

Non vascular Interventions

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IR-Introduction

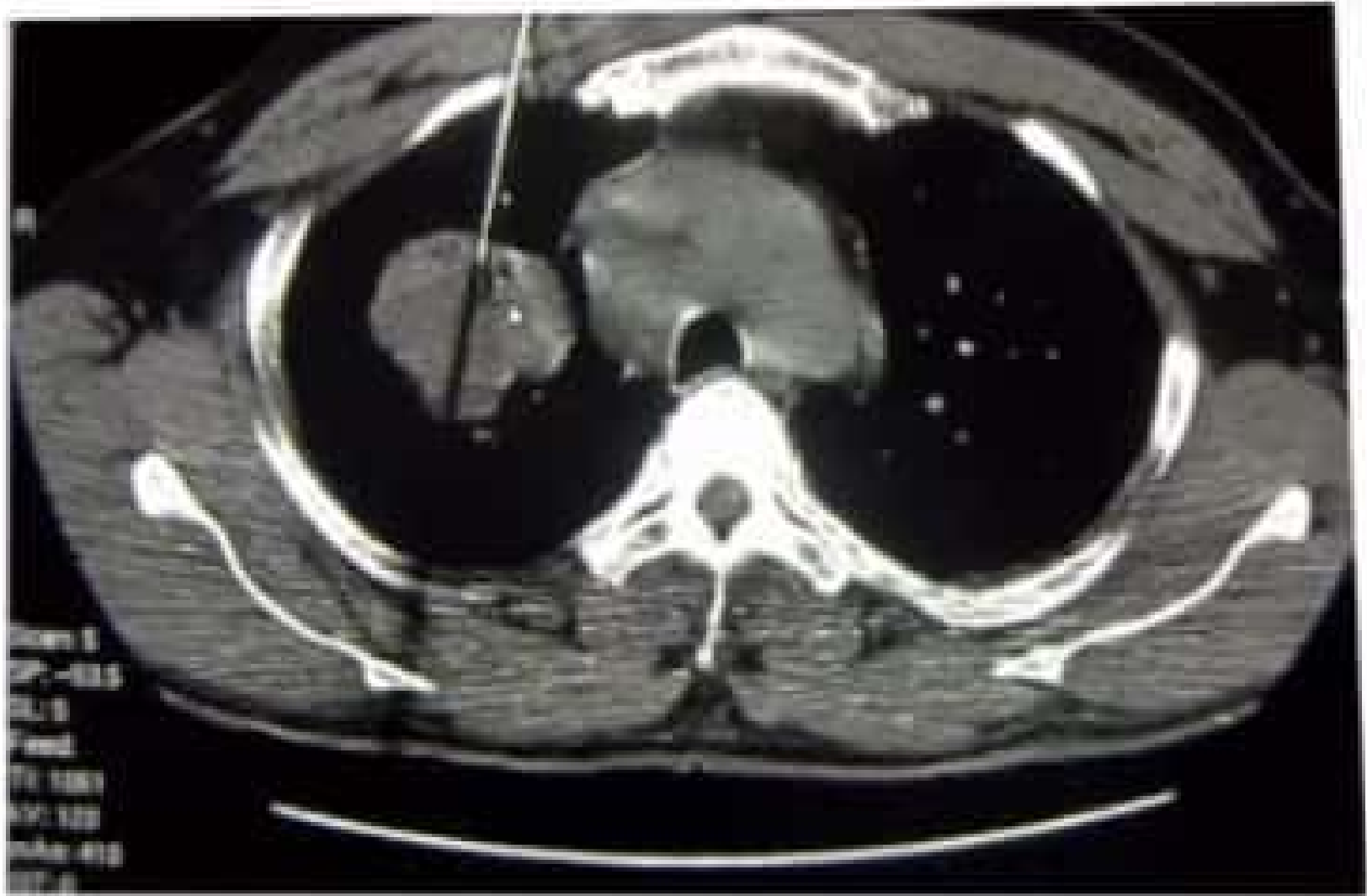
- Minimally invasive diagnostic and treatments
- Image guidance-US,CT,MR,floroscopic
- A variety of devices-needles,drainage catheters

Percutaneous biopsy



- US, CT or fluoroscopy
- Random sampling or sampling of a mass
- Lung, mediastinum, pleura, chest wall, nodes
- Liver, adrenal gland, pancreas kidneys, lymph nodes

