Liver EQA Scheme
Circulation LL

Spring 2015

Collated responses and suggested scores

for meeting 10th December 2015, Harrogate.

Changes in the Liver EQA Scheme since last year

Informed in January that PHE no longer supports interpretive EQA schemes which are not part of a national screening programme

– 3 months' notice of withdrawal of organisational support from Quality Assurance Reference Centre.

Introduce EQAlite to support administration of scheme.

Secretarial support transferred to Histopathology Department

in St James's Hospital, Leeds

– secretary Ms Jassi Sagu.

Liver EQA scheme: Circulation LL

There were 79 responses.

For interpretive EQA schemes, cases are suitable for scoring if similar response categories can be combined to get a consensus of at least 80%.

This means 63 or more responses in agreement.

Liver EQA scheme: Circulation LL

- Responses collated and presented at open meeting on 10th December 2015 – 40 members present.
- Pre-meeting circulation with opportunity to comment – 7 members sent comments.
- Criteria for scoring agreed at meeting, and then applied to responses.
- Before deducting points, responses are re-read – including all text in both morphology and clinic-pathological components.
- The results and CPD certificates are sent to participants by EQAlite, once the annual subscription has been received.
- The individual's 'results' report is generated by EQAlite. Only the clinic-path text is shown in the report. For full responses, see excel spreadsheet.
- The EQAlite report also shows the individual participant's score, the agreed scoring criteria and the average score for all participants.

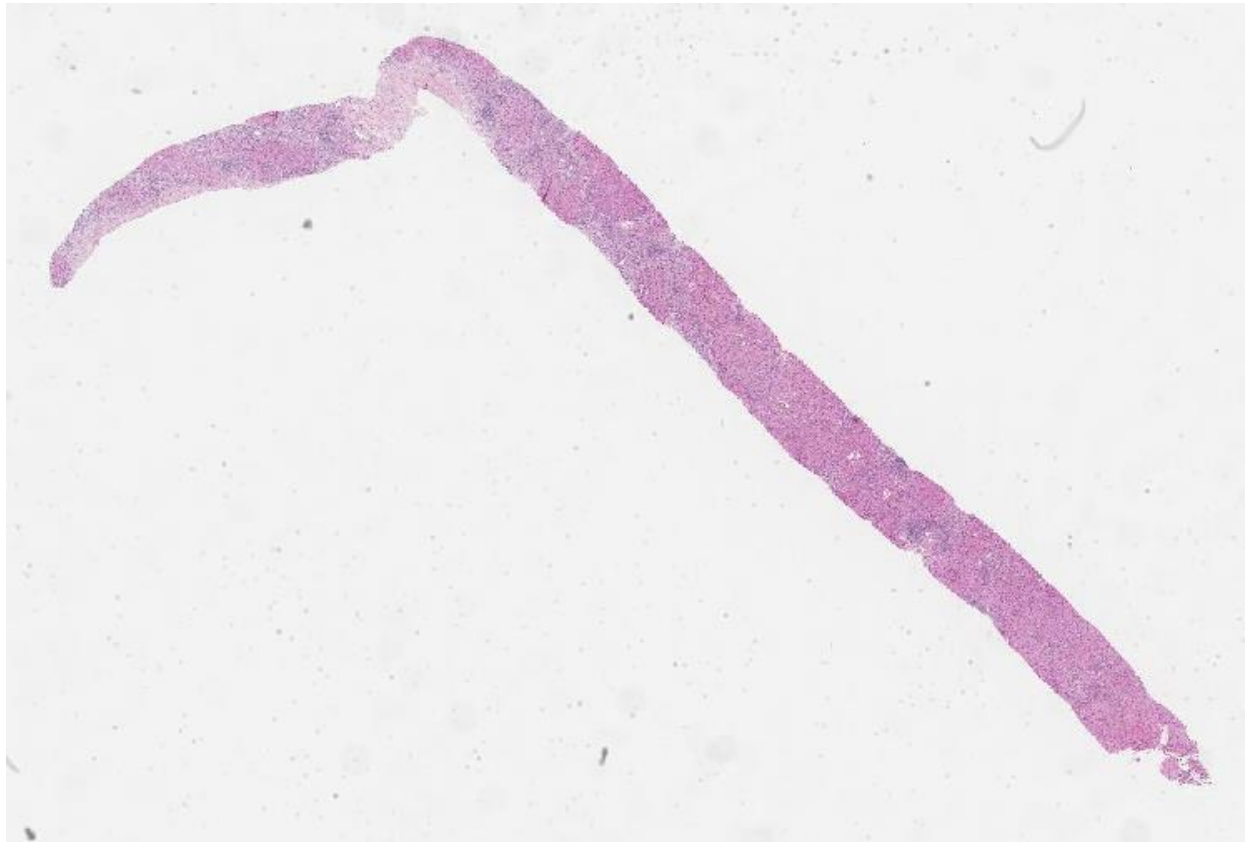
Case LL 1

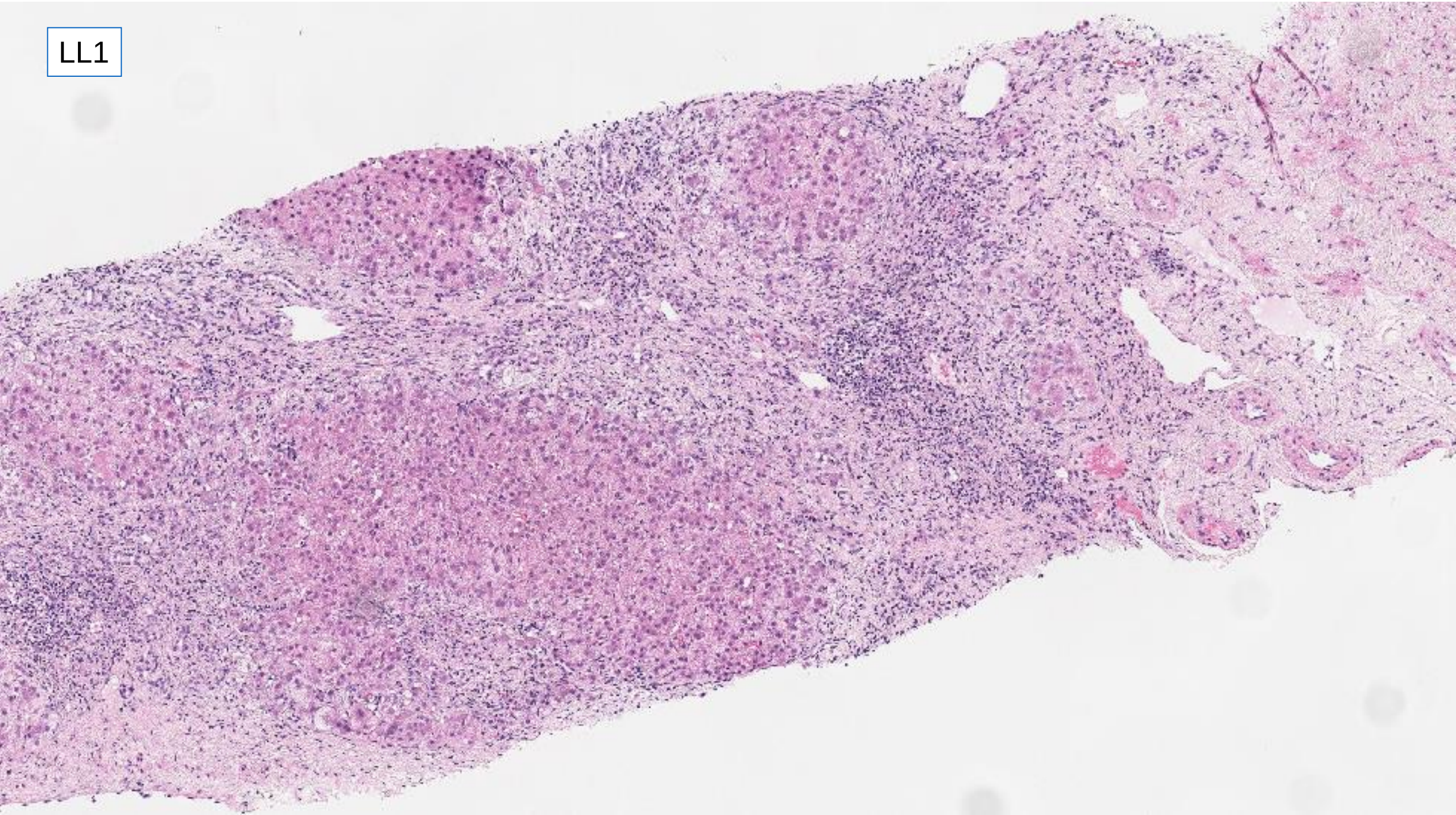
Male 43 years

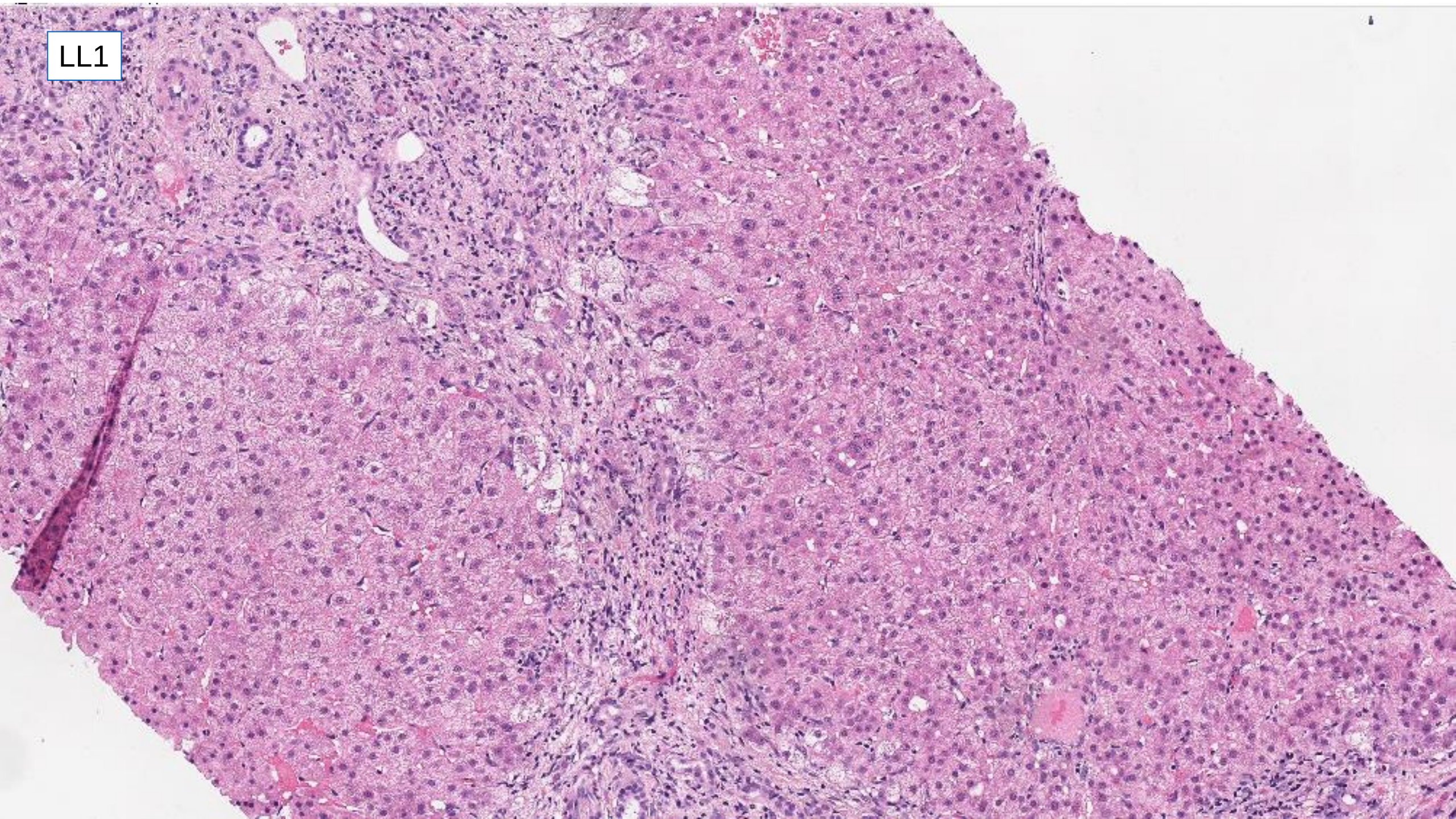
To stage fibrosis/cirrhosis. ?aetiology - AIH, PSC, other. ALT 2-3x normal, GGT and Alk phos 4-5 x normal, IGG raised, antibodies negative apart from positive anti PR3.

Specimen: Biopsy.

Macroscopic description:
Core of tissue 24mm.




LL1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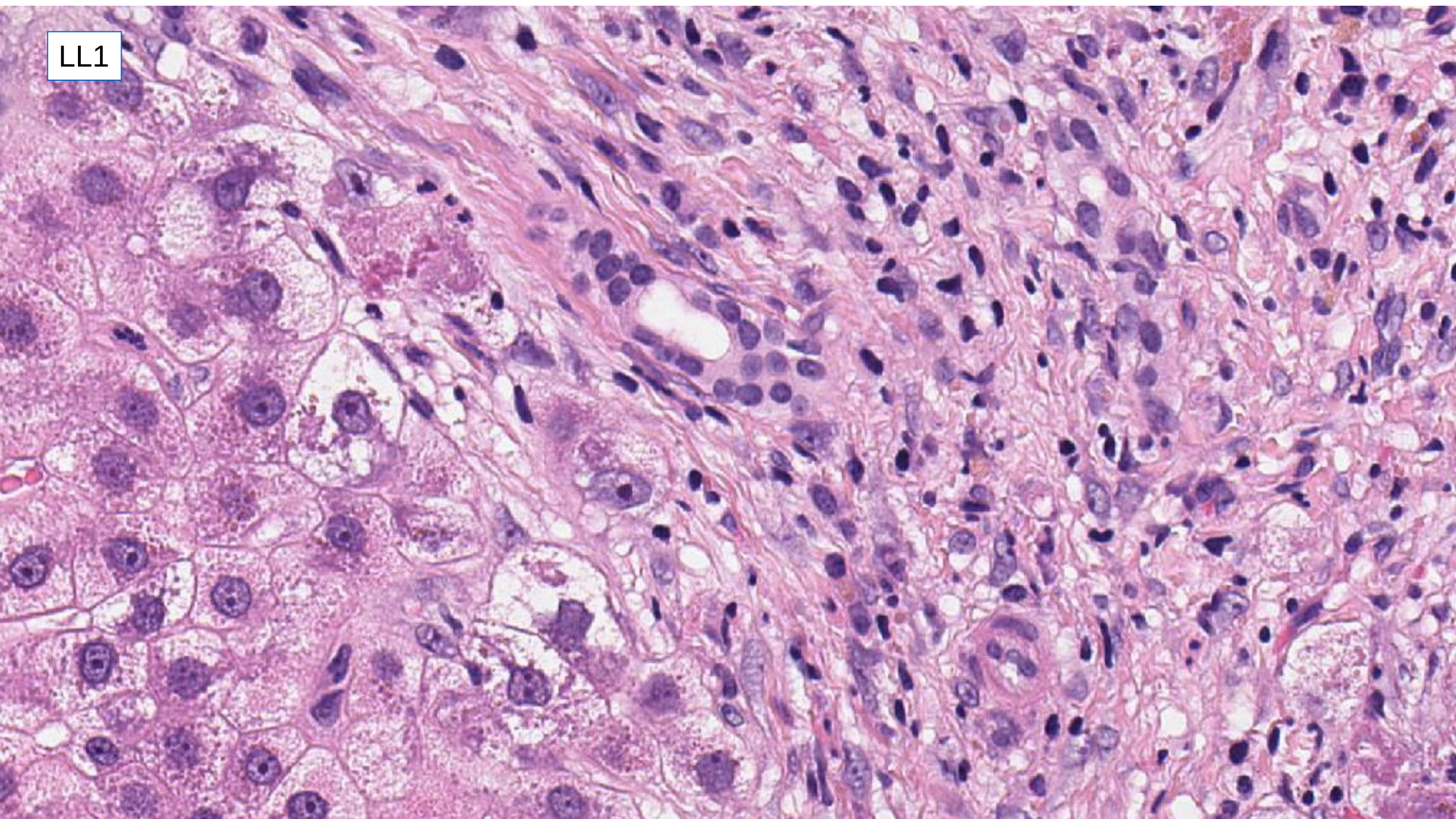
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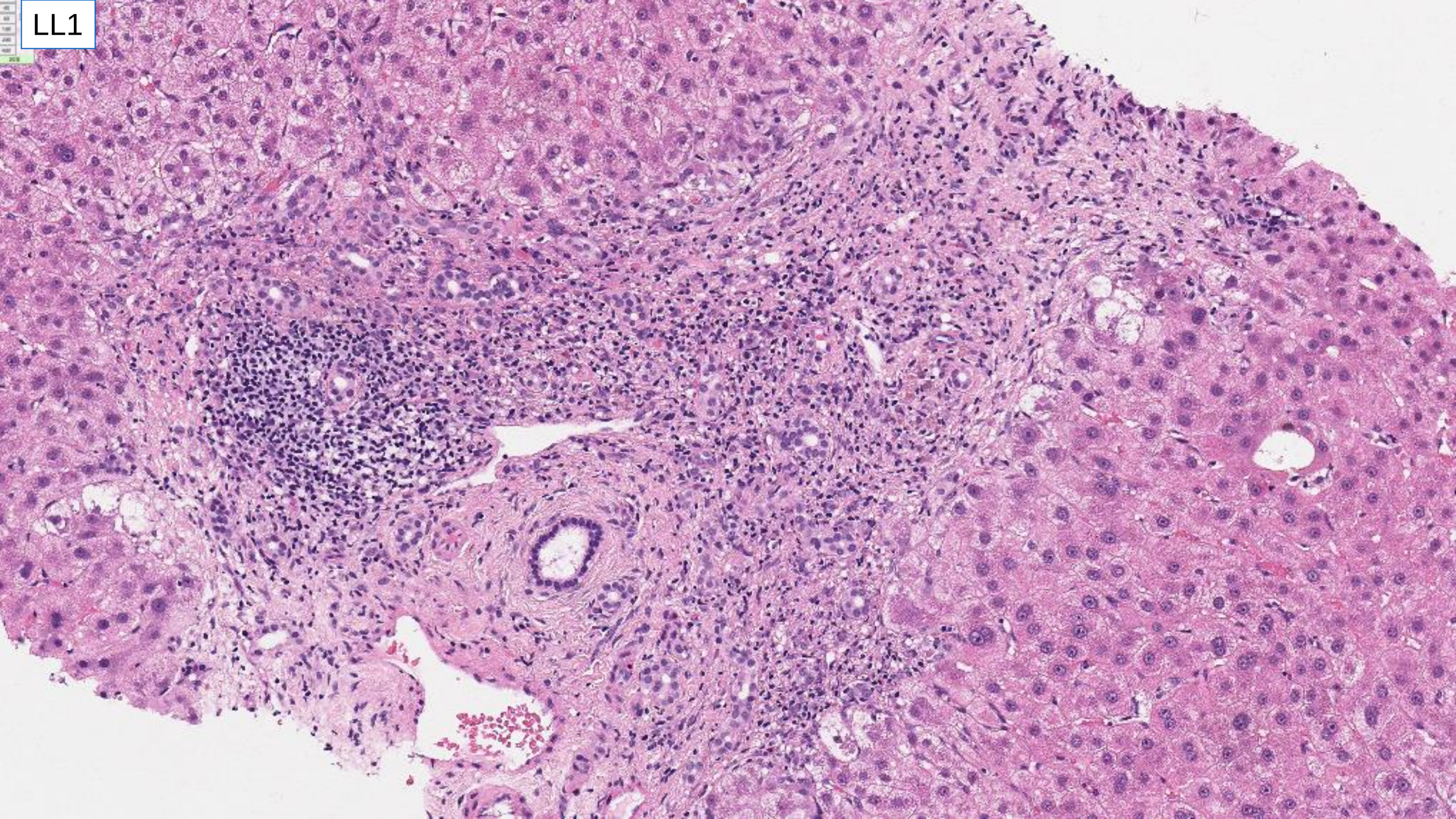
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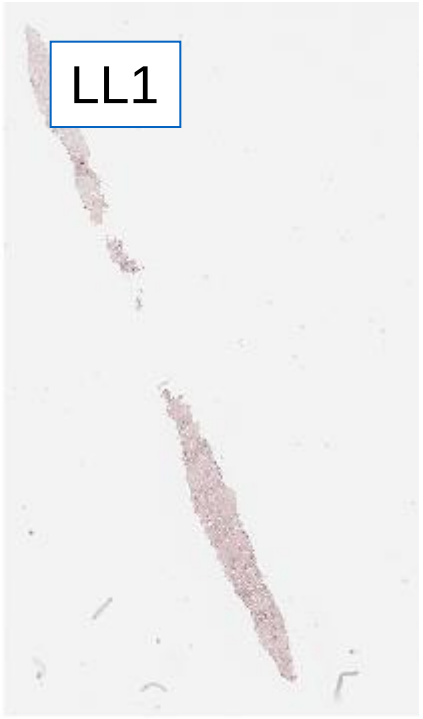
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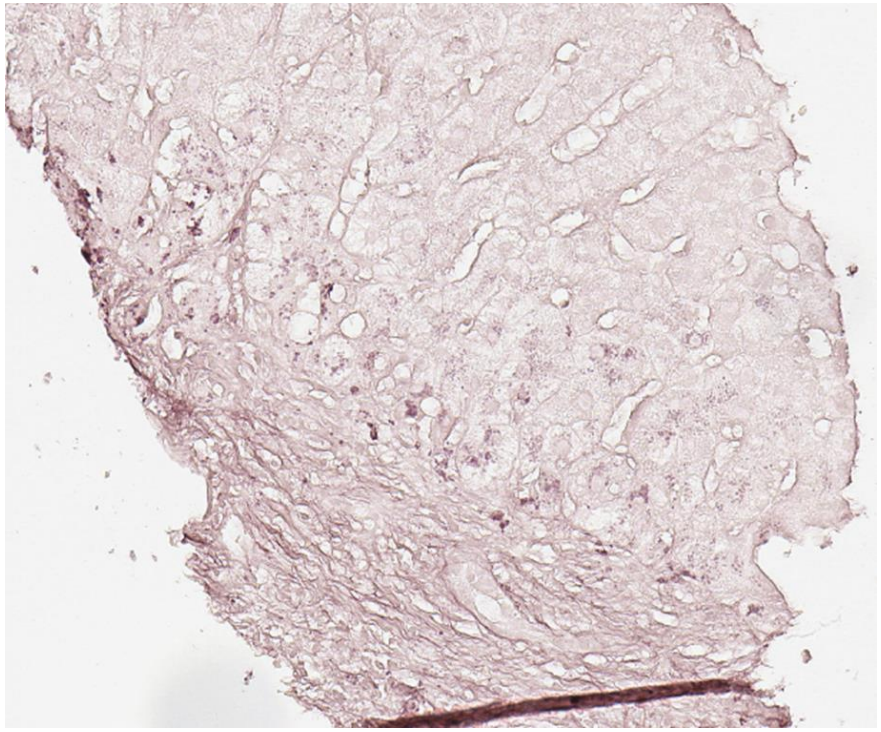

