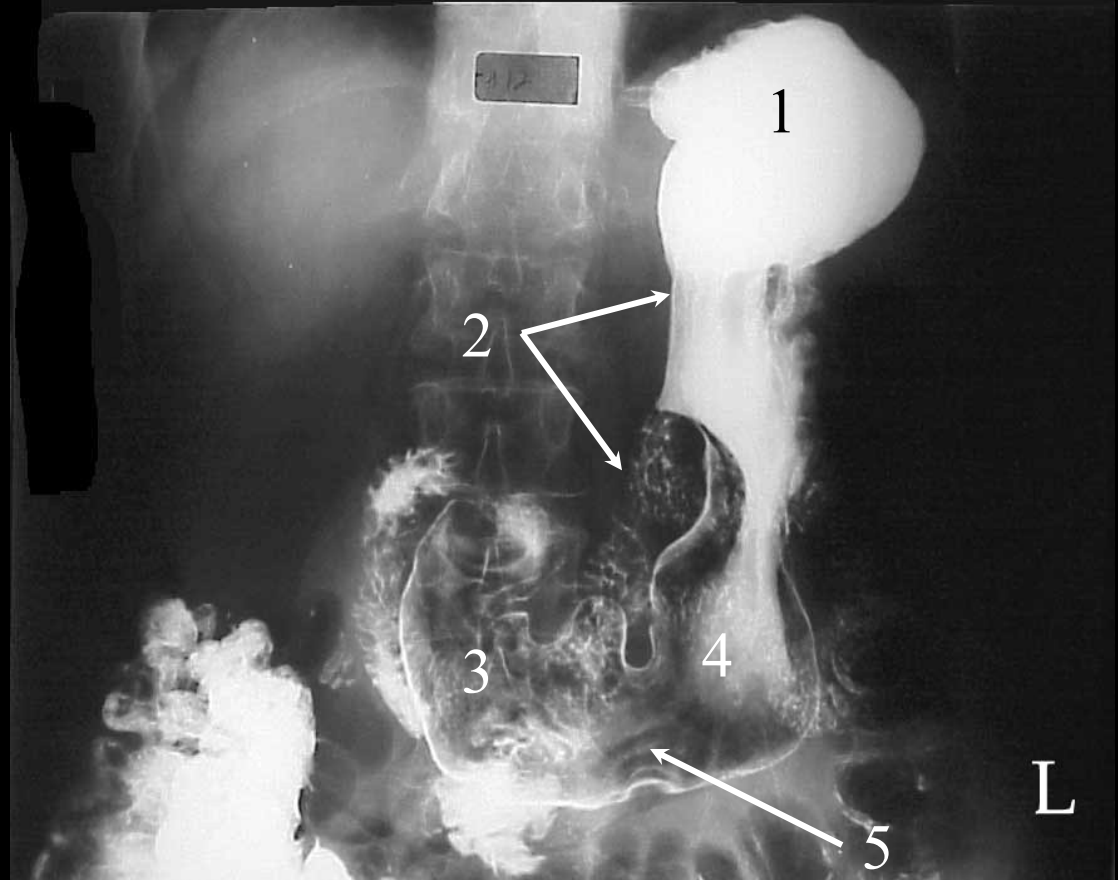


UGI: AP Stomach



UGI: AP Stomach

1. Barium in the Fundus
2. Lesser Curvature of the Stomach
3. Pyloric Antrum
4. Body of the Stomach
5. Rugae



Small Bowel Series (SBS)

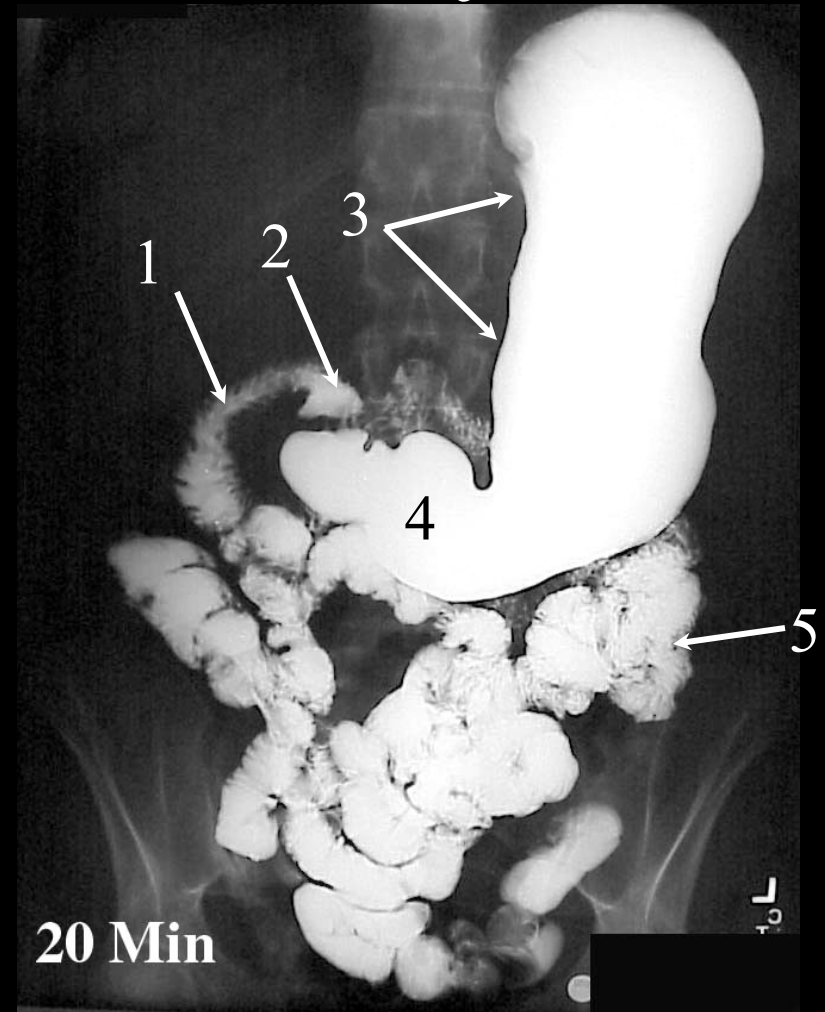
An small bowel series is a radiographic examination of the small intestine and it is often combined with an UGI series. This is generally a single contrast study where the patient is instructed to ingest 16 ounces of thin barium. A series of radiographs is taken every 15 to 20 minutes until the barium reaches the large intestine. A spot radiograph is then taken of the terminal ileum by either by the radiologist or the radiographer.

SBS: 20 Minute Delay

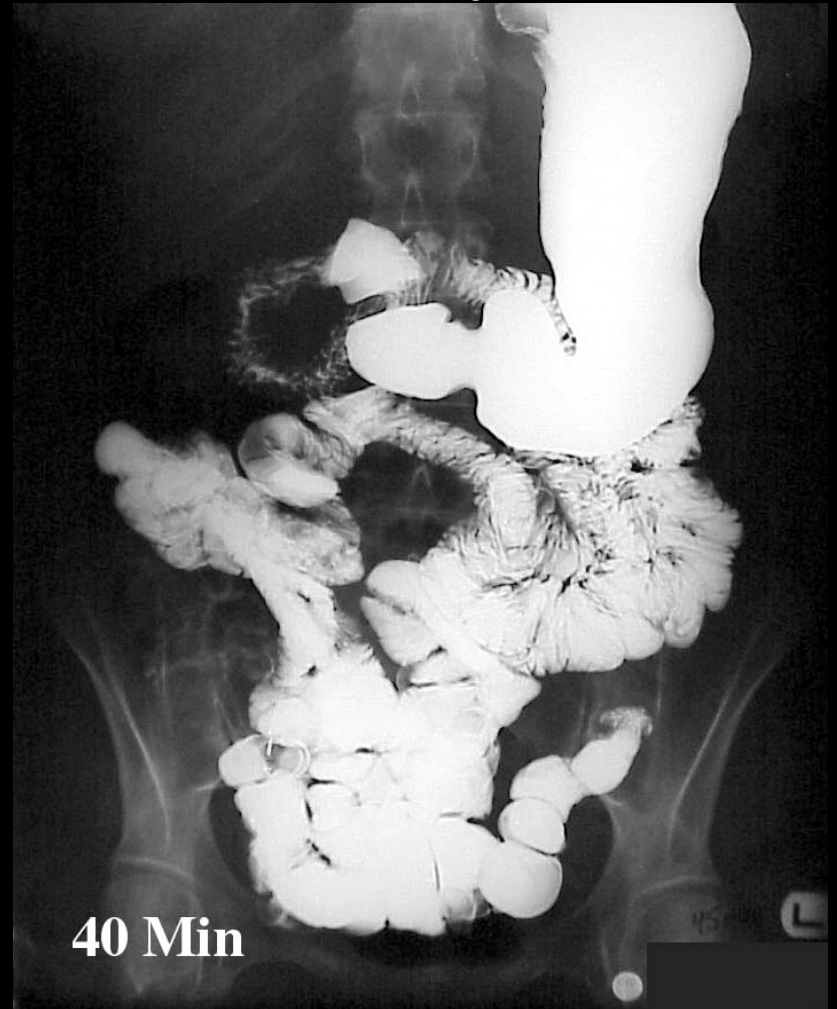


SBS: 20 Minute Delay

1. Descending Portion of the Duodenum
2. Duodenal Bulb or Cap
3. Lesser Curvature of the Stomach
4. Pyloric Antrum of the Stomach
5. Jejunum

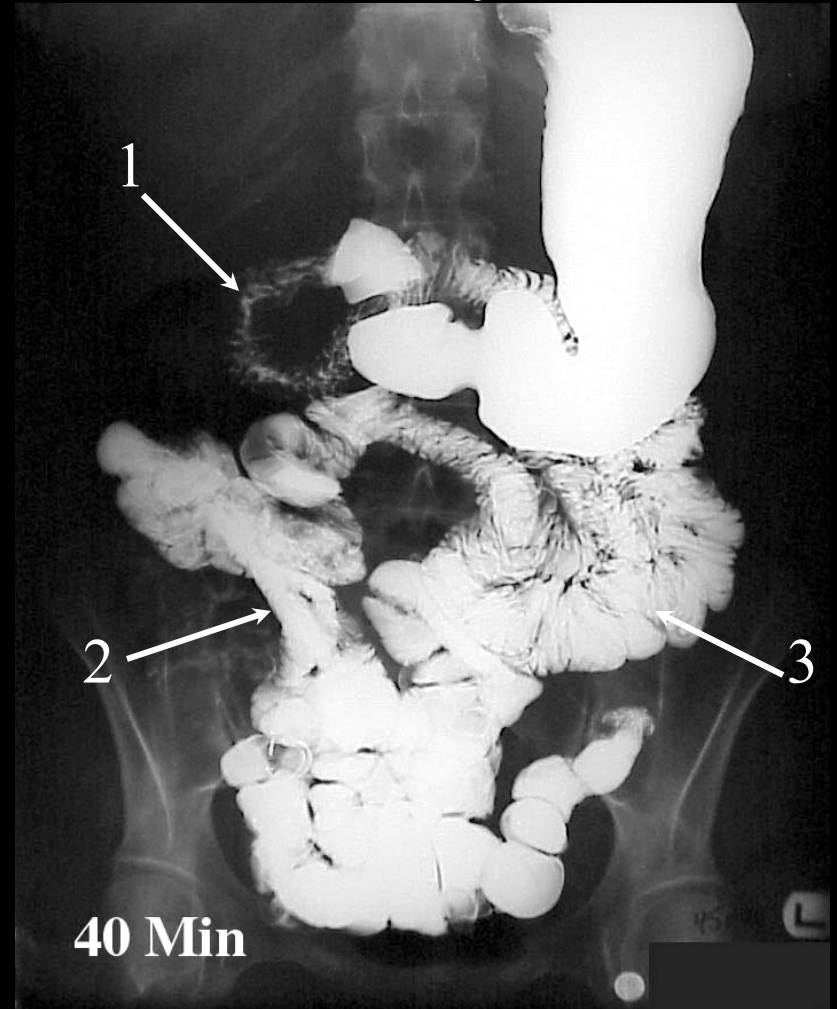


SBS: 40 Minute Delay



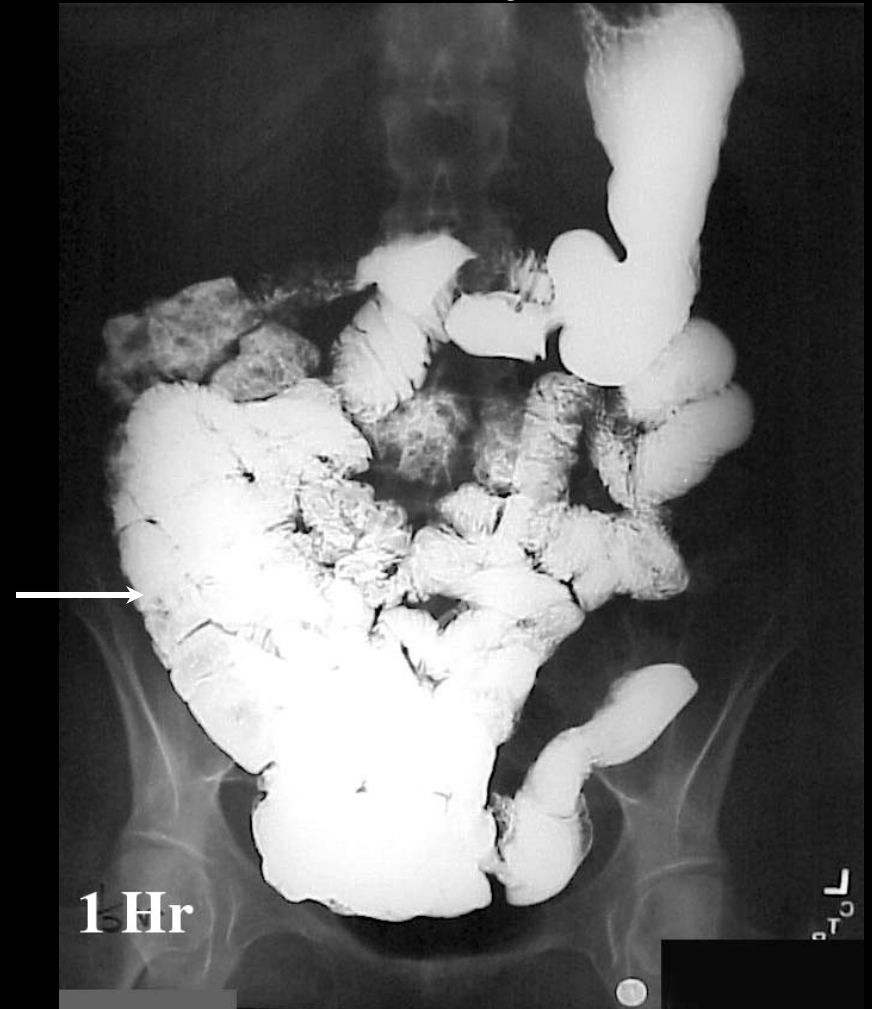
SBS: 40 Minute Delay

1. Descending Portion of the Duodenum
2. Ileum
3. Jejunum



SBS: 60 Minute Delay

After the barium reaches the large intestine as indicated by the arrow, the exam is near complete. A fluoroscopy spot radiograph is then taken by either a radiologist or a radiographer depending on the department routine.

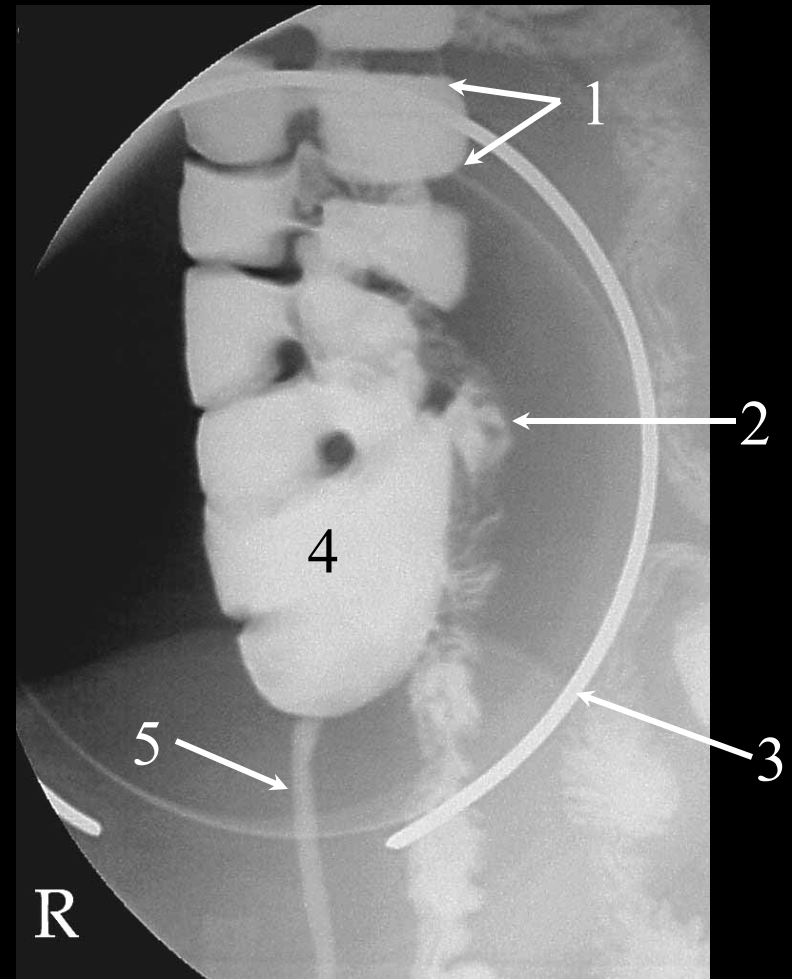


SBS Spot Film of the Terminal Ileum:



SBS Spot Film of the Terminal Ileum:

1. Haustra
2. Terminal Ileum
3. Compression Paddle
4. Cecum
5. Appendix or Vermiform Process



Lower Gastrointestinal System

Lower Gastrointestinal Series

1. Description
2. AP
3. AP Axial or “Sigmoid”
4. RPO
5. LPO
6. Lateral Rectum
7. Right Lateral Decub
8. Left Lateral Decub
9. X-Table Lateral Rectum

