

CASES

DECREASED LEVEL OF CONSCIOUSNESS AFTER BEING INVOLVED IN A MOTOR VEHICLE ACCIDENT.



Findings:

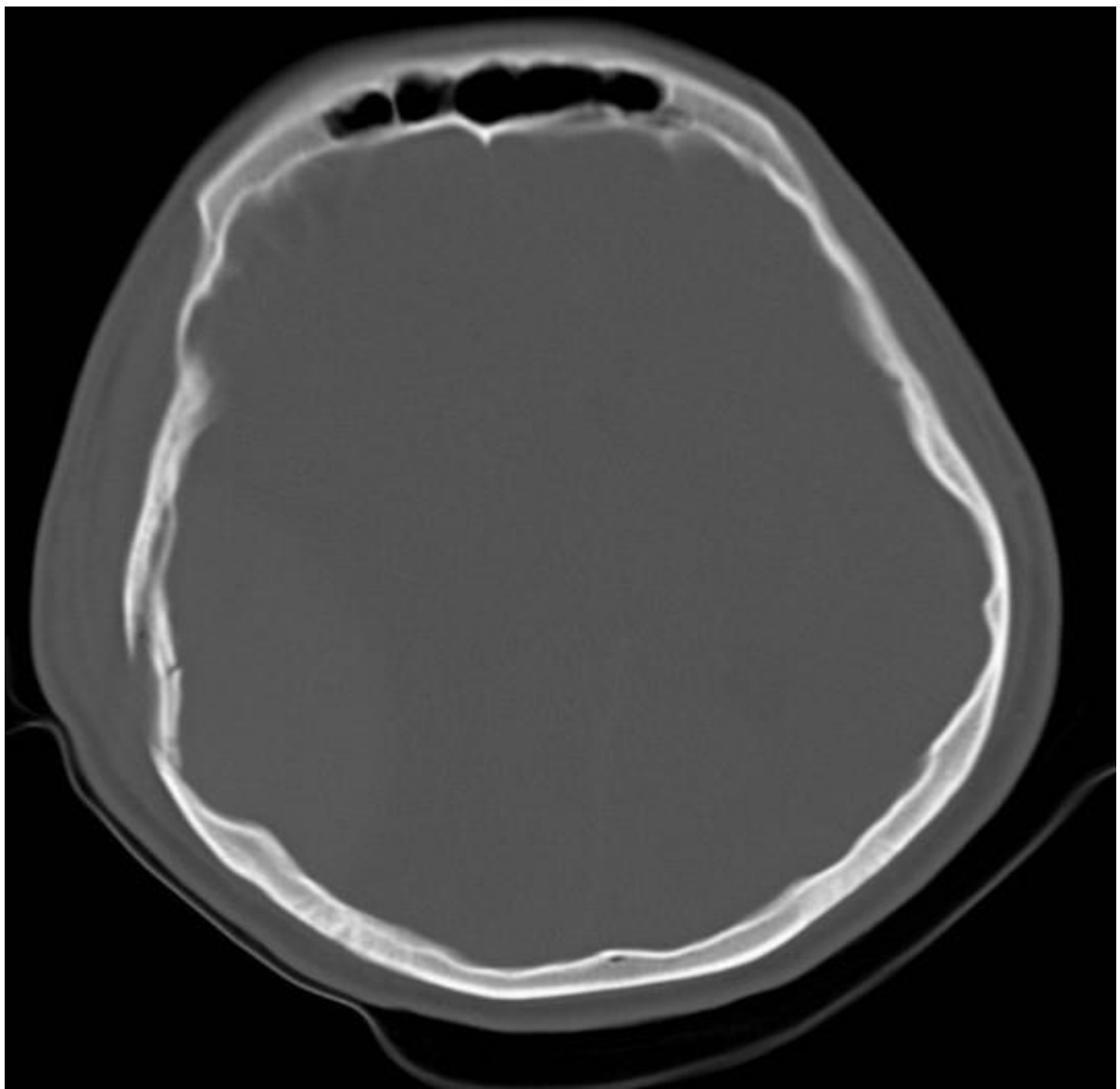
Extra-axial biconvex hyperdense collection consistent with epidural hematoma.

Pathophysiology:

- ▶ Intracranially, the dura is the periosteum and epidural hemorrhage requires the dissection of the dura away from its calvarial attachment.
- ▶ Epidural hematomas are most commonly related to arterial rupture and are frequently seen in the setting of calvarial fractures, with increased frequency related to displaced fractures.
- ▶ Epidural hematomas may also arise from venous disruption.
- ▶ Middle meningeal artery branches in the temporal and parietal regions are vulnerable to injury, and most epidural hematomas occur in these regions.