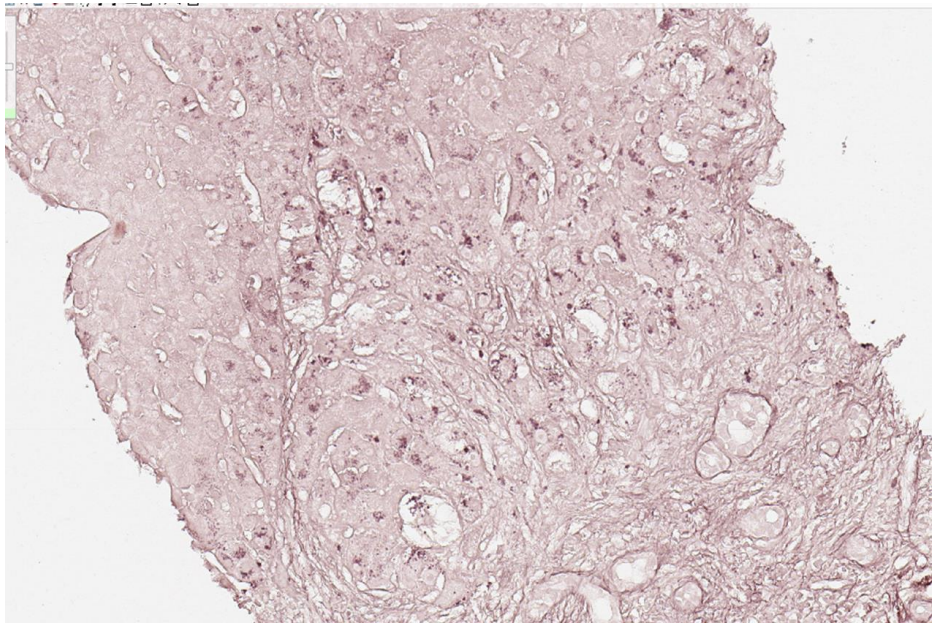

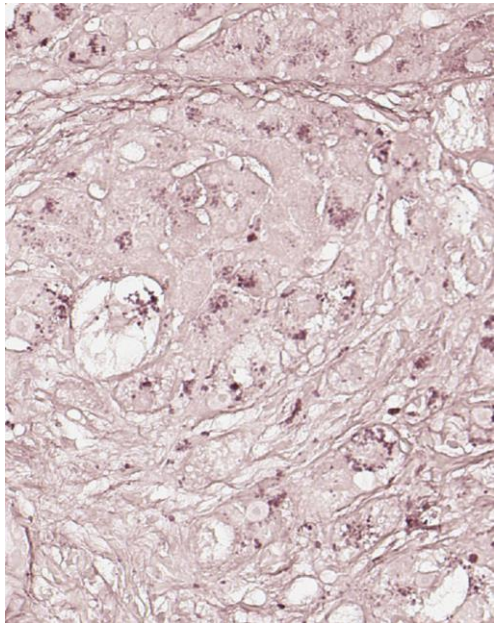

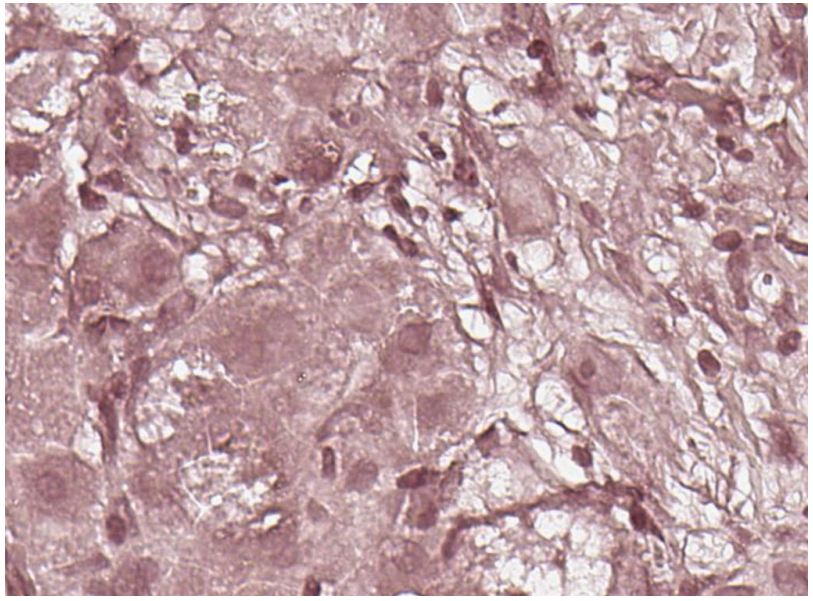

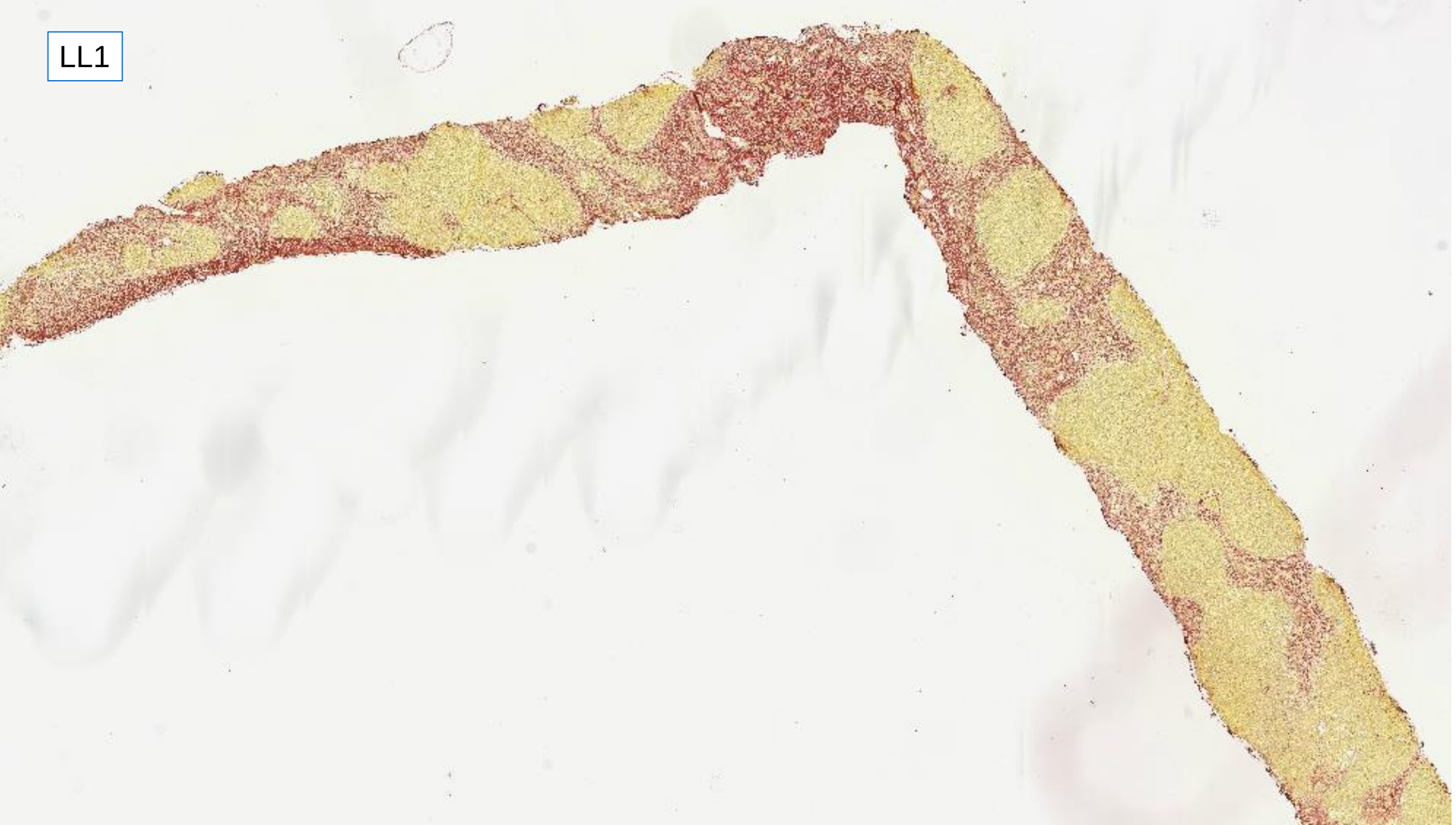
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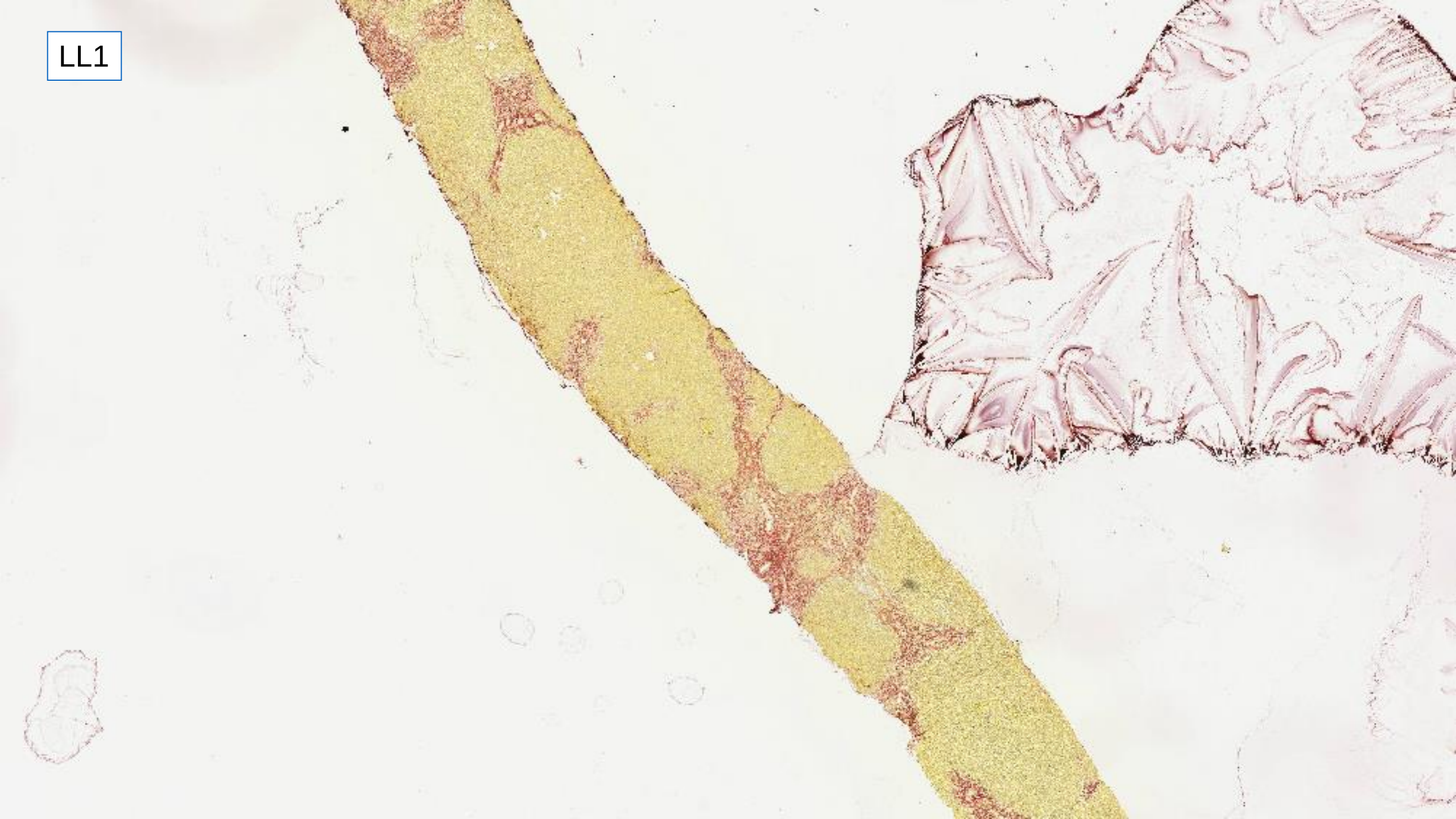
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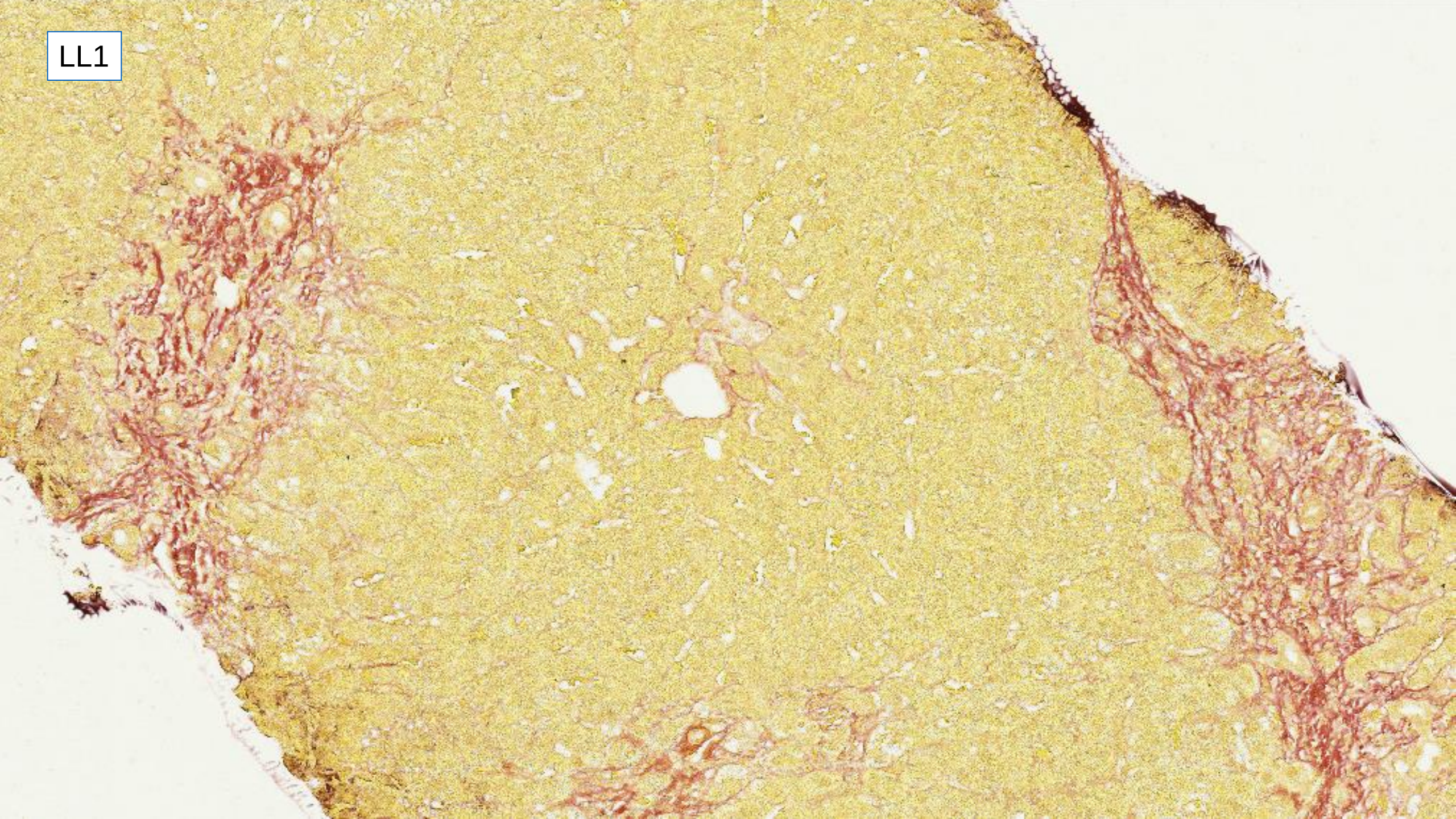

LL1

LL1 Male 43 years

To stage fibrosis/cirrhosis. ?aetiology - AIH, PSC, other.

diagnosis	
pattern biliary, or a biliary diagnosis – these may include:	60
PSC	36
PSC/AIH overlap	10
PSC/PBC	2
Autoimmune cholangiopathy?	1
PR3 IHC -ve shikata +ve so preferred diagnosis PBC (PSC not mentioned)	1
. Mild chronic hepatitis - could be AIH need to exclude biliary, Wilson's NAFL	1
. not typical AIH ? Alcohol ? Cholangiopathy	1
. Cirrhosis likely alcohol	1
. c/w AIH consider alcohol and Wilsons	1
. Cirrhosis probably viral	1
. Biliary NOS	1
. Exclude Wilson's maybe alcohol not typical AIH or PSC	1
. Wilson's, differential steatohepatitis	1
. Antibody -ve AIH with cirrhosis - no mention of biliary	2
. Cirrhosis, chronic biliary obstruction, differential Wilson;s	1
. Cirrhosis - alcoholic, exclude biliary e.g. PSC	1
. Cirrhosis probably AIH - exclude drugs, viruses	1
. Fuliminant hepatitis ? Seronegative AIH/DILI/Wilsons	1
. AIH (PSC and viral considered less likely)	1
. cirrhosis, exclude wilsons	1
. AIH v drug, less likely other cause	1

stage	
developing cirrhosis	23
cirrhosis	53
no stage	2
linking fibrosis, not cirrhotic	1

other comments:	
copper associated protein present (most say lots)	55
no copper associated protein	5
copper associated protein not mentioned	9
exclude Wilson's	6

Scoring: For full marks need to have cirrhosis or developing cirrhosis AND recognition of a biliary pattern, and/or a biliary disease as the most likely diagnosis.

Half marks where biliary disease is in the differential, but not most likely.

No marks when the liver disease is not biliary. These include Wilson disease (large amount of copper associated protein) or alcoholic liver disease (large amounts of Mallory Denk bodies).

Case LL 2

Male 48 years

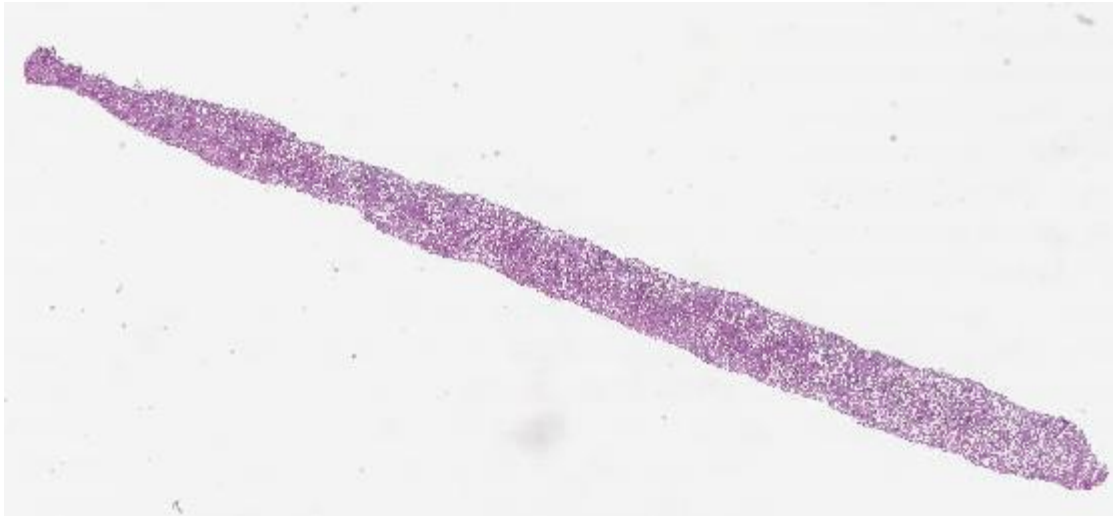
Presumed NAFLD. Type 2 diabetes. BARD = 4. Ferritin 800 (HFE Gene negative)
Raised fibroscan.