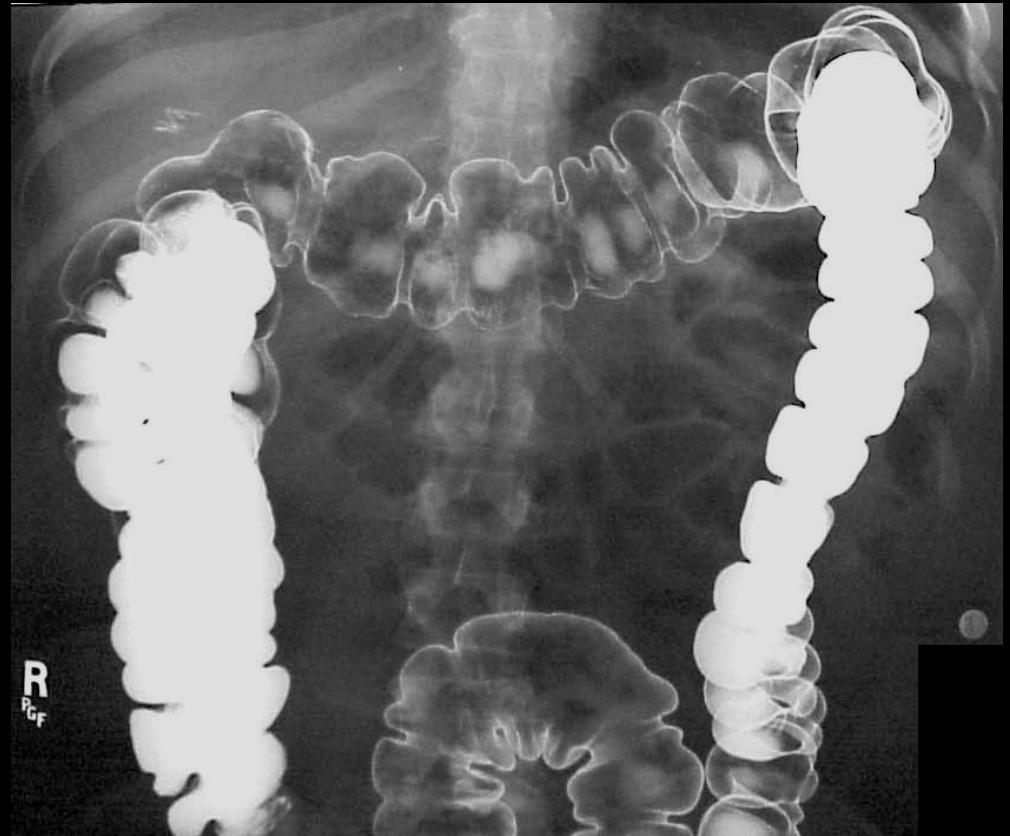
Water-soluble Enema Via Colostomy

1. Description
2. Scout
3. AP Spot #1
4. AP Spot #2
5. AP Spot #3
6. Post Evacuation

Lower Gastrointestinal Series or Barium Enema (BE)

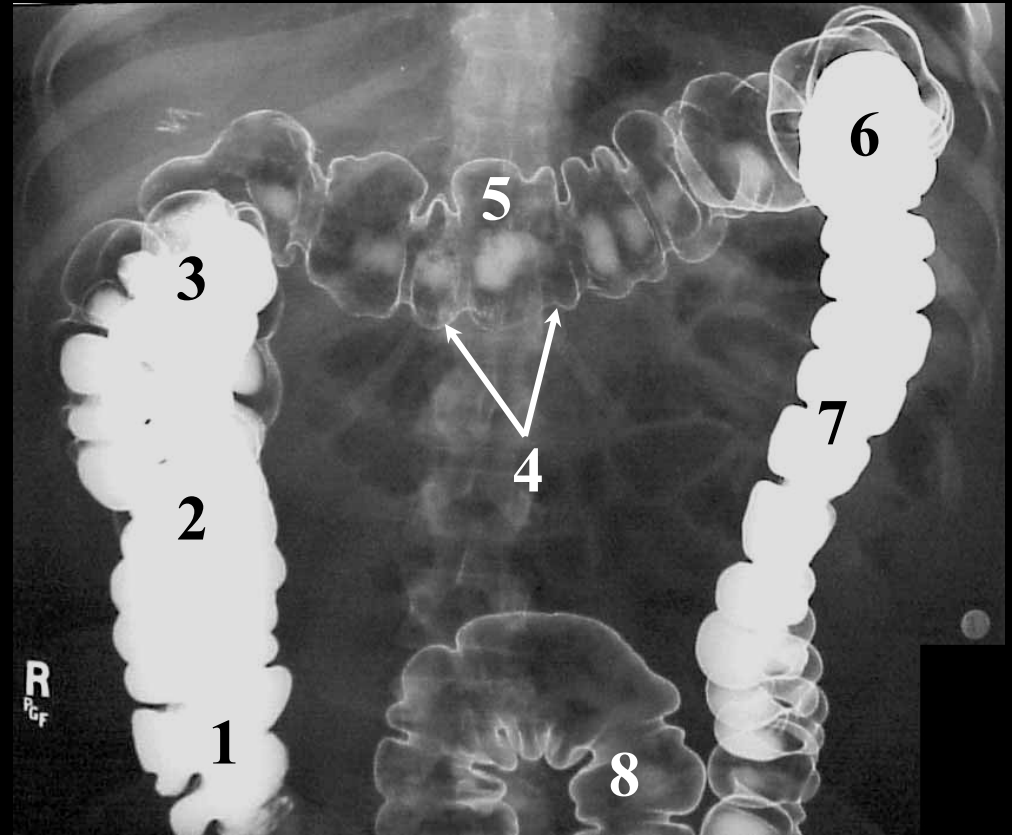
A lower GI series or BE is a radiographic examination of the large intestine. This is generally a single or a double contrast study where barium and air is instilled via the rectum by a radiologist under fluoroscopy. A series of radiographs is taken under fluoroscopy by the radiologist and at the end of the exam by the radiographer.

BE with Air: AP Upper

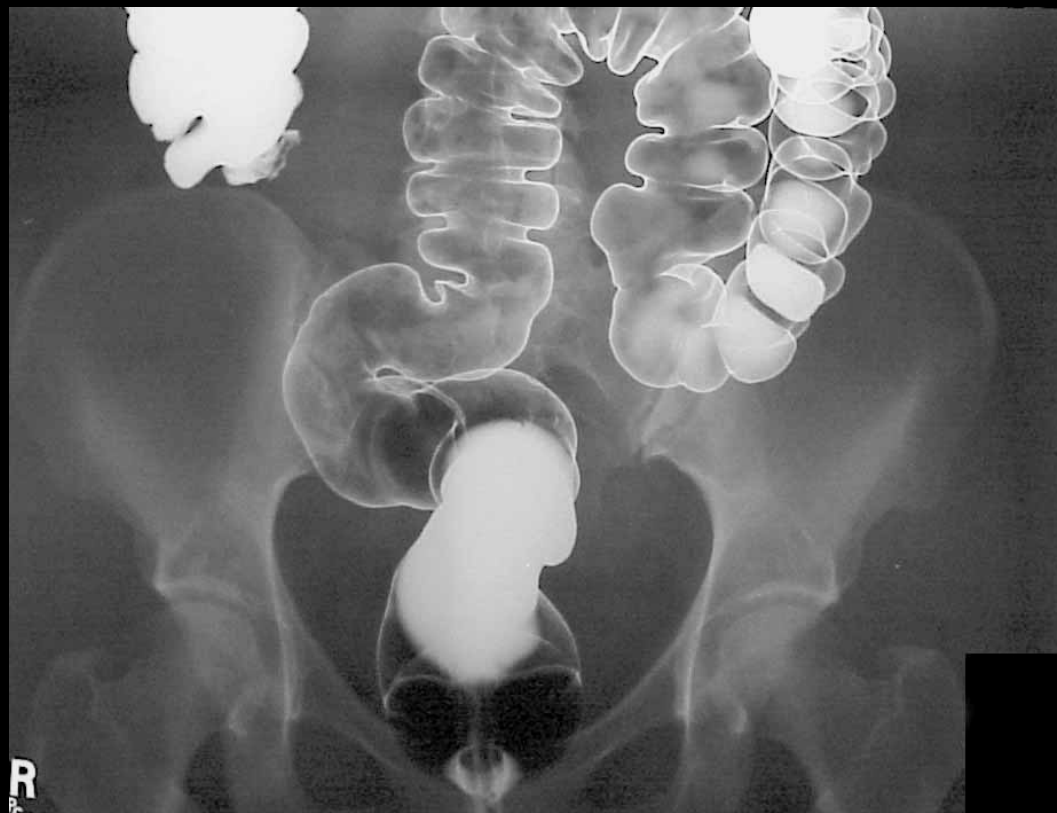


BE with Air: AP Upper

1. Cecum
2. Ascending Colon
3. Hepatic or Right Colic Flexure
4. Haustra
5. Transverse Colon
6. Splenic or Left Colic Flexure
7. Descending Colon
8. Sigmoid Colon

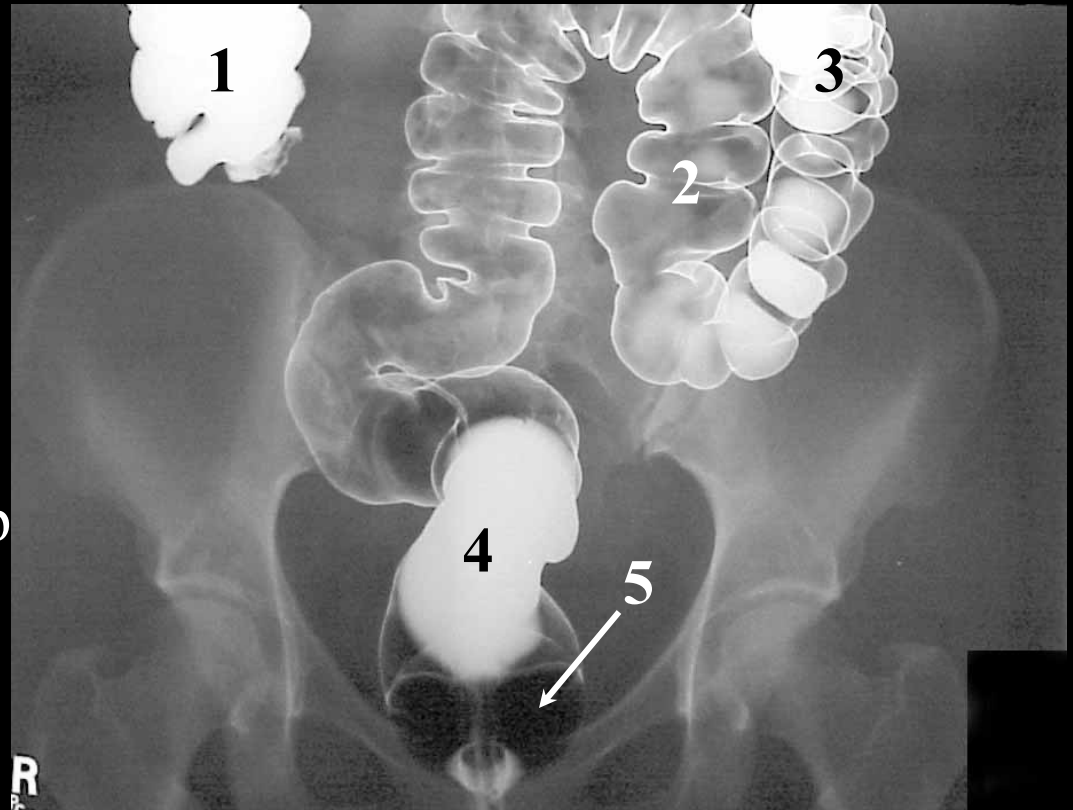


BE with Air: AP Lower

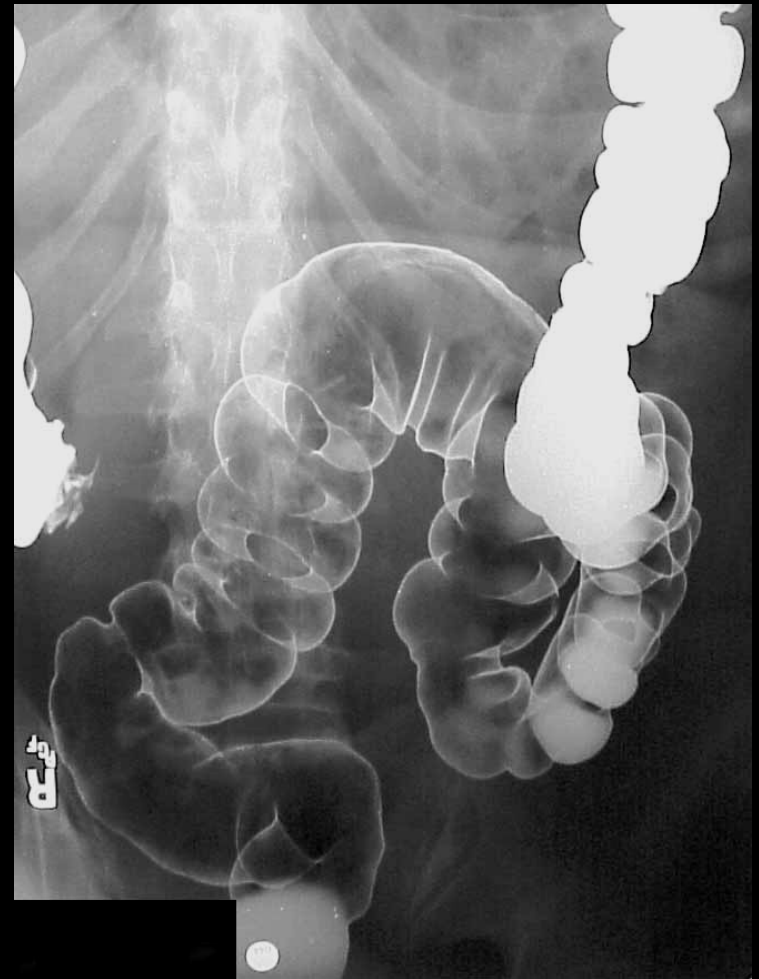


BE with Air: AP Lower

1. Cecum
2. Sigmoid Colon
3. Descending Colon
4. Rectum
5. Balloon for the Enema Tip

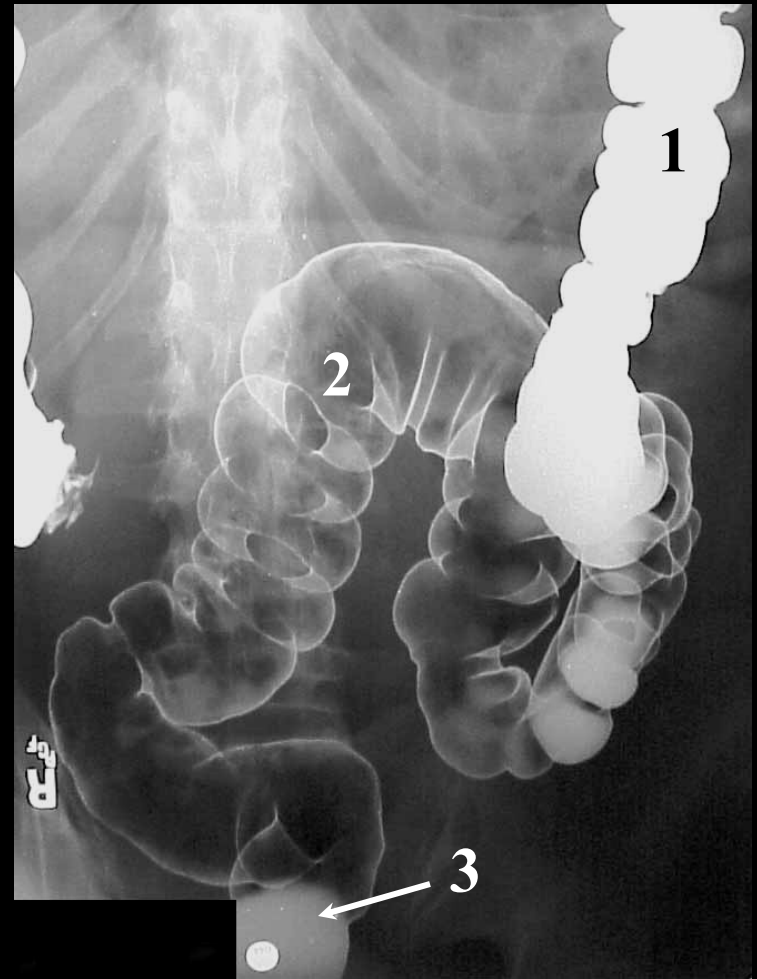


BE with Air: AP Axial or “Sigmoid”

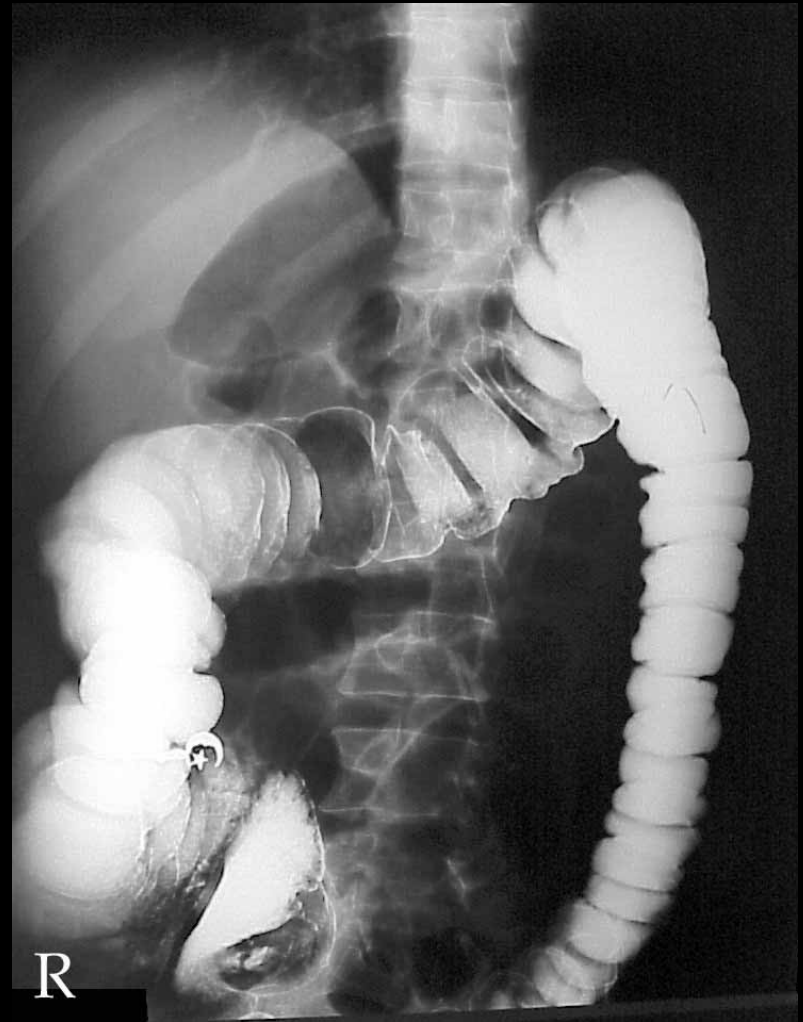


BE with Air: AP Axial or “Sigmoid”

