Independent Ultrasound Reporting

BMUS UCD Study day 2018

Pamela Parker
Consultant Sonographer
Hull & East Yorkshire Hospitals

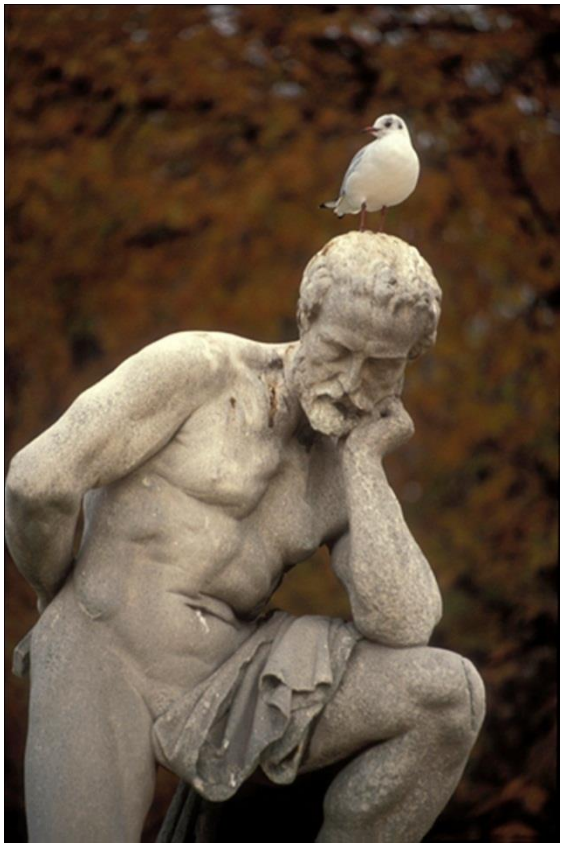
Colin Griffin
Lead Sonographer
Royal Liverpool University Hospital

Report

- **To give an account of the results of an investigation**
  - **Collins Concise Dictionary**

Image Reporting

- Consider:
  - Report style
  - construction
  - language



Reports-writing style

- To ensure directness and clarity of style, it always helps to think of the people you're trying to communicate with through the report. Imagine them looking for answers to their questions.

- Readers are interested in clear, positive analysis- not in hedged statements and tentative conclusions. They respond to vitality in style…..

Plain English

Despite the name, Plain English is only partly about language. It also emphasises the importance of document design.Any document needs clear layout, in sections and paragraphs that express the structure of the information and with effective headings and subheadings to identify local content. Adequate white space between sections also makes the information more accessible.

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Plain English

- The most important principle of Plain English is to keep the reader in mind as you write. Think of yourself as communicating to someone across the table, and of how each sentence sounds.

- Plain English can clarify communication, it also reduces reading errors, reduces complaints and lawsuits related to official documents.

Picture This

- There is a double fronted two storey detached house with a single side garage. The garage is situated to the right side of the ground floor and appears attached
- There is a central front door with a small window directly above this on the first floor
- There are four more windows evident; two on the ground floor and two on the first floor. The windows are symmetrically placed either side of the front door
- The roof of the house is pitched and there are bilateral apex to the roofs directly above the first floor windows.
- Underneath the right sided ground floor window there is a garden bench
- There is a drive leading up to the garage and a lawn in front of the house

Picture This….

- There is a bilobular mass in the midline. The two lobes are sited one above the other in the LS plane. The lobules are ovoid, the superior one is marginally larger than the inferior lobule.
- Within the superior lobule there are two spherical cystic masses. These are equally spaced from the midline in the centre of the lobule.
- The cystic masses have concentric rings within with a hypoechoc central component
- Just inferior to the two cystic masses, situated in the midline, there is a triangular structure equal in size to one of the cyst
- Arising from the lateral borders of the triangular structure bilaterally there three fine septa extending beyond the outer margins of the lobular structure
- Arising from the superior border of the superior mass there are two inverted triangular structure equally spaced from the midline

Picture This….

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Conclusion:

There is a cute kitten present – no suspicious features

Communication

- Communication problems are a causative factor in up to 80% of medical malpractice cases.

What is the question?

- **Why is the examination being undertaken?**
  - **Rule in/out an abnormality**
- **What is the clinical question?**
  - **Specific question or a vague impression**

The imaging examination

- Before the examination
  - What is the clinical question
- During the examination
  - Specific observations
- After the examination
  - Judgement / conclusions / report

Making a decision

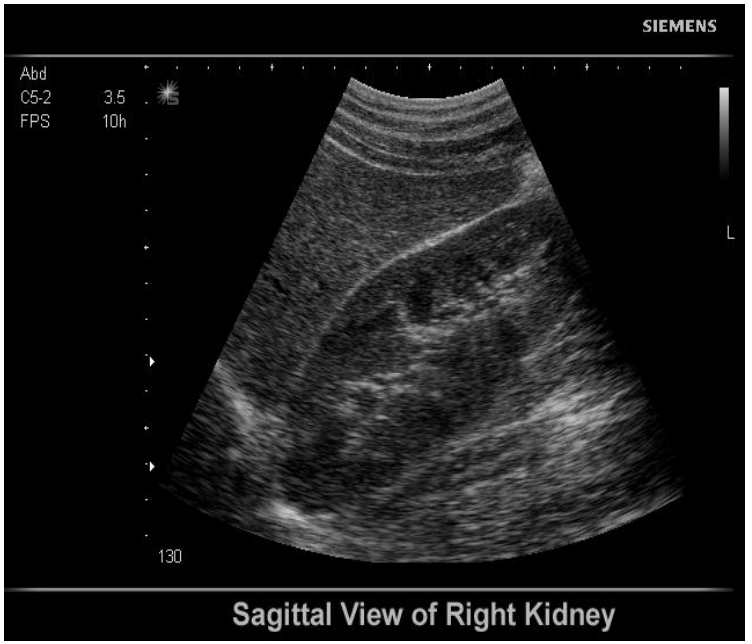
- **Process of judgement :**

  making a decision or conclusion on the basis of indications and probabilities

- **Aim - to obtain information of a good predictive value**

Ultrasound observations

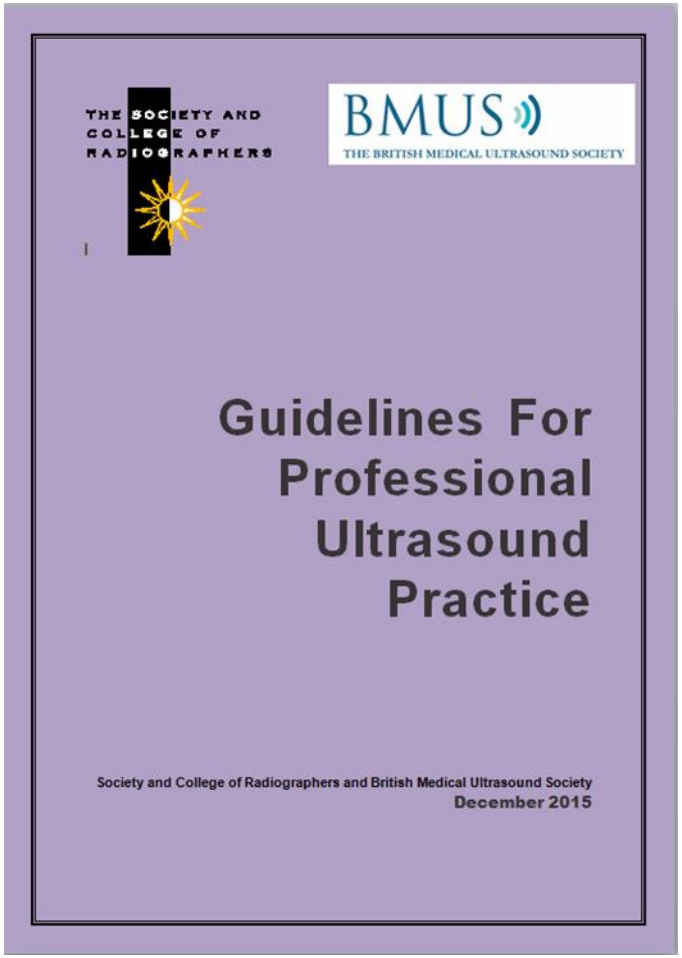
- Location and size
- Internal characteristics
- Borders / outline
- Attenuating properties
- other features



Observations / conclusions

- **Making a list of observations may be useful as a process, but <u>conclusions</u> are usually required in an ultrasound diagnosis**