Specimen:

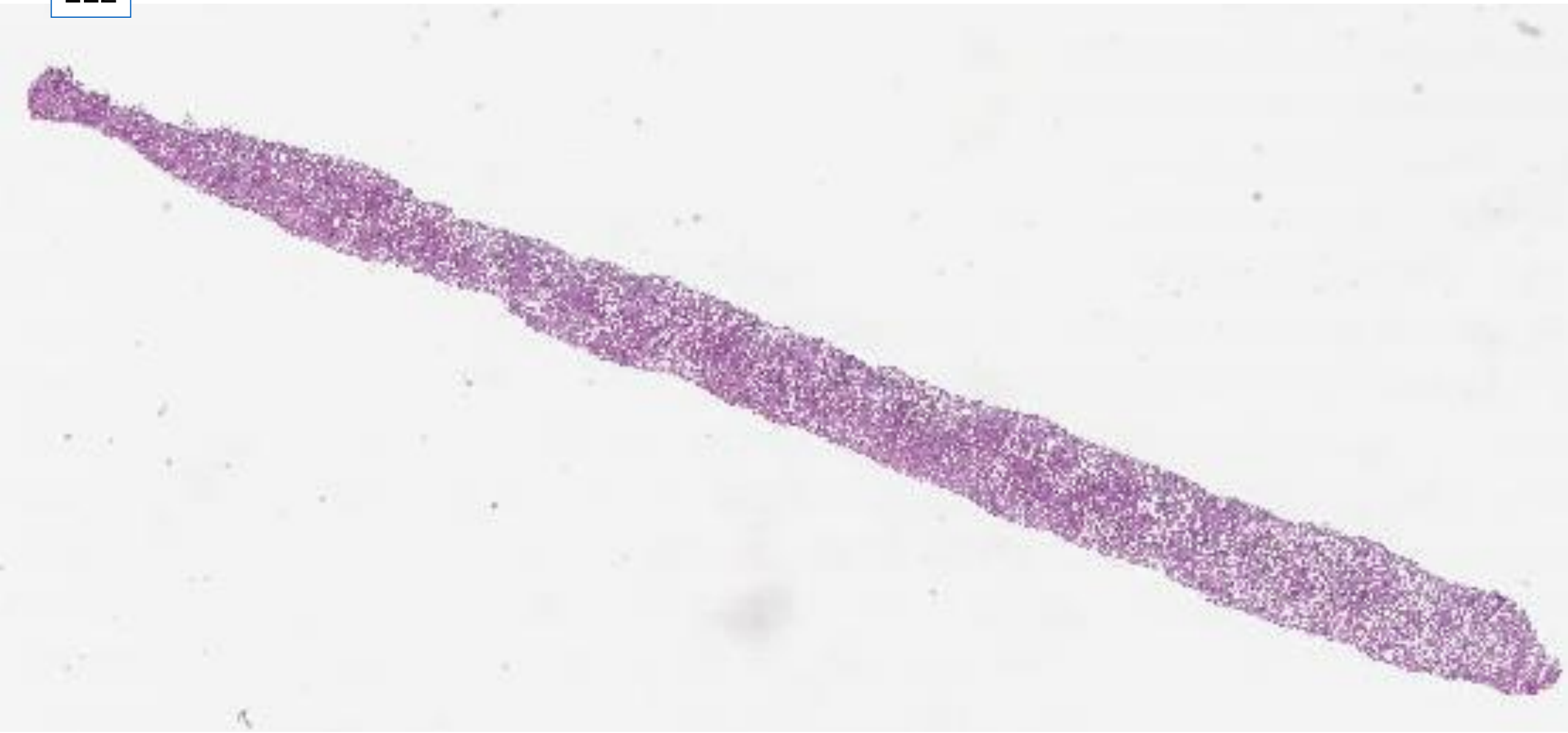
Liver biopsy.

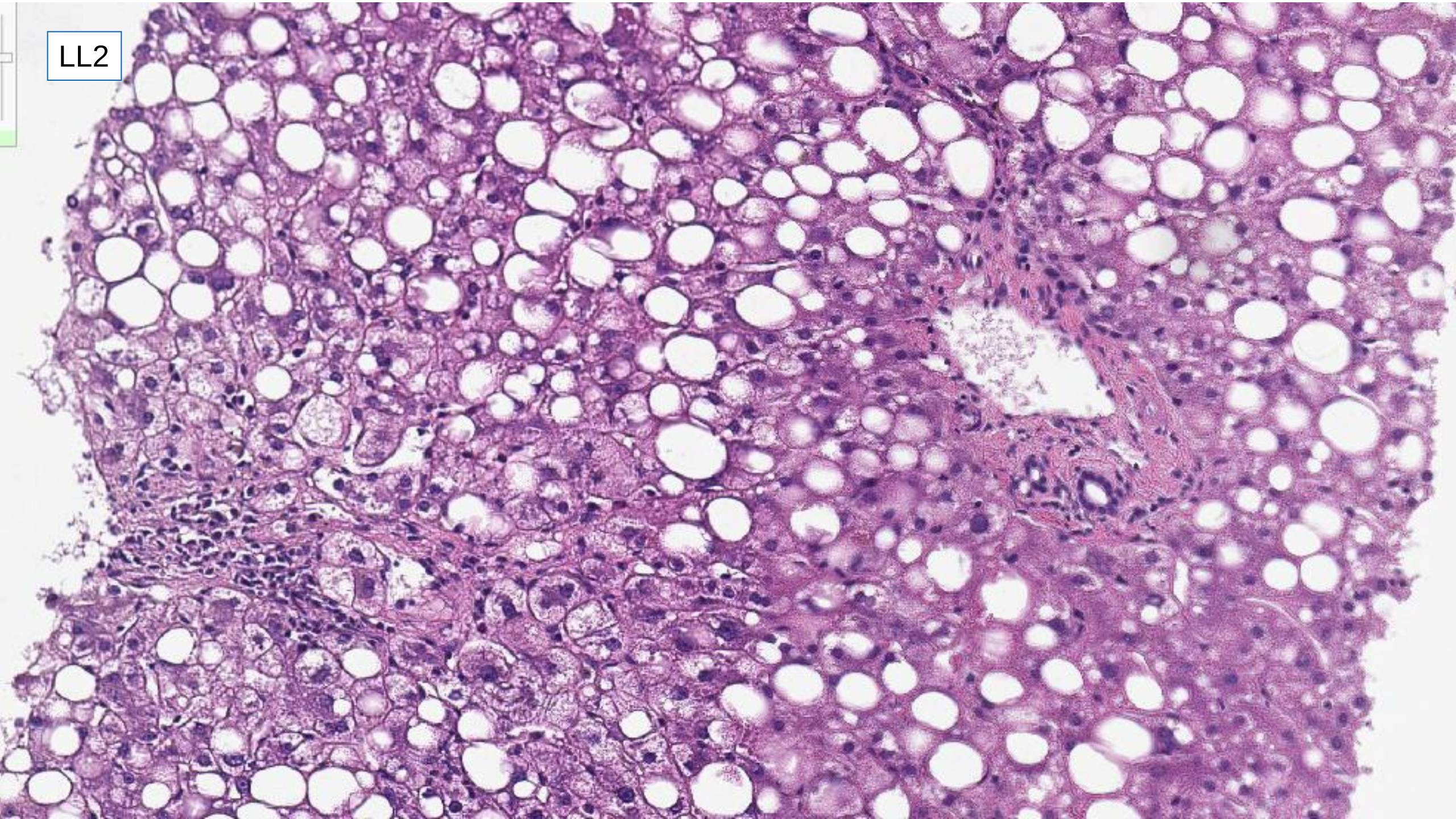
Macroscopic description:

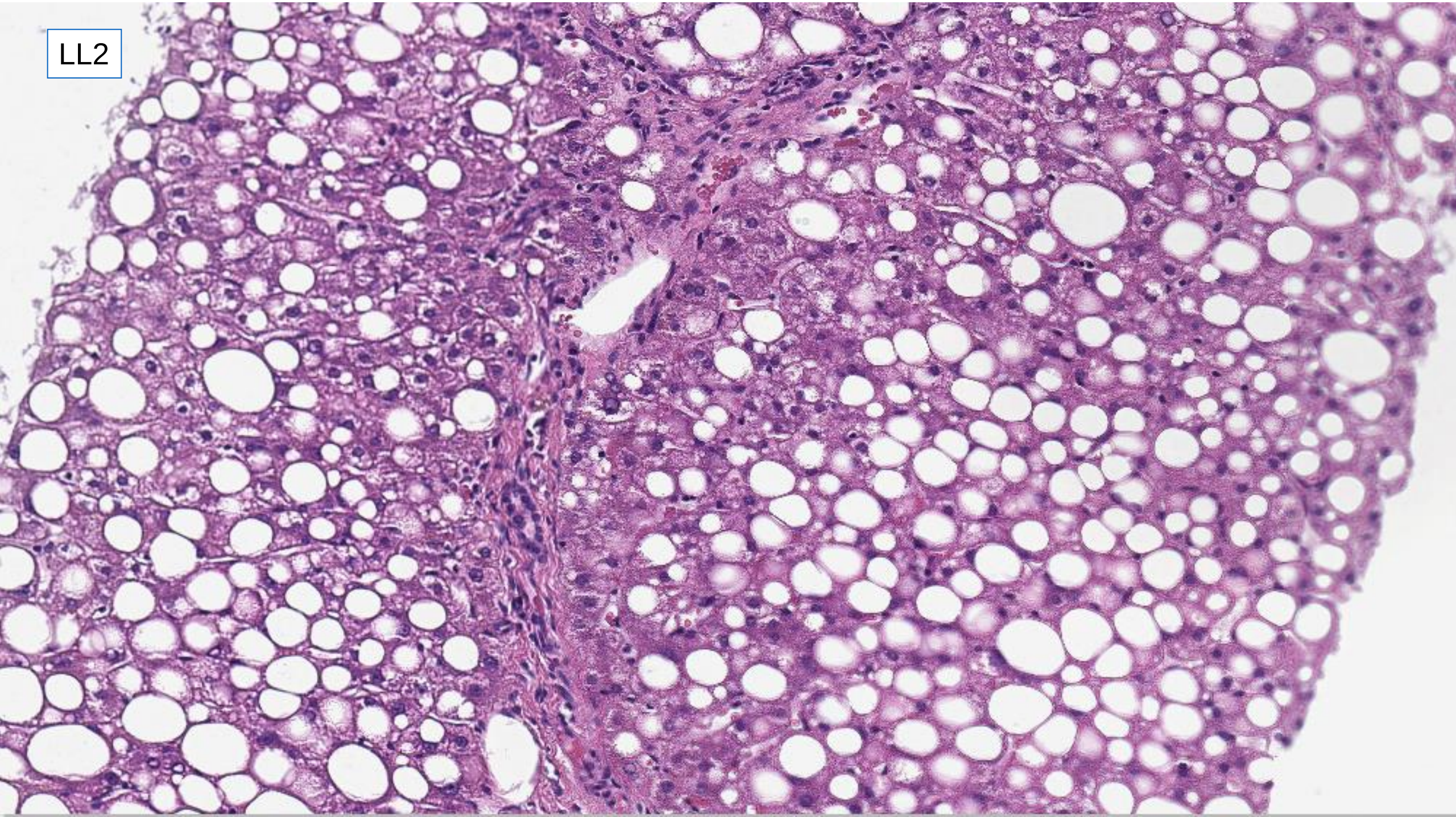
Liver biopsy: a yellowish core 17mm long.

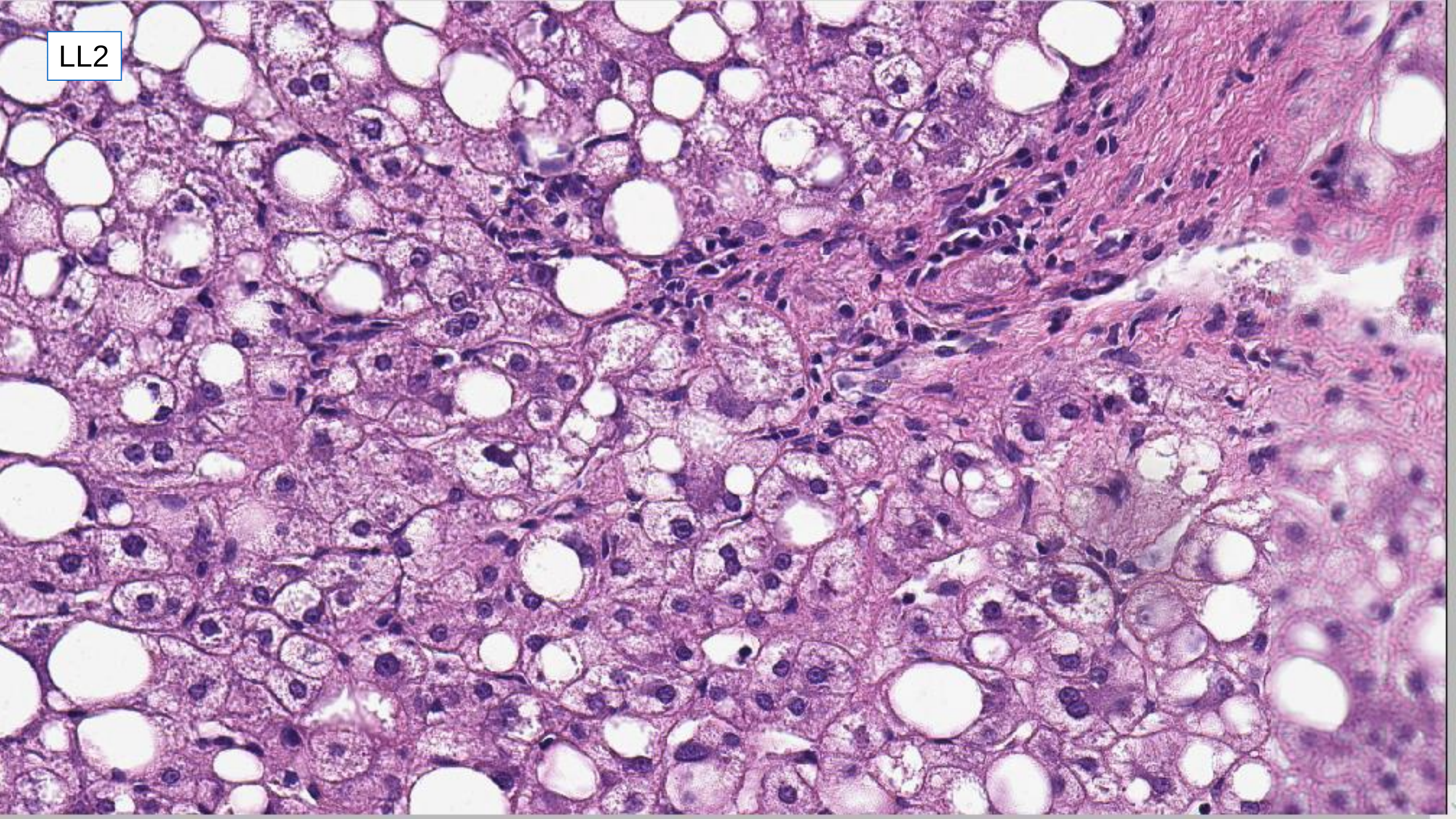


LL2




LL2


LL2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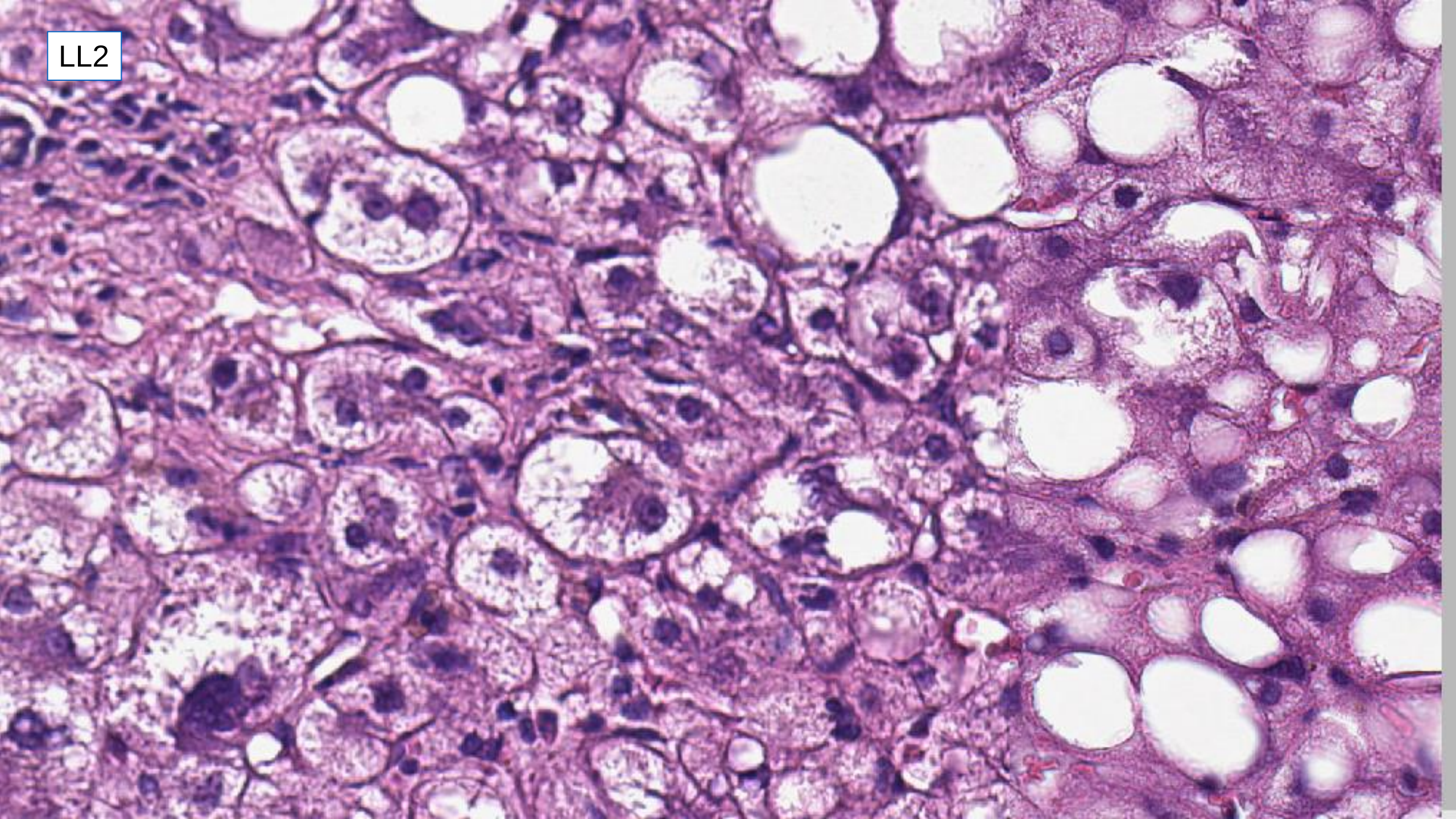
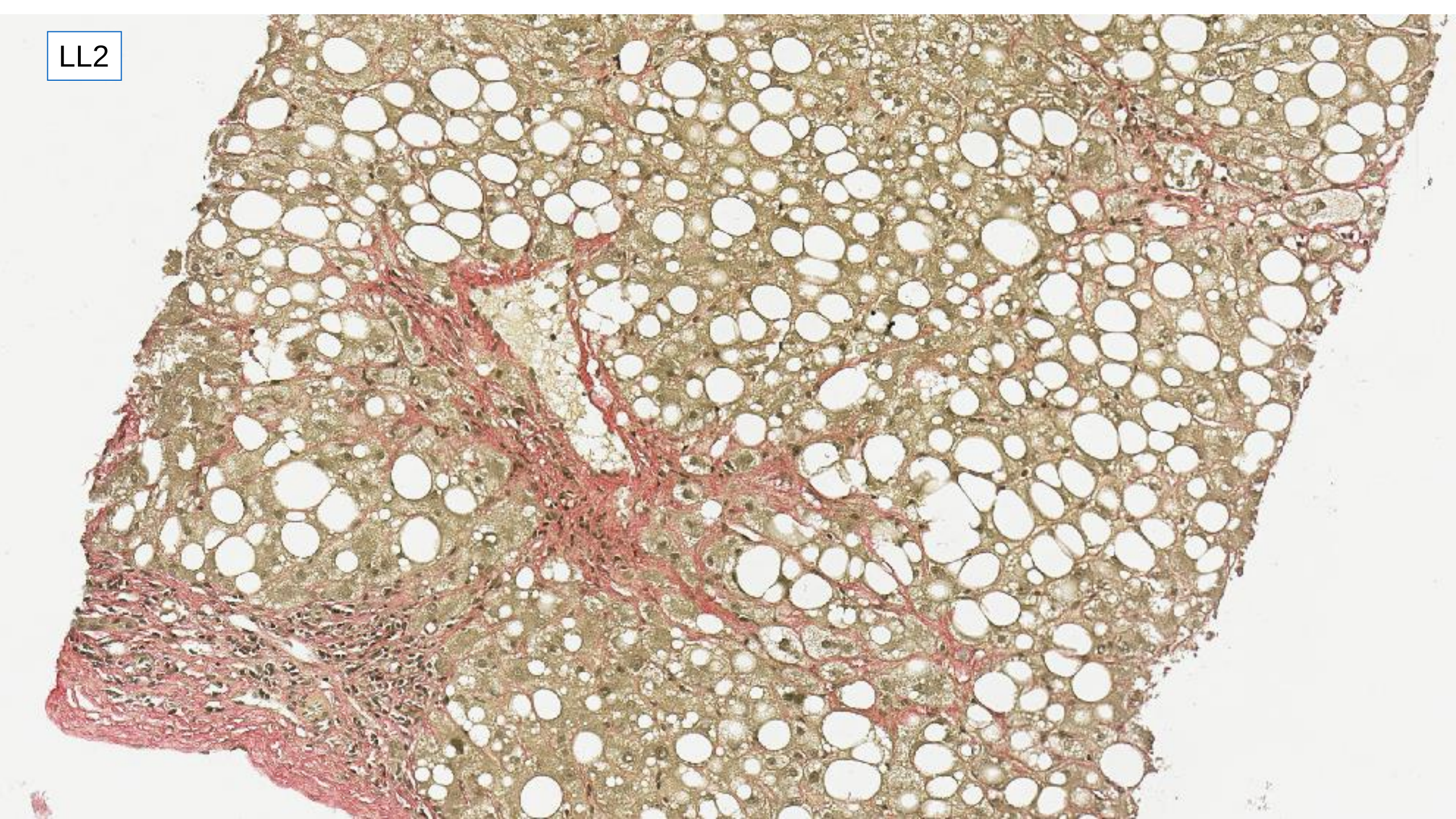
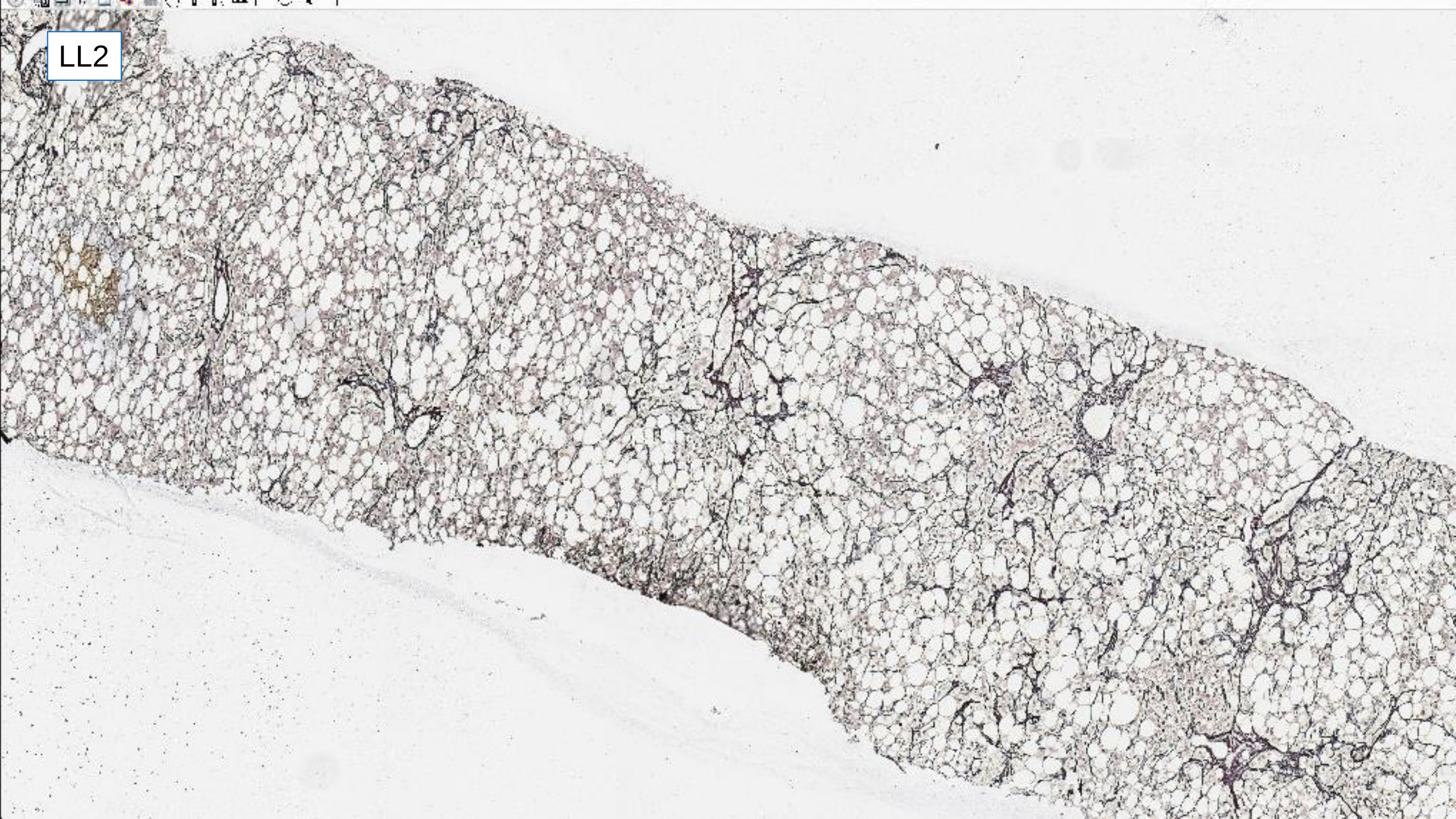
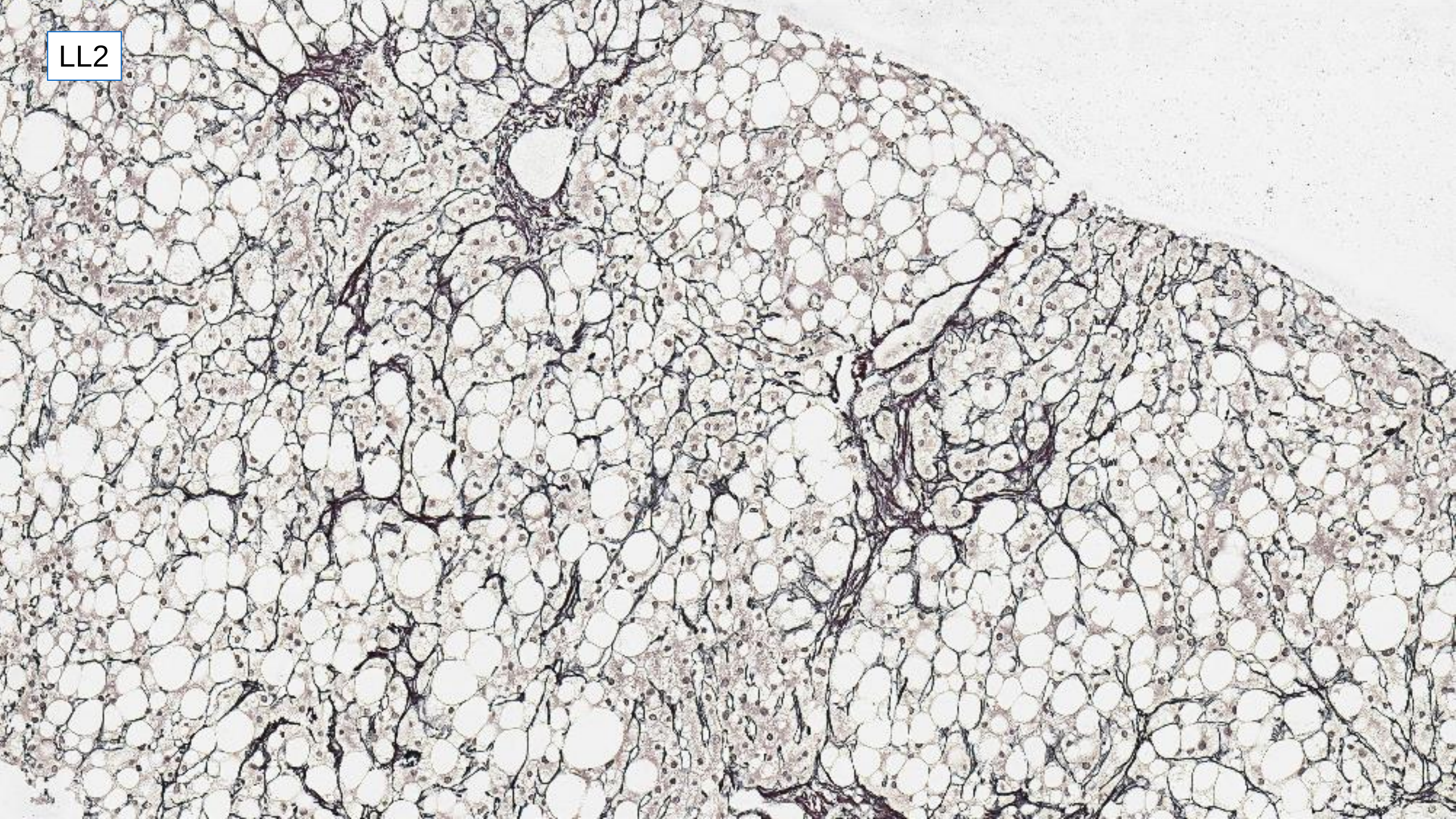