Important Points:

- ▶ Major head trauma, calvarial fracture, and a lucent interval followed by more profound impairment are features concerning for epidural hematoma
- ▶ Epidural hematoma does not typically cross sutures unless there is severe fracture at the suture line.



FALL WITH HEAD INJURY AND CONFUSION. WARFARINISED FOR METALLIC HEART VALVE.



Findings:

Crescentic, mixed density collection within the extra-axial space that can cross suture lines but limited by dural attachments.

Important Points:

- ▶ Acute collection of blood products between the inner layer of the dura and arachnoid membranes
- ▶ Acute hemorrhage is usually as a result of severe head trauma, high-velocity acceleration, or deceleration head injury. Chronic SDH is usually caused by more trivial trauma in patients with risk factors (chronic alcoholism, epilepsy, coagulopathy).
- ▶ In children, neonatal hematomas may be related to delivery, and usually resolve. In infants and toddlers, nonaccidental trauma must be considered.
- ▶ Typically overlies convexity, although posterior fossa hemorrhages can occur.
- ▶ SDHs may be symptomatic even when small, especially in young patients.
- ▶ Density characteristics are not an absolute indicator of relative timing of hemorrhage.

Subdural Hematoma



- Concave/Crescent-Shaped
- Bridging Veins
- Elderly, Alcoholics