1. Descending Colon
2. Sigmoid Colon
3. Rectum



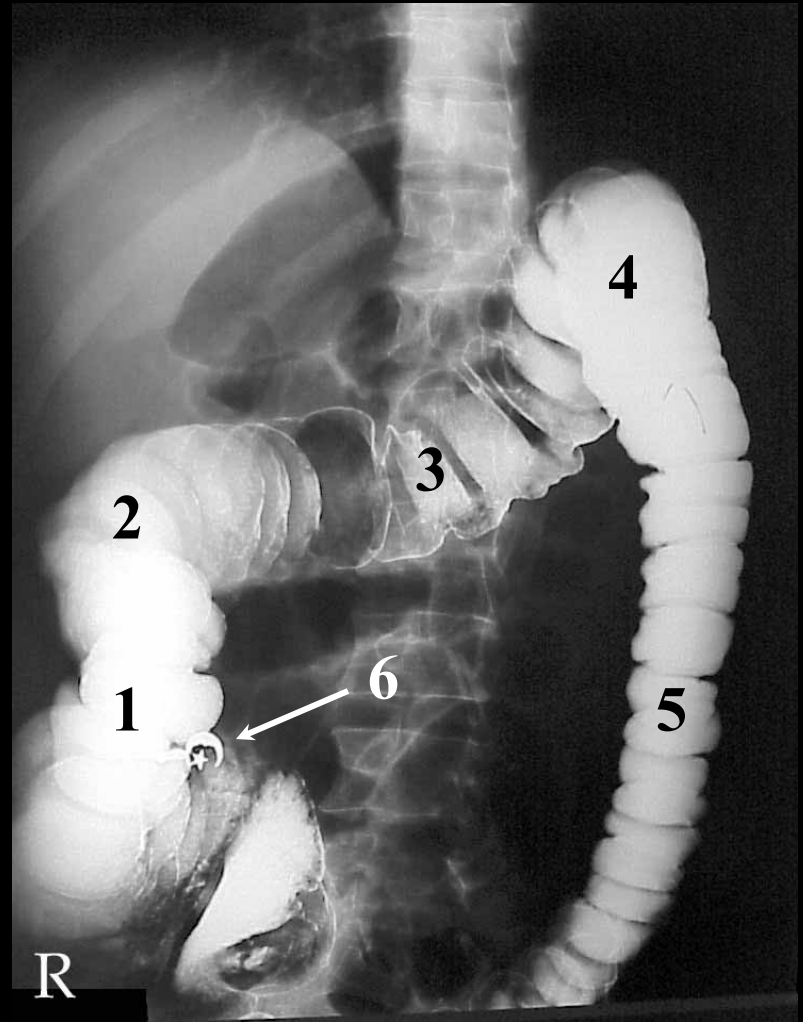
BE with Air: RPO



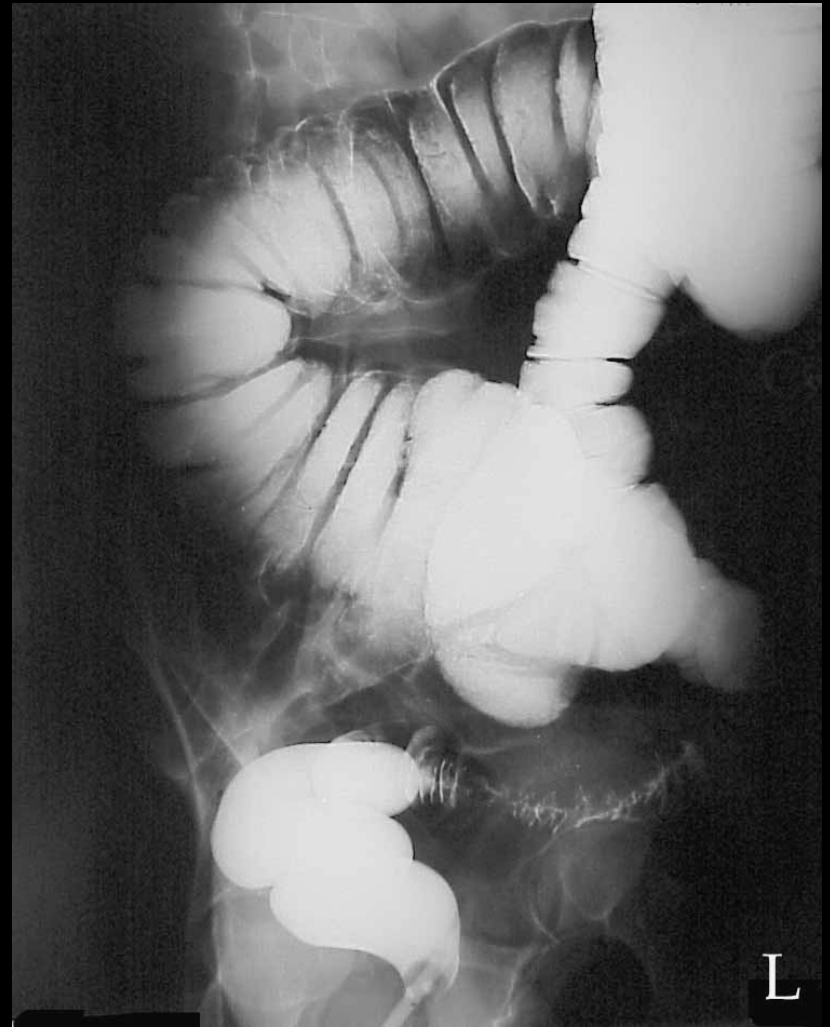
BE with Air: RPO

1. Ascending Colon
2. Hepatic or Right Colic Flexure
3. Transverse Colon
4. Splenic or Left Colic Flexure
5. Descending Colon
6. Belly Button Piercing

Note: This position best demonstrates the splenic flexure.



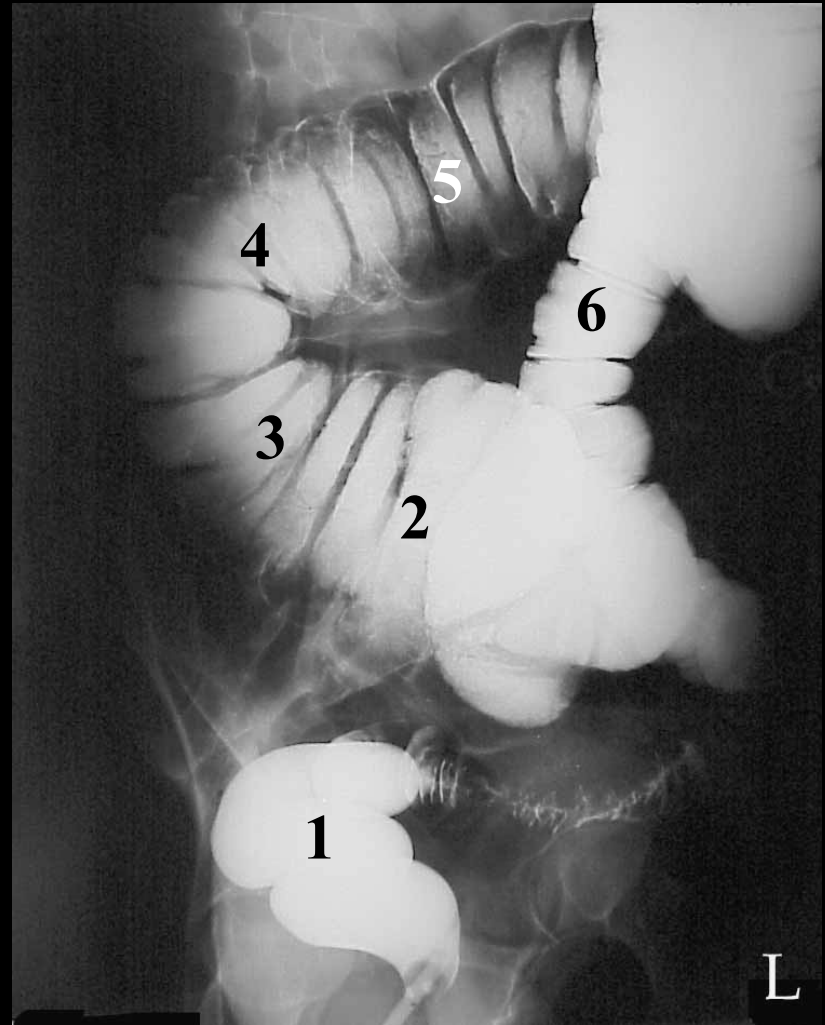
BE with Air: LPO



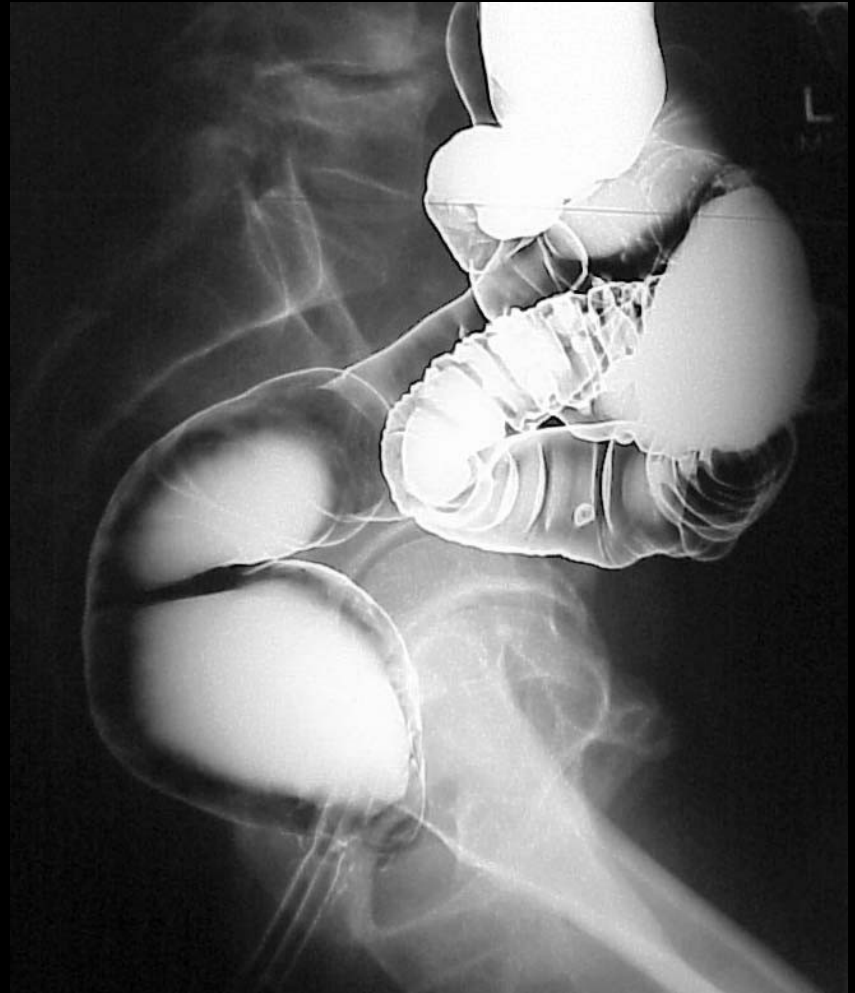
BE with Air: LPO

1. Rectum
2. Cecum
3. Ascending Colon
4. Hepatic or Right Colic Flexure
5. Transverse Colon
6. Descending Colon

Note: This position best demonstrates the hepatic flexure.