LL2


LL2


LL2


LL2

LL2 Male 48 years

Presumed NAFLD. Type 2 diabetes. BARD = 4. Ferritin 800 (HFE Gene negative) Raised fibroscan.

morphology	
steatohepatitis	60
fatty liver hepatitis	2
description includes steatohepatitis features, but the word steatohepatitis not used	13
no steatohepatitis	2
aetiology	
c/w NAFLD/NASH	56
NASH/ASH	9
most likely ALD, dd. NAFLD	1
no cause mentioned, (nor NAFLD terminology used)	9
.'NAFLD/AFLD; dysmetabolic iron overload, likely severe fibrosis' only diagnosis	1

fibrosis?	
fibrosis not mentioned	2
mild/no significant fibrosis	7
fibrosis not bridging	25
bridging fibrosis	31
severe fibrosis	1
other comments	
needs Perls	11
scoring systems: (- included for information)	
Ishak stage -3 - one each for stage 1, 2,3	
Kleiner - 25 - of which: 2 stage 1b, 7 stage 2, 4 stage 2-3, 10 stage 3	
Brunt grade - 5 - of which: 2 grade 1, 3 grade 2.	
Kleiner grade - 15 of which: 5 grade 5, 6 grade 6, 4 grade 7.	

Scoring: for full marks, need comment on fibrosis, as descriptive and/or staging

AND diagnosis of steatohepatitis - ? need to use the word or NASH. 13 diagnosed NAFLD with description of morphology, generally were describing borderline NASH changes.

Lose 5 points if no mention of fibrosis,

and lose 10 points if states there is no steatohepatitis.

Lose 5 marks if no cause mentioned, nor NAFLD terminology used.

Can we improve reproducibility of staging liver biopsies ?

Inter-observer agreement of 8 pathologists, first set of 48 biopsies, sirius red.

Use fibrosis – none, early, bridging, late – as in Tissue Pathways,
Not a specific/numerical score – doesn't depend on knowing the type of liver disease,
clinically important information.

Identify cases that achieve full agreement
And cases that have a 50:50 split.
Photograph these.

Repeat with second set of biopsies.

Does use of these images improve agreement?

You can participate in this study – see next slide ……..

Can we improve reproducibility of staging liver biopsies ?

Now we want to see if this improves reproducibility for other pathologists,

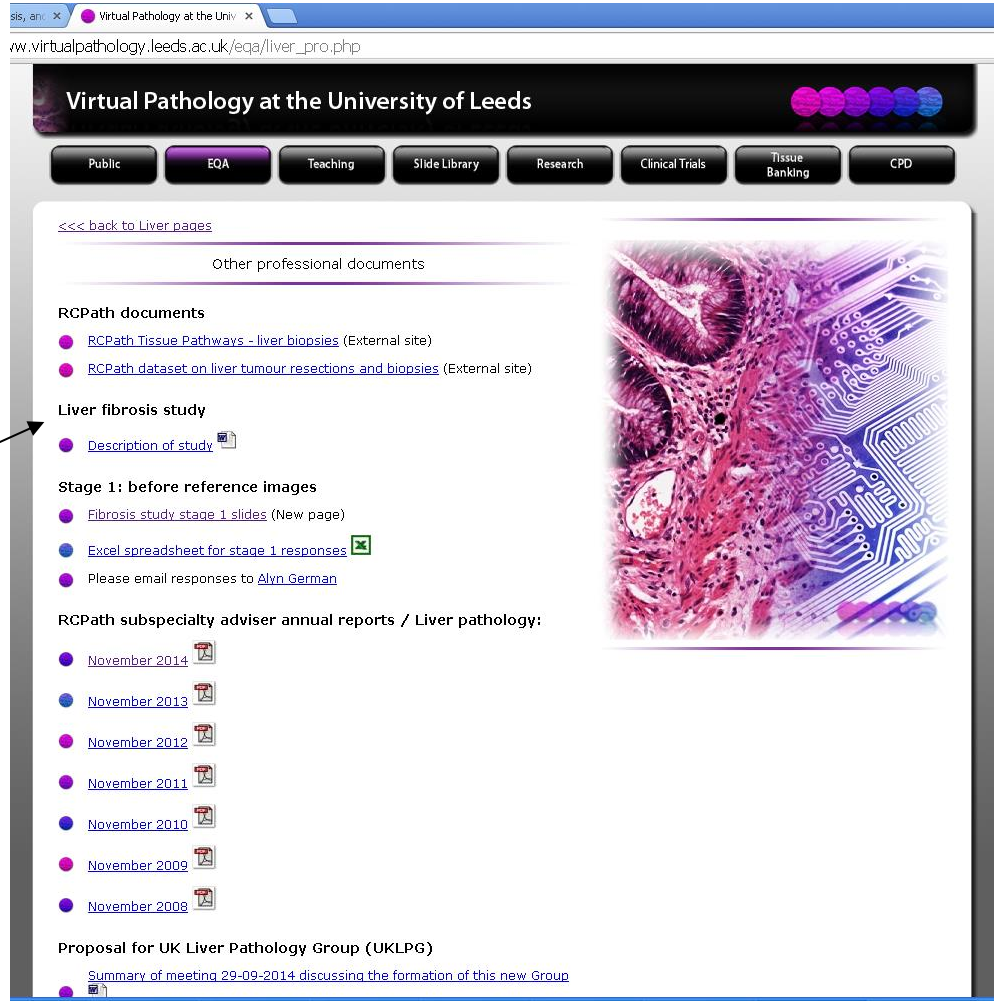
Especially trainees and pathologists who don't report many liver biopsies.

On line study – images on virtualpathology.

Do first set – email result to Alyn German,

Receive link to reference images and second set of biopsies.

http://www.virtualpathology.leeds.ac.uk/eqa/liver_pro.php



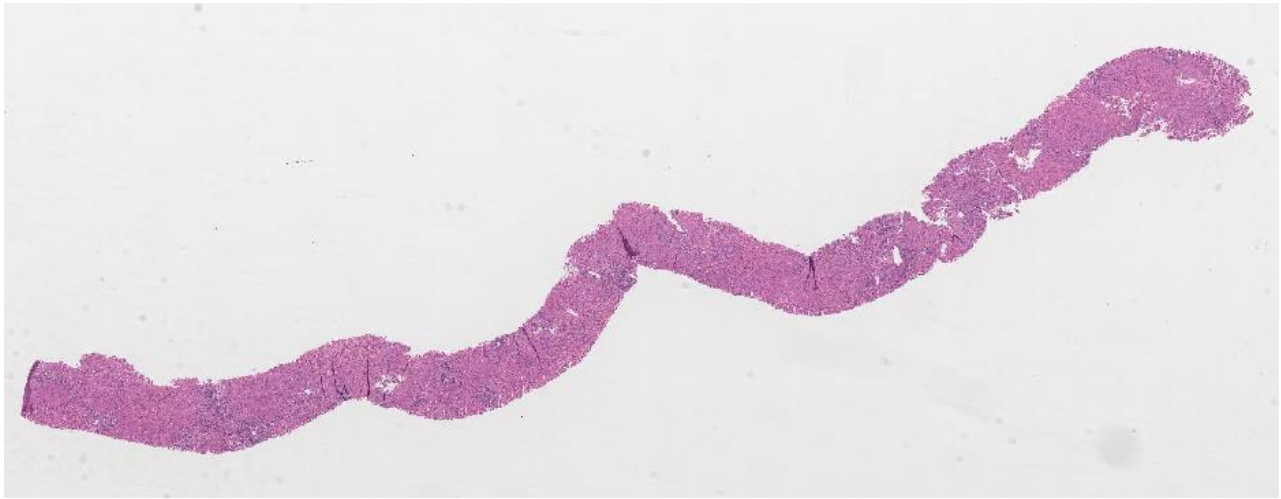
Case LL 3

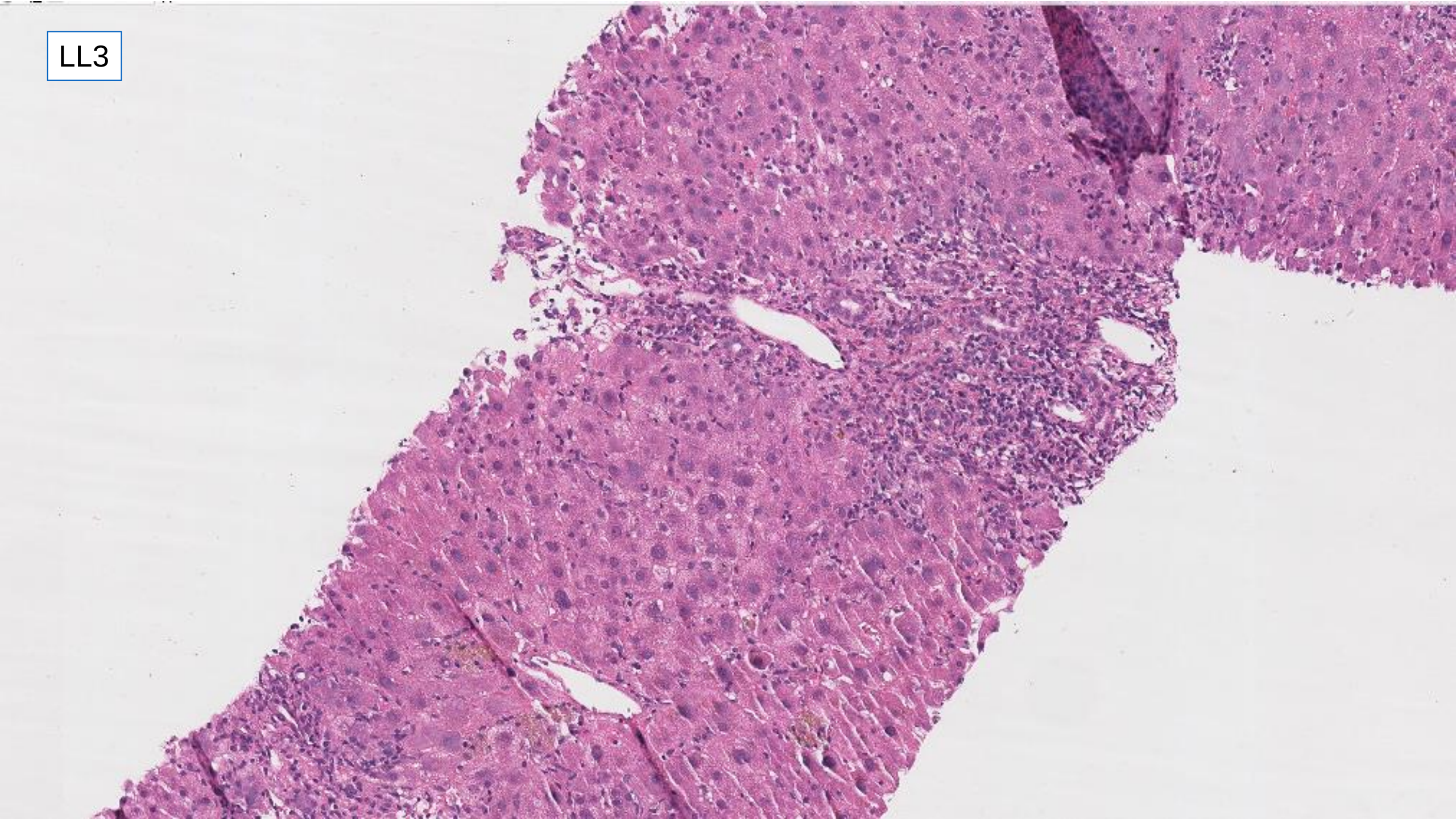
Female 60 years

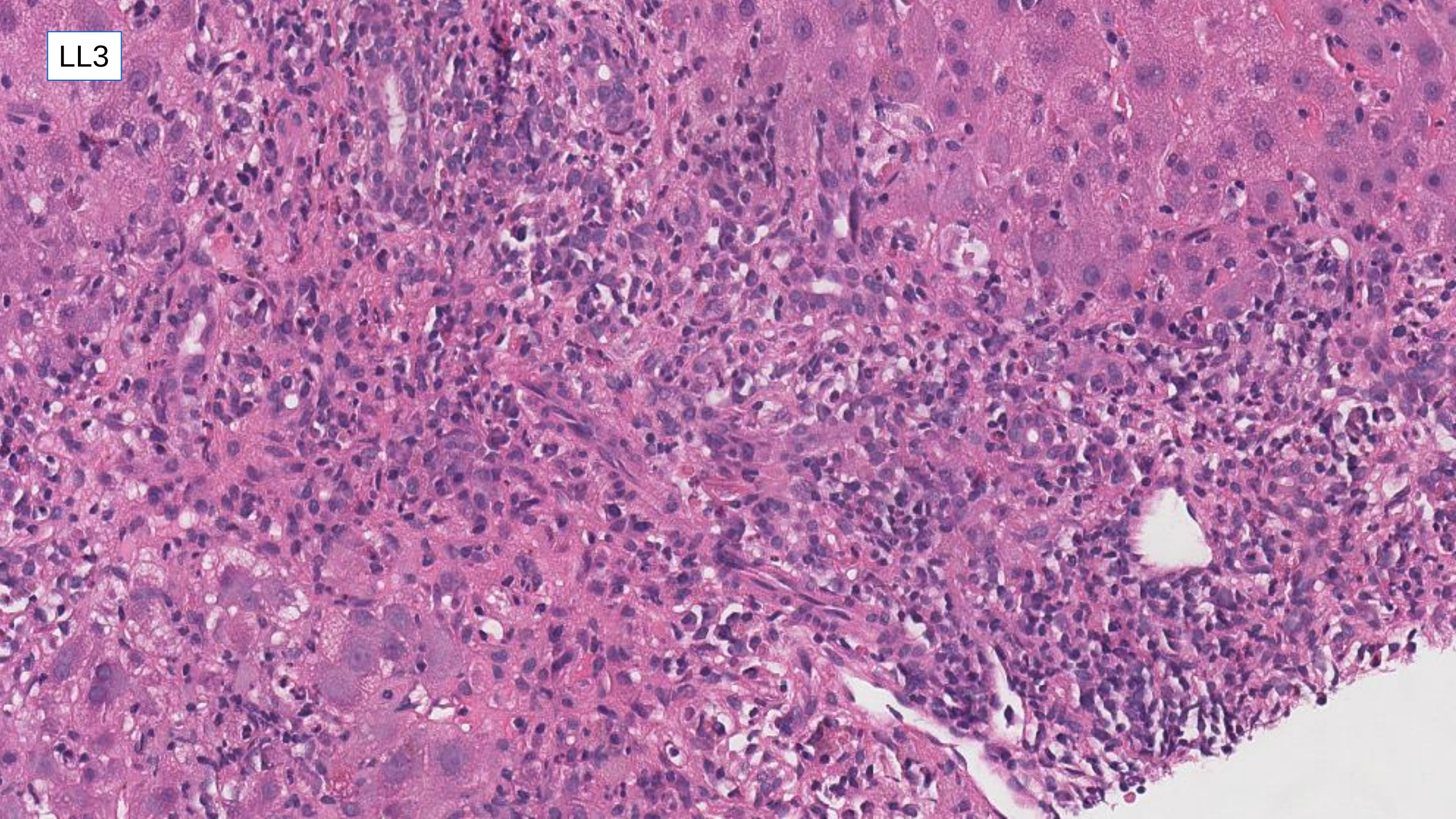
Deranged LFTs, ALT>1100, SMA+ve.