Lung biopsy



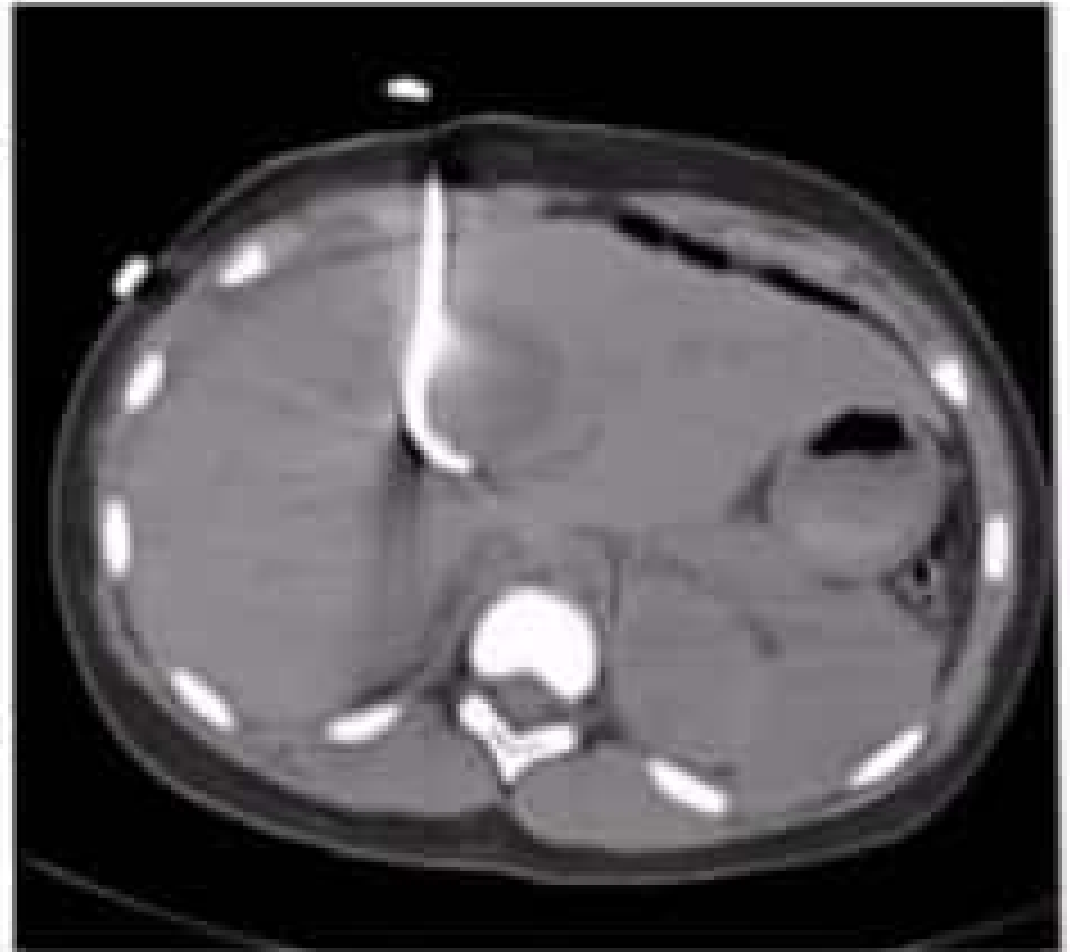
Lung biopsy



- For early diagnosis
- US,CT,floroscopic guidance-for yields and safety

Percutaneous abscess drainage

- US, CT or fluoroscopy
- Aspiration or drainage tube placement
- Usually for infection
- Pleura, lung
- Hepatic (intra/sub), pericolic gutters, perisplenic, peri/intrapancreatic, pouch of Douglas, psoas, abdominal wall



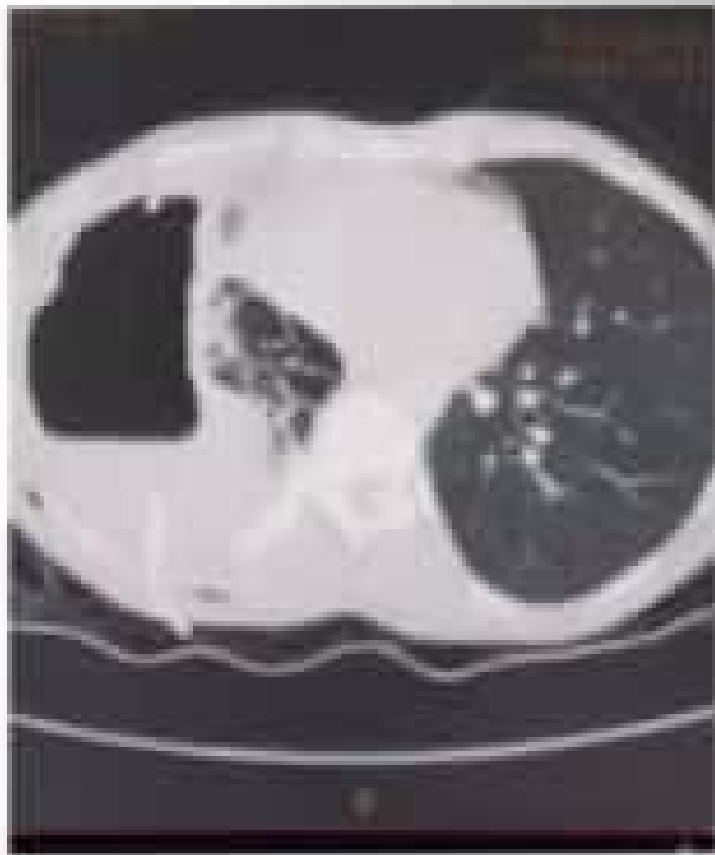
Drainages



- Done for fluid collections in solid organs and cavities
- pigtail catheters used