suB = Banana

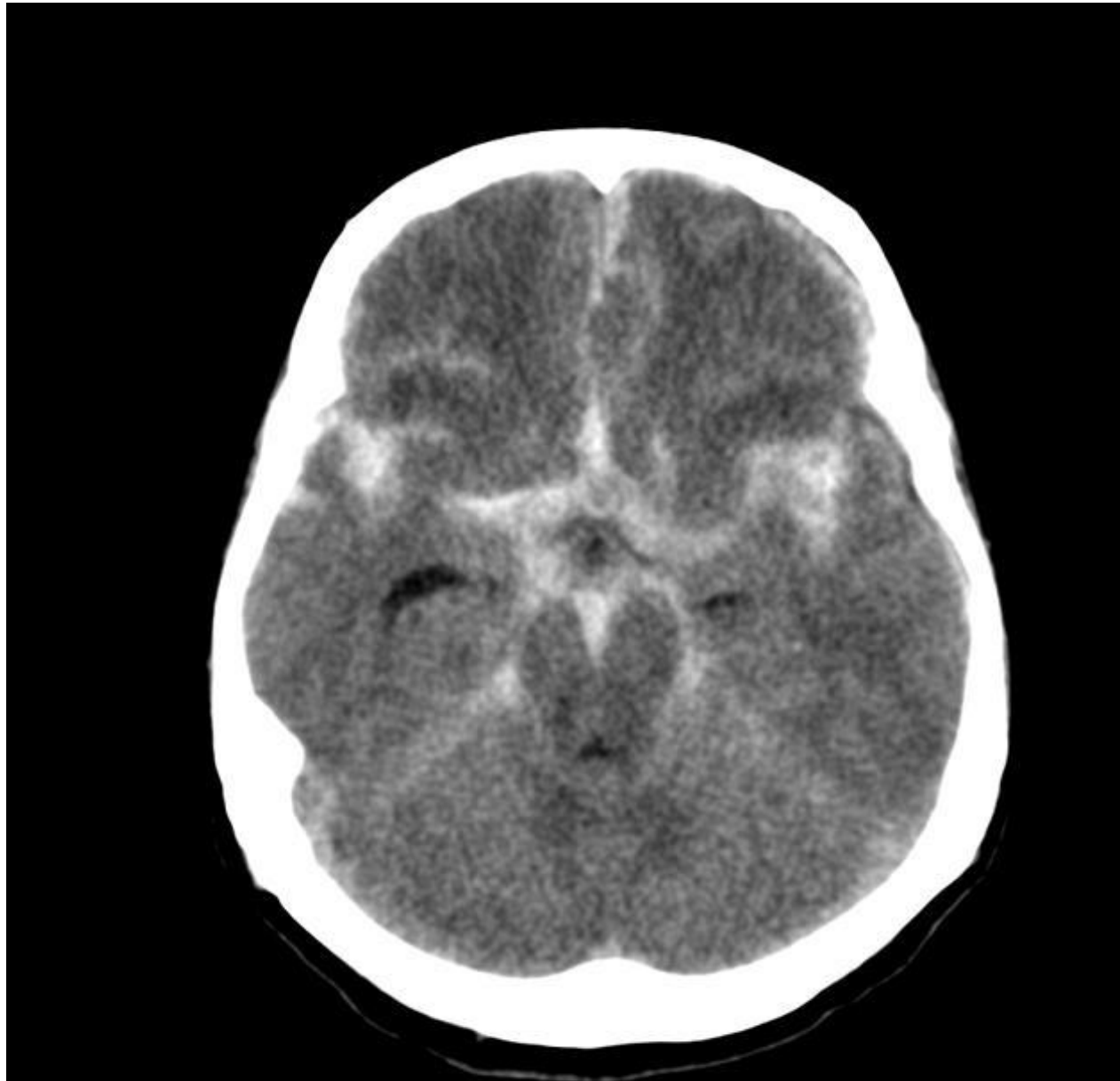
Epidural Hematoma



- Convex/Lens-Shaped
- Middle Meningeal Artery
- "Lucid Interval"

Epi = Pie = Lemon

DISORIENTATION, HEADACHE OF SUDDEN ONSET.



Findings:

Diffuse subarachnoid hemorrhage in all basal cisterns.

Pathophysiology:

- ▶ The arachnoid mater overlies the pia mater, which is the deepest layer of the meninges covering the brain and spinal cord, and SAH expands the space between these coverings.
- ▶ The pia mater is extensively innervated with nerve fibers that transmit pain and are irritated by blood, resulting in severe headache, such as a thunderclap headache.
- ▶ Intraventricular hemorrhage is a subtype of SAH.

Important Points:

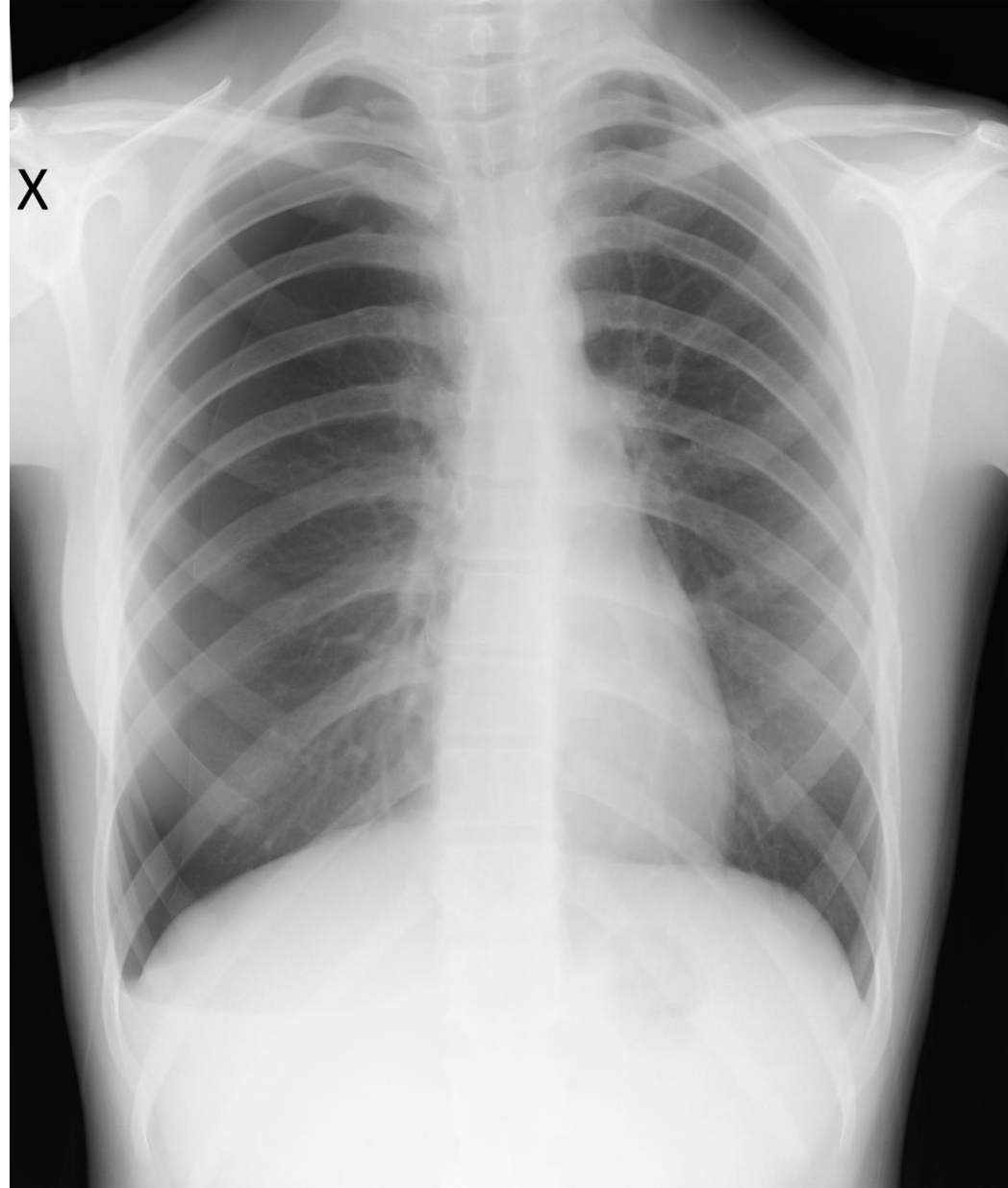
- ▶ Head CT is the most appropriate first examination to evaluate for SAH.
- ▶ Usually CTA is indicated to rule out aneurysm, if negative then conventional 6 vessels cerebral angiography is required.
- ▶ Lumbar puncture is often more sensitive than CT for SAH, and may reveal evidence of chronic SAH, such as xanthochromia.
- ▶ MRI is relatively less sensitive for early SAH, although very sensitive for chronic SAH, which produces a strong susceptibility signal.
- ▶ Traumatic SAH is strongly associated with other forms of traumatic brain injury, including contusion and diffuse axonal injury.