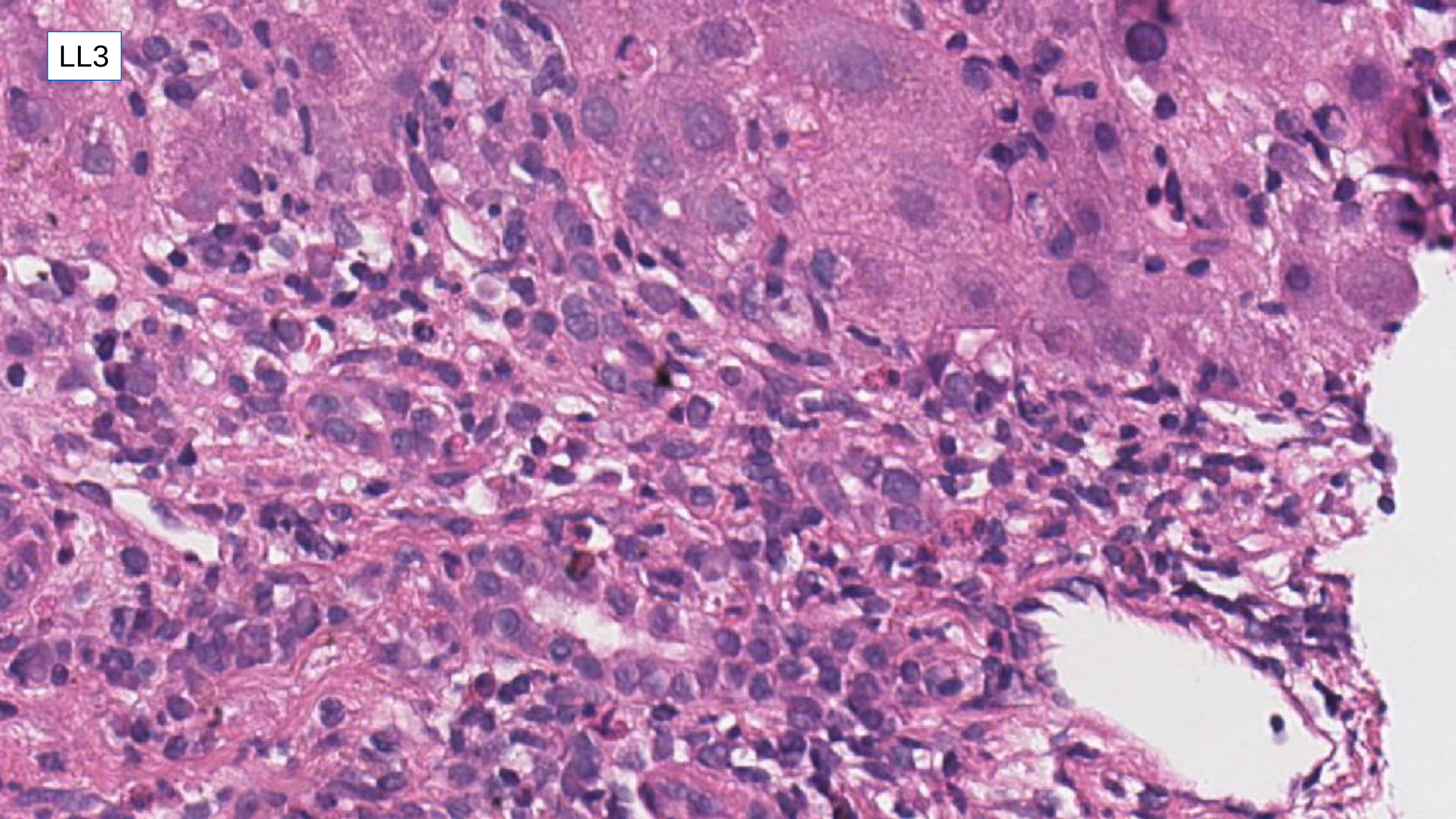
Specimen: Biopsy.

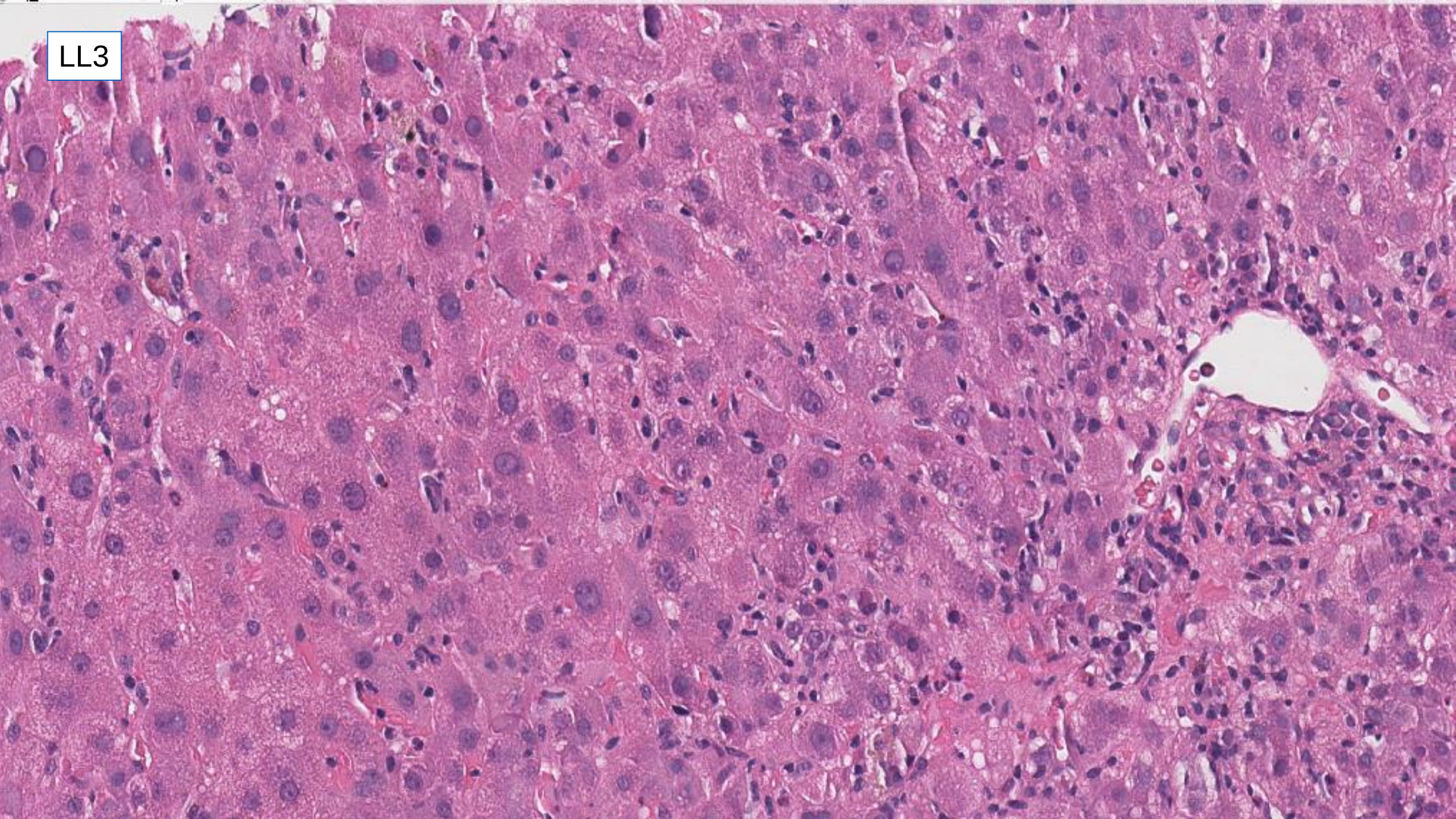
Macroscopic description:
Single core 17mm.




LL3


LL3


LL3


LL3

LL3 Female 60 years
Deranged LFTs, ALT>1100, SMA+ve.

morphology	
hepatitis NOS or acute	65
chronic hepatitis	9
acute or severe chronic hepatitis	2
hepatitis not mentioned	2
aetiology	
autoimmune hepatitis	20
AIH but exclude drugs, virus	30
any of AIH/virus/drug, none favoured	2
AIH or drug induced	16
AIH or virus	2
drug induced	3
.'chronic active hepatitis ? Drugs'	1
. 'mod chronic hepatitis c/w acute presentation of AIH	1
. 'viral x AIH x DILI' as only text, no description	1
. 'AIH v drug' as only text	1

comments:	
cholestasis	16
no cholestasis	2
needs connective tissue stains	21
fibrosis: bridging 3, portal 1.	
emperipolesis	2

Scoring:

For full marks need hepatitis pattern – all chronic hepatitis responses included a comment on lobular necro-inflammatory activity
AND some mention of autoimmune hepatitis.

Lose 5 marks if only give aetiology with no description of features, even though these include ‘AIH’ among diagnoses.
Lose 5 marks for ‘chronic active hepatitis’ not current terminology.

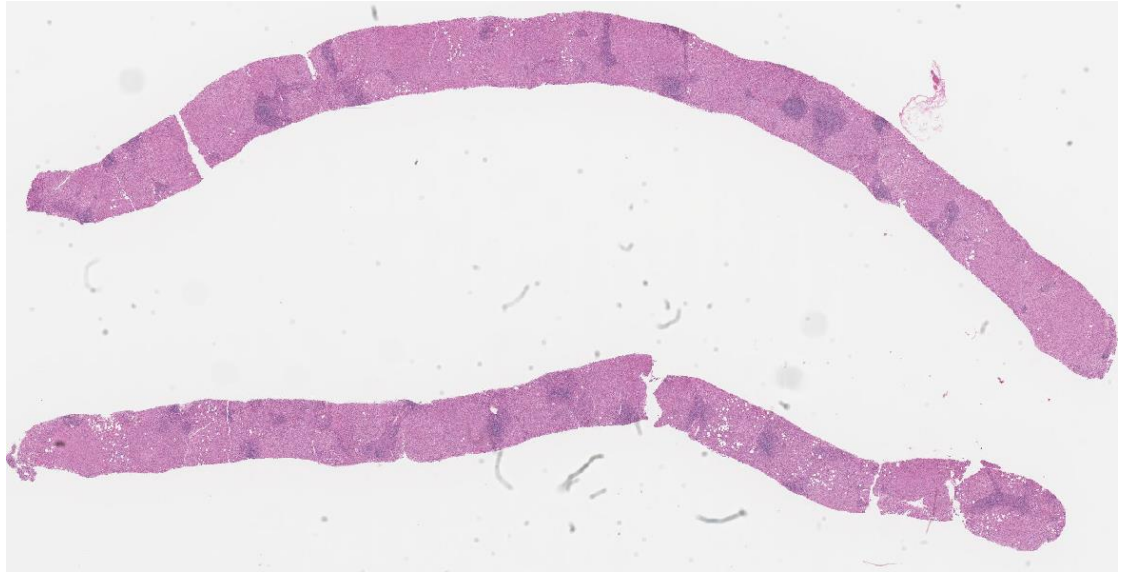
Case LL 4

Female 74 years

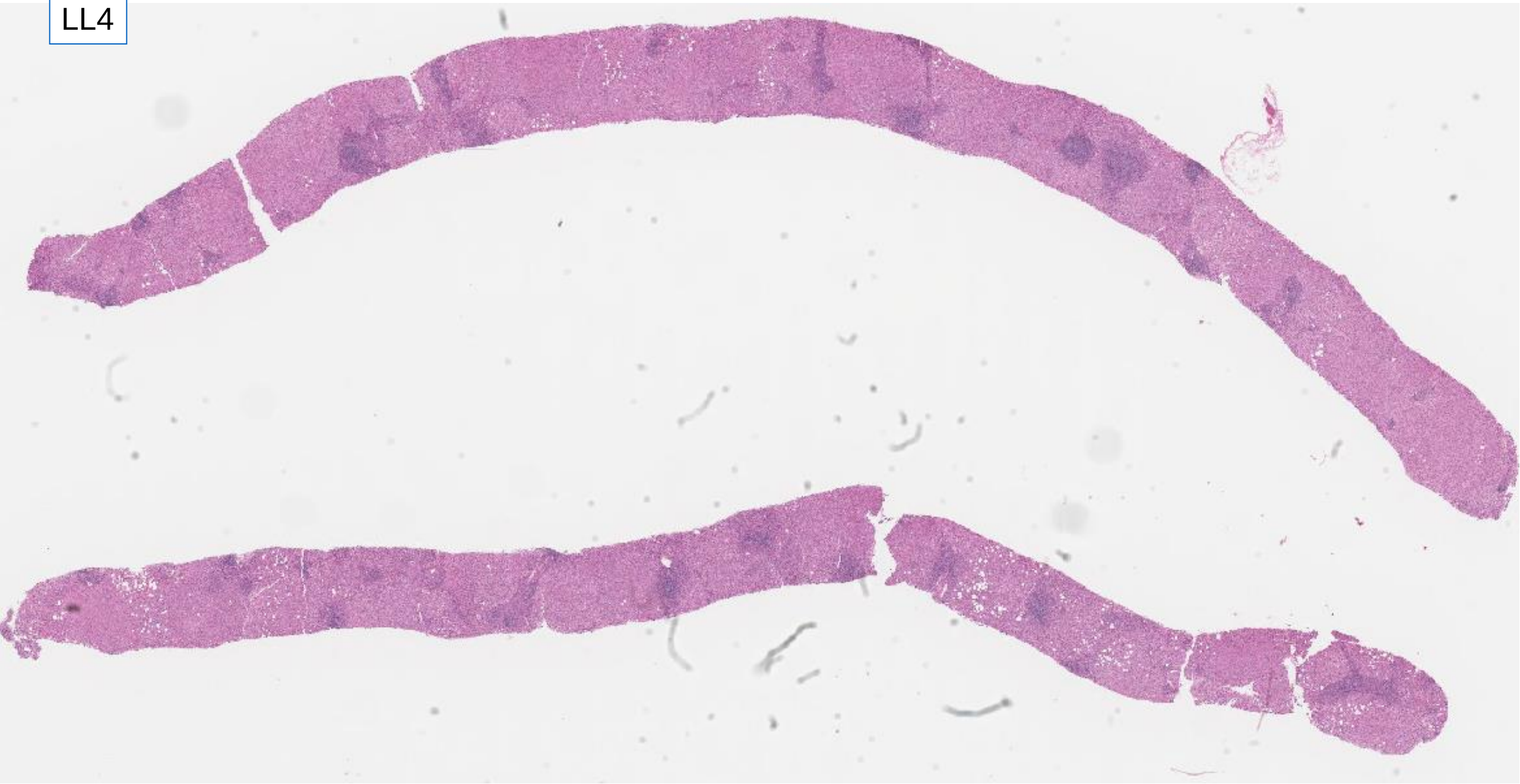
Acute hepatitis, ALT >1000, SMA+ve.

Specimen: Biopsy.

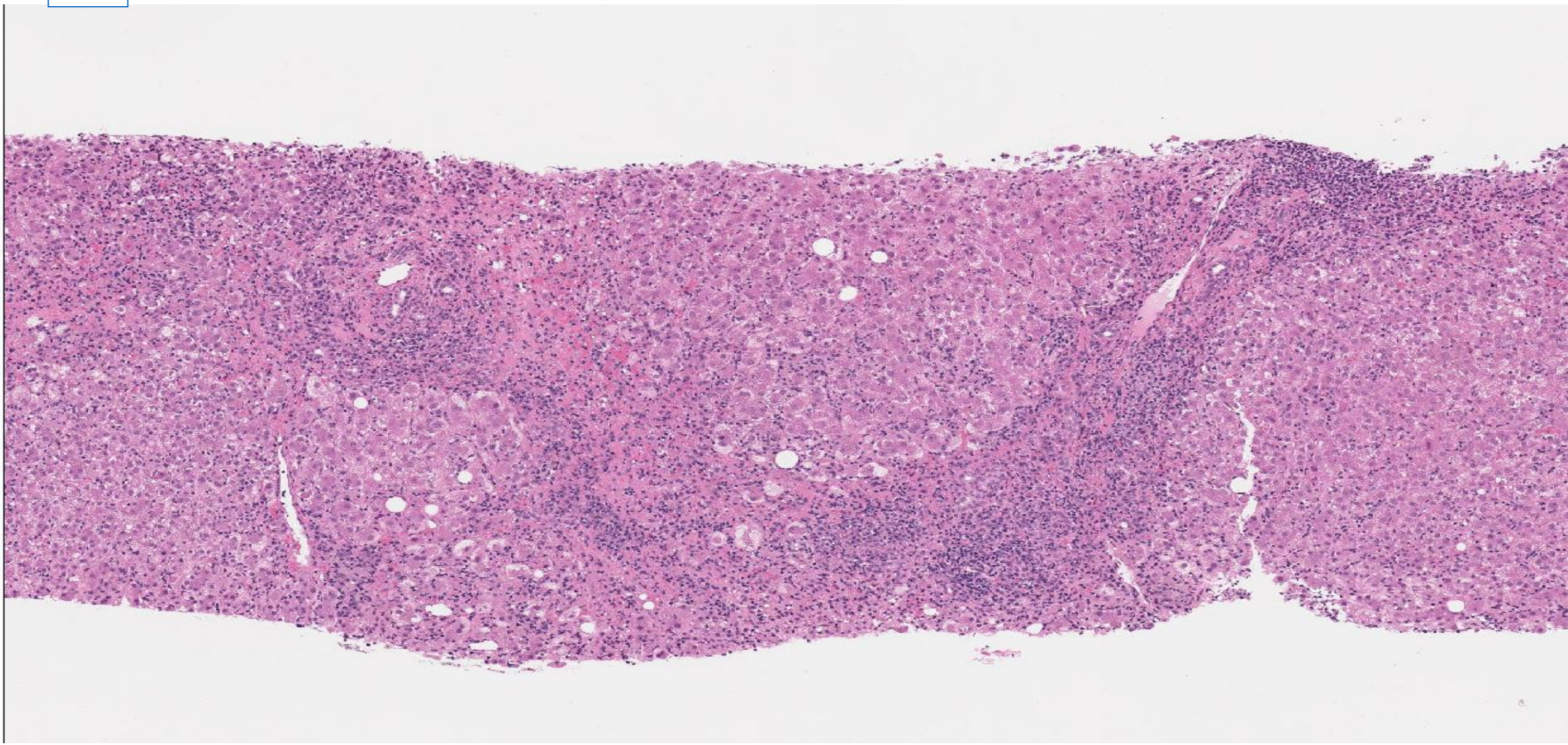
Macroscopic description:
Two cores 19mm and 18mm.