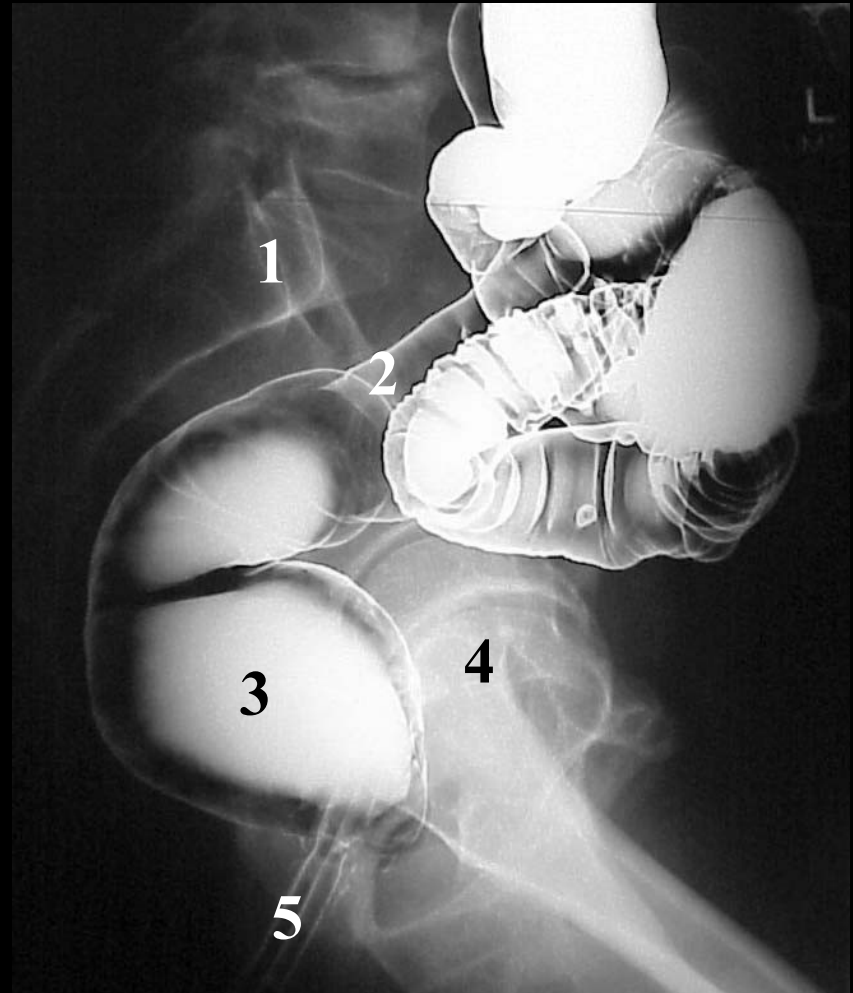


BE with Air: Lateral Rectum



BE with Air: Lateral Rectum

1. Sacrum
2. Sigmoid Colon
3. Rectum
4. Heads of both Femurs
Superimposed
5. BE Tip

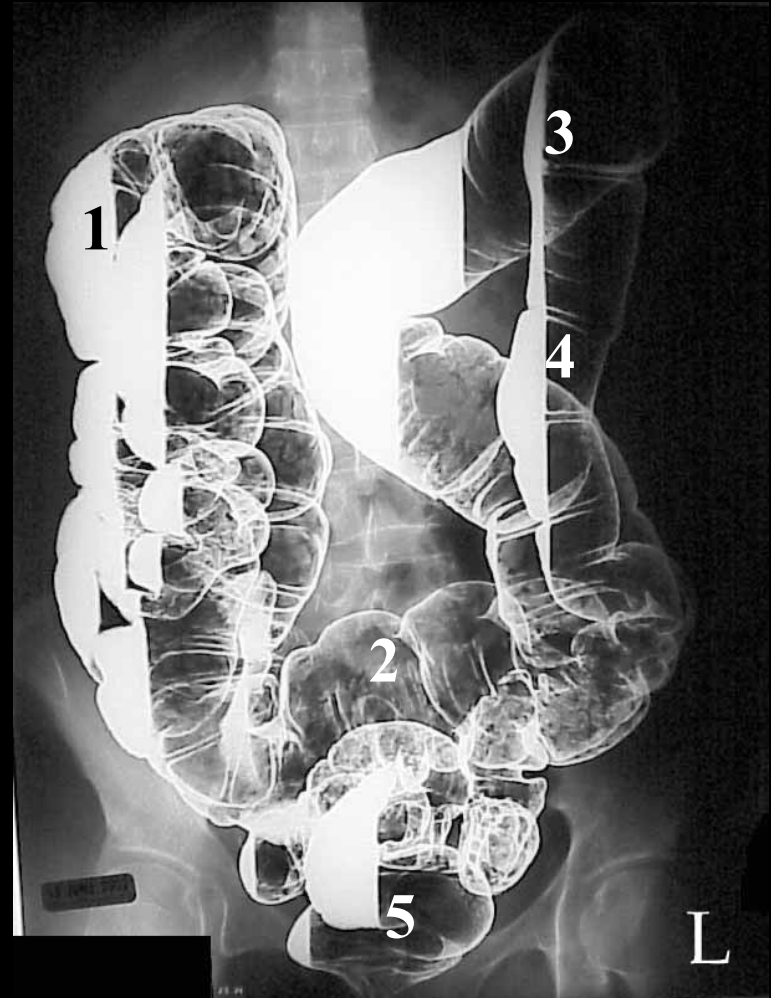


BE with Air: Right Lateral Decubitus



BE with Air: Right Lateral Decubitus

1. Hepatic or Right Colic Flexure
2. Transverse Colon
3. Splenic or Left Colic Flexure
4. Descending Colon
5. Rectum

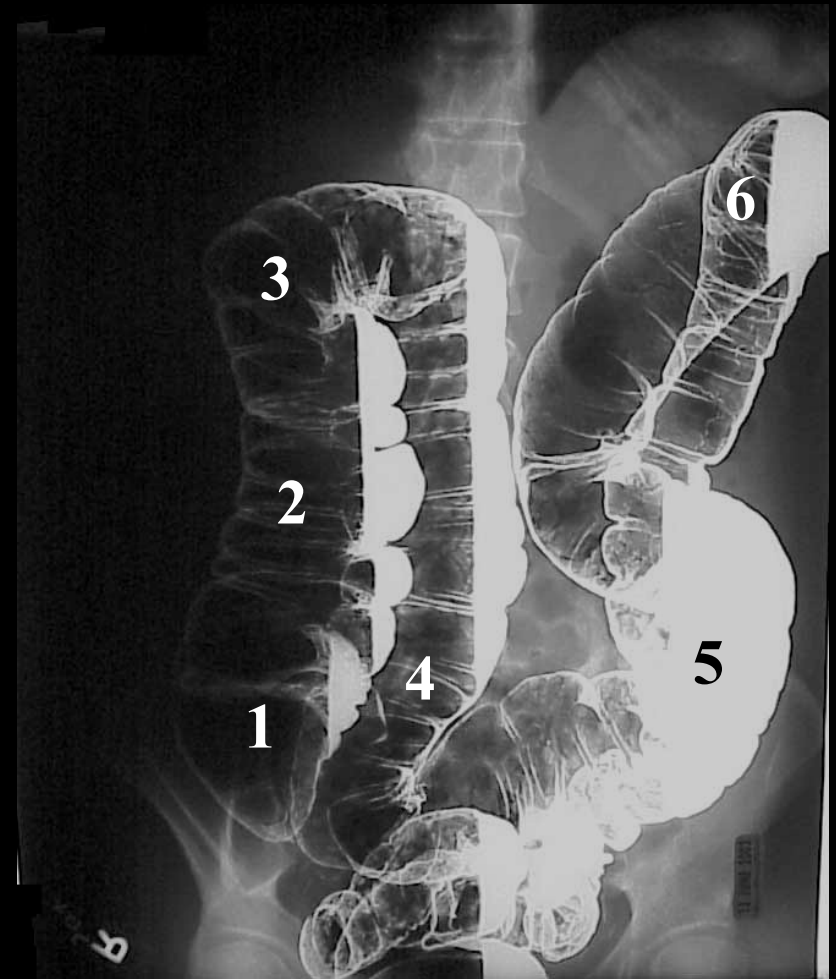


BE with Air: Left Lateral Decubitus

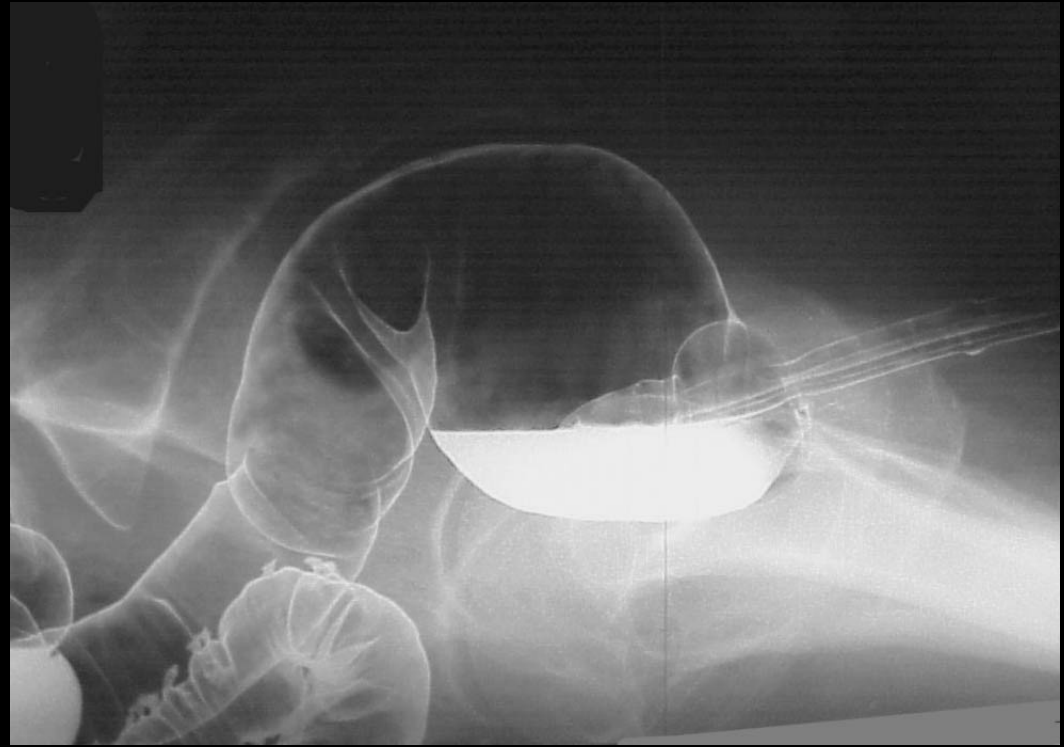


BE with Air: Left Lateral Decubitus

1. Cecum
2. Ascending Colon
3. Hepatic or Right Colic Flexure
4. Transverse Colon
5. Descending Colon
6. Splenic or Left Colic Flexure

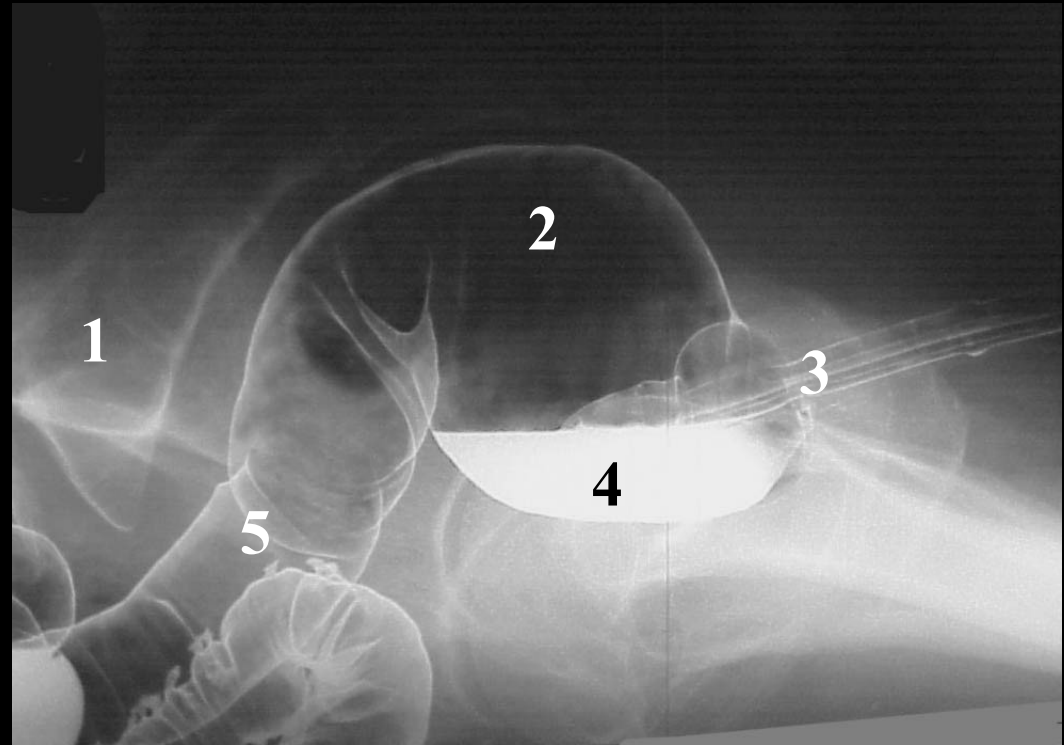


BE with Air: PA X-table Lateral Rectum



BE with Air: PA X-table Lateral Rectum

1. Sacrum
2. Air in the Posterior Rectum
3. BE Tip
4. Barium in the Anterior Rectum
5. Sigmoid Colon

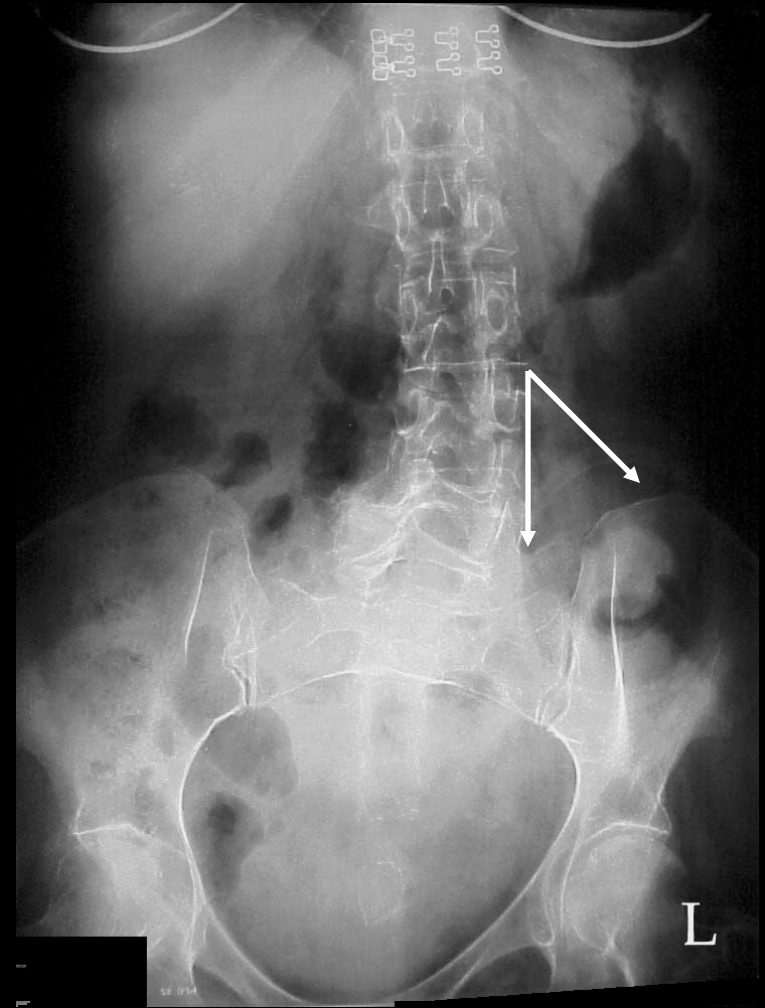


Lower G.I. Series with Water-soluble Iodinated Contrast via a Colostomy

Prior to removing a patient's temporary colostomy, an examination employing the instillation of a water-soluble contrast agent, such as Gastroview or Gastrografin, may be performed. During this procedure, a Foley catheter is inserted into the stoma and the balloon is inflated. Next, the contrast agent is slowly instilled and spot radiographs are taken. This same process may also be performed by inserting the enema tip into the rectum and instilling contrast material from the rectum up to the stoma.

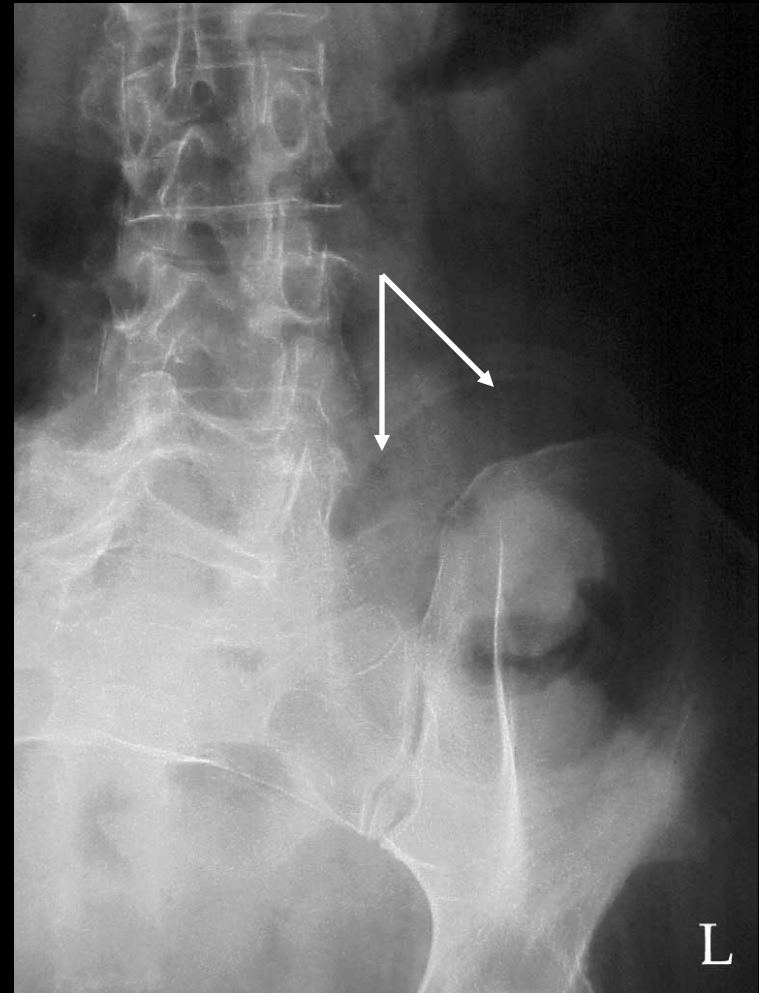
Lower G.I. Series via Colostomy: Scout

The arrows indicate the area where the temporary colostomy has been surgically inserted.



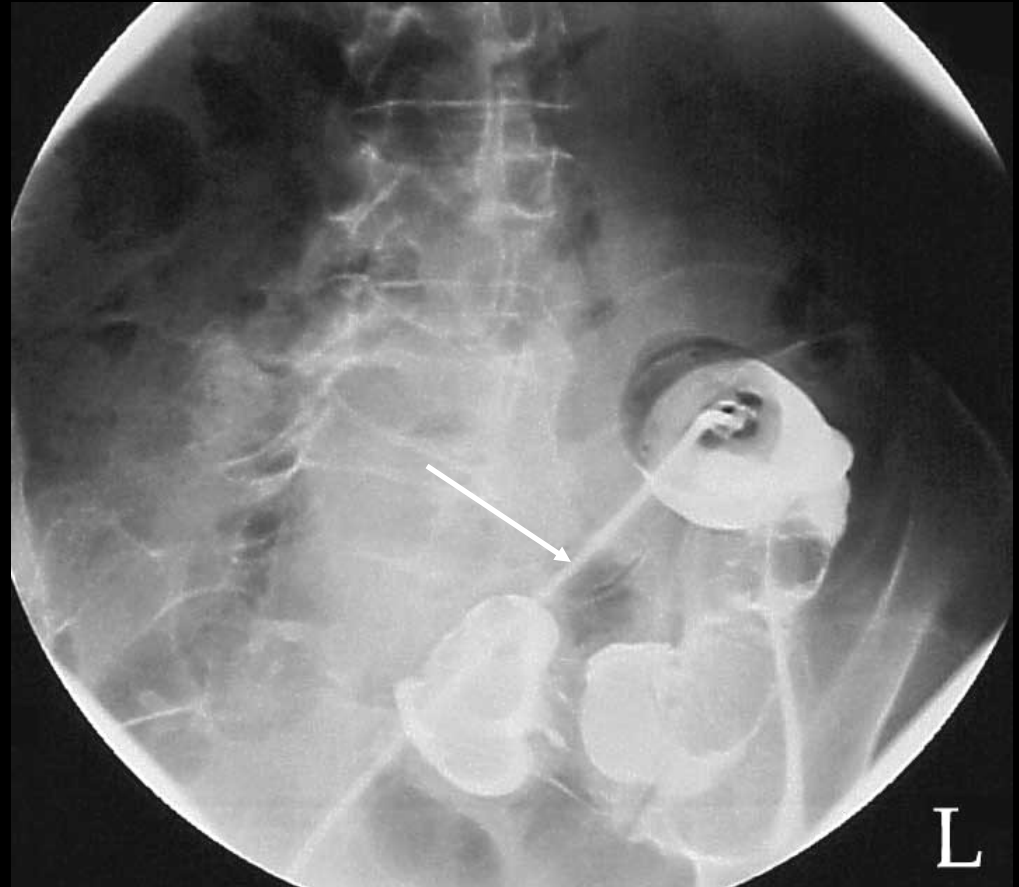
Lower G.I. Series via Colostomy: Scout

This is a magnified image of the previous radiograph which further delineates the outline of the stoma as indicated by the arrows.



Lower G.I. Series via Colostomy

The arrow is pointing to the Foley catheter that has been carefully inserted into the colostomy and has had the balloon inflated. The water-soluble contrast agent is slowly instilled into the colon.

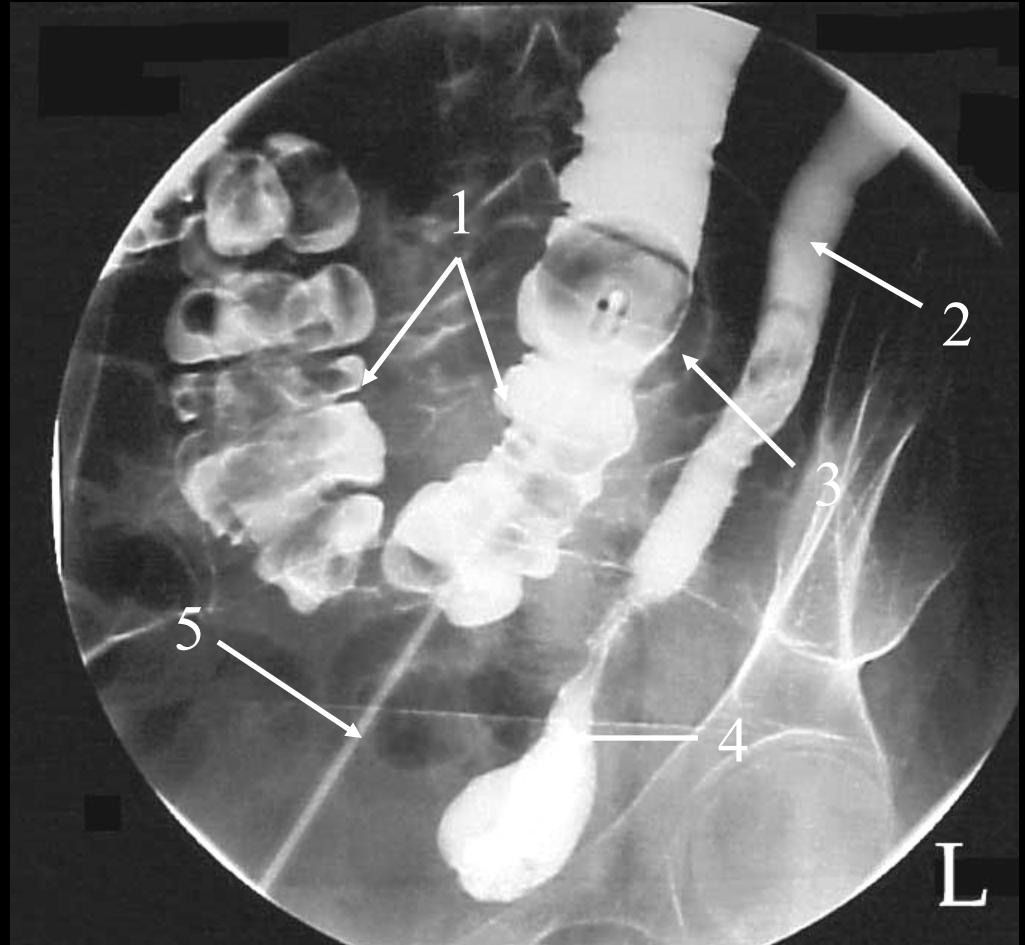


Lower G.I. Series via Colostomy



Lower G.I. Series via Colostomy

1. Transverse Colon
2. Descending Colon
3. Balloon from the Foley Catheter
4. Sigmoid Colon
5. Contrast Material in the Foley Catheter



Lower G.I. Series via Colostomy

After the colon has been fully distended and it has been determined that it is in fact patent, the exam is terminated.



Lower G.I. Series via Colostomy

A post evacuation radiograph is generally performed to complete the procedure. The arrows are pointing to residual feces within the colon.