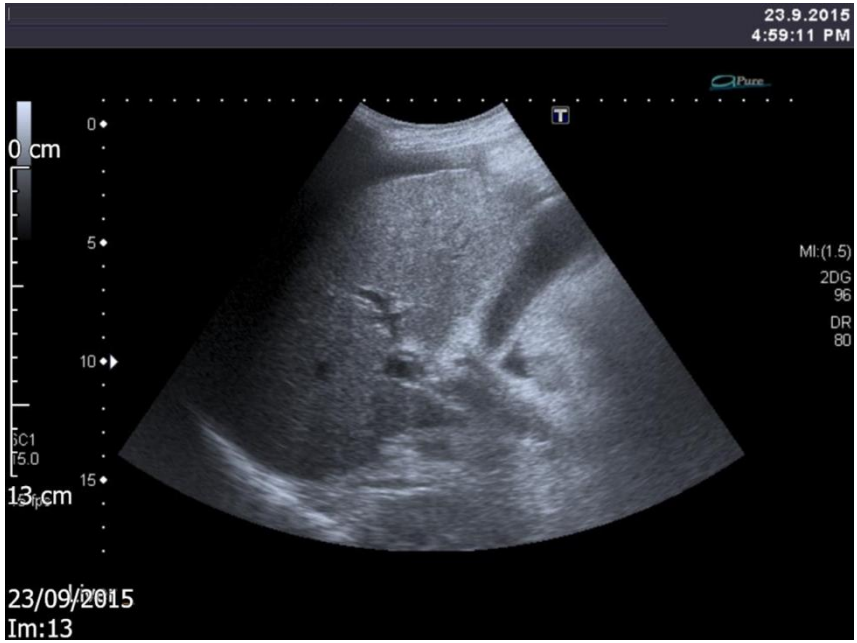
Professional Guidelines



'An ultrasound report may be defined as the recording and interpretation of observations from an ultrasound examination'

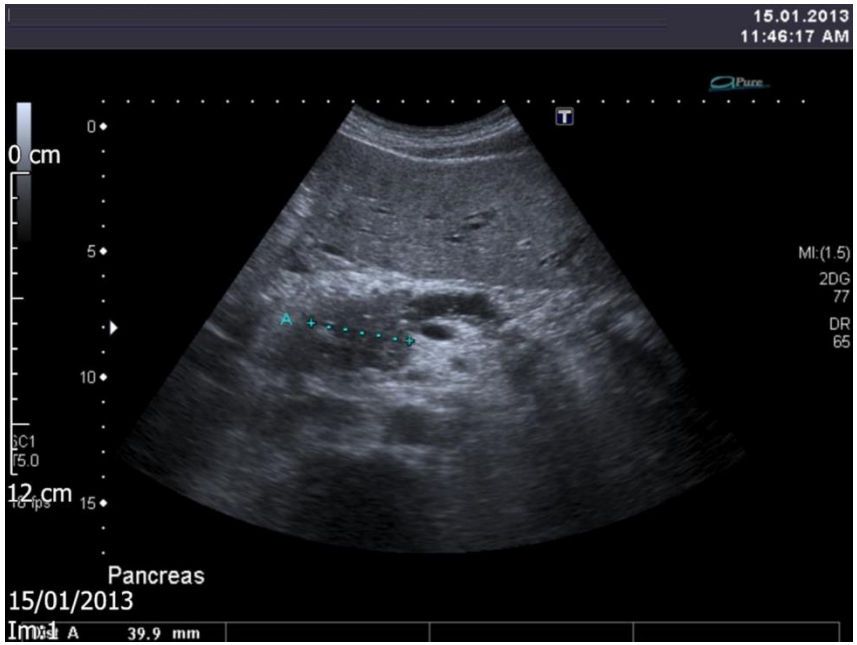
Professional Guidelines

- **The ultrasound report should be written by the person performing the ultrasound examination and should be viewed as an integral part of the whole examination.**



Professional Guidelines

- **The person issuing the report should take responsibility for the accuracy of the report.**



Reporting error

DoB :
Hosp. No. :
CRIS No. :
NHS No. :

Ref. Locn. : OUTPATIENTS [redacted]
Referrer : [redacted] Specialty: MEDICAL ONCOLOGY

VERIFIED Verified By: [redacted]

Clinical History : Metastatic spindle cell sarcoma of the right thigh. Has had two cycles of chemotherapy.

CT Thorax & abdo & pelvis with contrast : Comparison is made with a scan of 18/11/2010.
The lung metastases show good response. The lesion in the left lung adjacent to the posterior heart has resolved. There is a residual 11 mm nodule in the right middle lobe anteriorly but otherwise the other lesions are unmeasurable. Inflammatory changes are present in both lungs. The mediastinum is clear.

A couple of small simple cysts are seen in the liver. No pelvic or retroperitoneal lymphadenopathy. Kidneys are unremarkable.
There is a 12 cm diameter intramuscular mass within the medial left thigh.

Conclusion: Improvement in the lung lesions

Event Number :

Examination Date : 18/01/11

Professional Guidelines
Report style

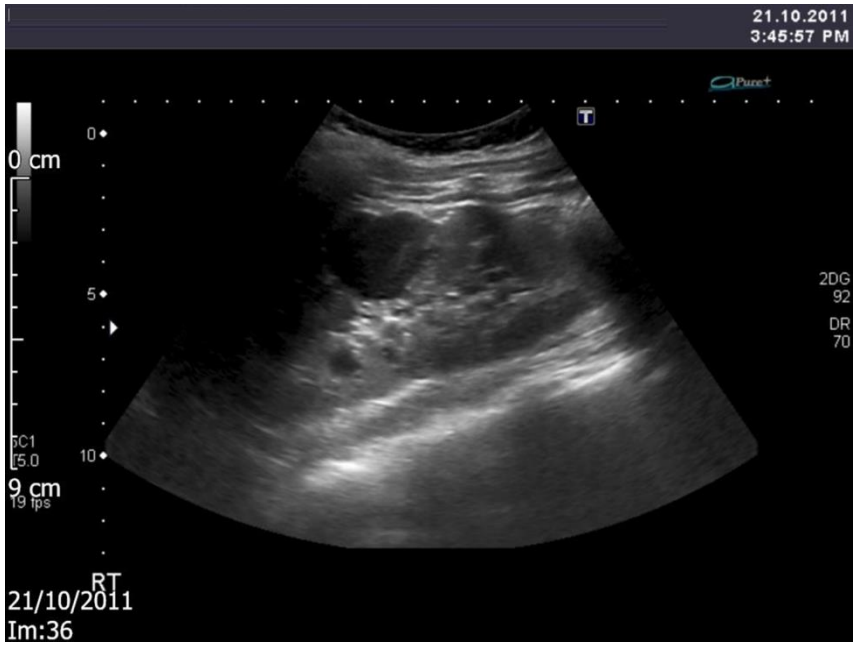
- **The practitioner should be aware of his/her limitations and consequently seek advice when necessary**

Professional Guidelines
Limitations

- **Any limitations should be stated and, if a relevant organ has not been fully examined, the reason(s) should be indicated**
- **The exclusion value and significance of the appearances should be stated where relevant.**

Professional Guidelines
Clinical implications

- **The practitioner should be aware at all times of the implications for the client/patient of the contents of the report and act in accordance with local guidelines**



Legal responsibility College of Radiographers

- **Radiographers are legally accountable for their professional actions and for any negligence, whether by act or omission or injury.**

College of Radiographers 1994

Case 1

- 75 year old male
- GP Referral
- Clinical details:
- Recent weight loss with vague abdominal discomfort in the epigastrium. Vague mass ? liver enlarged and nodular.

Report

The liver is normal in size and appearance. No focal lesions or biliary dilatation. The CBD is of normal calibre. The gallbladder is normal with no evidence of calculi.

Normal size and appearance of the spleen, pancreas and IVC.

The known infrarenal abdominal aortic aneurysm measures 4.2cm . No large volume para-aortic lymphadenopathy demonstrated.

Both kidneys are normal in size and appearance with good cortical preservation and no hydronephrosis.

Normal bowel gas pattern seen with no obvious bowel mass demonstrated.

No free fluid.

Conclusion:

No cause presenting symptoms demonstrated on this examination.

Case 2

- 85 year old male
- Nurse Specialist Referral
- Haematuria

Report

US Urinary tract

Unremarkable appearances of the kidneys which are normal in size.
Difficult to appreciate the urinary bladder since it is partially distended.
The prostate gland is not seen.

Abdominal aorta is normal in calibre.