left sided weakness with decrease level of consciousness



- Hypodensity at right parietal lobe consistent with right MCA territory infarction .
- No midline shift

YOUNG ADULT PATIENT WITH SUDDEN CHEST PAIN



Findings:

Right sided pneumothorax with no significant mass effect.

Pathophysiology:

- **Primary spontaneous: no underlying lung disease.**
- **Secondary spontaneous: underlying lung disease is present.**
- **Iatrogenic/traumatic.**

Treatment and prognosis:

- Treatment depends on a number of factors:
- size of the pneumothorax
- symptoms
- background lung disease/respiratory reserve

ASTHMA PRESENTED WITH ACUTE SHORTNESS OF BREATH.



- **Findings:**

Huge left sided pneumothorax with midline shift.

Right lung clear. Heart size normal.

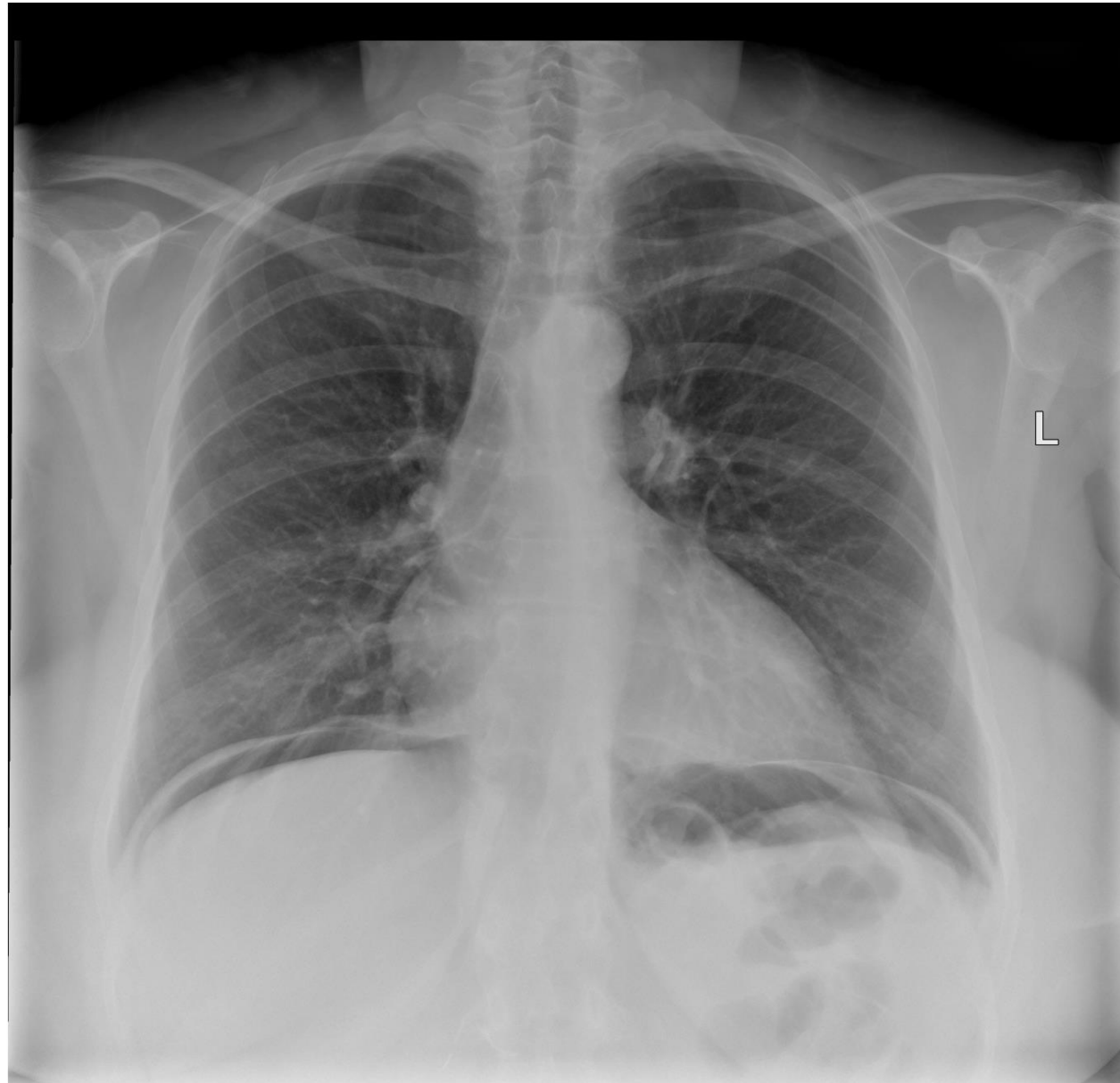
Pathophysiology:

- A tension pneumothorax occurs due to the progressive accumulation of intrapleural gas in thoracic cavity caused by a valve effect during inspiration/expiration. In this situation, the ipsilateral lung will, if normal, collapse completely (although a less than normally compliant lung may remain partially inflated). In either case, as the collection grows further, it exerts a positive mass effect on the mediastinum (compression of vessels and heart) and the opposite lung.

Treatment and prognosis:

- Treatment of a tension pneumothorax is one of the classic medical emergencies where life can be saved or lost on the basis of recognition and subsequent rapid decompression

SEVERE EPIGASTRIC PAIN WITH ABDOMINAL GAURDING



- **Findings:**

Extensive free gas below the diaphragm.

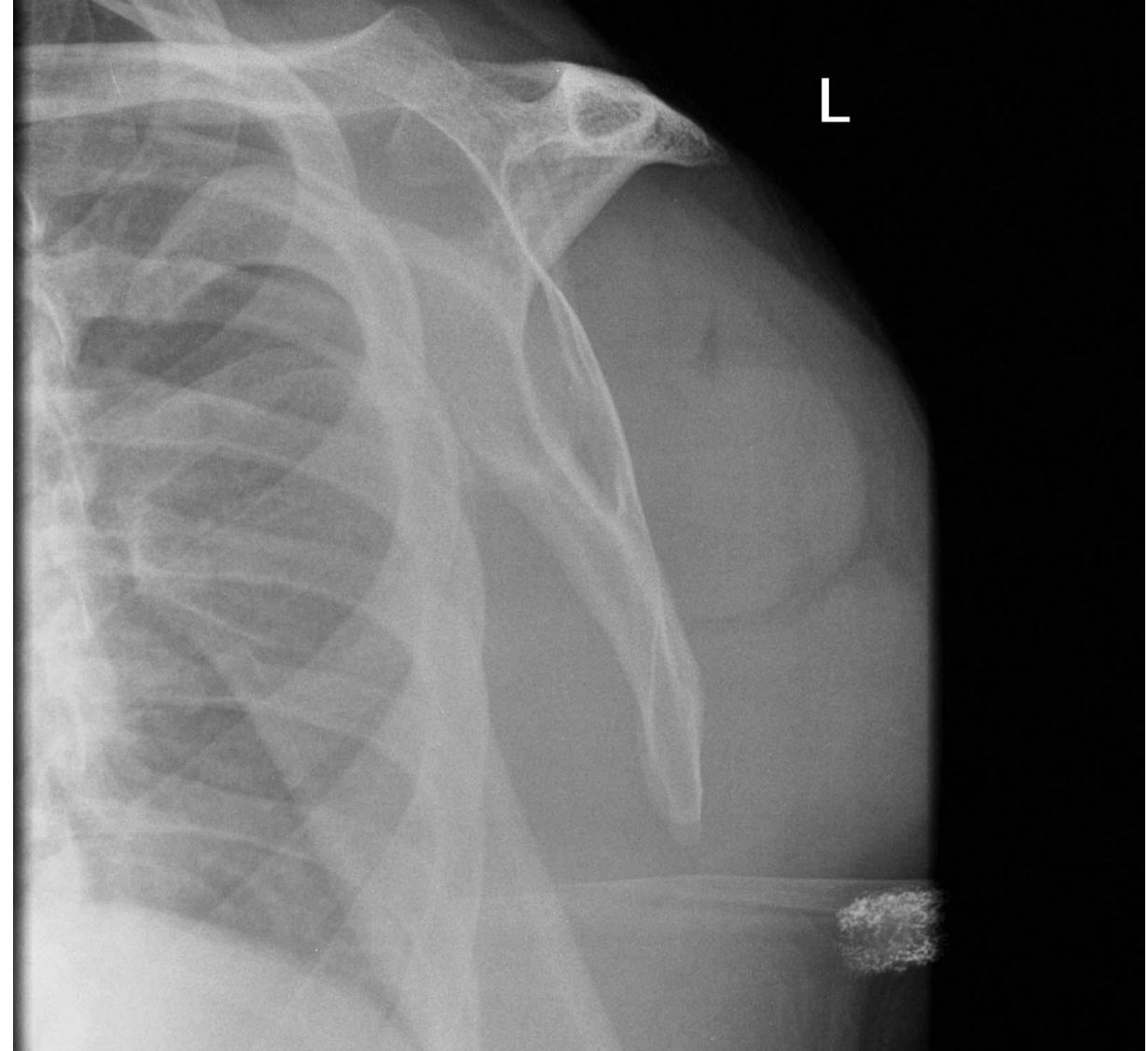
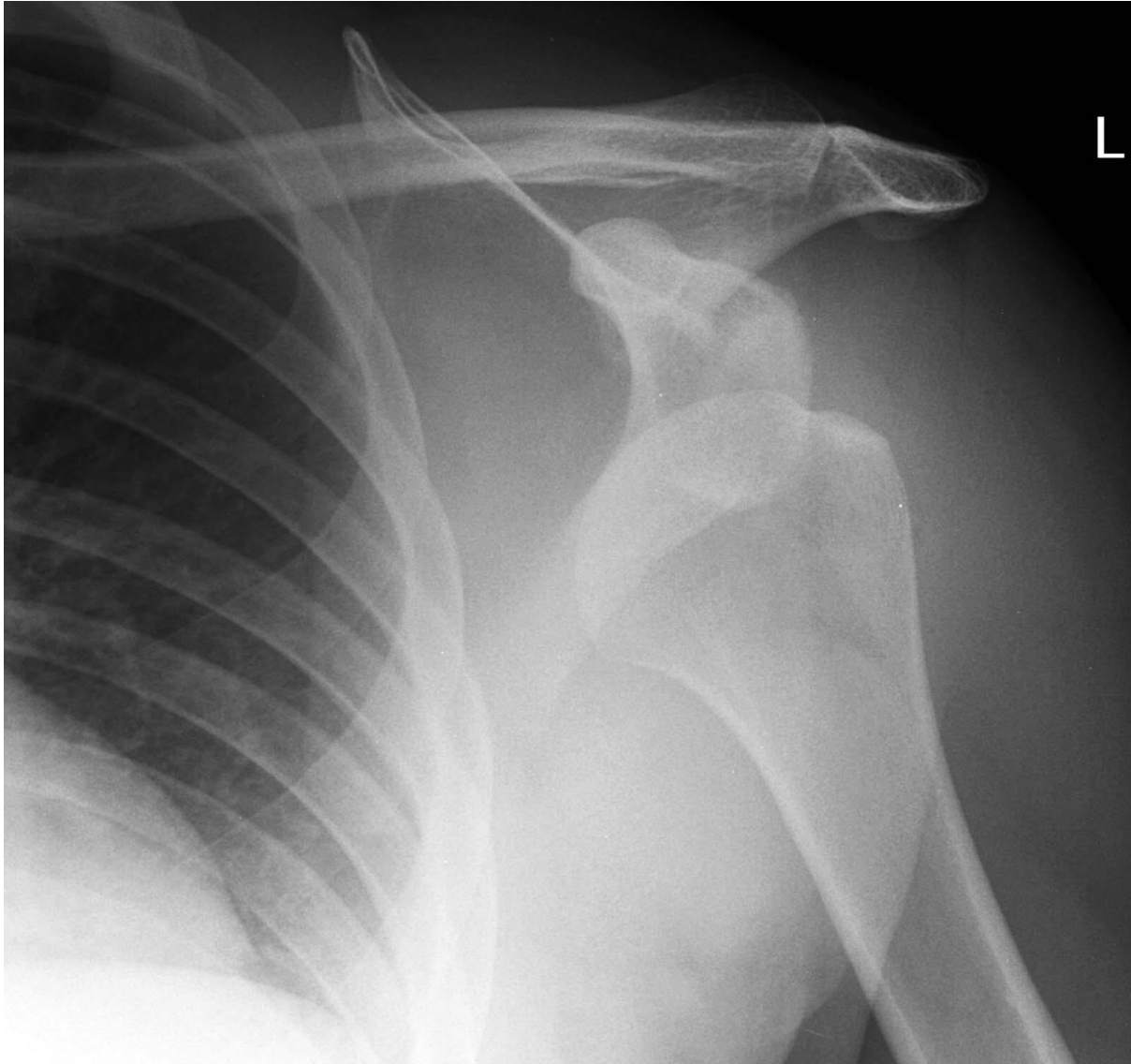
Pathophysiology:

- The most common cause of pneumoperitoneum is the disruption of the wall of a hollow viscus.
- Post operative free gas.

Treatment and prognosis:

- Urgent surgical consultation.

ADULT PATIENT WITH SHOULDER PAIN



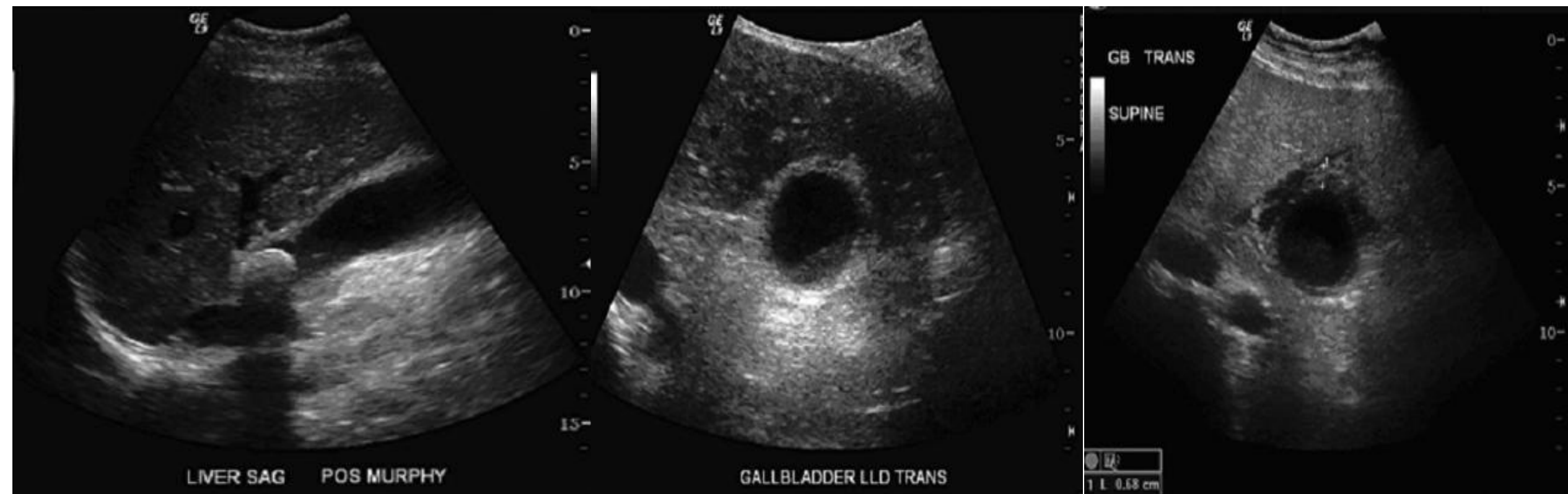
- **Findings:**

X-rays demonstrate anterior and inferior dislocation of the glenohumeral joint without evidence of a fracture.

- **Treatment and prognosis:**

- Relocation and shoulder MRI arthrogram for further assessment.

RIGHT UPPER QUADRANT PAIN, NAUSEA, AND VOMITING.



- **Findings:**

- Large gallstone at the gallbladder neck.
- Sludge within a gallbladder with thickened and edematous wall.