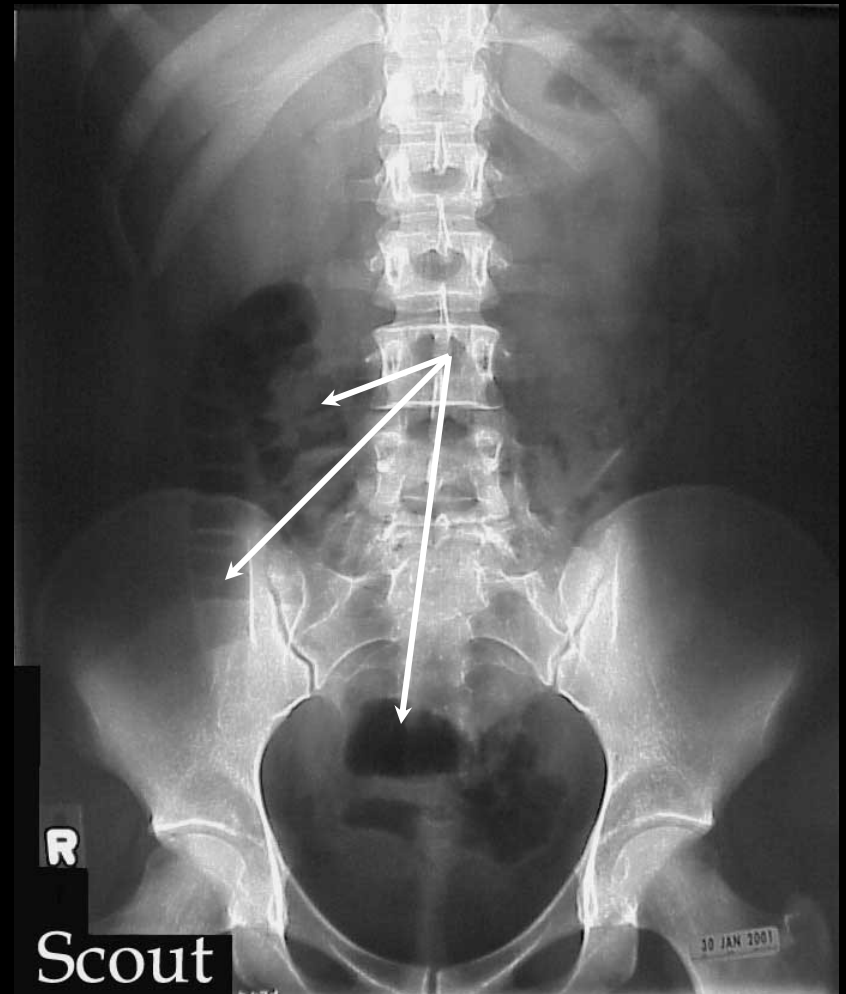
Intravenous Pyelogram

Intravenous Pyelogram

- 1. Scout**
- 2. Immediate**
- 3. Tomogram**
- 4. RPO**
- 5. 10 Minute Delay**
- 6. Post Void**
- 7. Magnified Kidney**
- 8. Compression Technique**

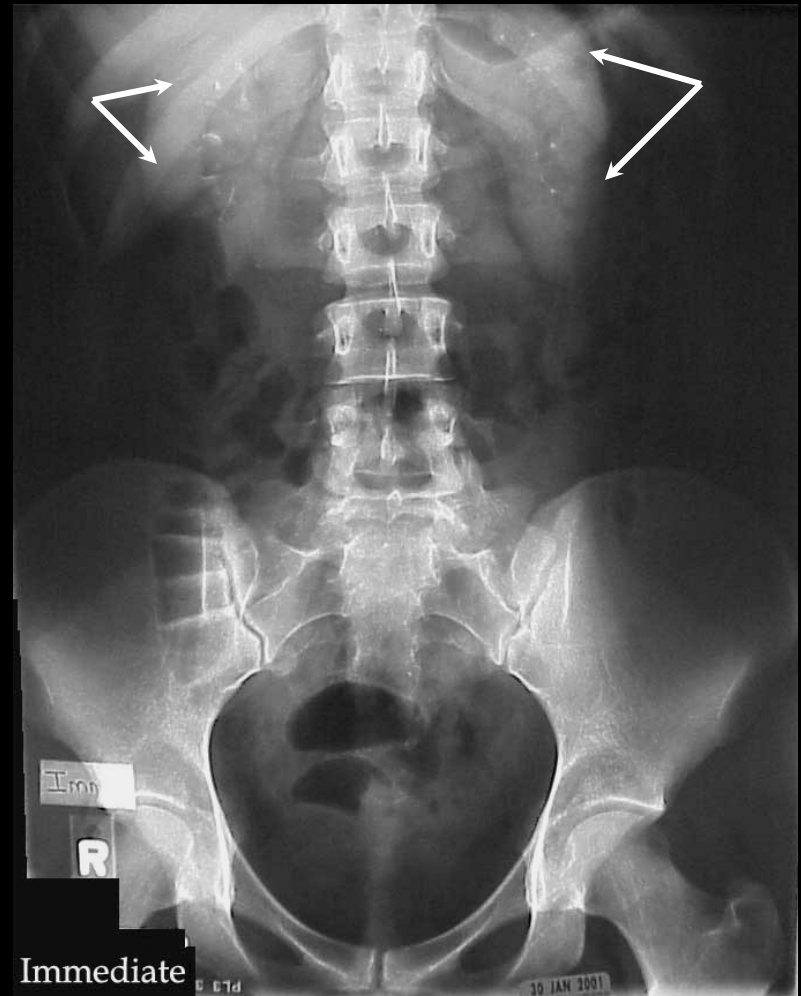
Intravenous Pyelogram or IVP:

A scout radiograph is always taken as part of the routine for an IVP. This is done to ensure that the patient has been properly prepped and has no residual barium from a previous exam is present. In this case, there is some air in the large intestine, however, there is not enough to warrant postponing the exam.



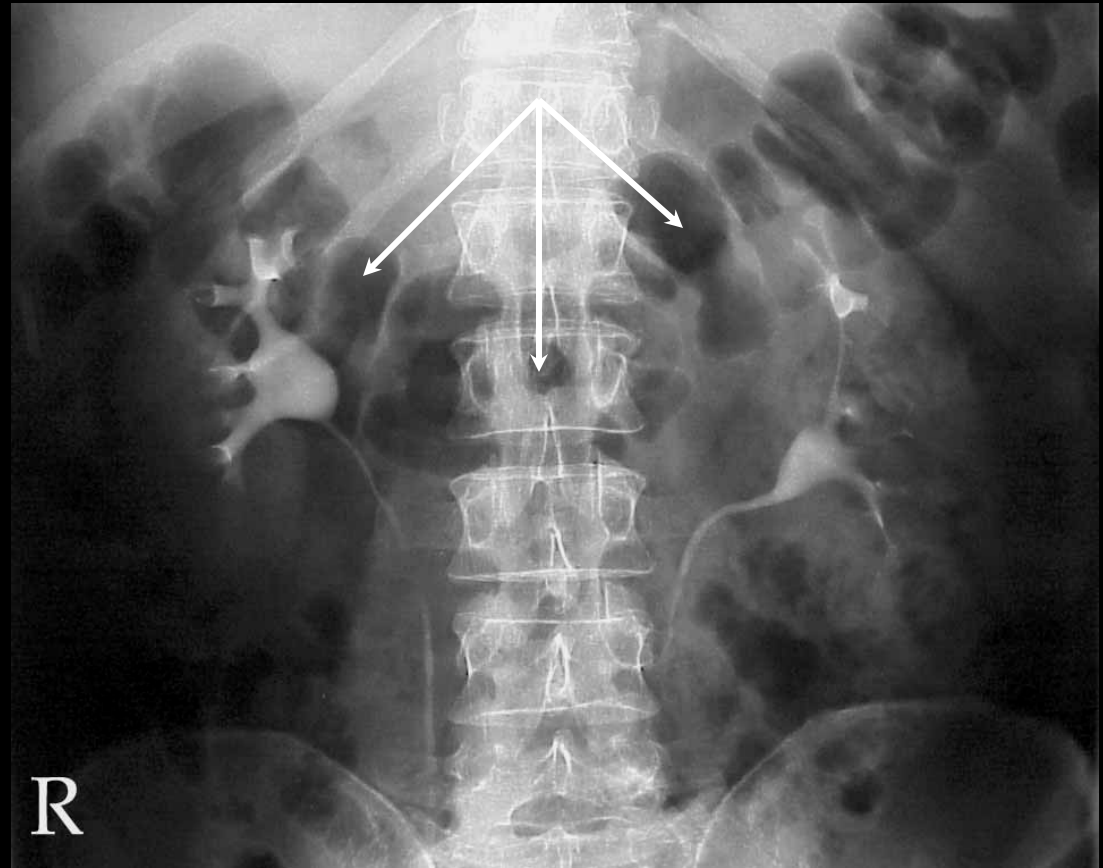
IVP: “Immediate” Radiograph

The routine for an IVP varies at each facility and in many cases with each radiologist. In this particular routine, a full KUB is taken immediately following the injection of iodinated contrast material. The contrast is still in the nephron stage of filtration and this causes the kidneys to have a white, hazy appearance.

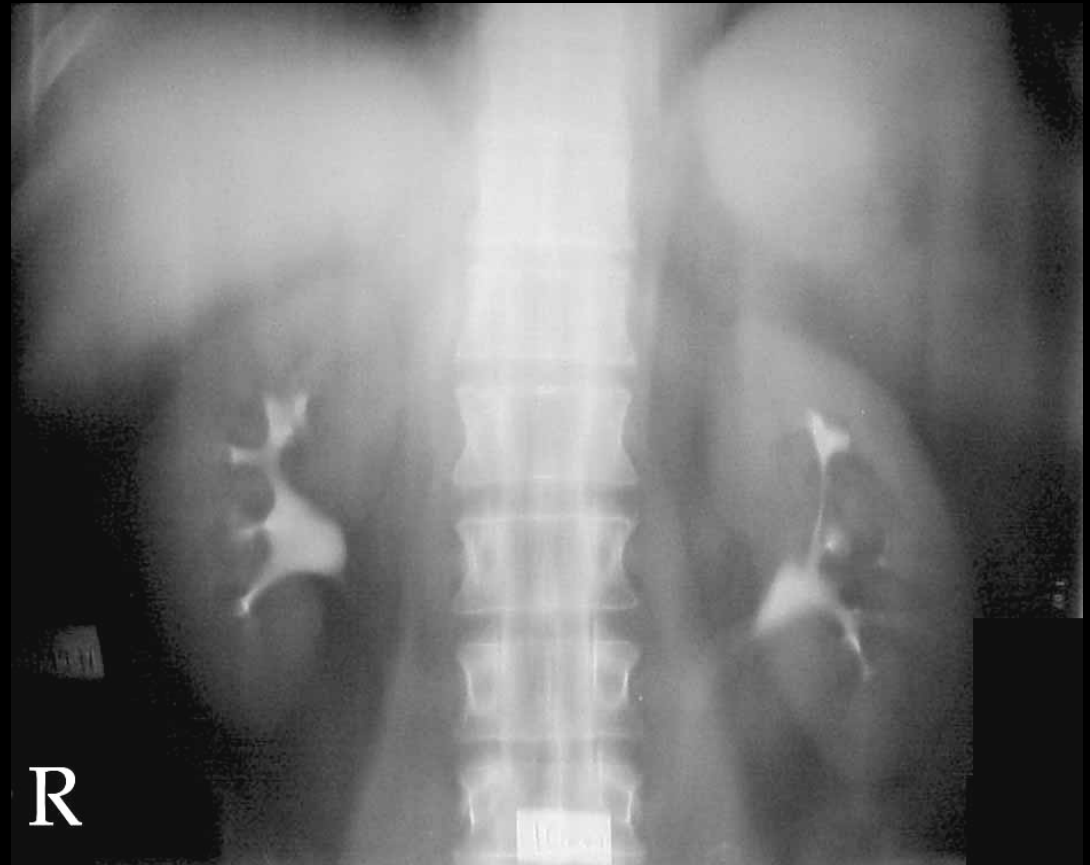


IVP: Kidney Cone-down or “KU”

Some departments require a cone down of just the kidneys. The kidneys are obstructed by the presence of gas in the transverse colon. This patient is the perfect candidate for tomography as you will see on the next slide.



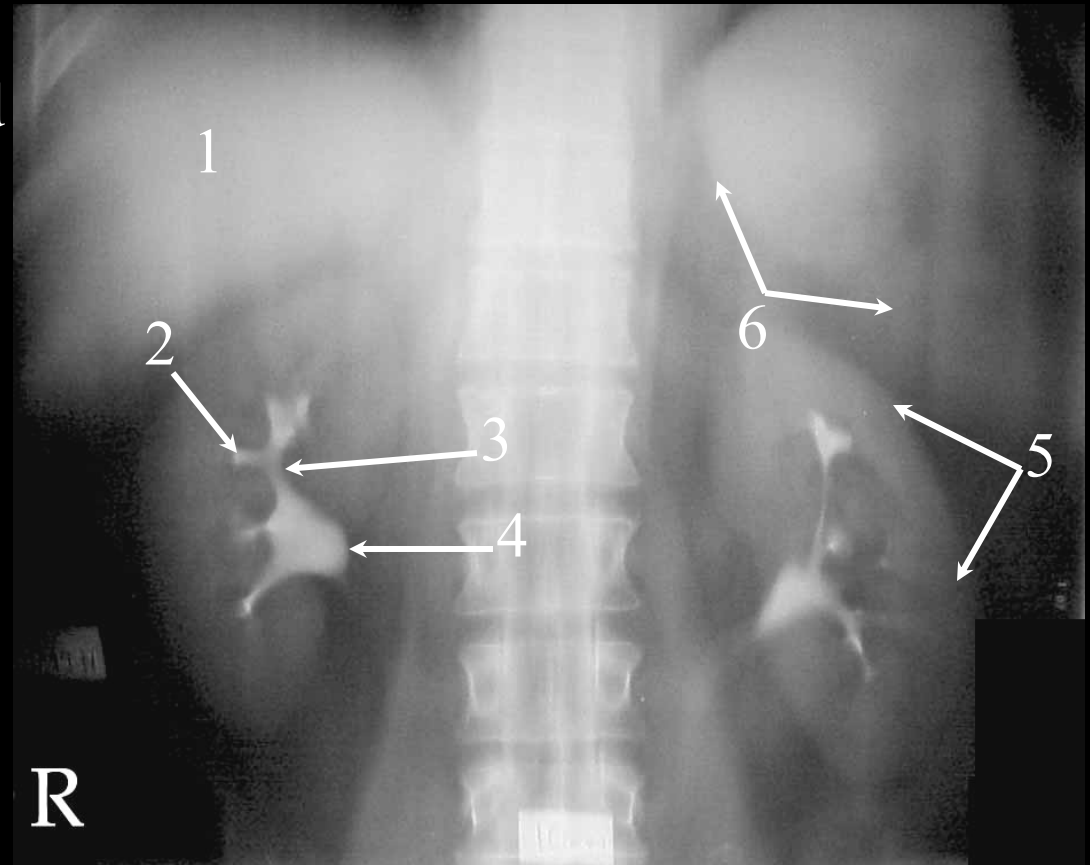
IVP: Tomogram



IVP: Tomogram

Tomograms have the ability to remove obstructive anatomy found above and below the kidneys

1. Shadow of the Liver
2. Minor Calyx
3. Major Calyx
4. Renal Pelvis
5. Renal Cortex
6. Shadow of the Spleen



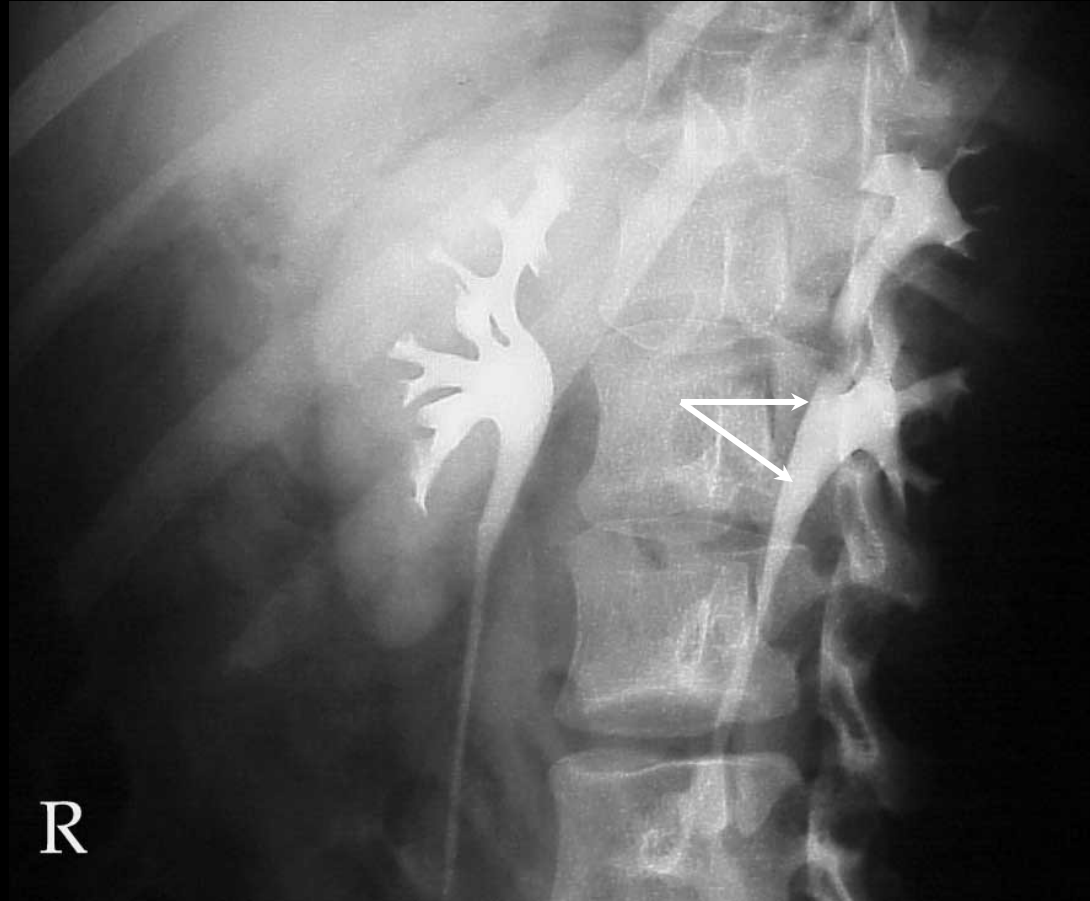
IVP: RPO

The patient should be placed in a shallow, 30 degree oblique for this position. On this particular radiograph, the patient is too steep thus causing the side up (left) kidney to be superimposed over the lumbar spine. Turn to the next slide for a magnified view.



IVP: RPO Magnified

It is acceptable for the side up (left) ureter to be superimposed on the spine but, the arrows clearly indicate that the left renal pelvis is overlying the spine which is an indication that the patient is too steep.