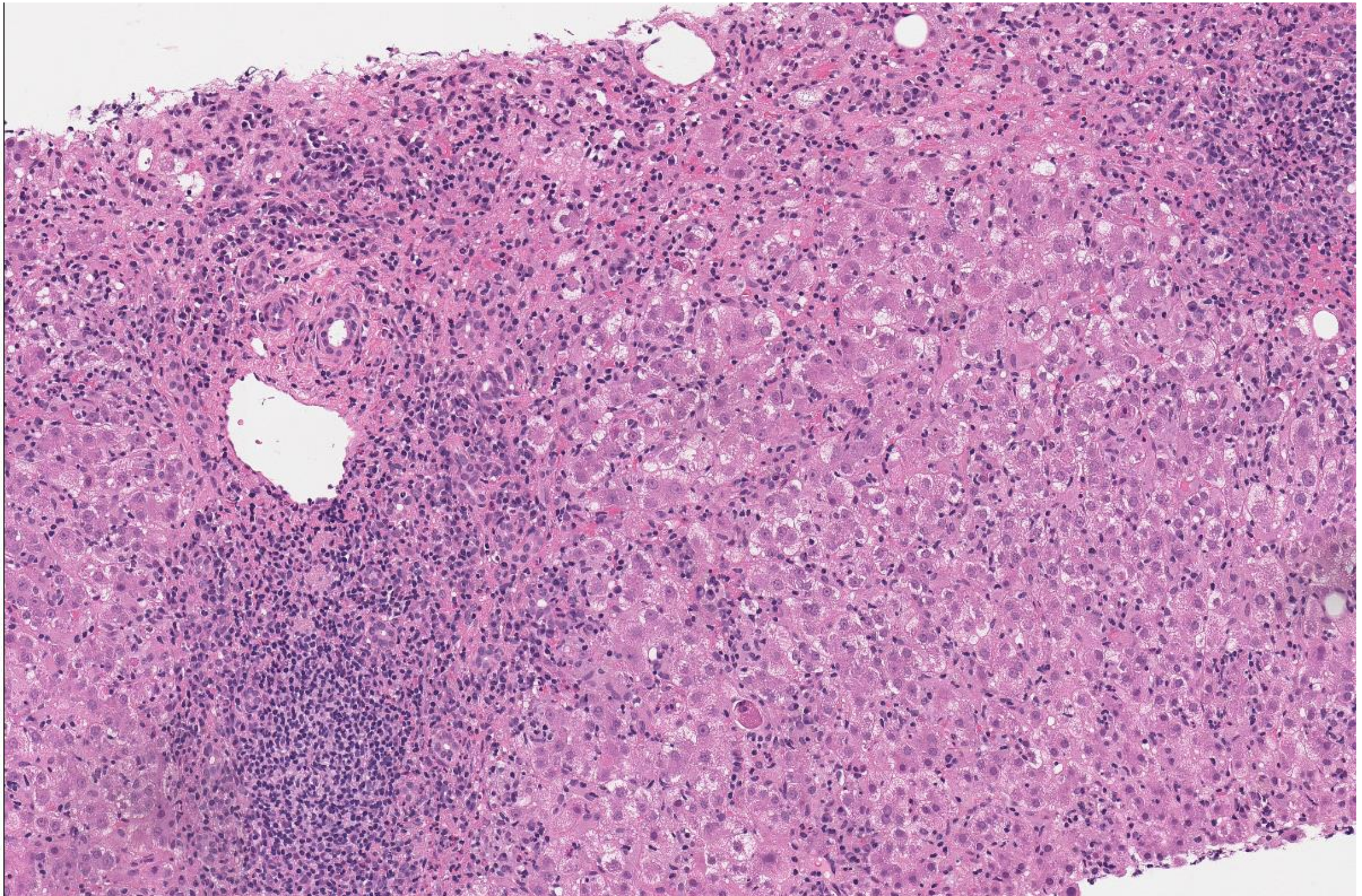
LL4

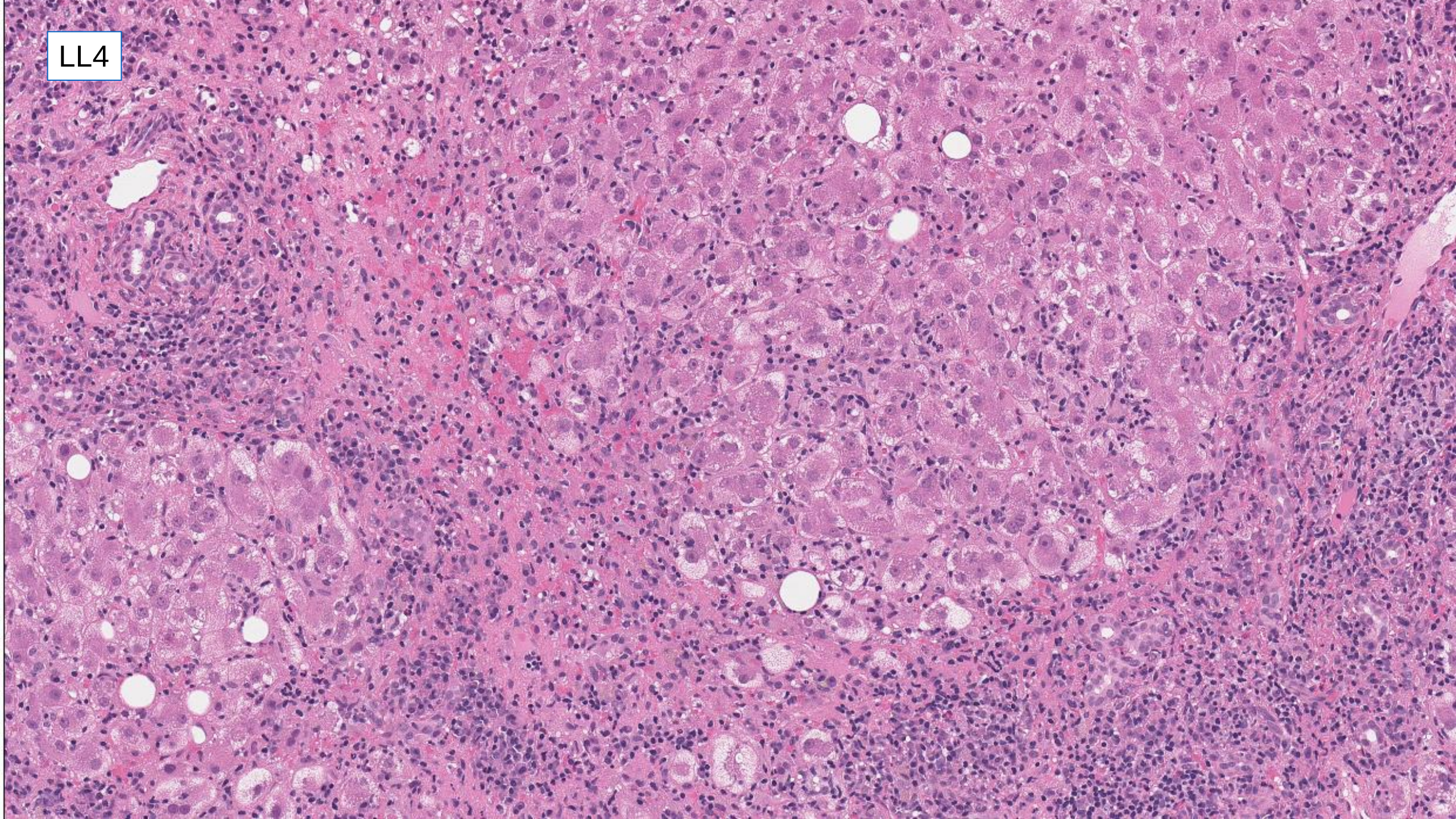


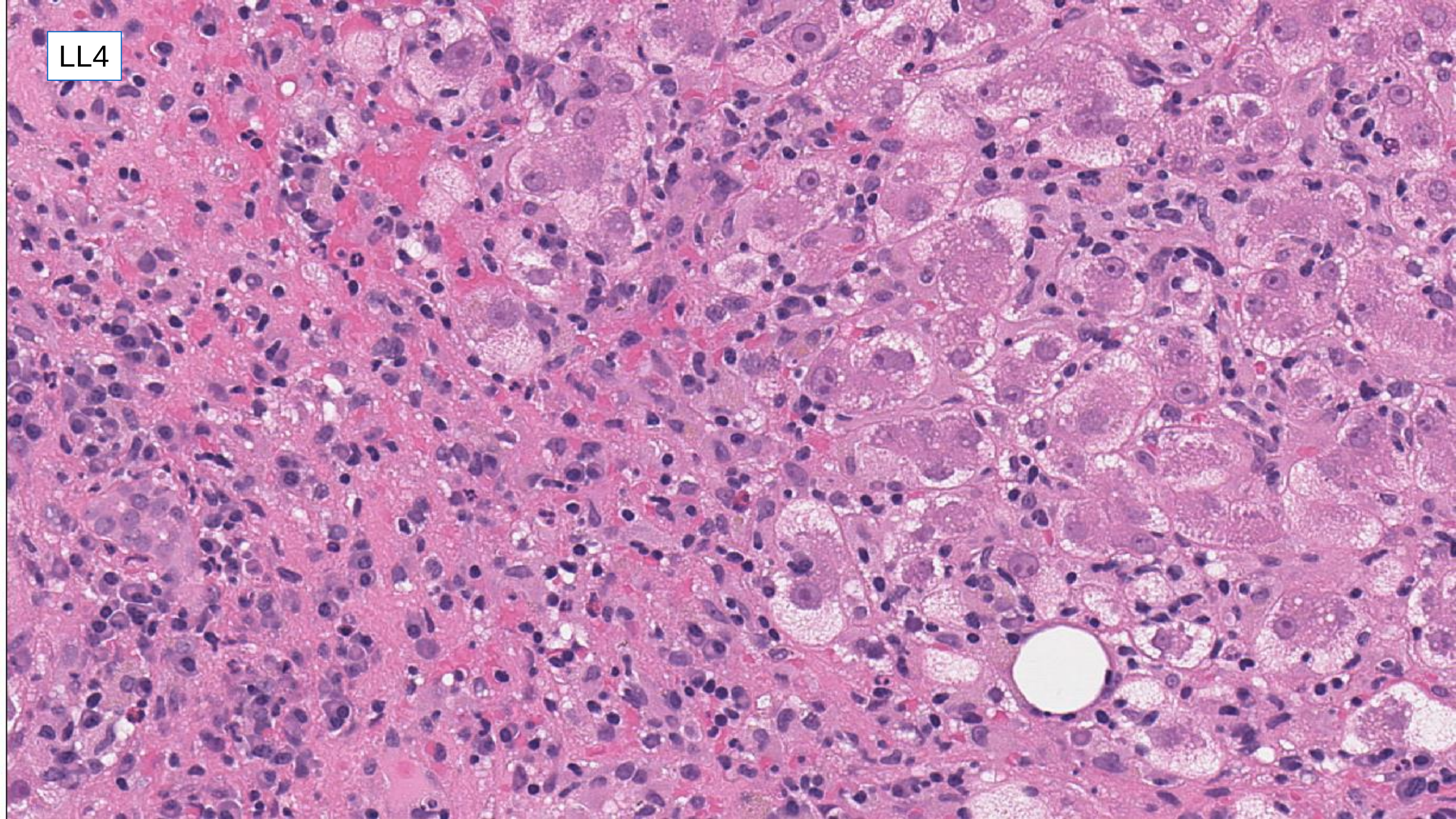
LL4

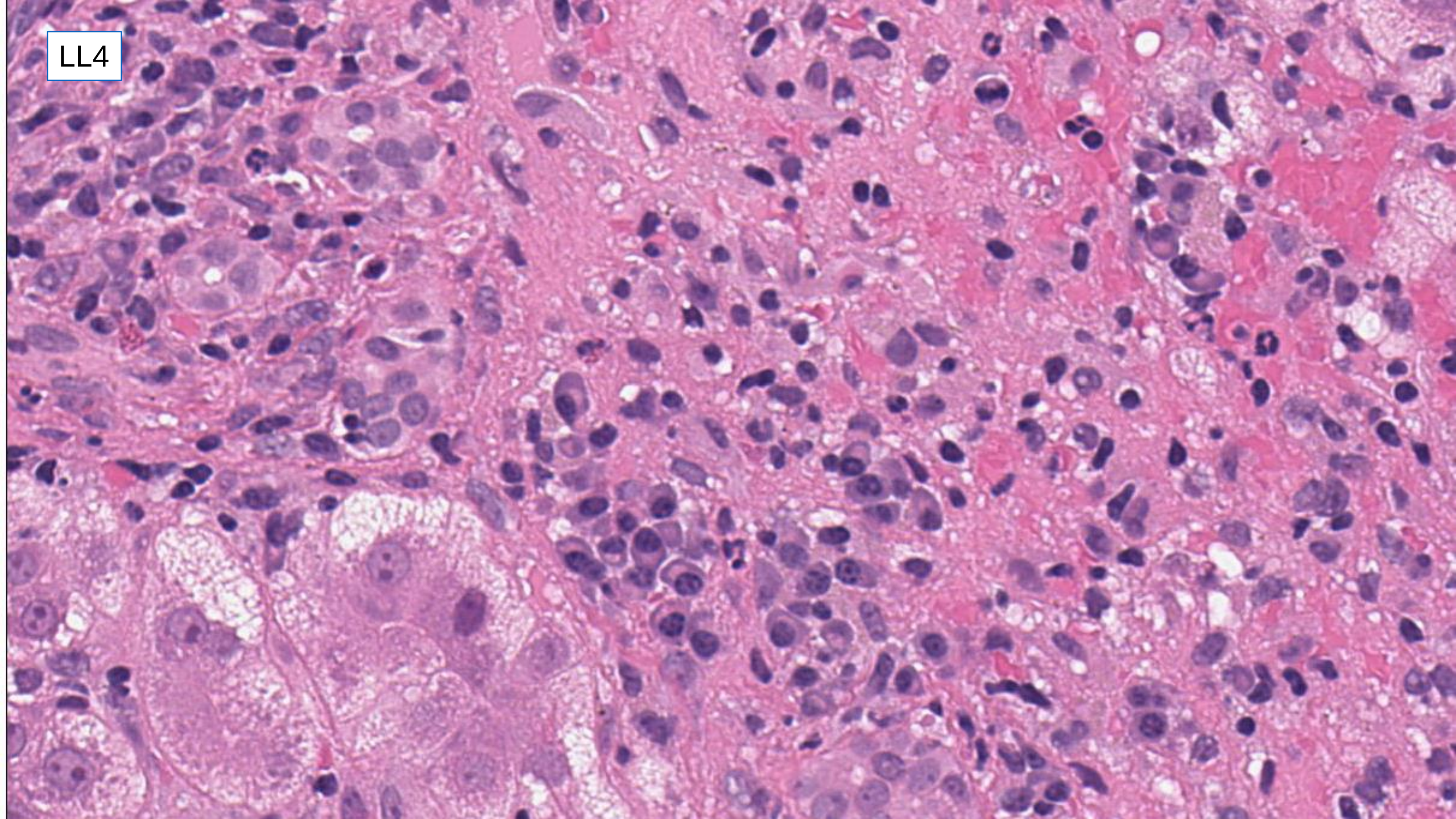


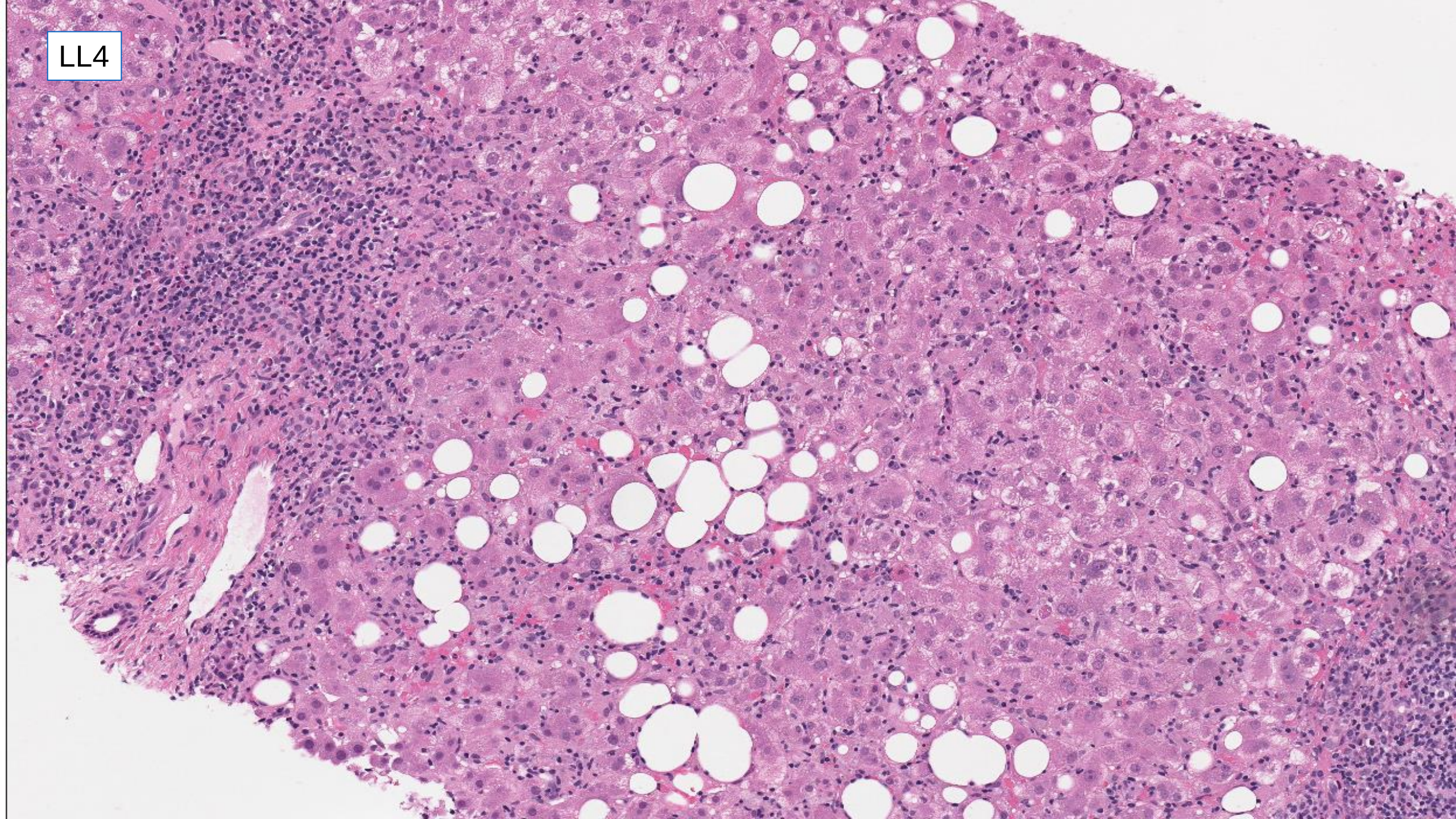
LL4




LL4


LL4


LL4


LL4

LL4 Female 74 years

Acute hepatitis, ALT >1000, SMA+ve.

Morphology	
hepatitis NOS	35
acute hepatitis	15
chronic hepatitis	24
chronic with incomplete cirrhosis	2
cirrhosis	**2**
aetiology	
AIH	31
AIH/drug/virus	29
AIH/PBC	4
AIH/drug/virus	3
AIH/viral	12
. 'chronic active hepatitis/PBC ? Hepatitis C' Autoimmune not stated	1
. 'PBC v AIH v overlap syndrome' only text	1

comments:	
need collagen stains	26
also steatohepatitis	2
emperipolesis	3
comment on eosinophils	24
on plasma cells	53
both	4
steatosis/fatty changes	53

Scoring: For full marks, need diagnosis that includes autoimmune hepatitis +/- differentials.

. Lose 5 marks for cirrhosis or incomplete cirrhosis – since this is not the consensus view.

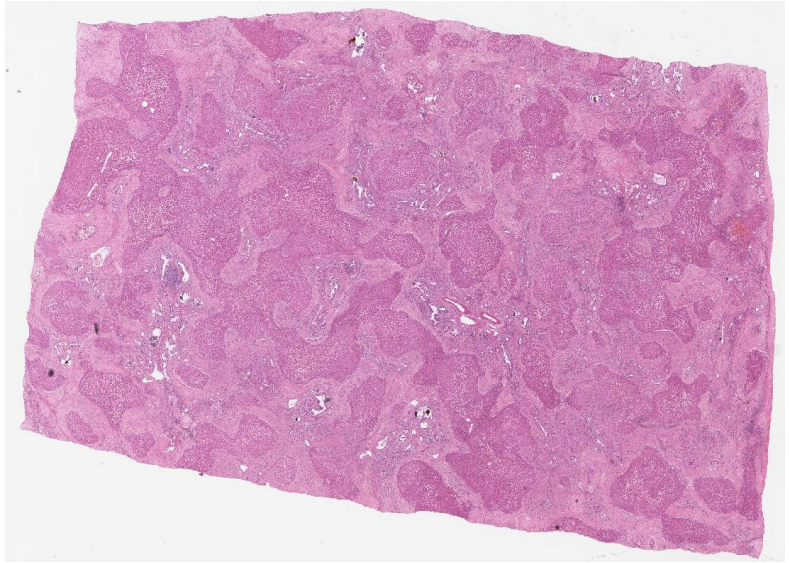
Case LL 5

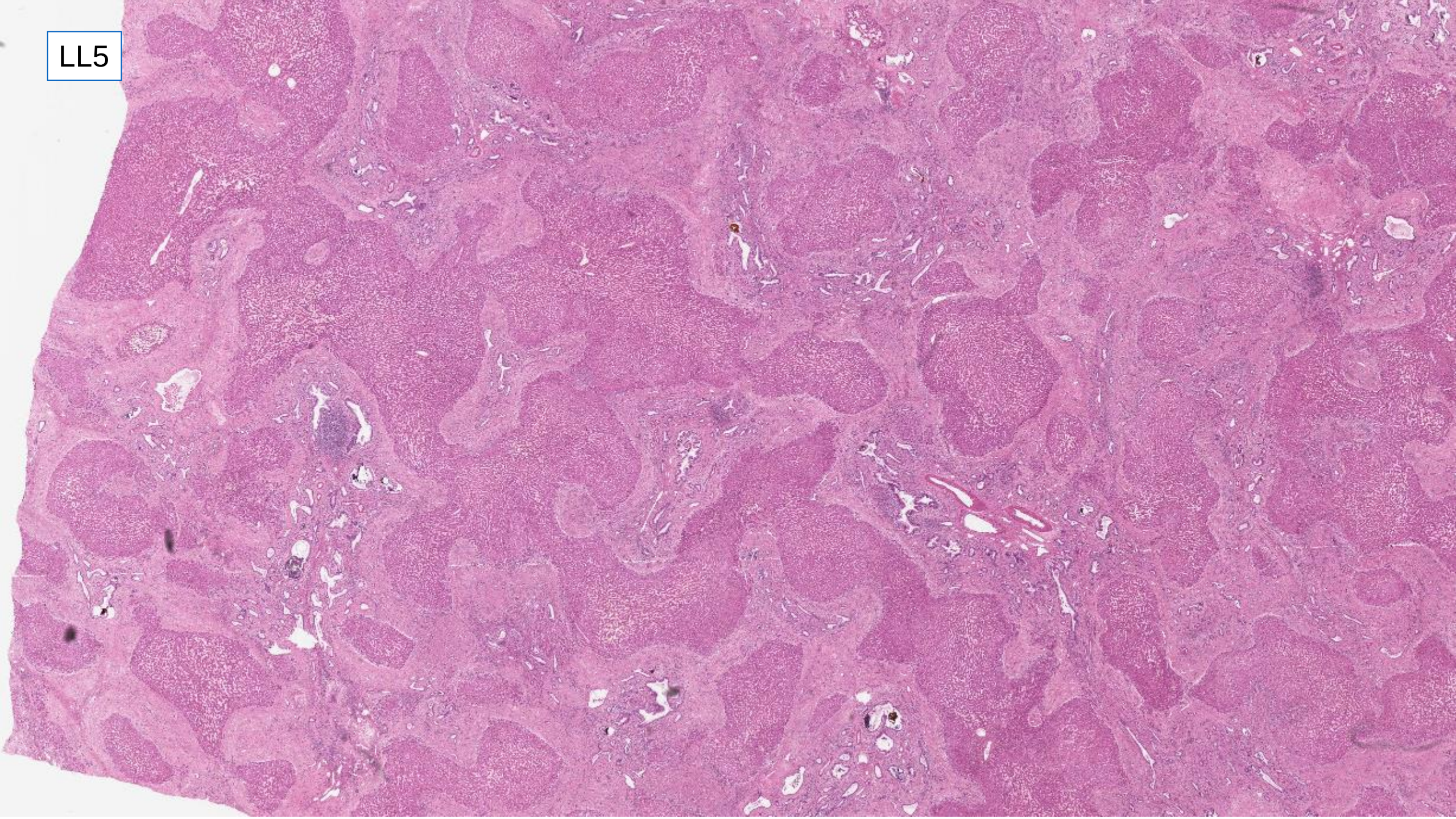
Female 52 years

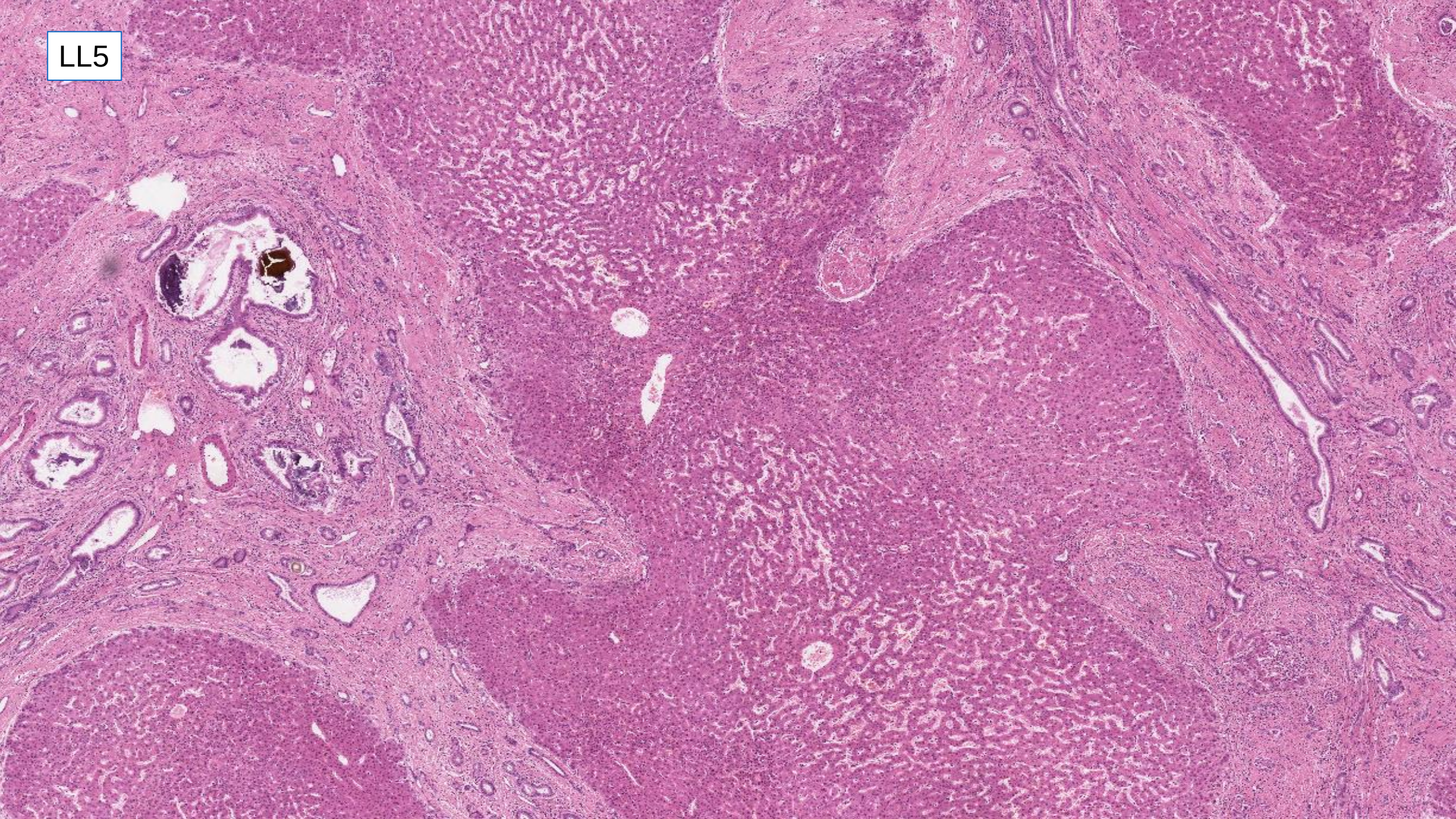
Portal hypertension, biliary sepsis, renal transplantation 7 years earlier.