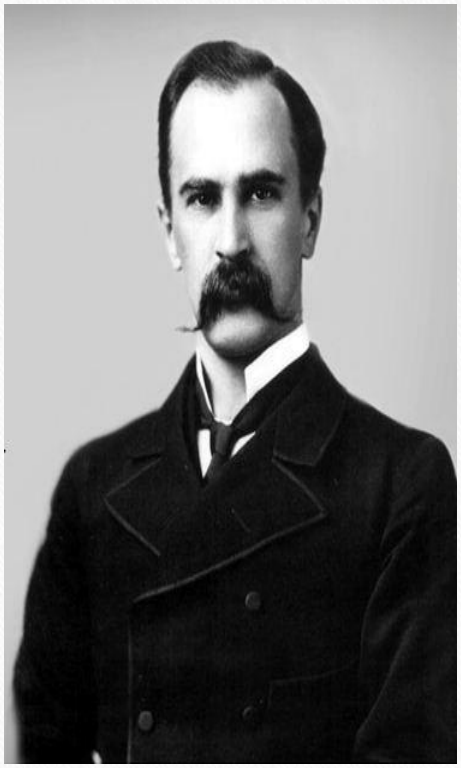
Coincidental finding of multiple lesions seen in the liver.
Post prandial collapsed gallbladder.
No intrahepatic biliary duct dilatation.
The CBD is not dilated.
Pancreas obscured by bowel gas.
Spleen appears normal.
No abdominal or pelvic free fluid.

Multiple cysts seen within the liver 12 October 2009 CT report.
You may wish to further investigate the liver lesions with an ultrasound examination using contrast.

Reporting Guidance

CP Griffin & P Parker

Ultrasound reporting



"There is no more difficult art to acquire the art of observation, and for some men it is quite as difficult to record an observation in brief and plain language"

Dr William Osler, Boston Medical Surgical Journal 1903

https://www.bmus.org/static/uploads/resources/GUIDELINES_FOR_PROFESSIONAL_ULTRASOUND_PRACTICE.pdf

Nine steps to producing a report:

- Understand clinical information and aim of request and how the exam fits the clinical management of the patient
- Technical assessment of scan quality / limitations
- Observations : SSOTM. (size, shape, outline, texture and measurements)
  - normal,
  - unequivocally abnormal (expected/unexpected),
  - equivocal,
  - normal variants
- Analysis (observation & clinical reasoning) Clinical opinion and diagnostic implication
- Medical interpretation: wider implication of findings in whole patient context
- Advice: level of certainty and any further imaging/Ix if needed
- Communication with referrer: adapt to different types of referring clinicians
- Take urgent action if necessary and document
- Communication with patient: if trained, appropriate knowledge to do so.

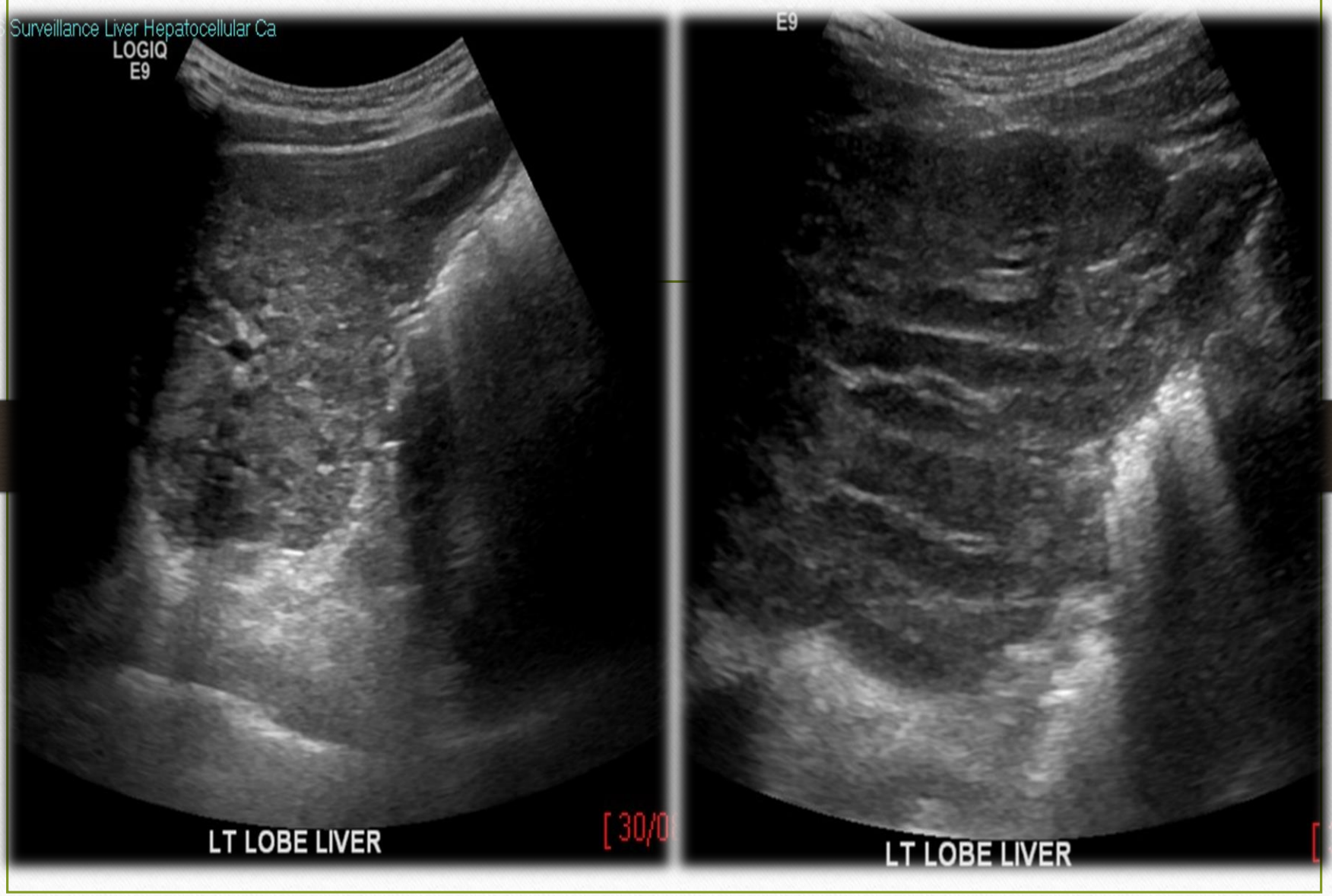
http://www.ajronline.org/doi/full/10.2214/ajr.180.2.1800327

Reporting style:

- Brief, relevant description.
- Conclusion: answer the queries, most important issues first
- Include pertinent negatives. (ovarian mass, but NO liver metastases or ascites)
- Don't be vague, equivocal or hedge: answer the question clearly
- Avoid: "sinister, concerning, large, worrying etc….." Imagine you are reading this about yourself/your loved ones
- If equivocal findings, indicate degree of uncertainty and advise how to resolve
- Beware the words: "significant" and "non-specific"