IVP: RPO

This radiograph is nearly perfectly positioned. The side up kidney (left) is now no longer superimposed on the spine. As a point of interest, the left kidney is parallel to the film and the right kidney is nearly lateral to the film. You will need this information to answer one of the questions on the Mastery Test.



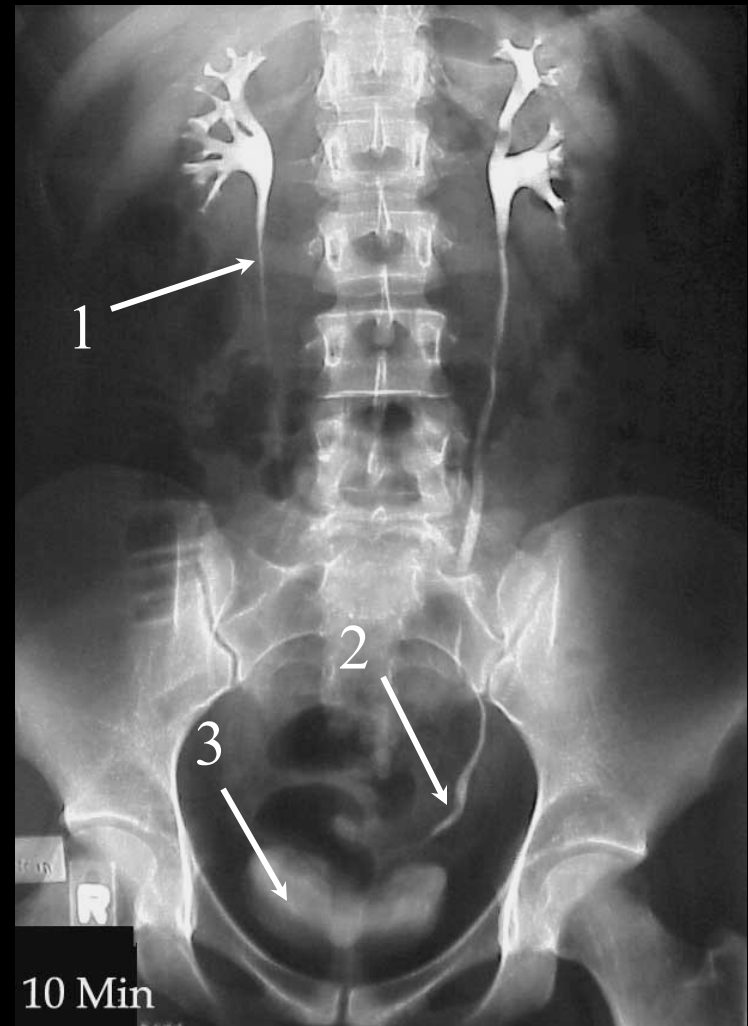
IVP: 10 Minute Delay



IVP: 10 Minute Delay

Normal peristalsis of the ureters results in the contrast material moving through them in waves as clearly demonstrated on this radiograph. It is imperative that the entire bladder is demonstrated on this radiograph.

1. Proximal Ureter
2. Distal Ureter
3. Urinary Bladder

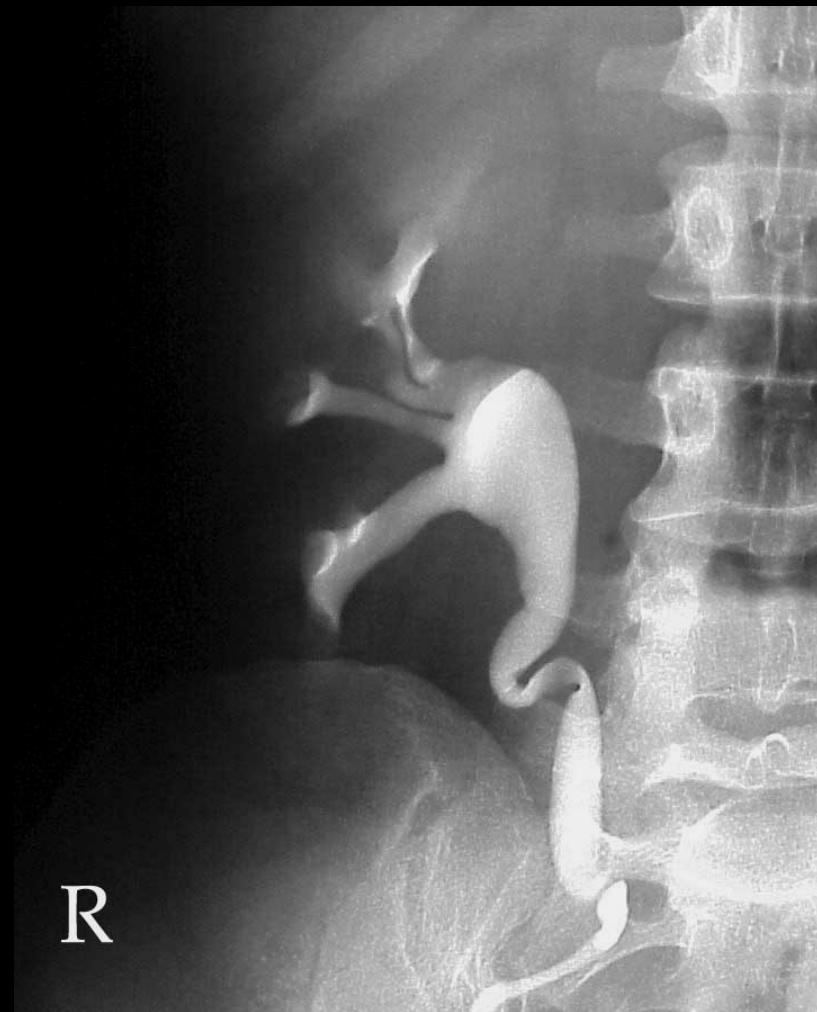


IVP: Post Void

A prone or upright KUB is taken after the patient has been instructed to void or micturate. This radiograph is used to demonstrate how well the patient can empty their bladder. Therefore, the entire urinary bladder must be visualized.

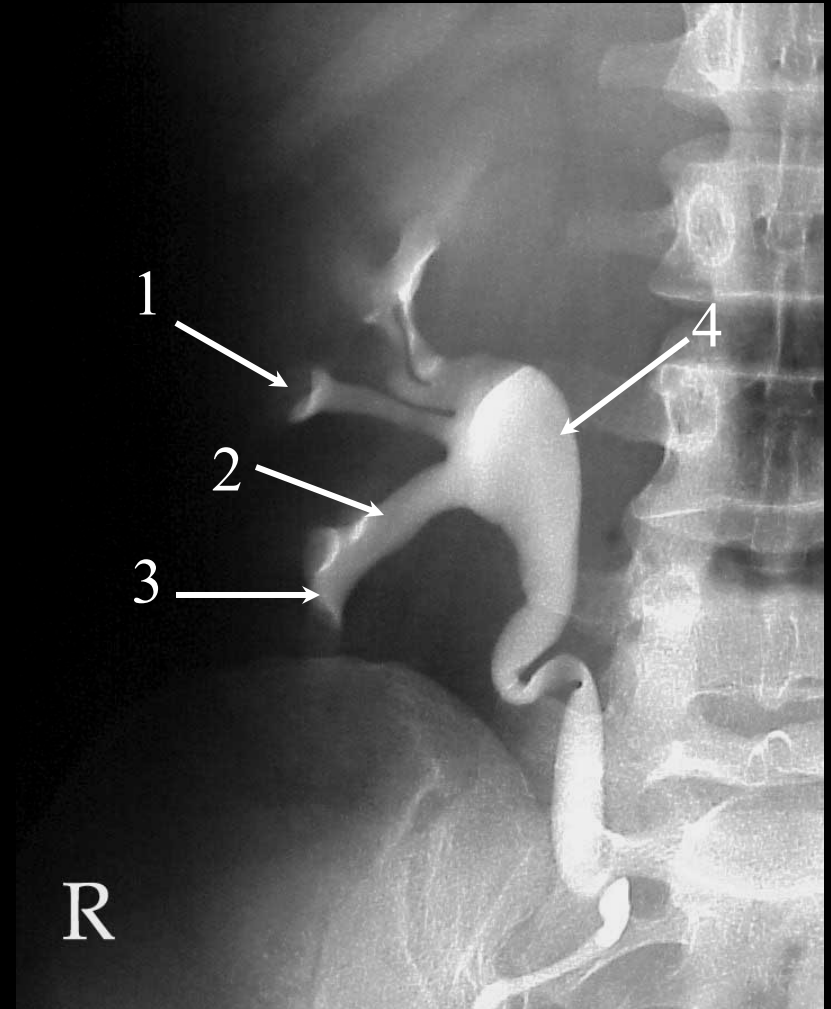


IVP: Magnified Kidney



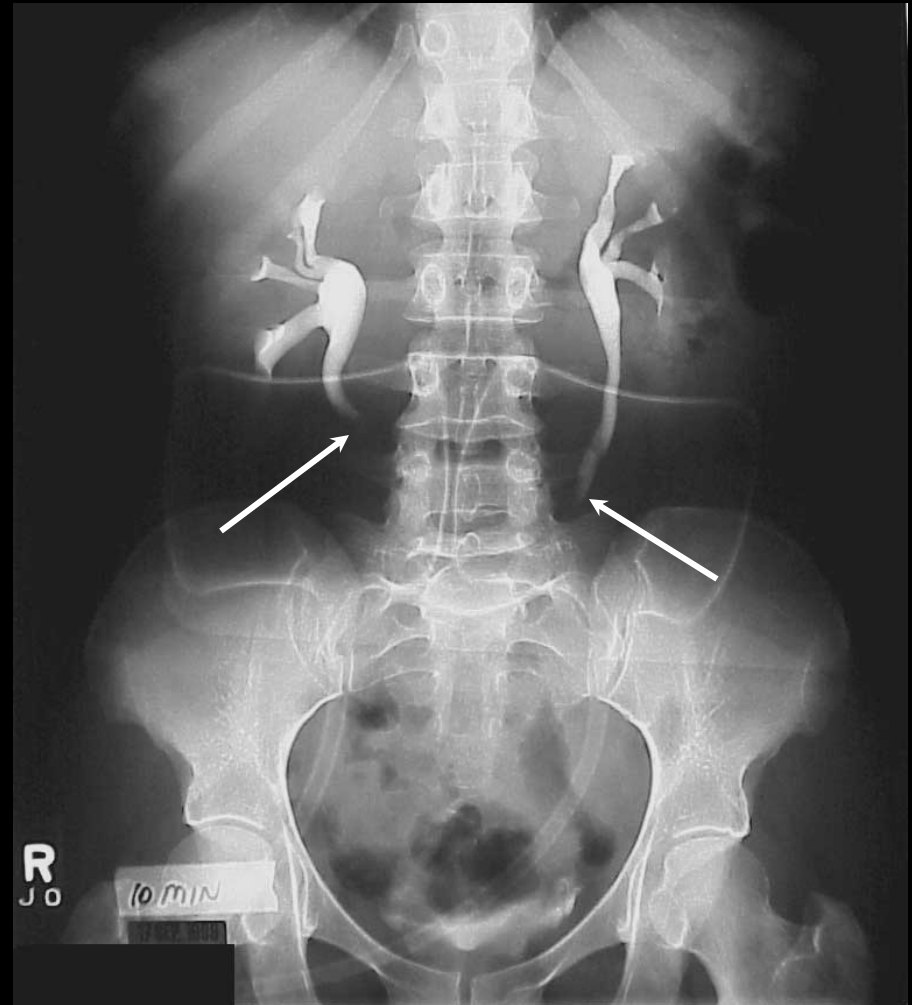
IVP: Magnified Kidney

1. Renal Papilla
2. Major Calyx
3. Minor Calyx
4. Renal Pelvis



IVP With Compression

Some departments still require the use of ureteric compression devices that required the use of inflatable paddles being placed over the pelvic brim and held in place with a Velcro strap. The idea was to manually prevent the flow of contrast into the bladder and thus enhance the filling of the pelvicalyceal and proximal ureters as indicated by the arrows.

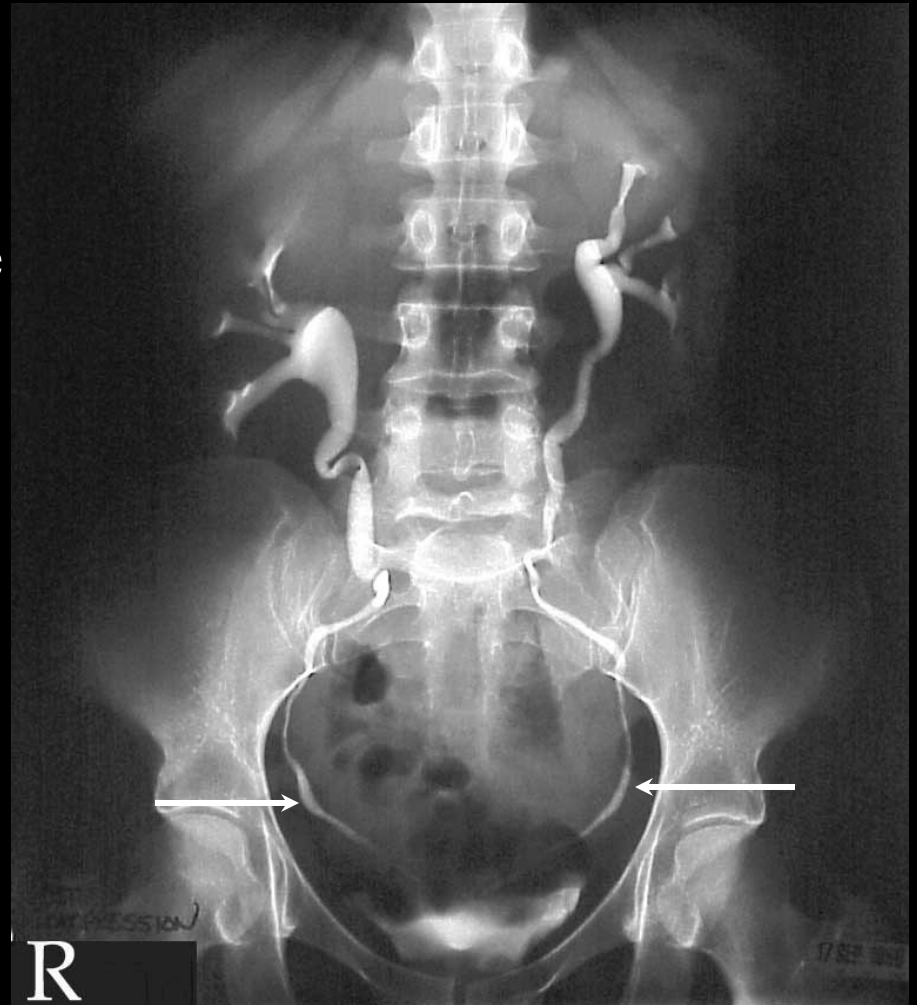


IVP With Compression: Magnified



IVP Post Compression

In this particular study, the paddles are removed prior to the 10 minute radiograph. This “post compression” film would then demonstrate the flow of contrast through the distal ureters and into the urinary bladder as indicated by the arrows.



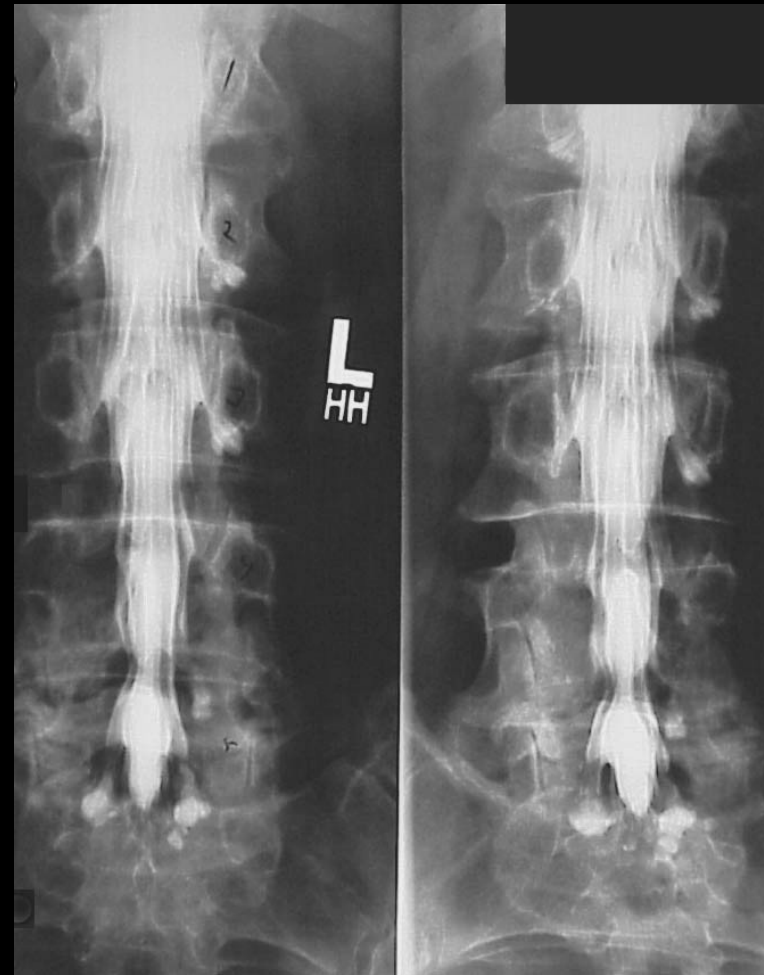
Myelogram

Myelogram

- 1. Lumbar PA**
- 2. Lumbar Oblique**
- 3. Lumbar X-Table Lateral**
- 4. Cervical X-Table Lateral**

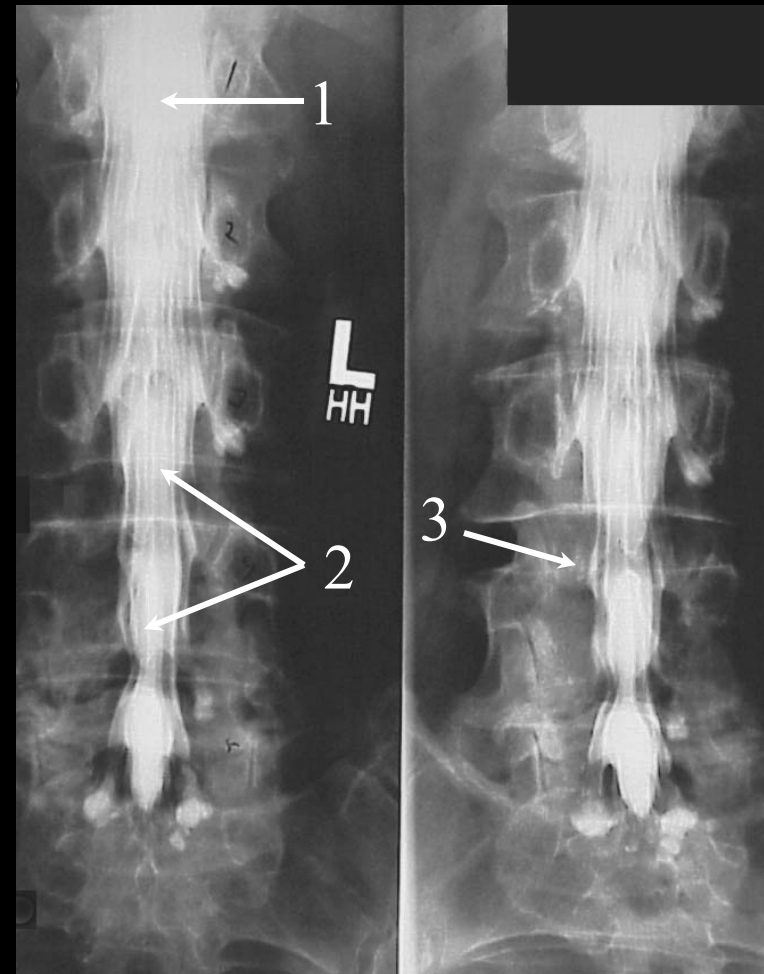
Lumbar Myelogram: PA

A lumbar myelogram is generally performed by a radiologist with the assistance of a radiographer. A spinal needle is placed below the spinal cord and into the subarachnoid space usually either between L2/L3 or L3/L4. CSF is removed and iodinated contrast material is instilled intrathecally. A series of radiographs is then taken.