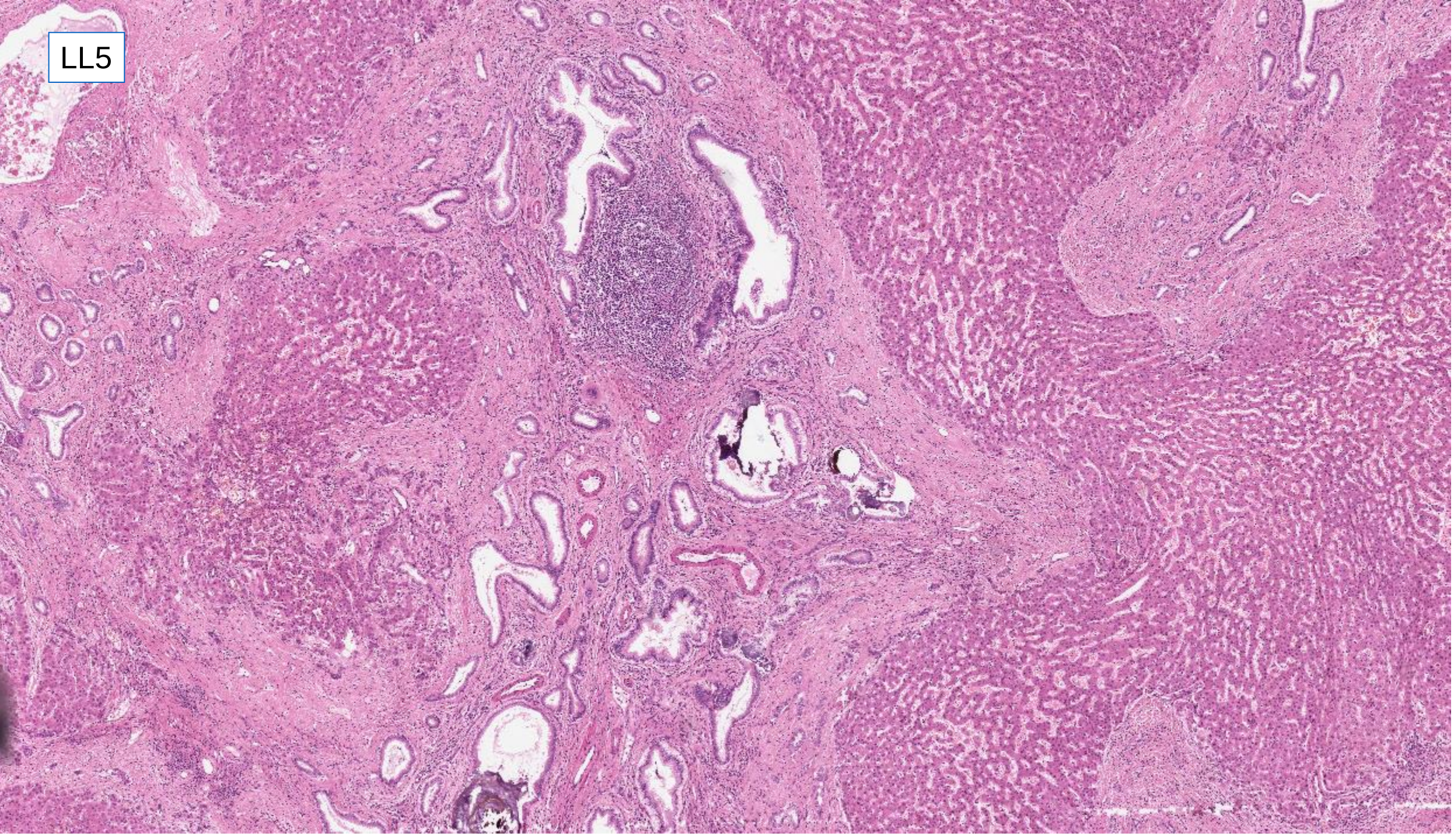
Specimen: Liver.

Macroscopic description:
Fine parenchymal nodularity. No tumour.




LL5


LL5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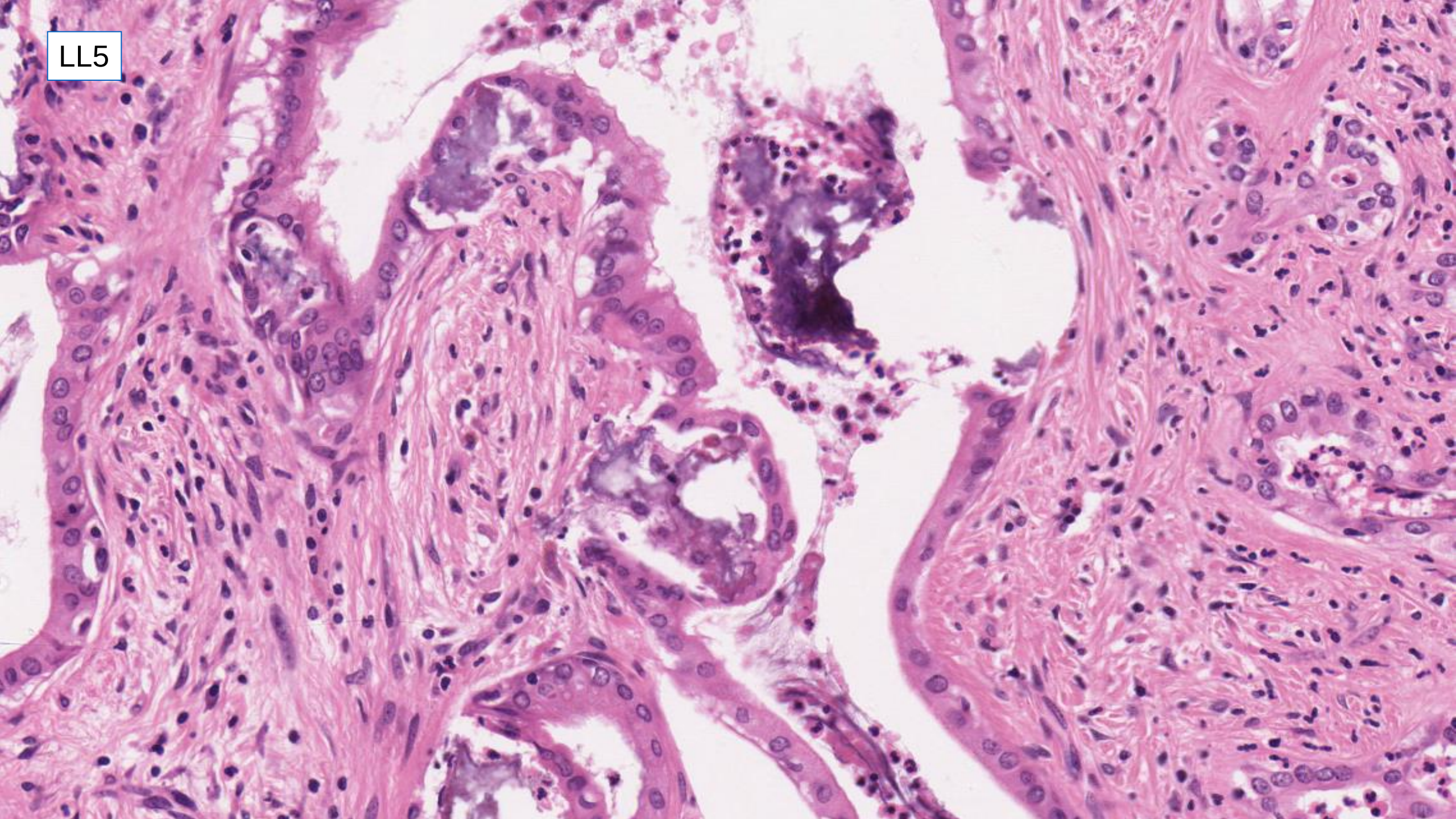

LL5

LL5 Female 52 years

Portal hypertension, biliary sepsis, renal transplantation 7 years earlier.

Main diagnosis:	
congenital hepatic fibrosis	45
biliary cirrhosis	19
differential diagnosis including fibropolycystic spectrum	4
ductal plate malformation/fibropoycystic	4
autosomal dominant polycystic disease	**1**
. 'veno-occlusive disease or end stage IgG4'	1
Caroli	4
Cirrhosis ?VOD	2
bile duct calcinosis	1
focal nodular hyperplasia with cholangitis	1
hepatic schistosomiasis	1

comments:	
comment on cholangitis	32
no cholangitis	1
renal transplant for polycystic disease?	20

Scoring : consensus around fibropolycystic spectrum/congenital hepatic fibrosis, but insufficient agreement for this case to be scored on this basis.

19 diagnosed biliary cirrhosis.

However, could be scored on the basis of losing marks for responses that do not include either fibropolycystic disease or biliary cirrhosis.

From meeting discussion:
for full marks – either congenital hepatic fibrosis spectrum or biliary cirrhosis. Score 0 for other diagnoses.

Case LL 6

Male 60 years

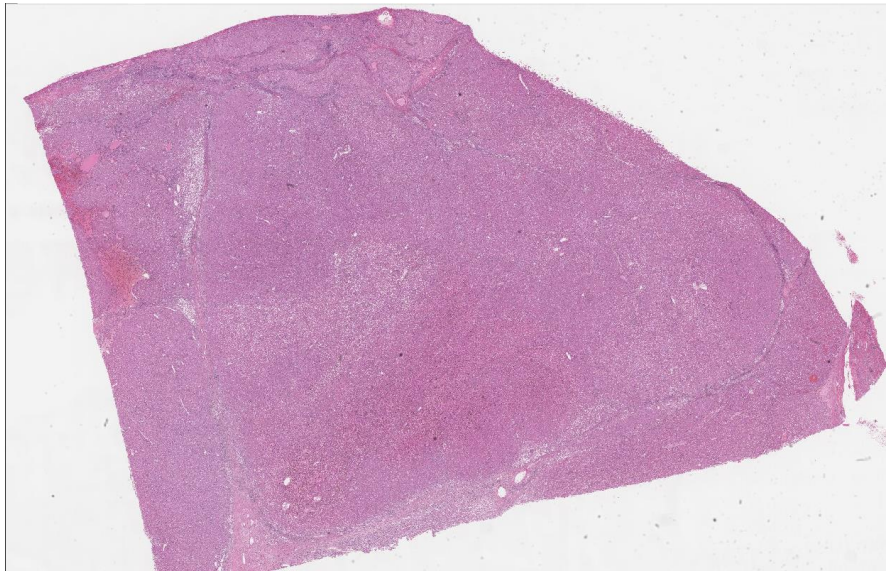
Background alcohol excess. Hepatoma screening identified exophytic lesion section II/III. AFT raise-CT strongly suggestive hepatoma. Laparoscopic left lateral sectionectomy.

Specimen: Excision Liver Segments II/III.

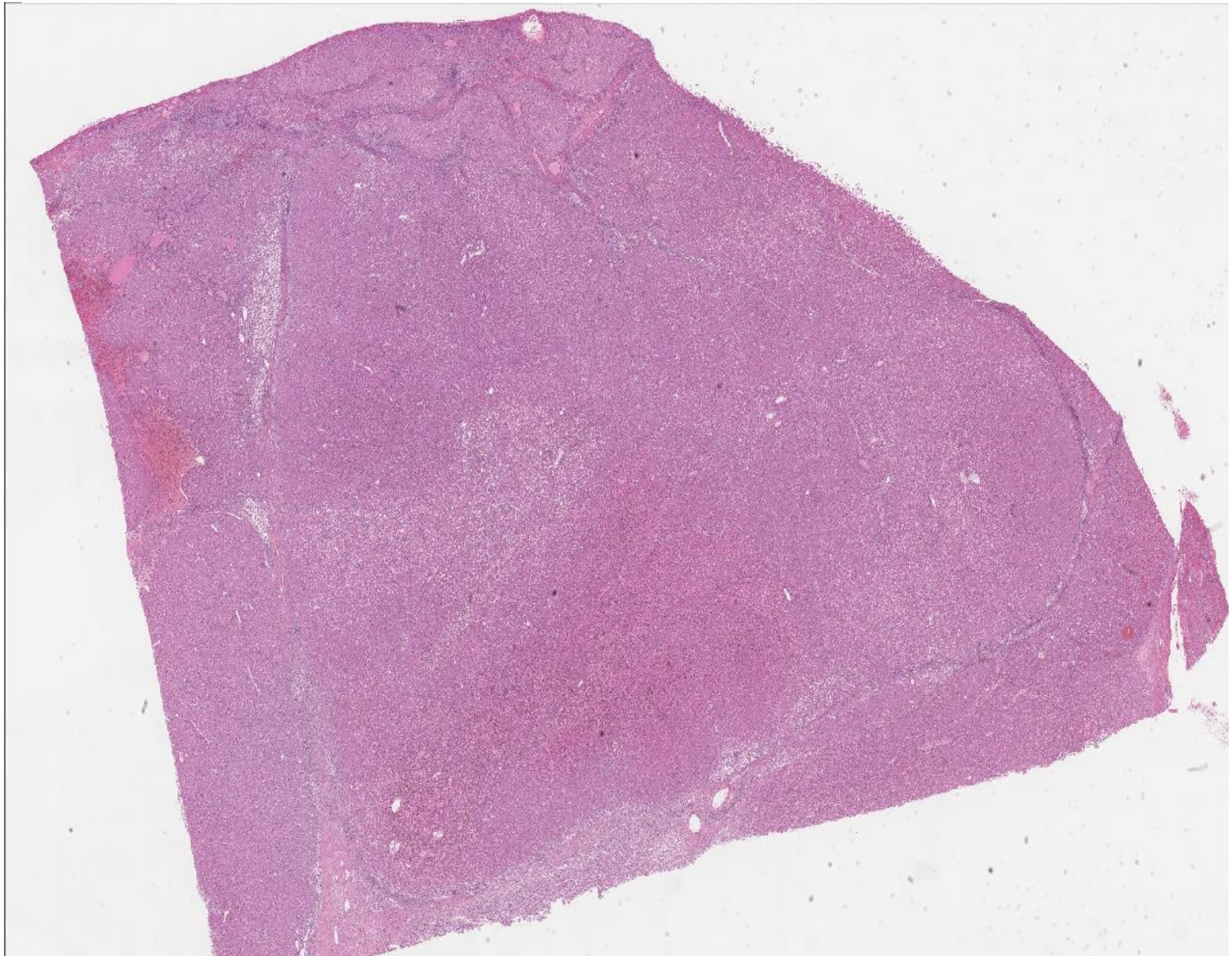
Macroscopic description:
100g of liver 8.3x5.7x4cm.

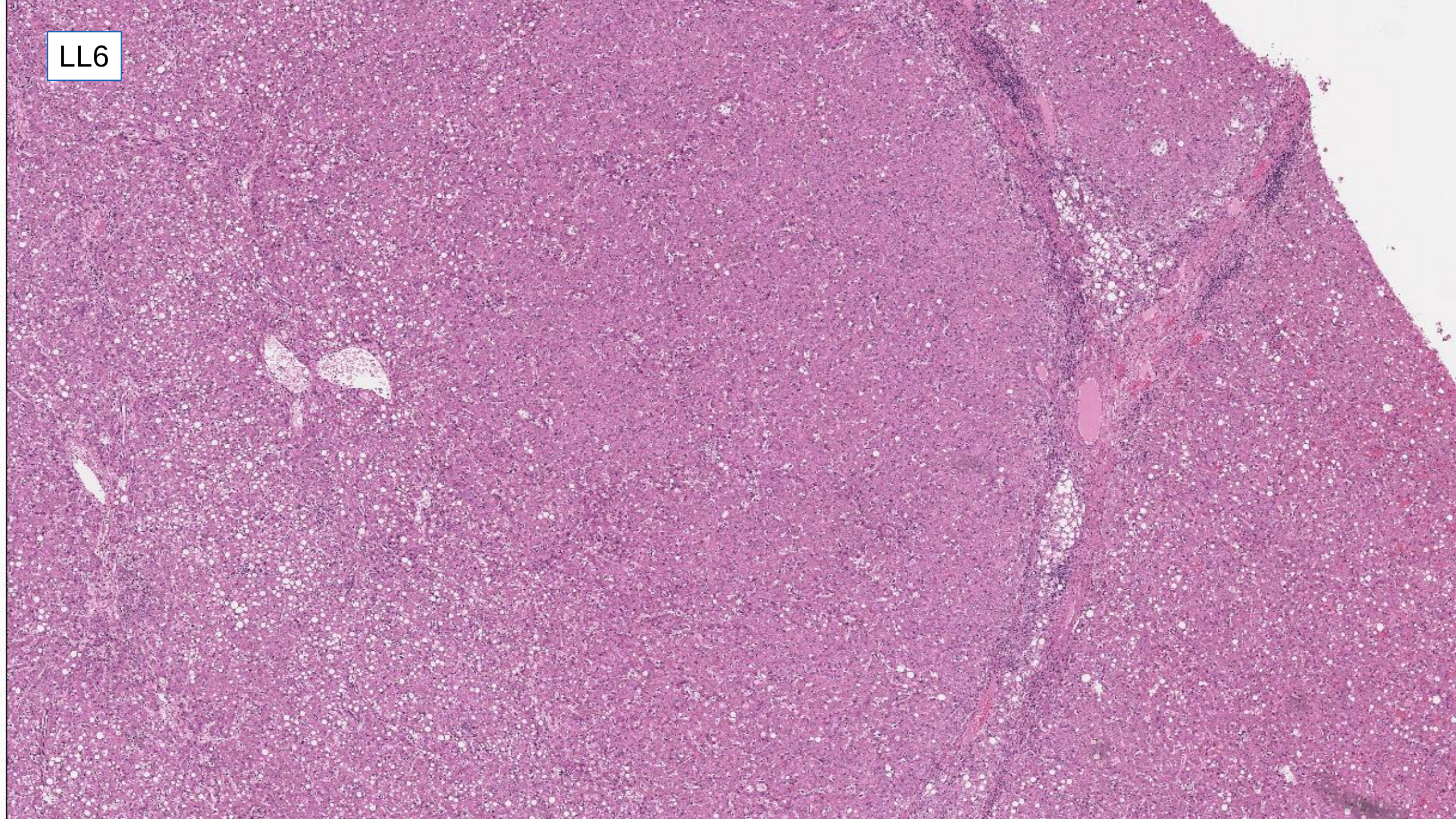
Single lobulated exophytic mass

5cm in diameter, excised by 1.2cm.