Case Example

- Clinical Information:
  - 19yo male
  - Hepatoma surveillance for PSC cirrhosis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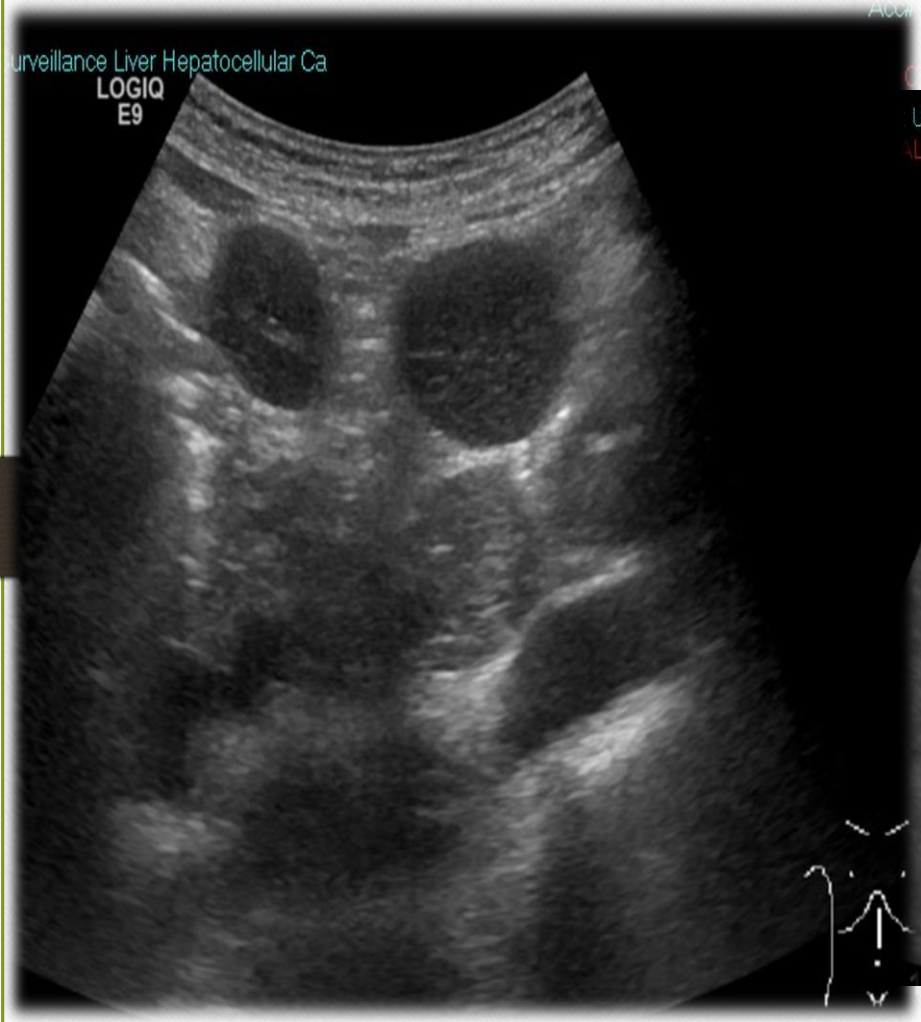
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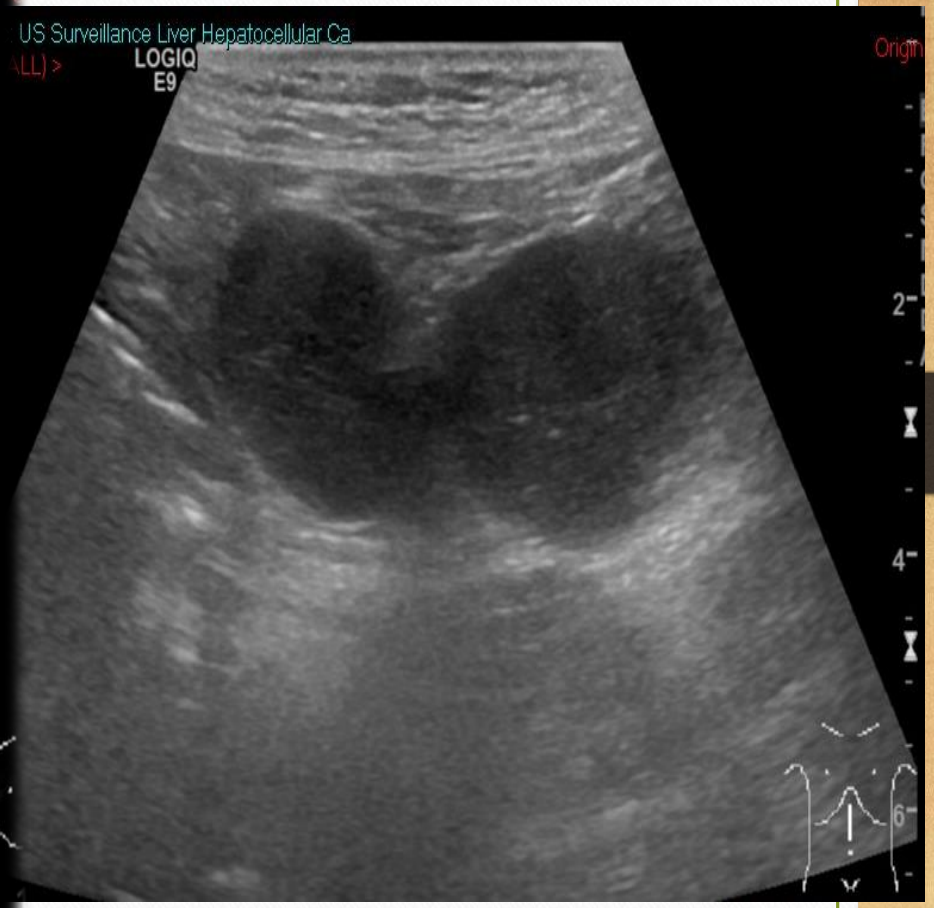