Lumbar Myelogram: PA

1. Conus Medullaris (terminal spinal cord)
2. Cauda Equina or “Horses Tail”
(group of nerve roots that exit the spinal cord at the conus medullaris)
3. Nerve Root

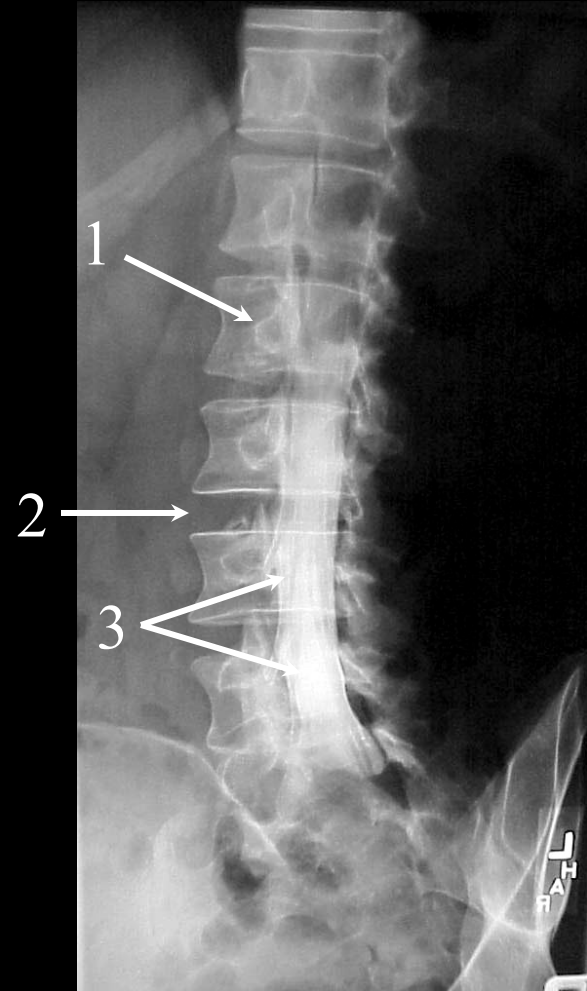


Lumbar Myelogram: LAO

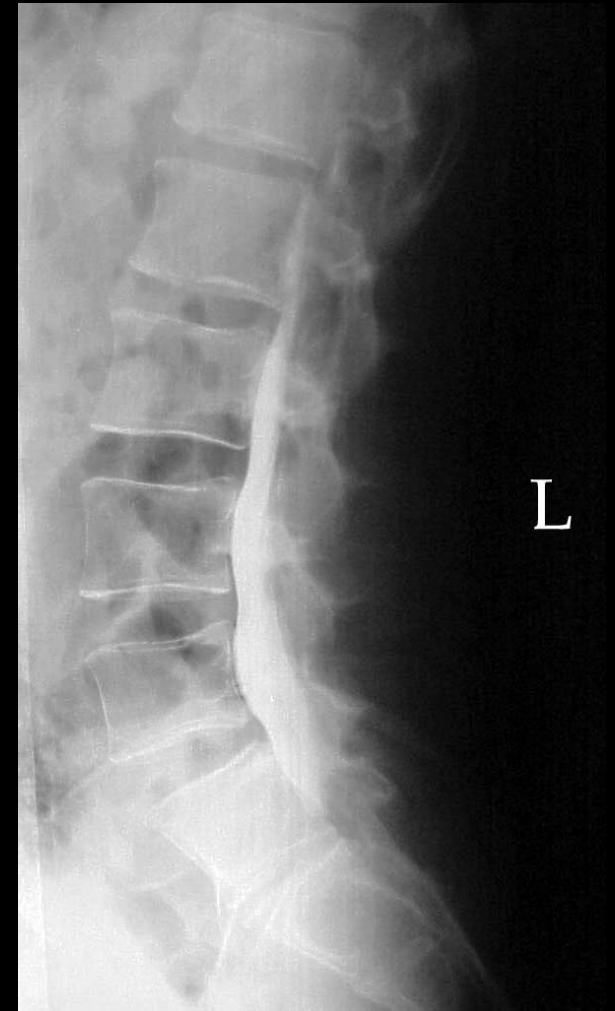


Lumbar Myelogram: LAO

1. Pedicle
2. Intervertebral Disc Space
3. Cauda Equina or “Horses Tail”

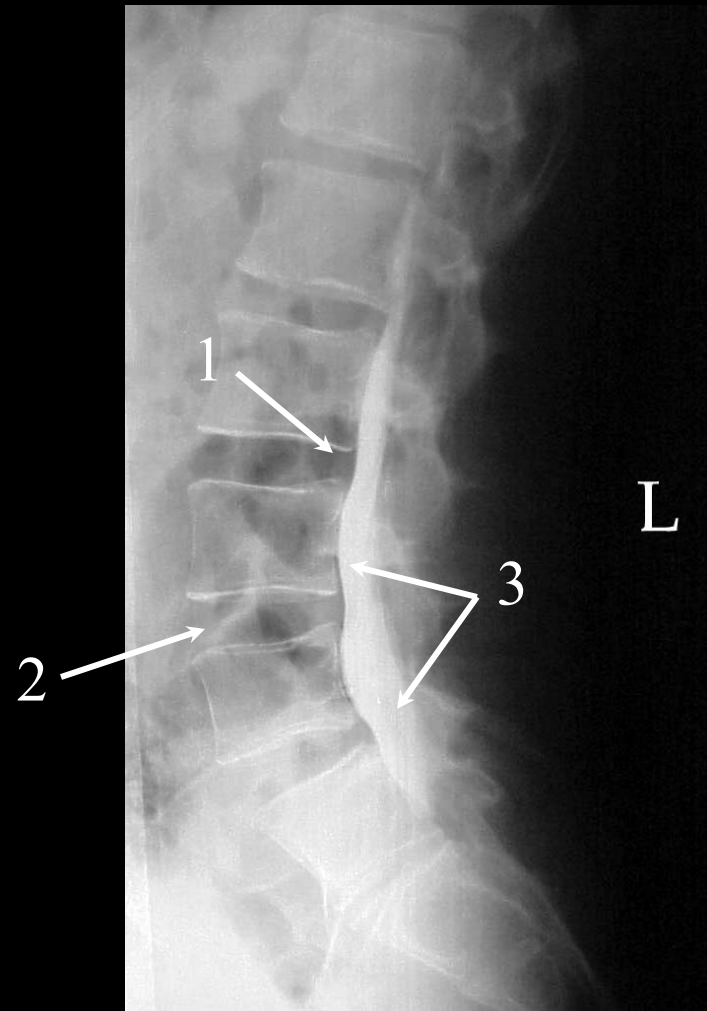


Lumbar Myelogram: X-Table Lateral

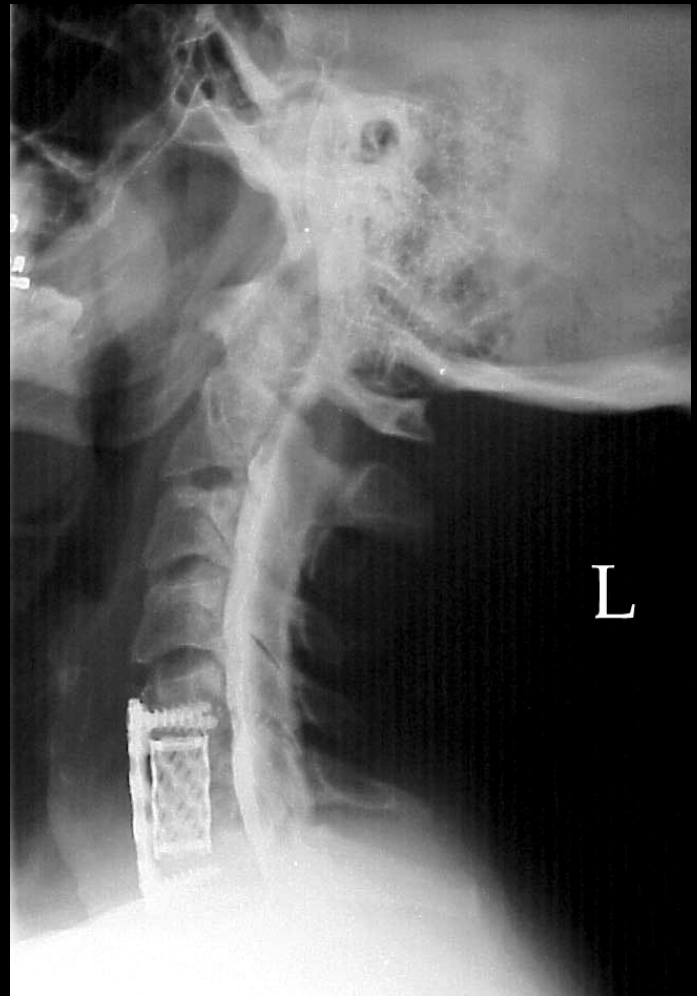


Lumbar Myelogram: X-Table Lateral

1. Area where a disk may herniate into the spinal cord or nerve root
2. Intervertebral Disc
3. Cauda Equina or “Horses Tail”

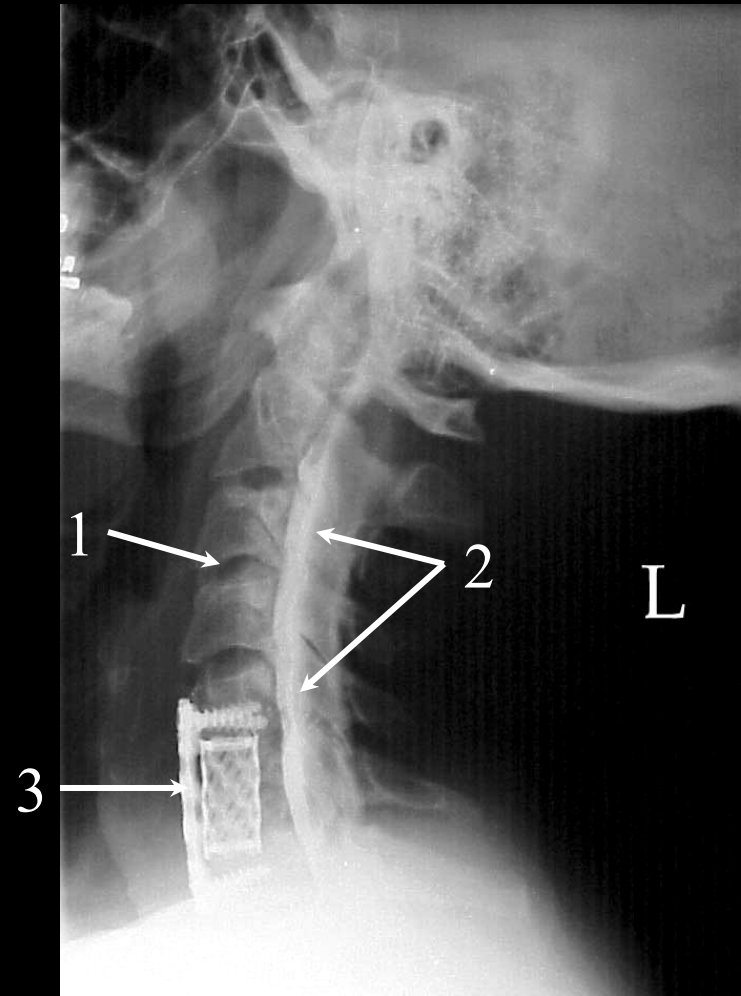


Cervical Myelogram: X-Table Lateral



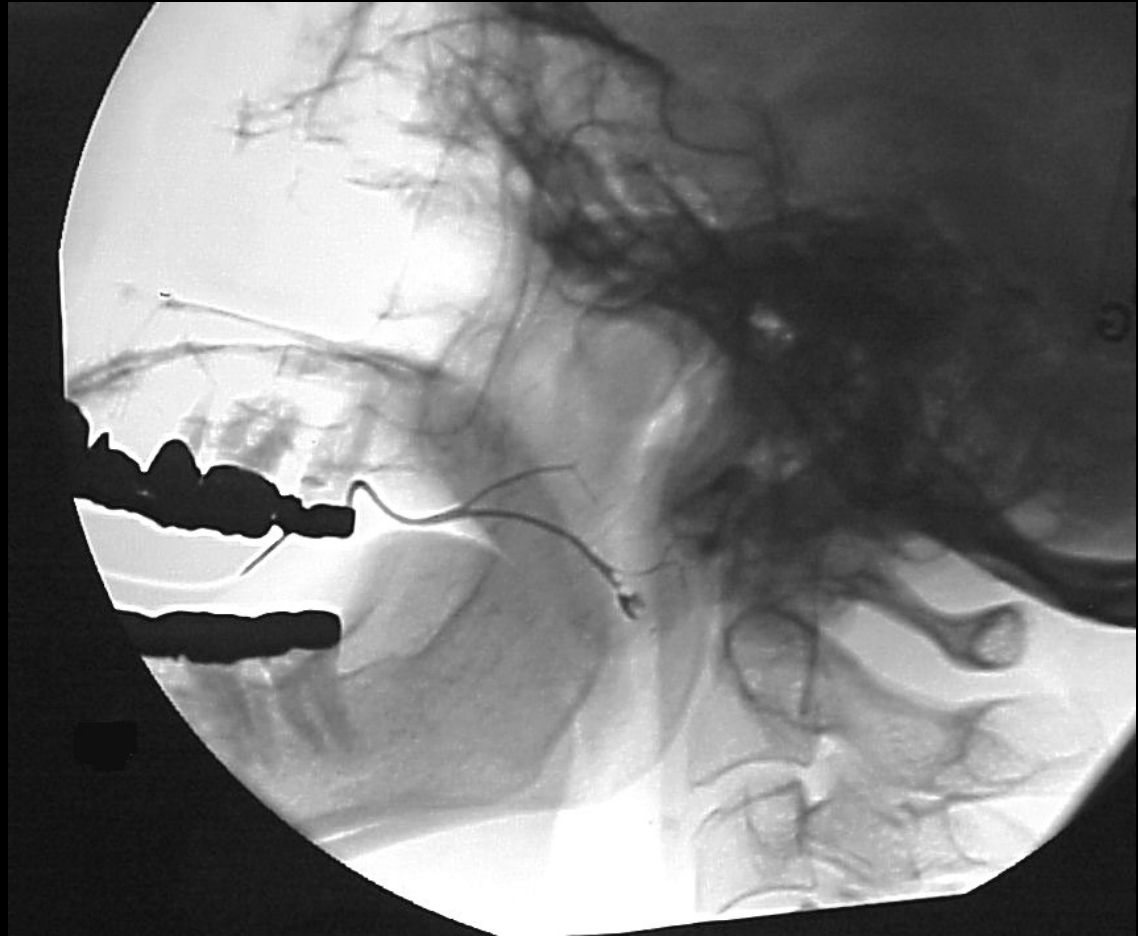
Cervical Myelogram: X-Table Lateral

1. Intervertebral Disc
2. Contrast Material in the Subarachnoid Space Surrounding the Spinal Cord
3. “Cage” Internal Fixator



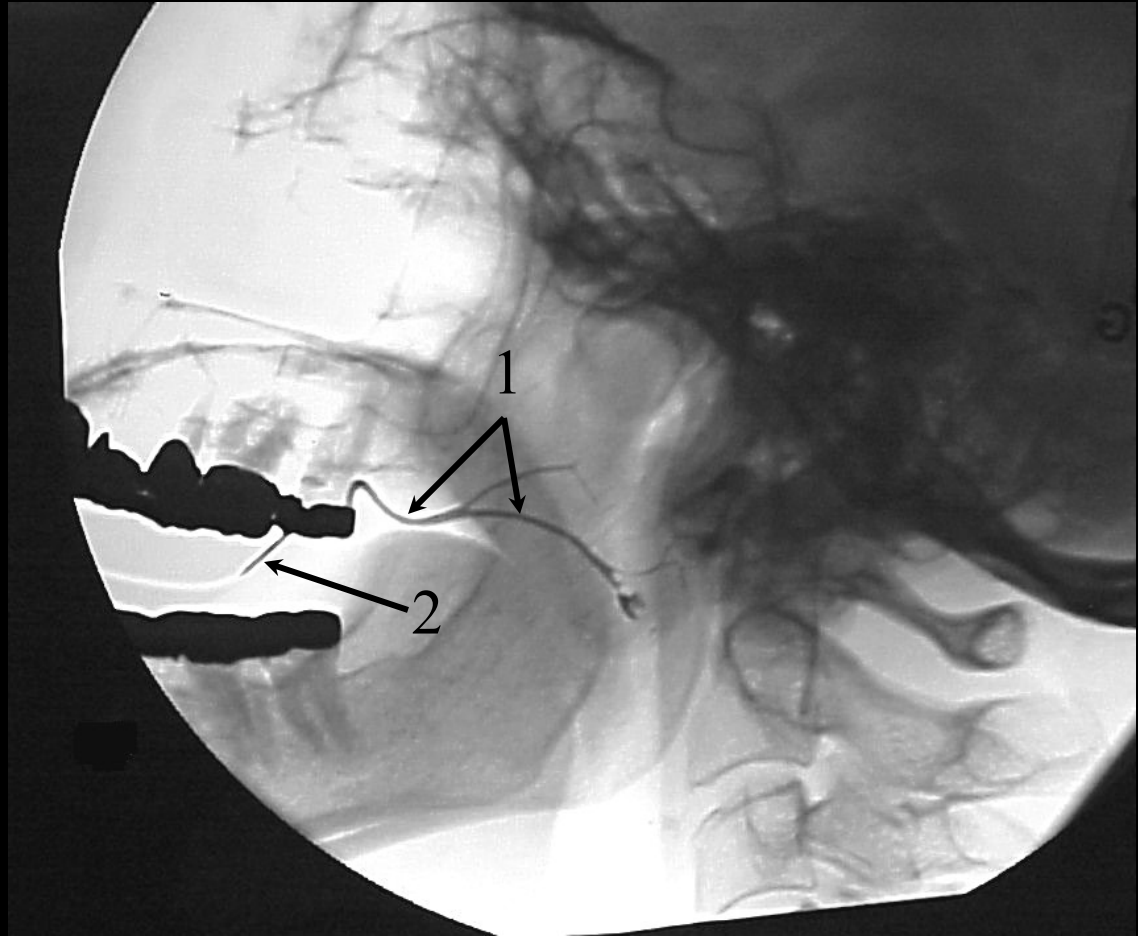
Parotid Sialogram:

Sialography is the radiographic examination of the salivary ducts and glands. It is a somewhat antiquated exam that has mostly been replaced by CT and MRI. However, it is still occasionally performed and thus it is included in this tutorial.