Drainage of a pneumothorax



- access /entry site is mapped out
- aseptic prep is done
- local anaesthetic
- pigtail catheter inserted
- real time-US ,CT



Cholangiography and biliary drainage



- Fluoro, US
- Cholangiogram – inject transhepatically into biliary tree and intervene with plastic or metal stents, stone removal, plasty, etc.
- Drains/stents can be internal, internal-external or external
- Interventions tend to be painful so need good anesthesia
- Often useful when GI cannot delineate lesion retrograde

Internal and external biliary stents (L), T tube cholangiogram (R)



Biliary stenting

- types: covered, non covered, plastic
- internal/external biliary drains first
- restenting



Nephrostogram and nephrostomy tube and ureteral stent placement



- US and fluoro guidance
- Used to check patency of collecting system and relieve obstructions putting the patient at risk for kidney failure, sepsis
- Tubes need constant monitoring after placement

Nephrostomies



-Have indications from obstructive uropathy

Ca cervix, prostate, calculi

Nephroureteral stent (L), double J stent (R)



Gastrostomy tubes

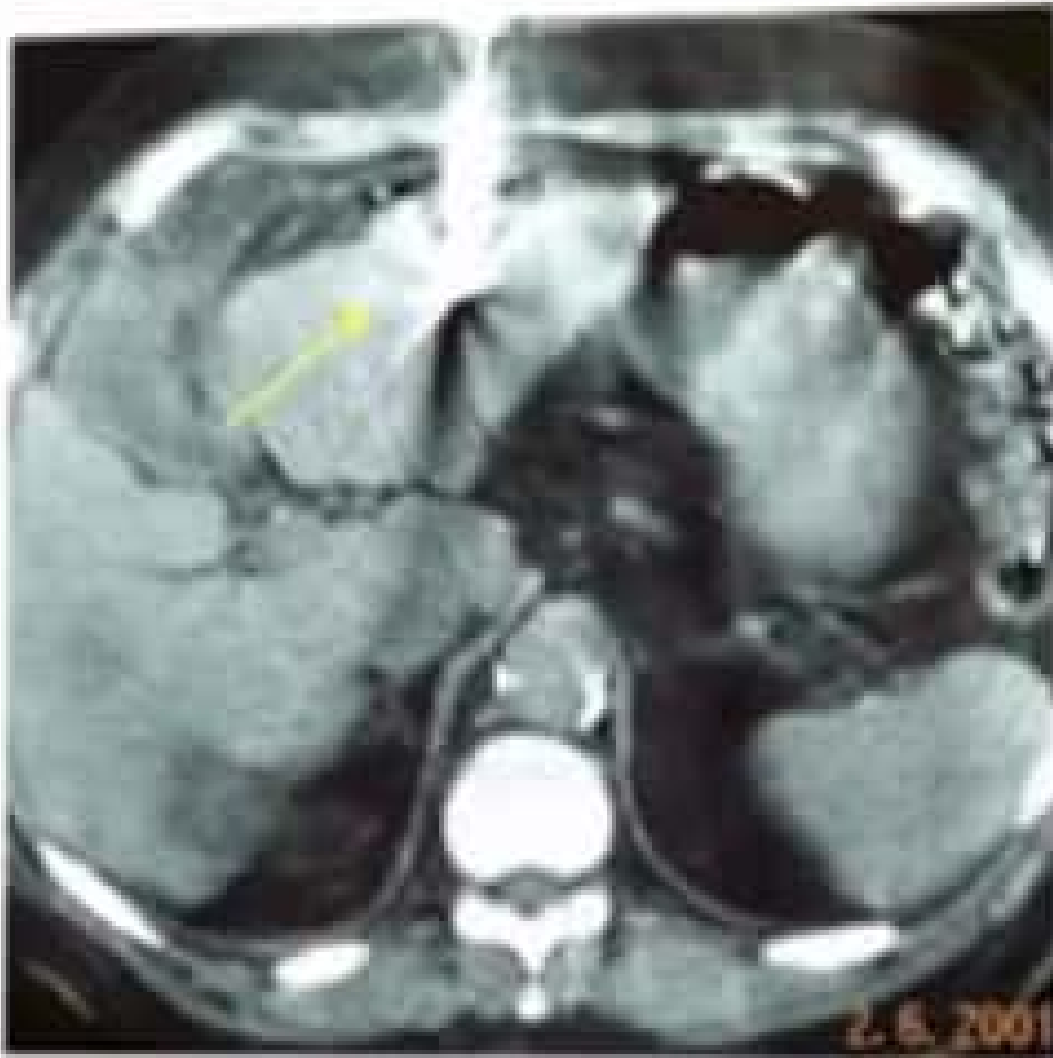


- Fluoro guidance facilitating direct percutaneous placement of G tube into the stomach
- Indicated for pts with difficulty swallowing often due to neurological or ENT causes
- G tubes can also be placed by surgery but IR is less invasive
- GI can also place G tubes except when the esophagus is blocked by a mass

Gastrojejunostomy tube

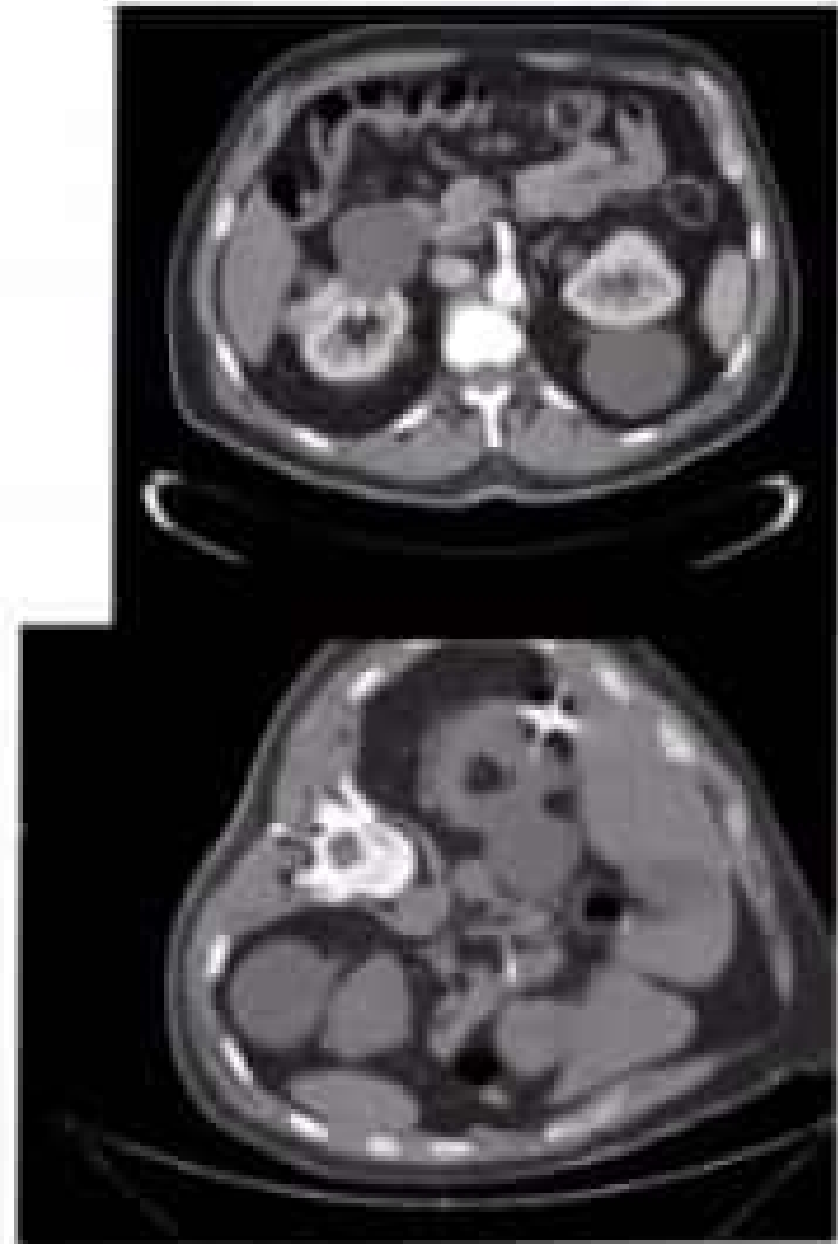


Radiofrequency ablation



- CT, US
- Thermal ablation using electrodes advanced into lesion
- Most used in the liver; has been used in lung, kidney, bone
- Probe heats the tissue via rapid alternating current for a set amount of time as per tissue
- Needs imaging f/u to check tumor response

Tumor microwave ablation



Vertebroplasty



- Fluoro guidance
- PMMA injected into vertebral body affected by osteopenia, metastases most frequently for pain relief
- Usually done in the lumbar spine through the pedicles



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