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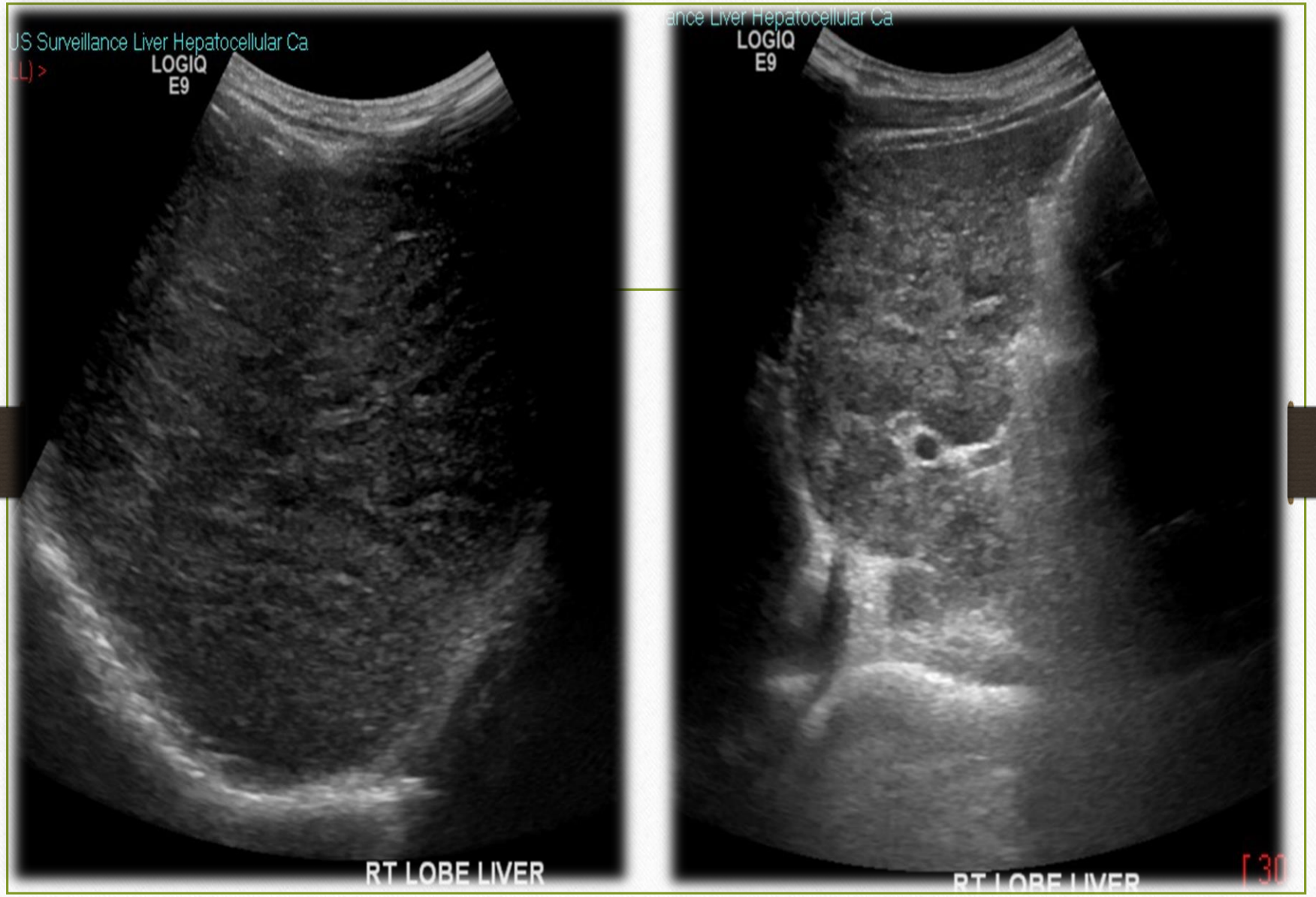
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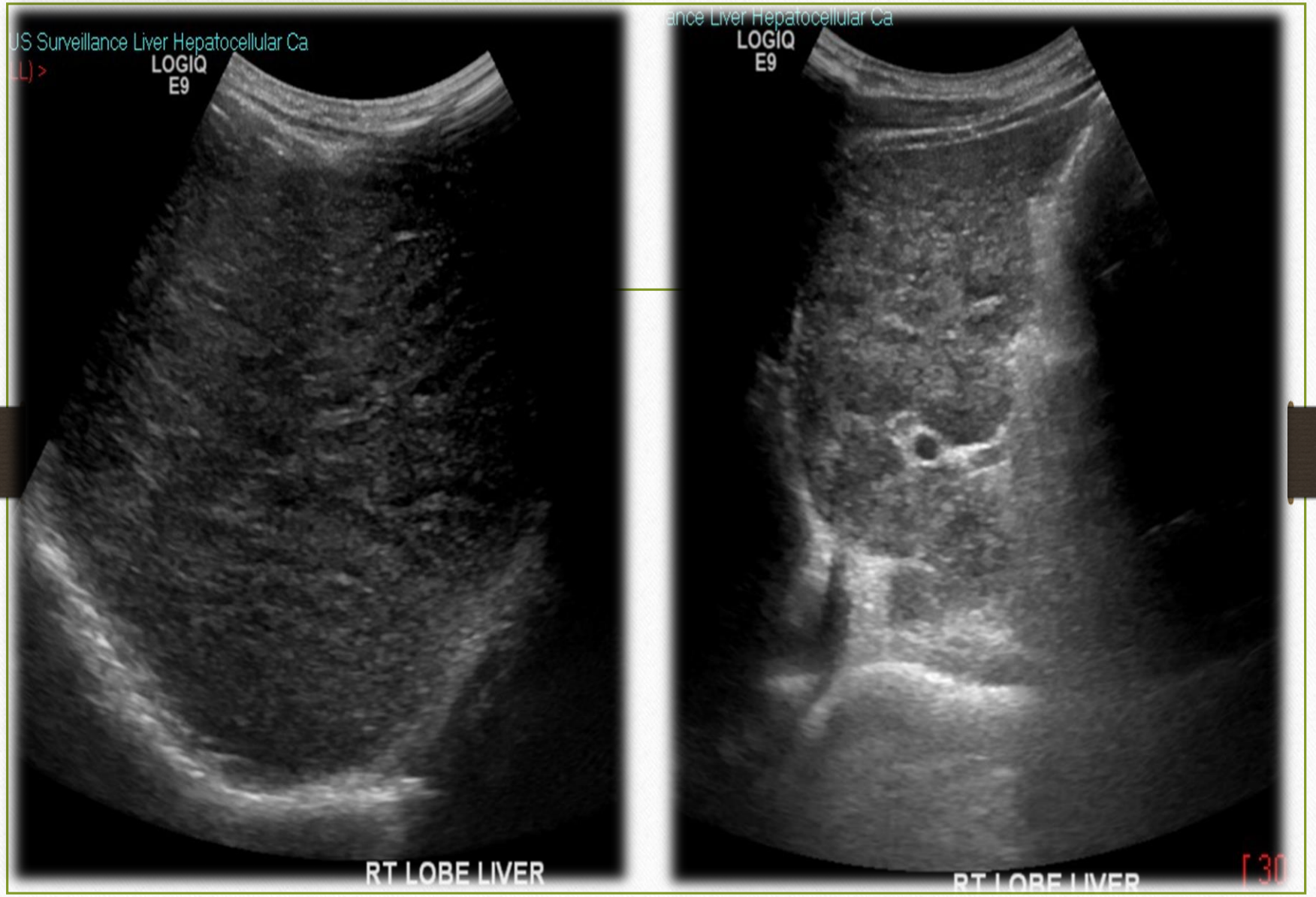
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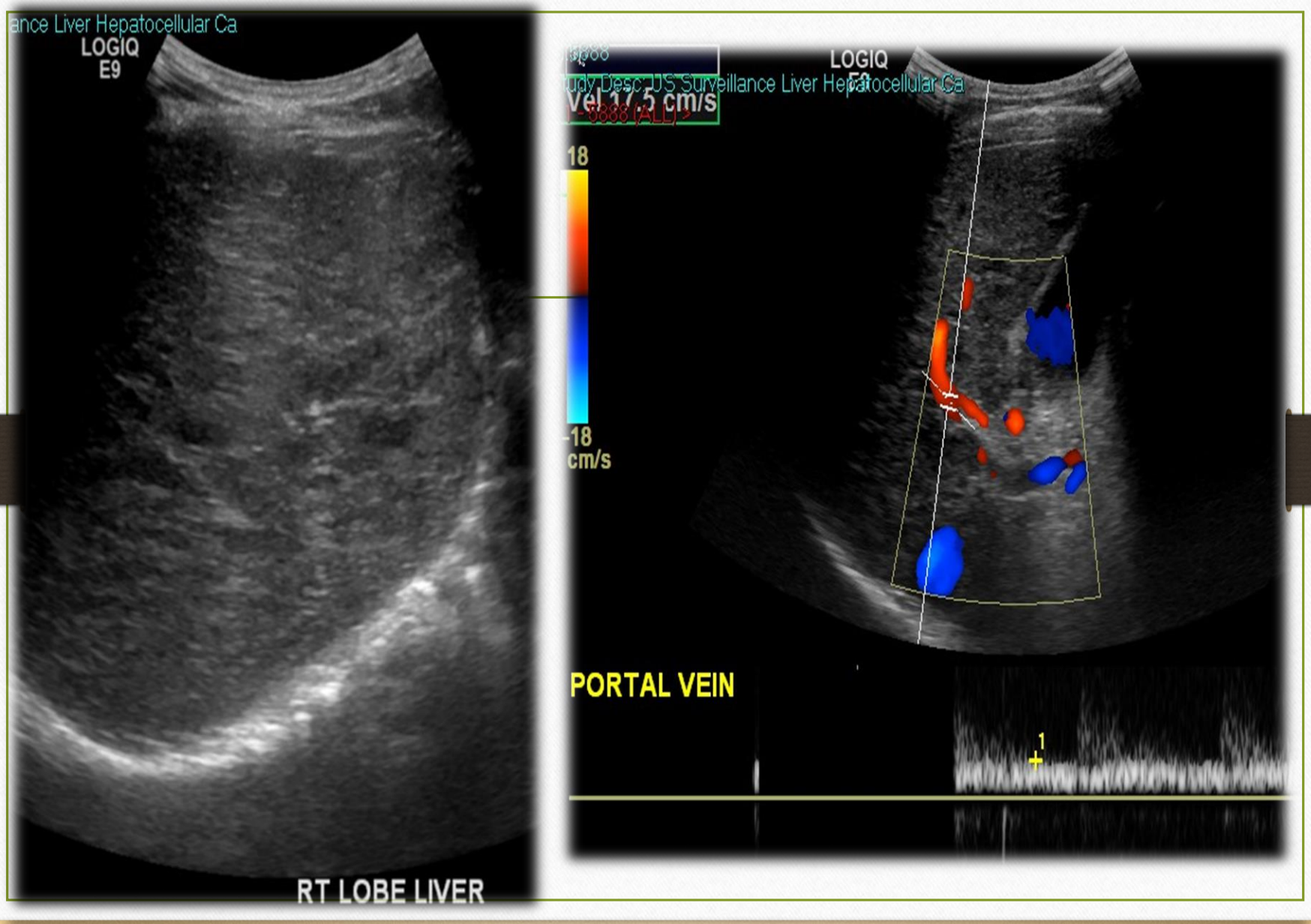
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Report?