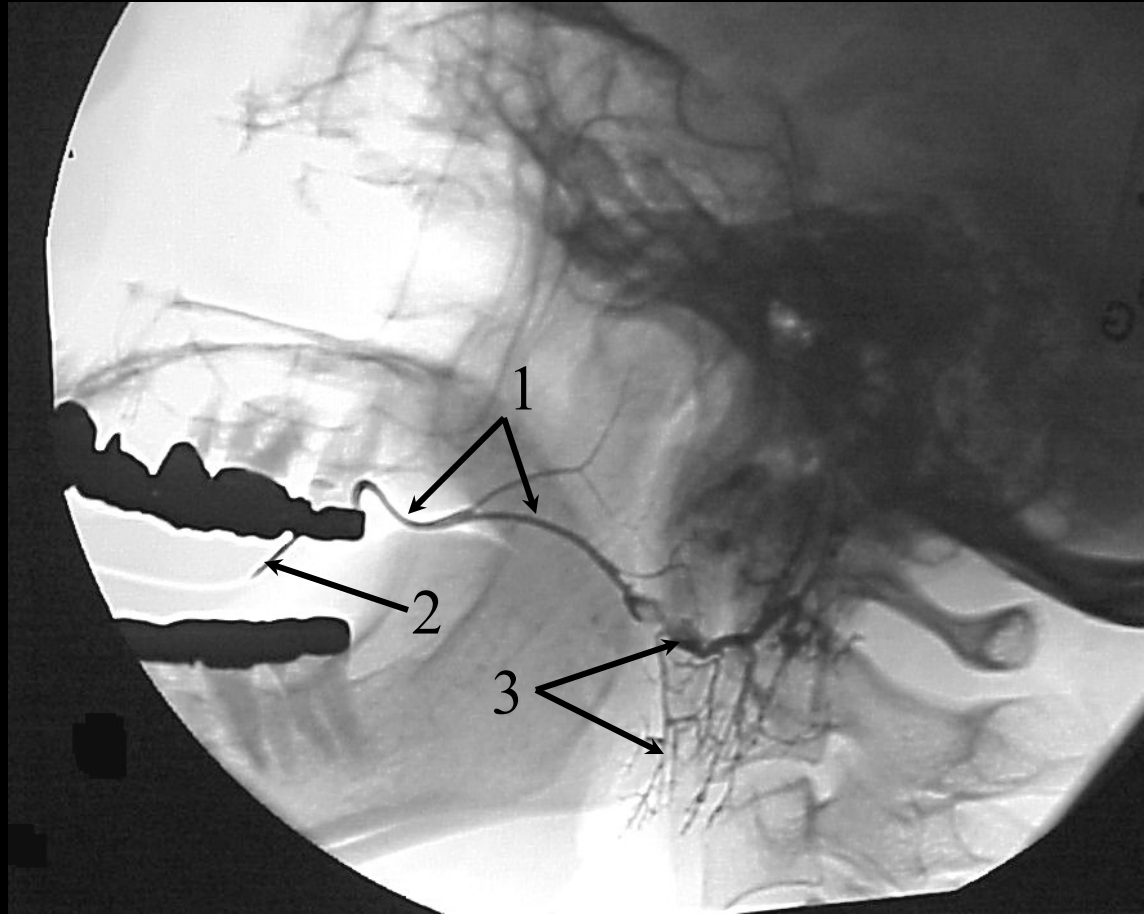
Parotid Sialogram: Initial Injection

1. Parotid or Stensen's Duct
2. Catheter/Cannula



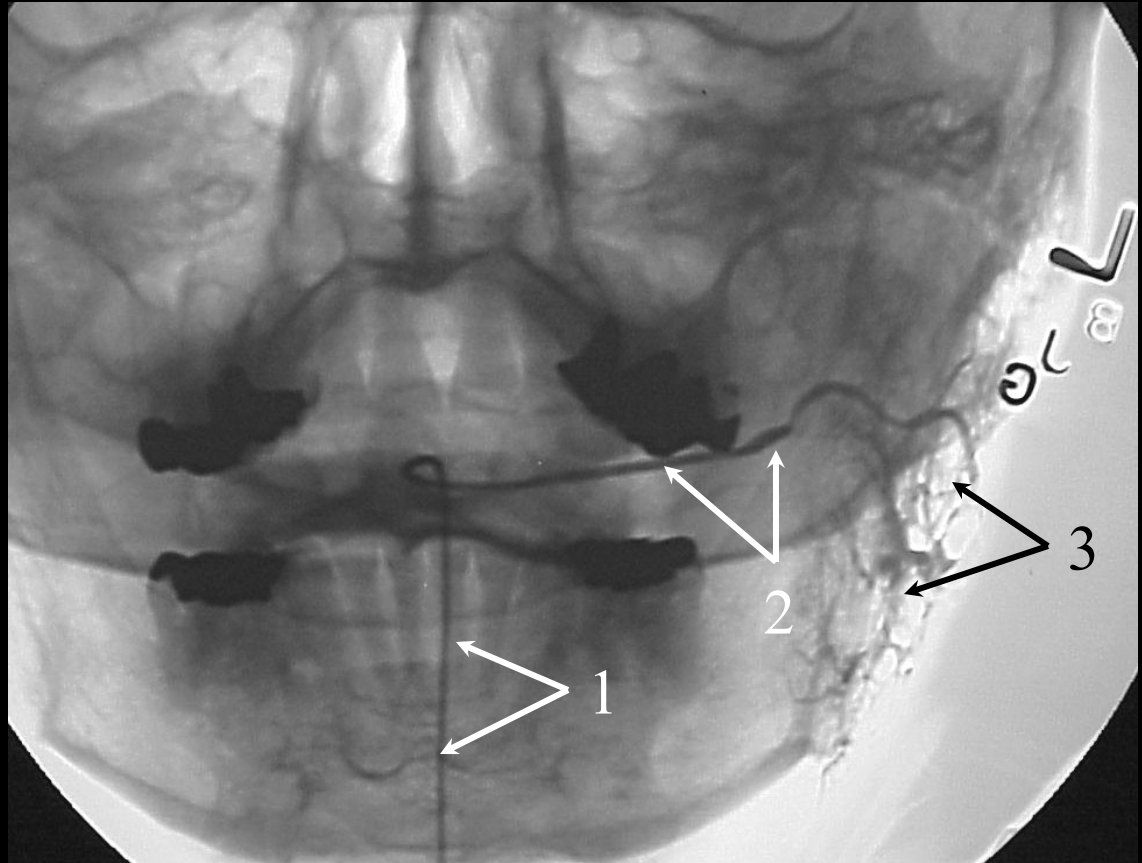
Parotid Sialogram

1. Parotid or Stensen's Duct
2. Catheter/Cannula
3. Parotid Gland



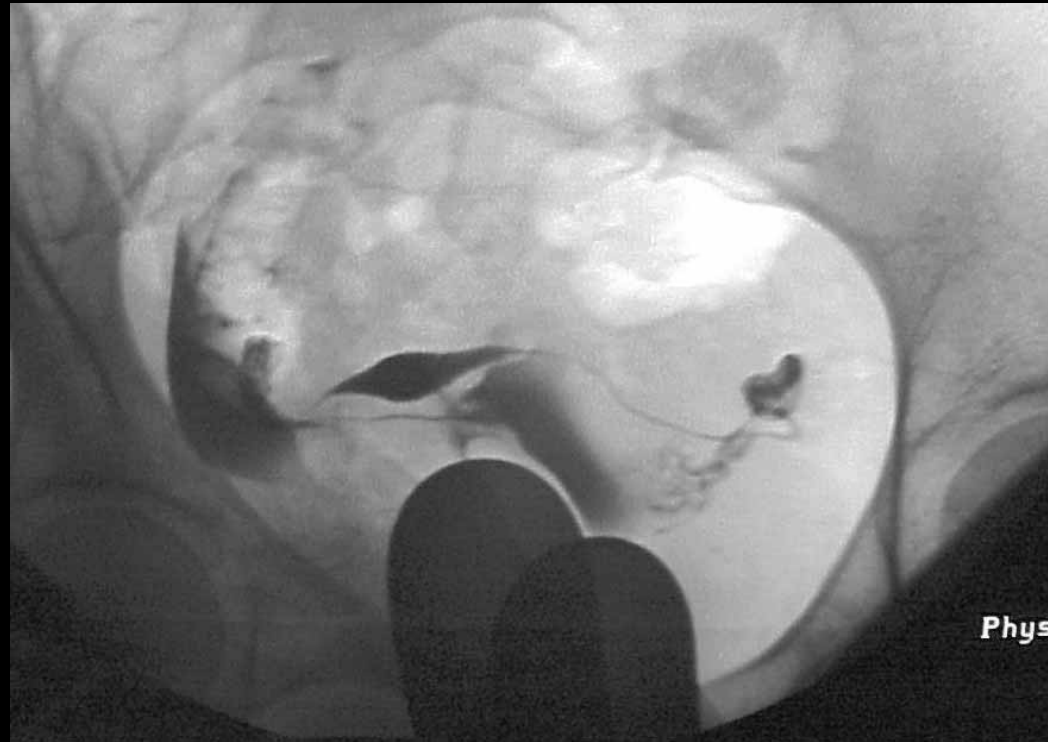
Parotid Sialogram: AP

1. Catheter/Cannula
2. Parotid or Stensen's Duct
3. Parotid Gland



Hysterosalpingogram or HSG:

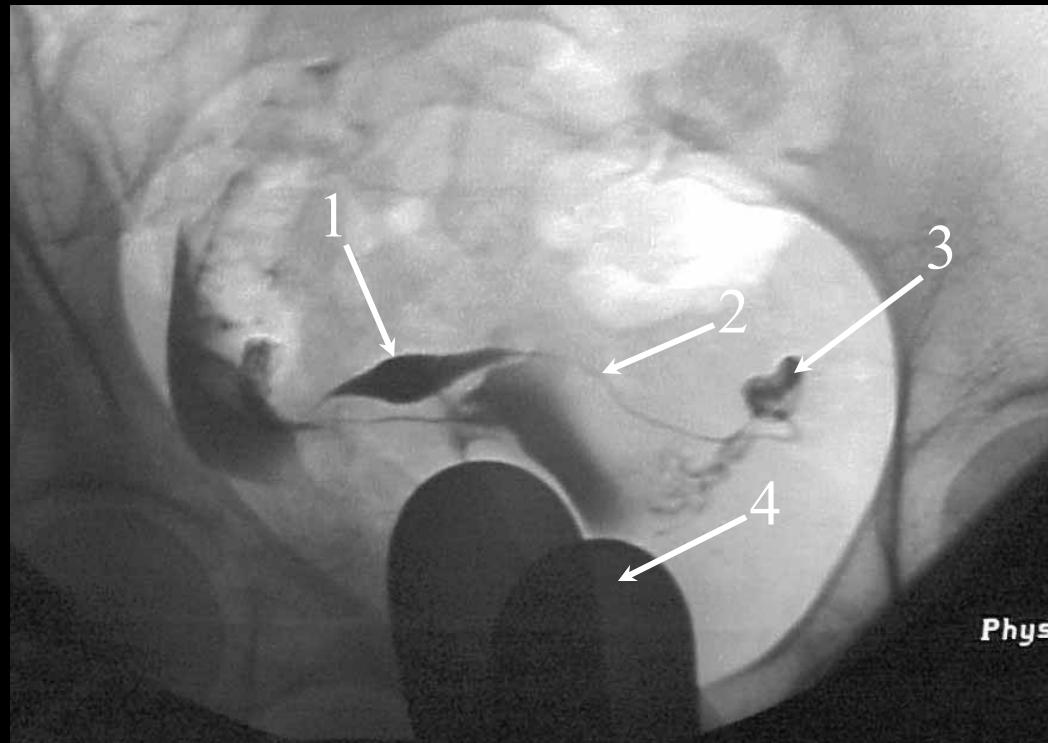
An HSG is the radiographic examination of the uterus and uterine tubes. It is performed by a radiologist with the assistance of a radiographer. The procedure consists of instilling a water-based iodinated contrast agent into the uterus via catheterization through the vagina.



Hysterosalpingogram or HSG:

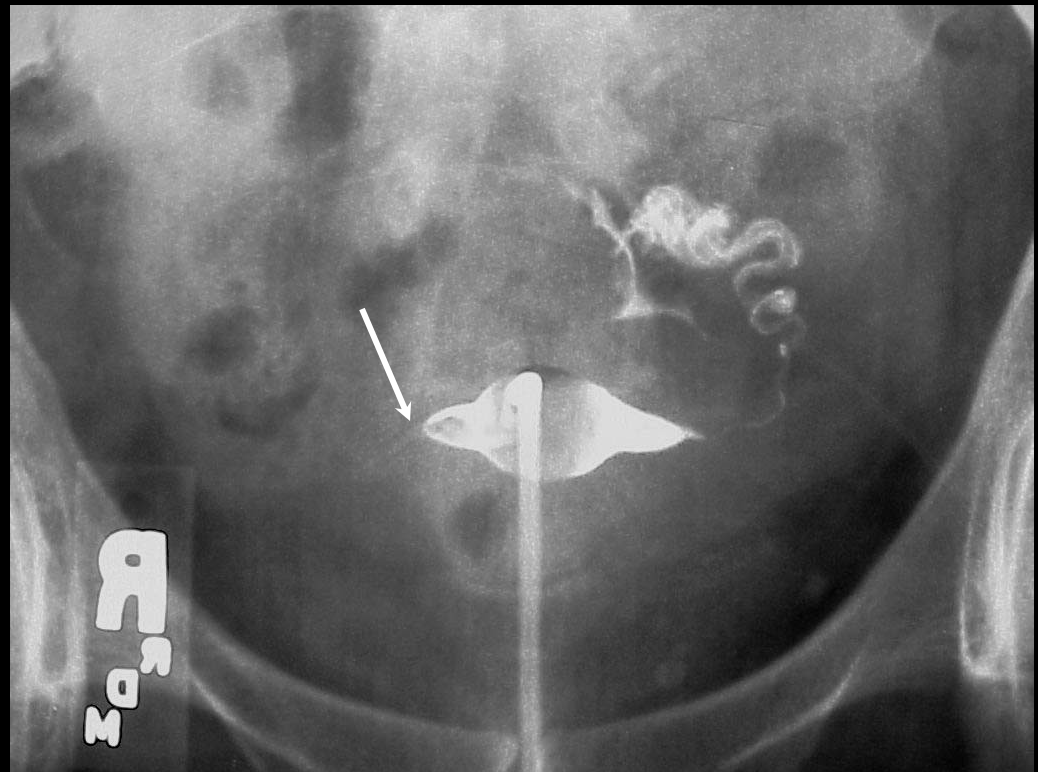
This exam was performed on digital equipment and was printed as a positive image.

1. Uterus
2. Uterine or Fallopian Tube
3. Infundibulum
4. Metal Speculum



Hysterosalpingogram or HSG:

This exam was performed on conventional x-ray equipment and demonstrates a blockage of the right uterine tube as indicated by the arrow.



There are **100** questions on this test. All answers can be found within the context of this program. The “hint” button located next to each question will provide you the information needed to answer the question. At any time during the test you may skip a question and return to it later. You must successfully answer 70% of the questions in order to receive credit for the course. To access the test, please close out of this course by clicking the “x” in the top right corner.

About the Author:

I graduated from the St. Petersburg College (SPC) Radiography Program in Pinellas Park, Florida in December of 1985. I have been employed by SPC since May of 1987 and I am currently the Radiography Program Director.

I completed a Master of Education Degree from the University of South Florida in December of 1998 and I have also passed the American Registry of Radiologic Technology's Computed Tomography and Magnetic Resonance Imaging certificate examinations.

Three Phase CEUs has been in existence since December of 2001. The motivation for establishing my company was in response to my graduates having to pay up to \$10 and sometimes more per hour of continuing education. My research indicated that most companies consistently charged top dollar for CEUs and that there were not many options for radiographers to choose from. I knew that there had to be a way to produce quality educational materials at a reasonable price and hence the creation of Three Phase CEUs. With your continued support, it is my intention to continue to provide radiographers with an affordable option to satisfy their continuing educational needs.



References:

Bontrager, Phillip W. and Anthony, Barry; Radiographic Positioning and Related Anatomy, Fifth Edition, C.V. Mosby Co. St. Louis, MO., 2001.

Wicke, Lothar; Atlas of Radiologic Anatomy, Sixth Edition, Williams & Wilkins, 1998

Ballinger, Philip W. and Frank, Eugene D.; Merrill's Atlas of Radiographic Positions and Radiologic Procedures, Ninth Edition, C.V. Mosby Co. St. Louis, MO, 1999.

Gauthier Cornuelle, Andrea and Gronefeld Diane H.; Radiographic Anatomy and Positioning An Integrated Approach, First Edition, Appleton & Lange, Four Stamford Plaza, PO Box 120041, Stamford, Connecticut, 1998.

Three Phase CEUs Mission Statement:

Provide high quality home study courses in a prompt and courteous manner for radiography students and all health care professionals.

Who do you get your points from?

Three Phase!!!

Mailing Address: Three Phase CEUs & SCS Continuing Education
c/o John Fleming
80 Bay Woods Drive
Safety Harbor, FL 34695
Phone & Fax 727-796-0397
E-mail: threephaseceus@tampabay.rr.com
Website: <http://www.ceuarmy.com/>