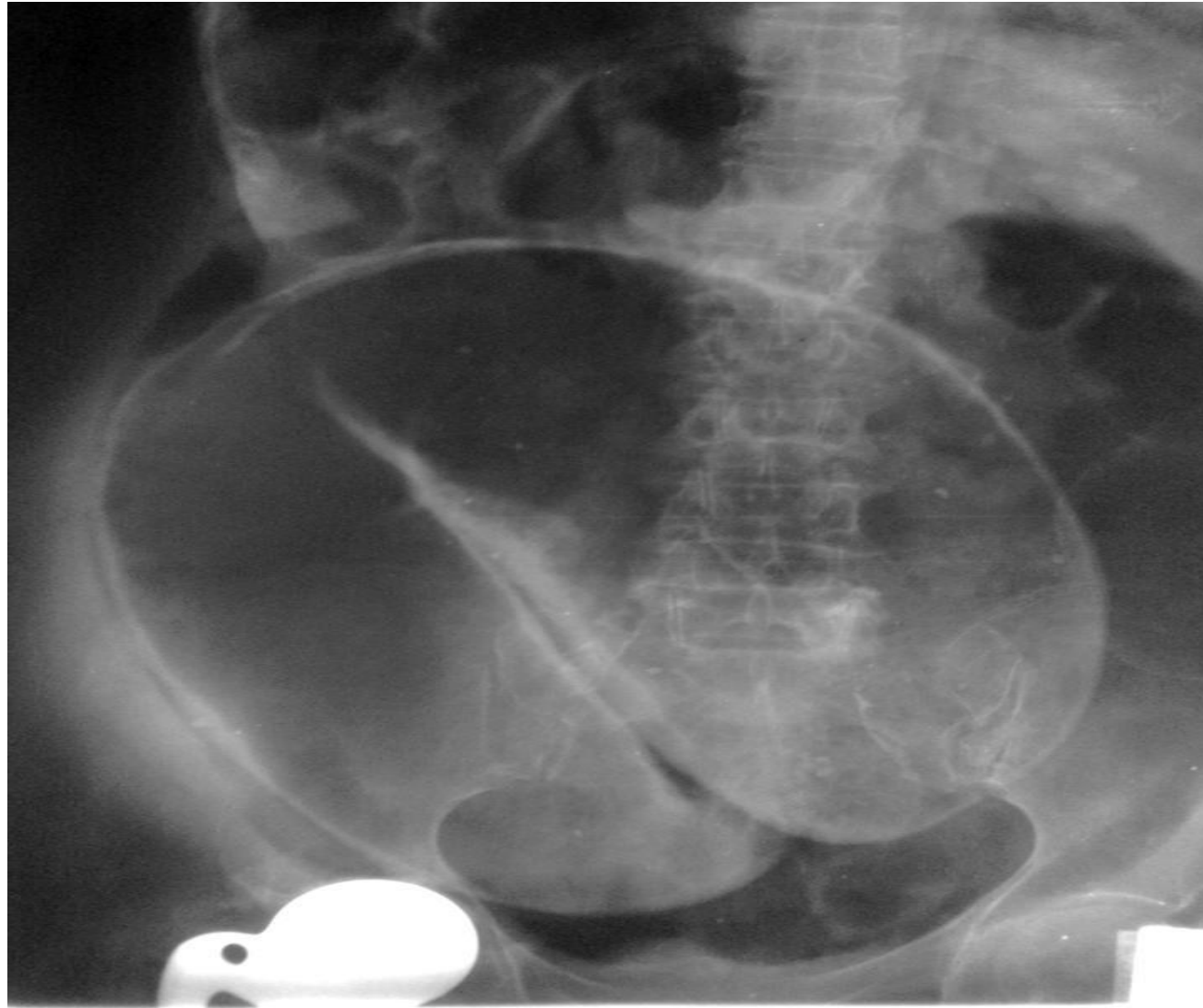
Pathophysiology:

- Stone obstructing the GB.

Treatment and prognosis:

- Cholecystectomy, laparoscopic favored
- Percutaneous cholecystostomy catheter for the unstable patient

ELDERLY PATIENT WITH ABDOMINAL PAIN AND DISTENTION



- **Findings:**

- Markedly dilated loop of colon with a coffee-bean shape. Its apex points toward the right upper quadrant.

Treatment and prognosis:

- Endoscopic detorsion.

Abdominal pain



The plain radiograph appearances are classical for a distal small bowel obstruction:

- a. Dilated small bowel
 - b. The location is central within the abdomen
 - c. Large bowel at the periphery is collapsed
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abdominal pain



Dilated loops of the large bowel to the sigmoid colon region accompanied by air-fluid level. The distal large bowel is collapsed. No free air or pneumotosis



Abdominal X-ray in a patient with renal tubular acidosis shows calcifications clustered in the renal papillae. This is a case of nephrocalcinosis.



Plain abdominal radiograph shows coarse calcification in the distribution of the pancreas.