Tell me what you think?

Actual Ultrasound Report

- Comparison made with previous ultrasound scan performed 26/01/2018 and the recent MRCP performed 24/07/2018.

- The liver parenchyma is heterogenous in keeping with previous imaging and the patient's diagnosis. No obvious focal lesion is identified on today's scan.
- In the midline of the abdomen there are two rounded soft tissue lesions which appear to correspond to the previously identified splenunculi.
- The portal vein is patent with normal hepatopetal flow present, velocity 17 cm/s.
- Again there is splenomegaly present, with the spleen measuring in excess of 21 x 6.5 cm.
- No ascites within the upper abdomen.

- Conclusion
- No new features identified. No focal lesions identified.

Case Example

- Clinical Information:

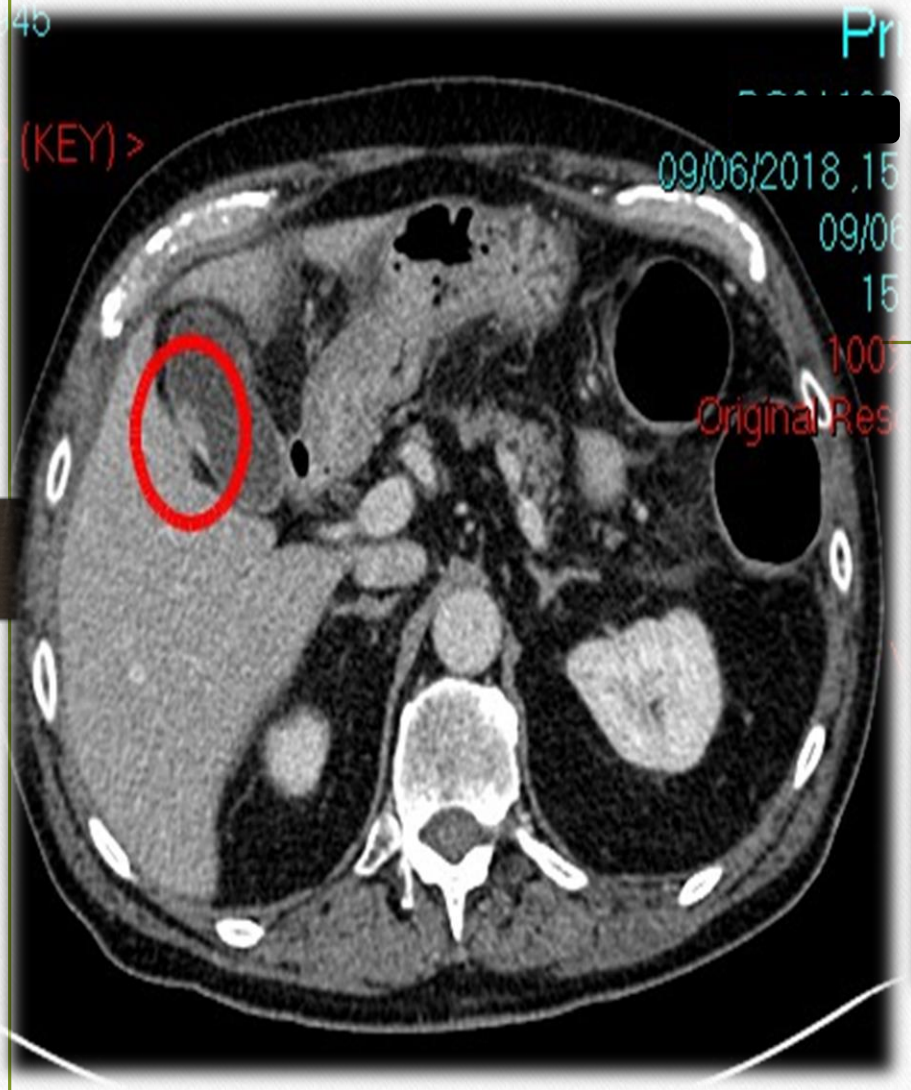
- CT
- Please kindly image this 73 year old gentleman who is day 3 post reversal of ileostomy and ileocolic anastamosis. The patient has now deteriorated with significantly derranged inflammatory markers, a distended and tender abdomen and constipation.
- He is tachycardic
- We are concerned regarding a post operative anastamotic leak.
- Please may we request imaging to further investigate

CT Abdomen with contrast : IV contrast in portal venous phase.

- Comparison study: CT abdomen dated 23rd March 2018.

- Evidence of recent laparotomy and the ileo-colic anastomosis (2–205). Evidence of a previous and ileostomy tract within the subcutaneous tissue of the right iliac fossa.
- No peri-anastomotic free fluid or gas. No evidence of an anastomotic leak. Unremarkable appearances of the remaining colon. No small bowel obstruction.
- Small amount of free intra-abdominal fluid (HU 18) within the bilateral paracolic gutters, slightly more marked on the right. No free intra-abdominal gas.
- Similar appearance of a 19 mm focal thickening along the posterior wall of the gallbladder, this is likely due to a fold in the gallbladder wall although further characterisation should be discussed.

- No radiopaque gallstones. A 3 mm hypodense area demonstrated in segment 5 of the liver, which is too small to characterise which most likely represents a cyst.
- Unchanged appearances of a 12x10 mm and a 16x14 mm adrenal adenoma within the body and the medial limb of the left adrenal gland.
- Normal appearances of the pancreas, spleen, right adrenal gland and kidneys (unchanged large right lower pole renal cyst).
- Normal calibre of the abdominal aorta.
- Non-dependent gas demonstrated within the urinary bladder, consistent with recent urinary catheter insertion.
- Bibasal lower lobe consolidation/atelectasis with small bilateral pleural effusions.
- No destructive bone lesions.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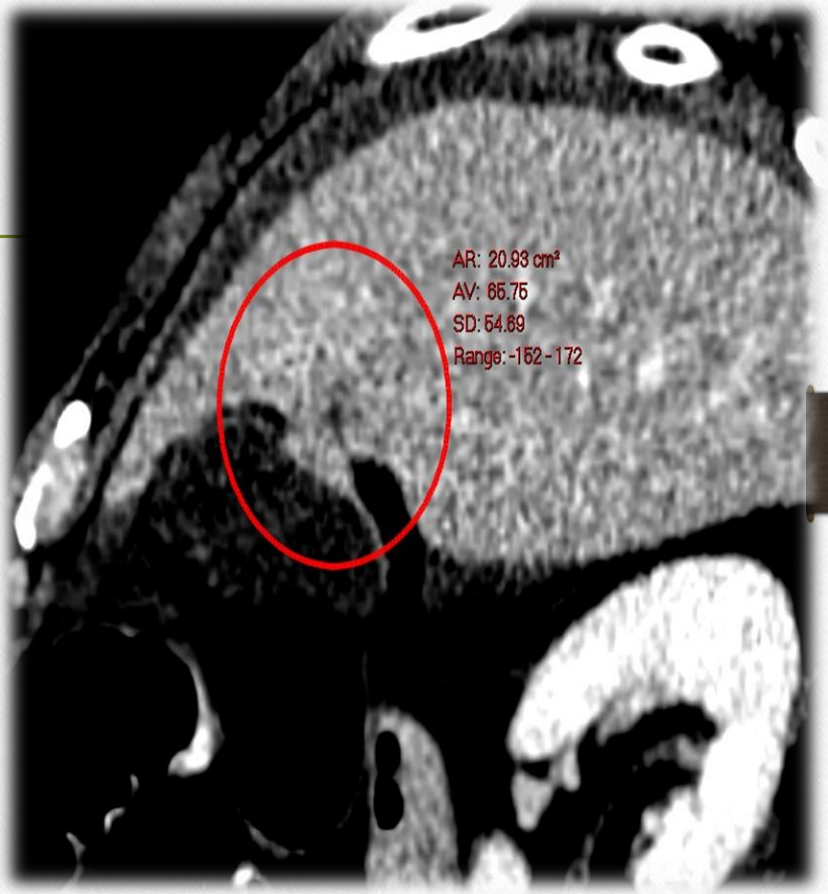
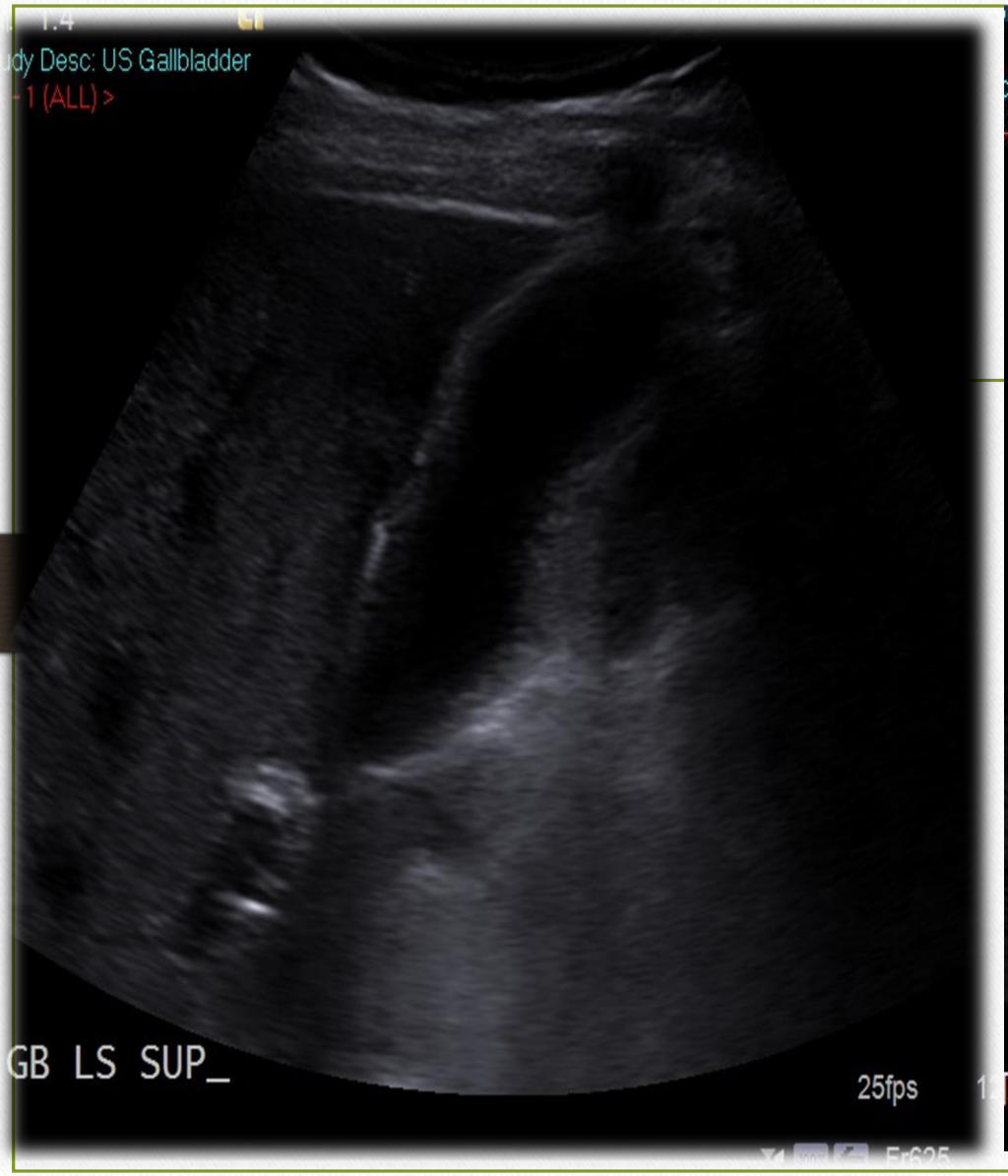

AR: 20.93 cm²
AV: 65.75
SD: 64.69
Range: -152 - 172

US Request

- Clinical History :
- Area of thickening seen in GB on recent CT. Suggested u/s f/u/. Please do when pt is an inpt. Tx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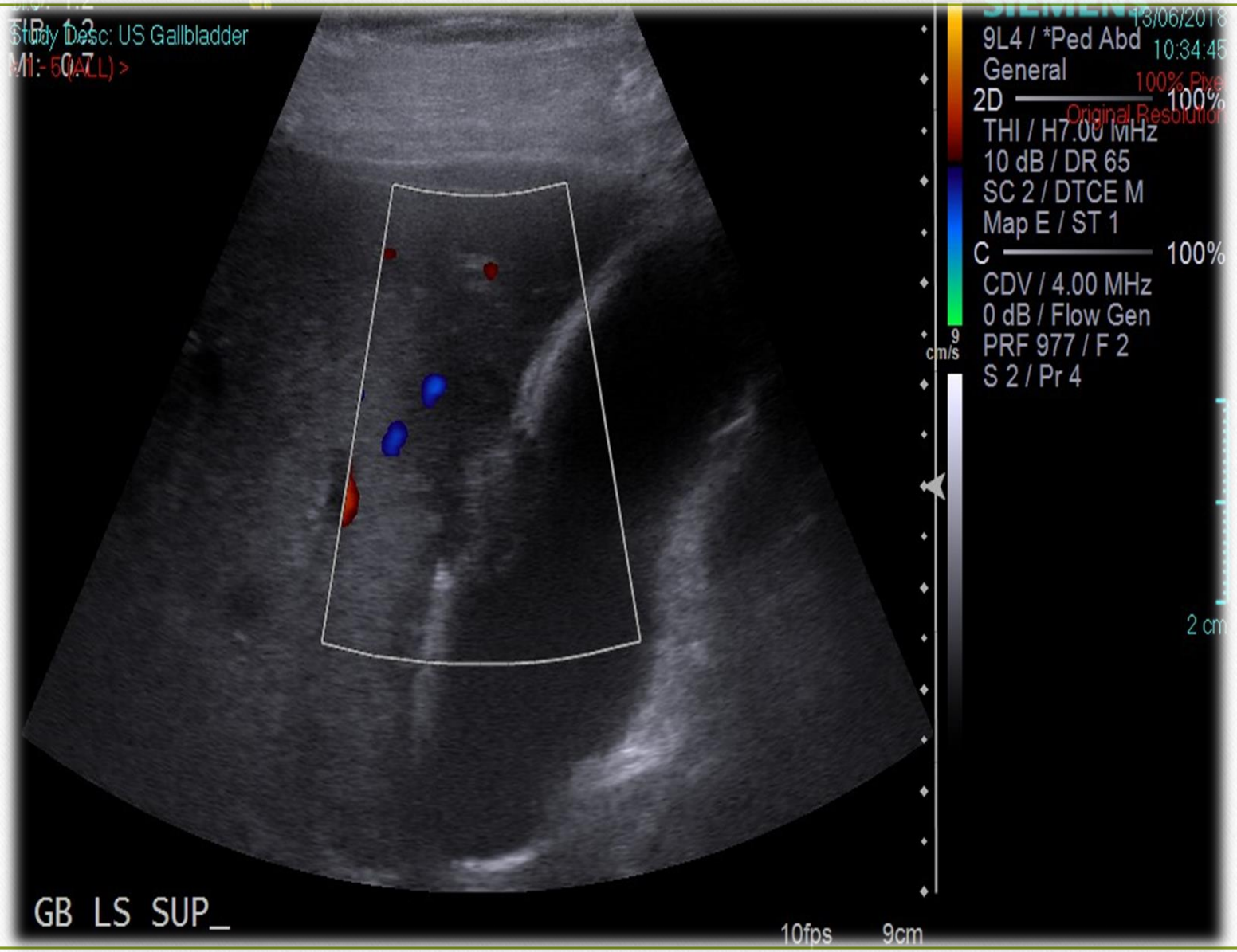
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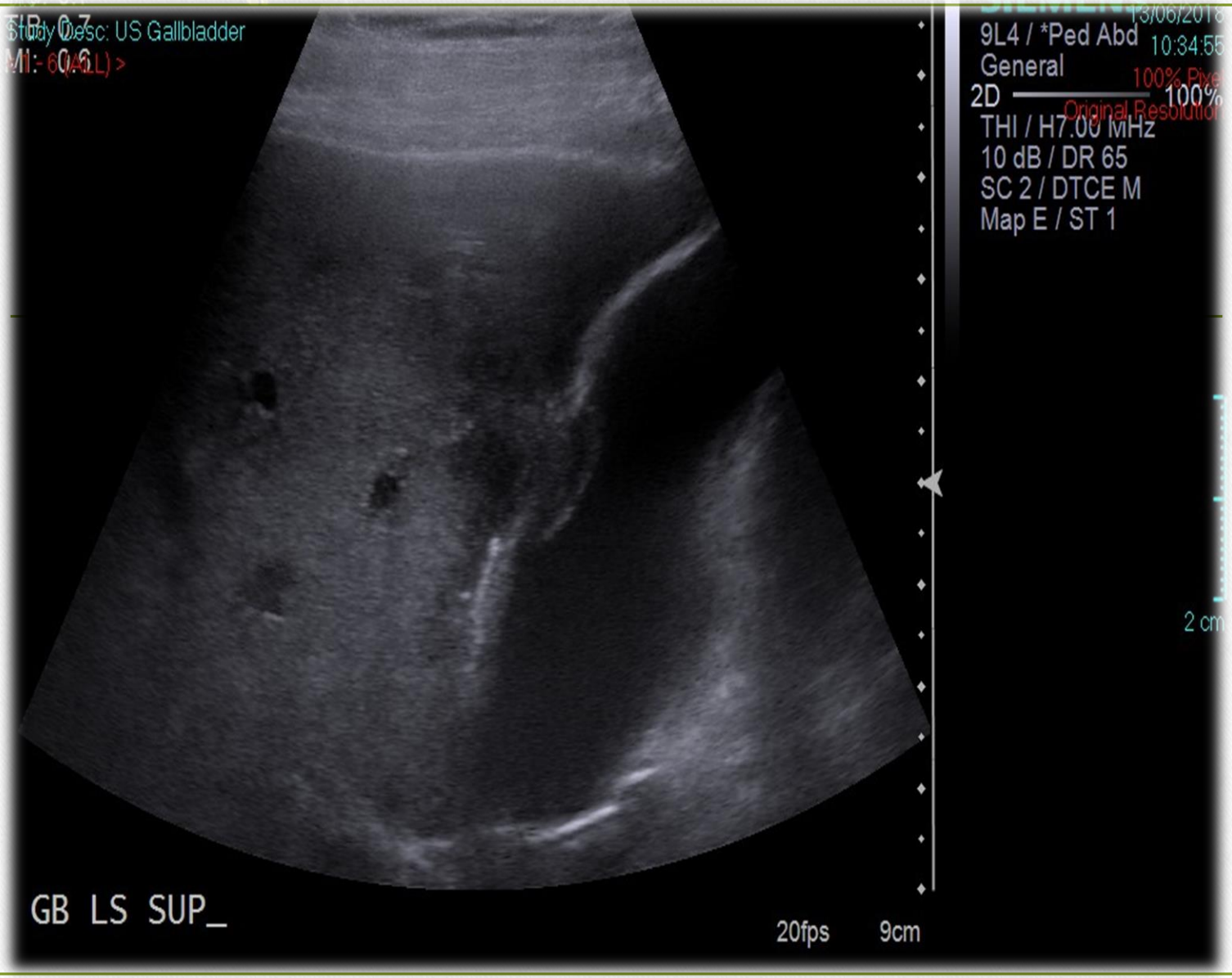
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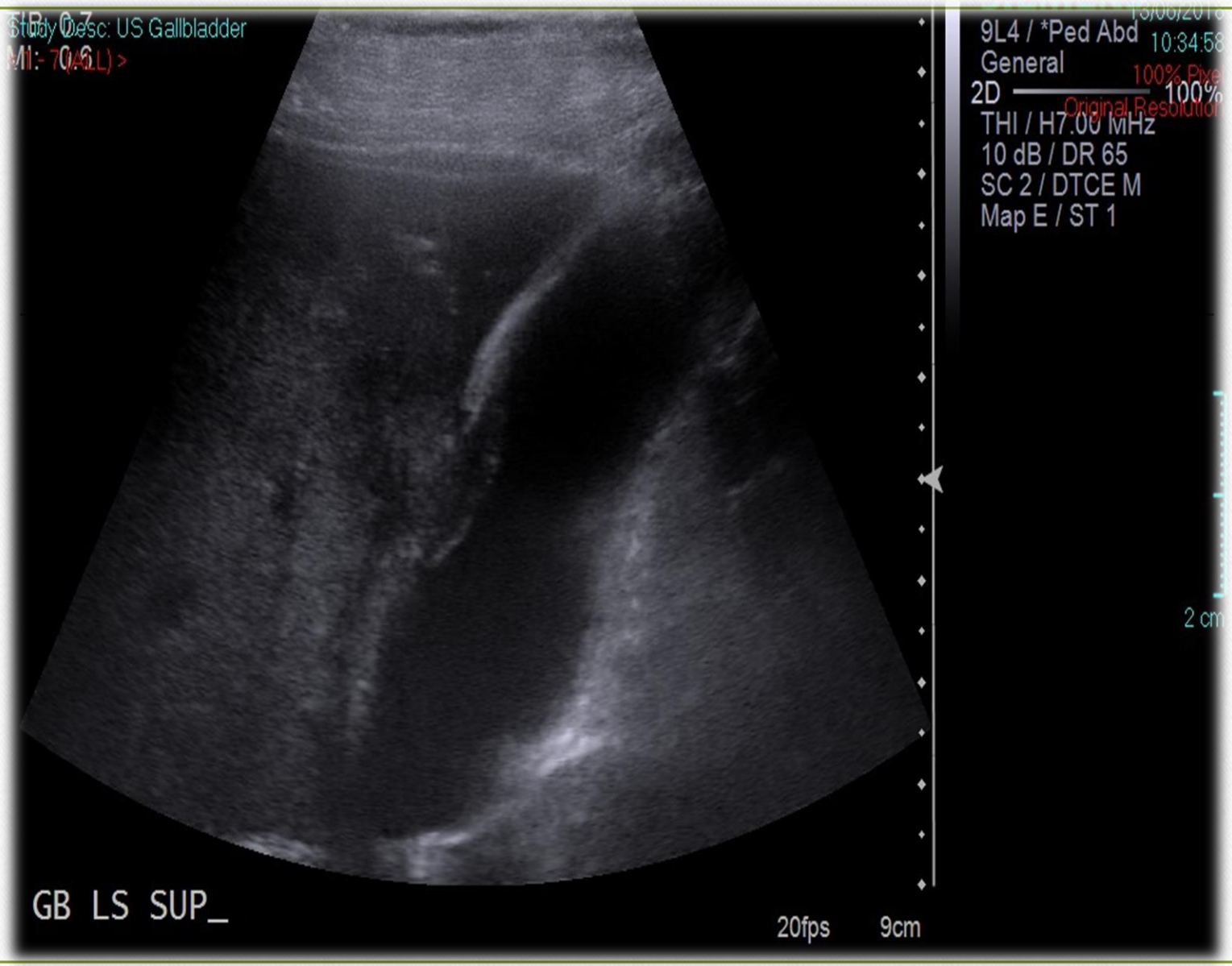
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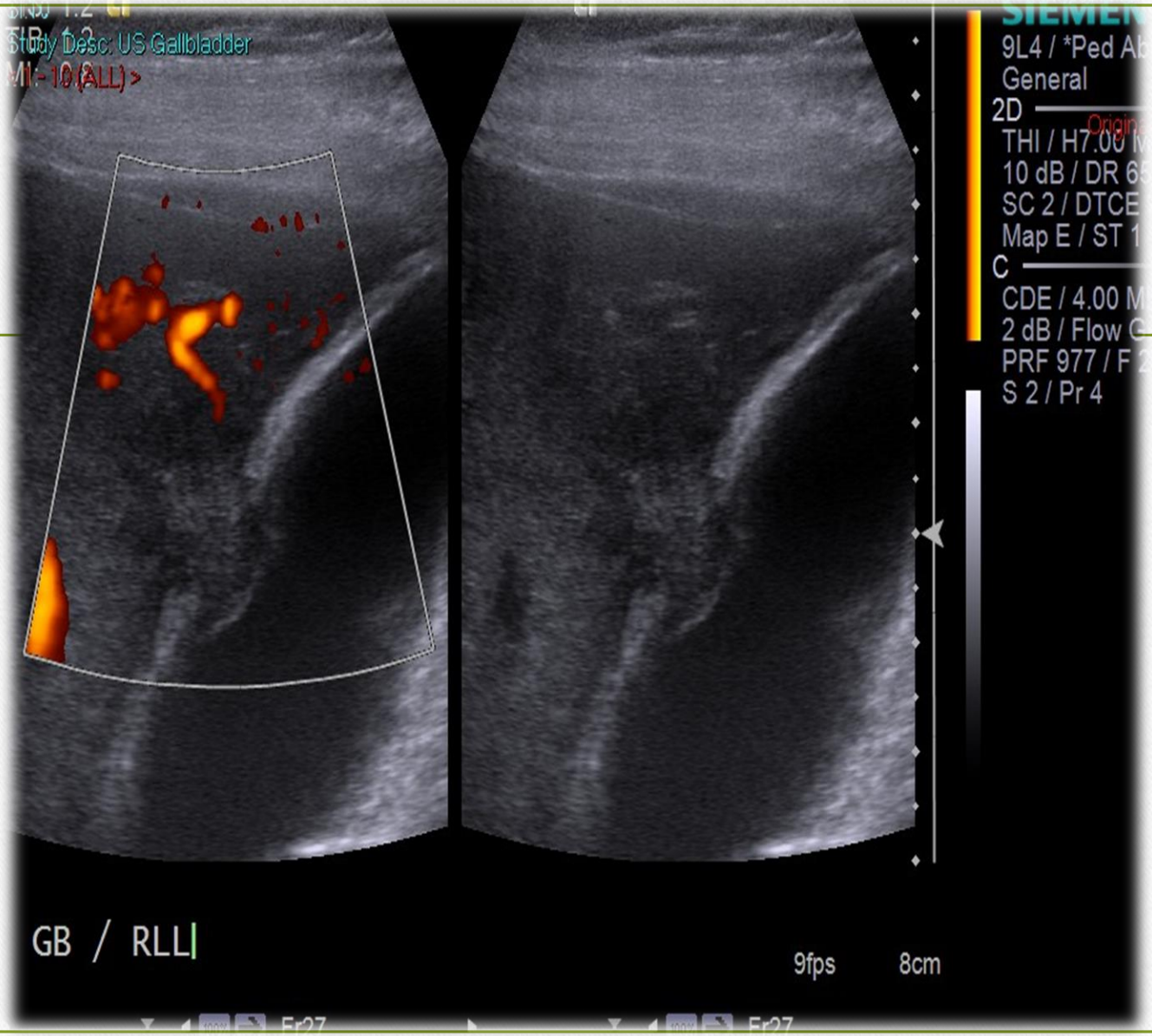
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Report?

Tell me what you think?

Actual Ultrasound Report

- US Gallbladder :

- Comparison made with the recent CT performed 09/06/18.
- The defect identified on the CT has been identified today. The ultrasound features are suggestive of a gallbladder malignancy with local invasion into segment 4b of the liver. No calculi were identified within the gallbladder.

- Conclusion:
- Ultrasound evidence to suggest gallbladder malignancy with local invasion to the liver. MDT discussion is suggested to discuss management options.

BMUS

THE BRITISH MEDICAL ULTRASOUND SOCIETY

No Feedback – No CPD Cert

Join us for BMUS ASM

4 – 6th December 2018

Manchester