LL6

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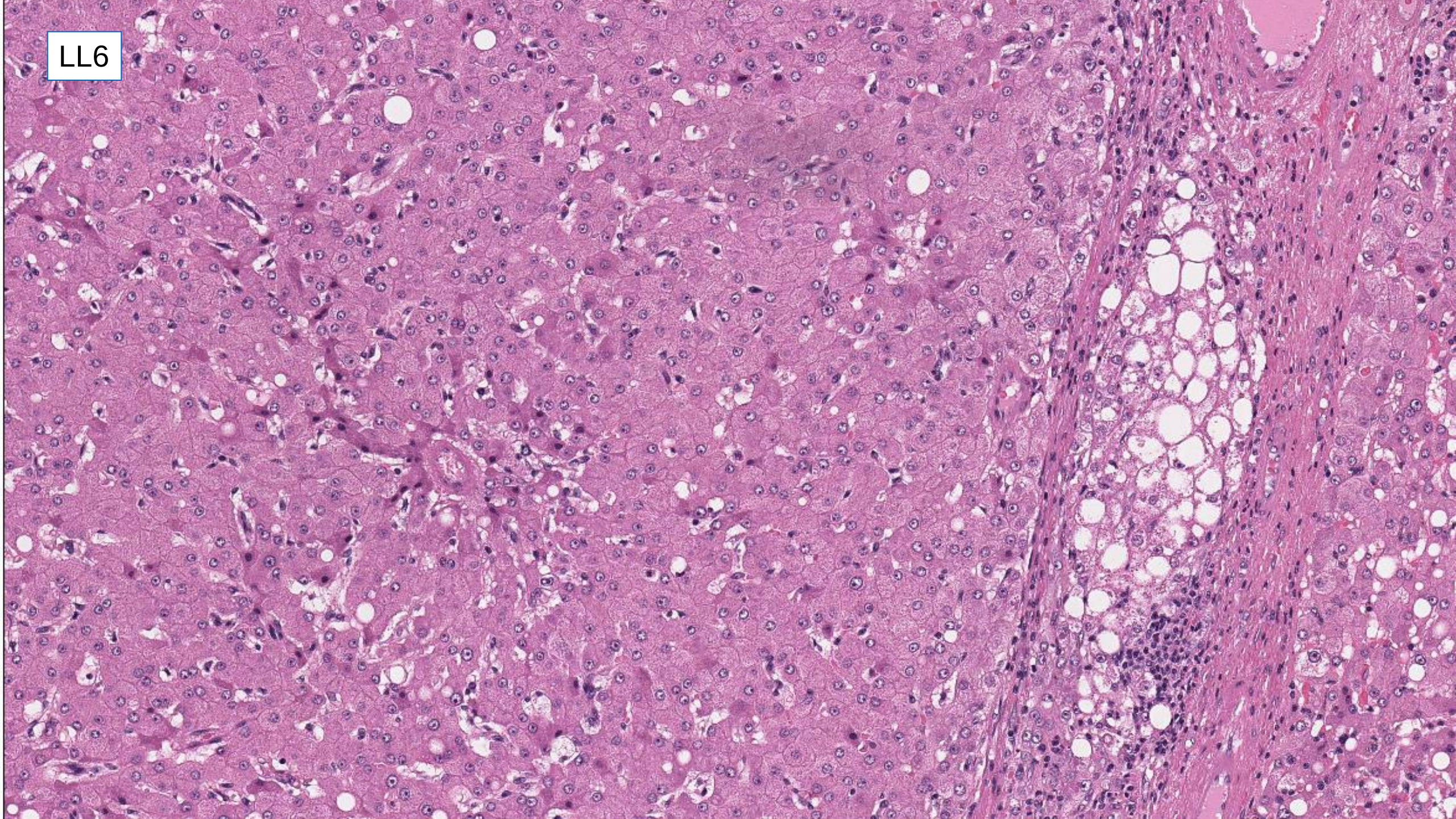
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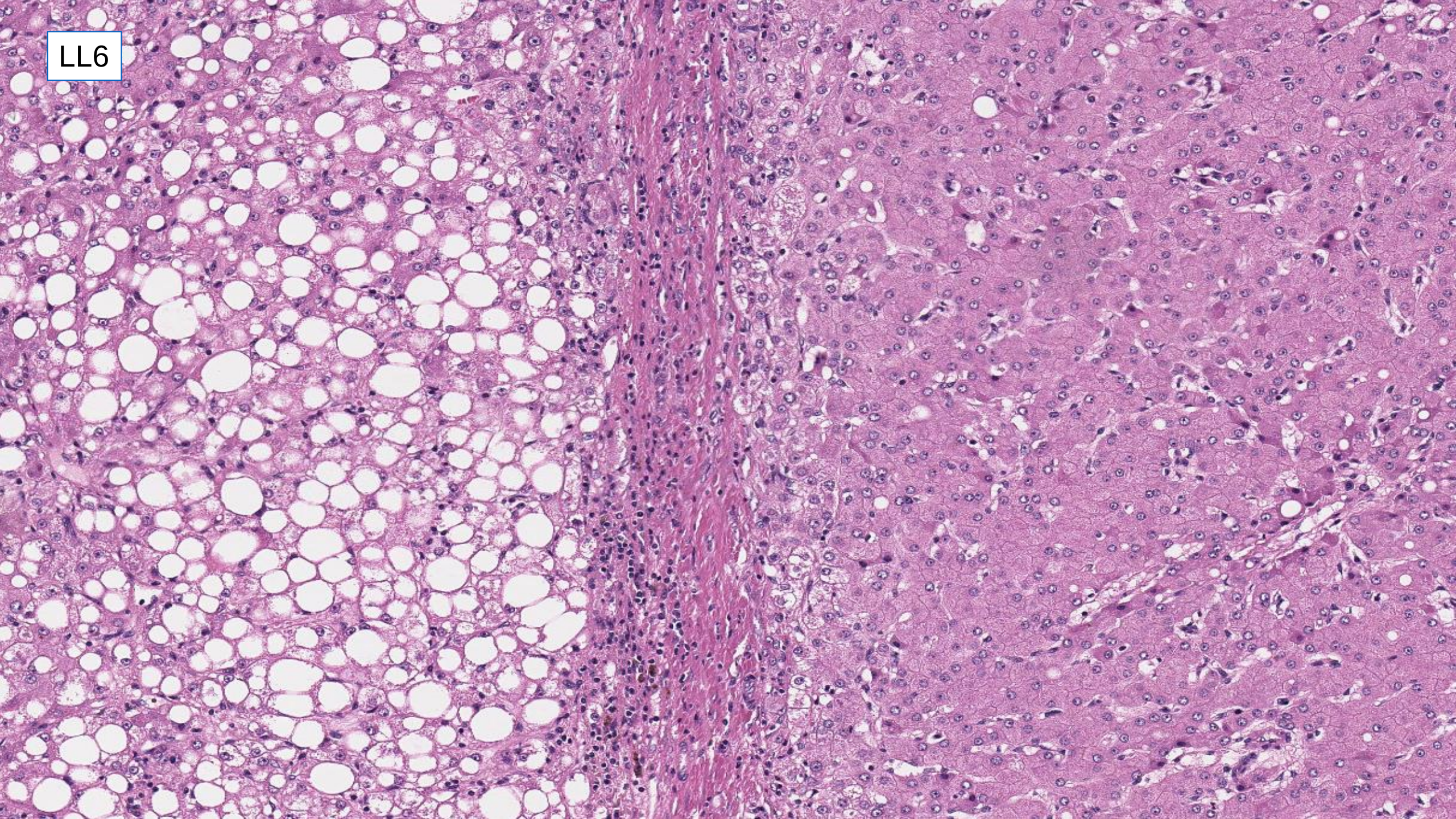
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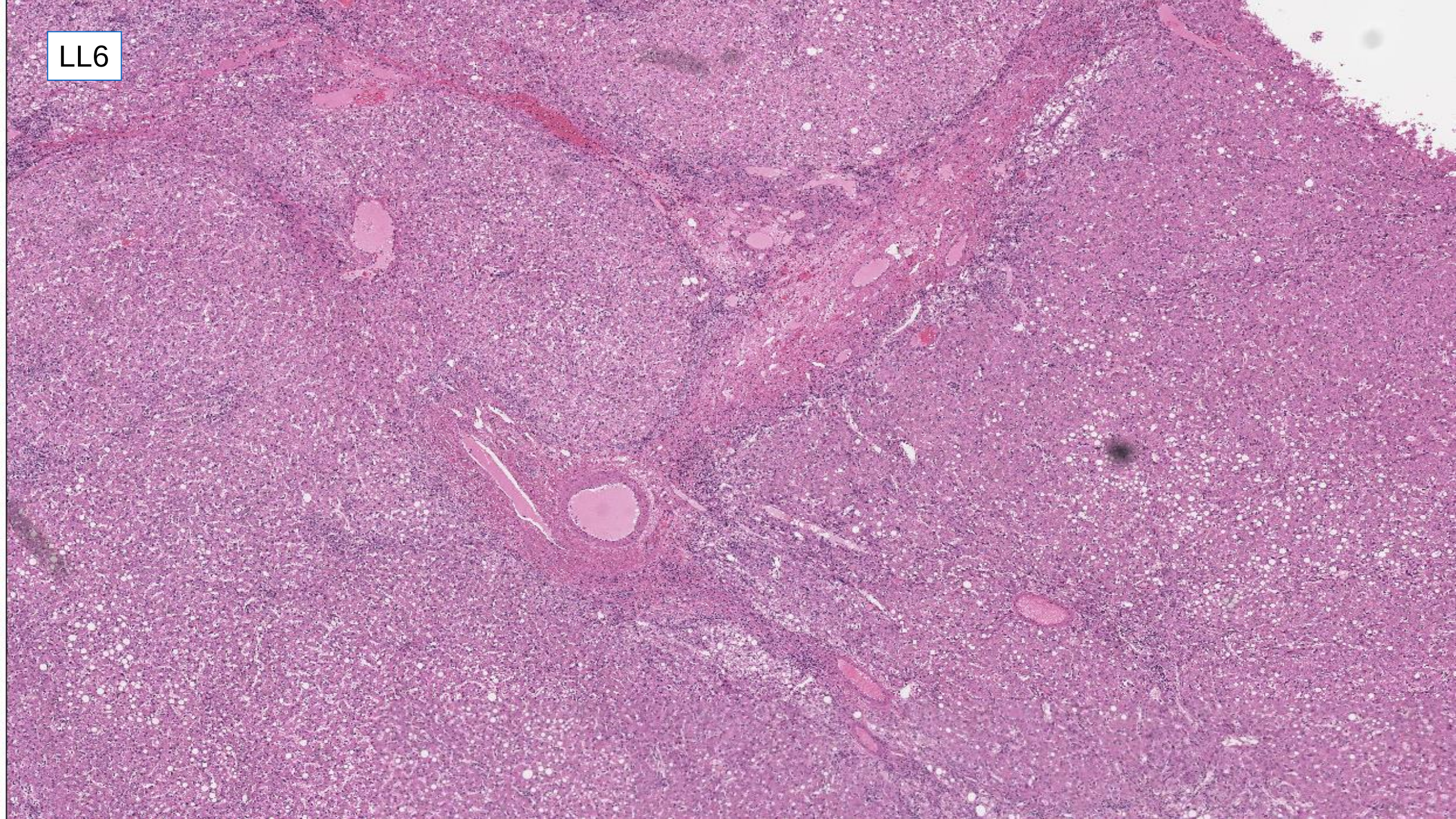
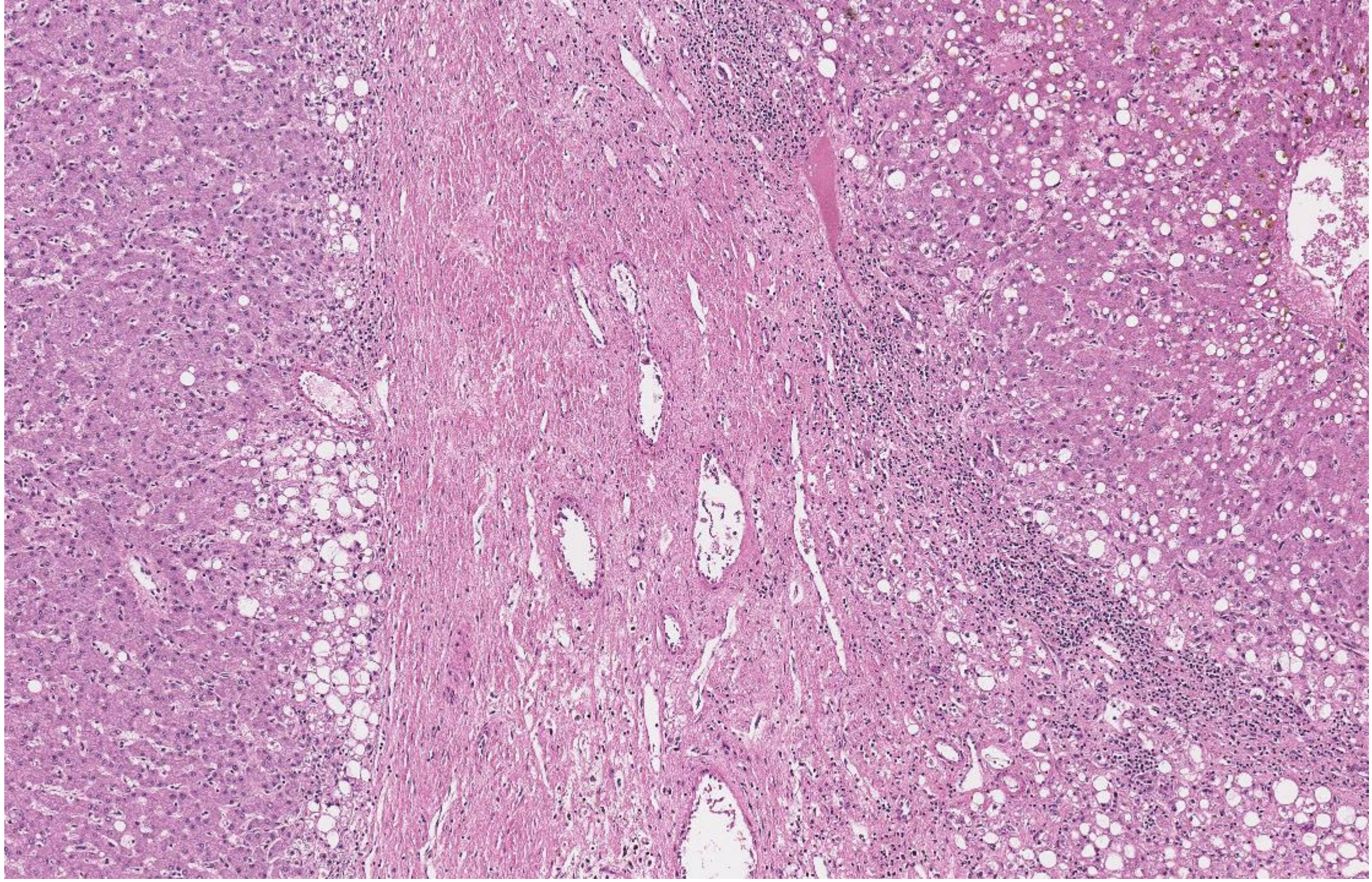
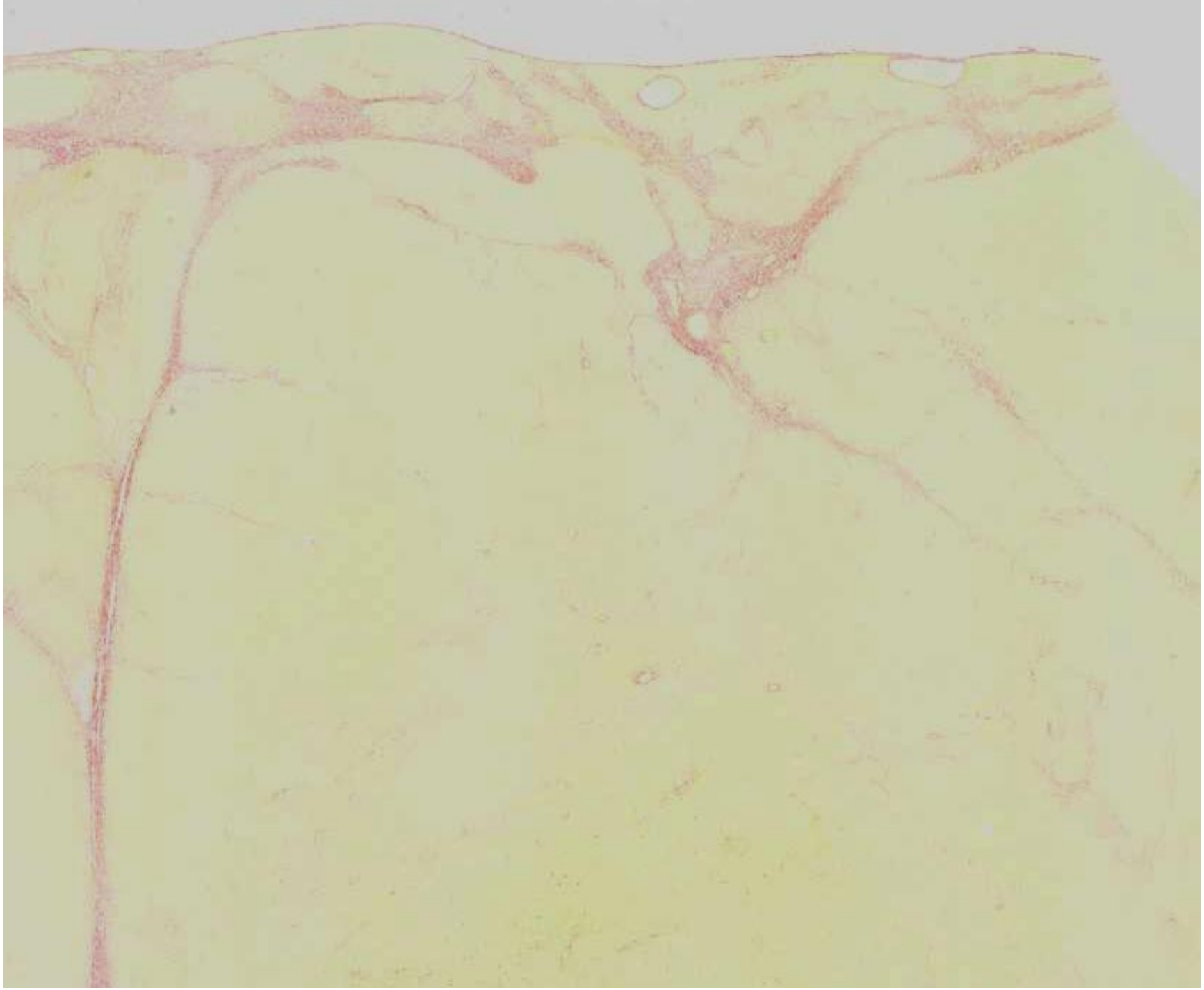

LL6

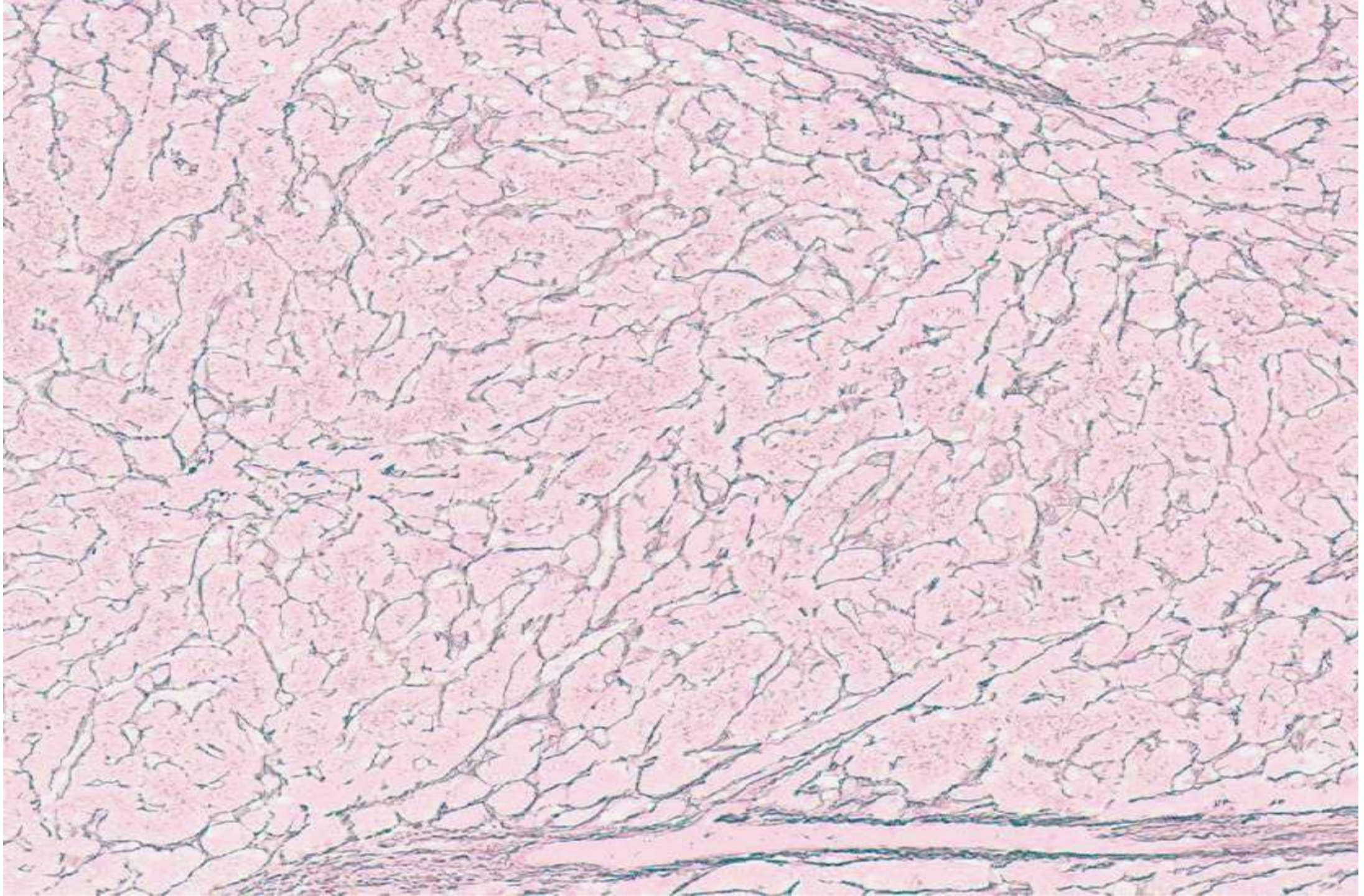
LL6



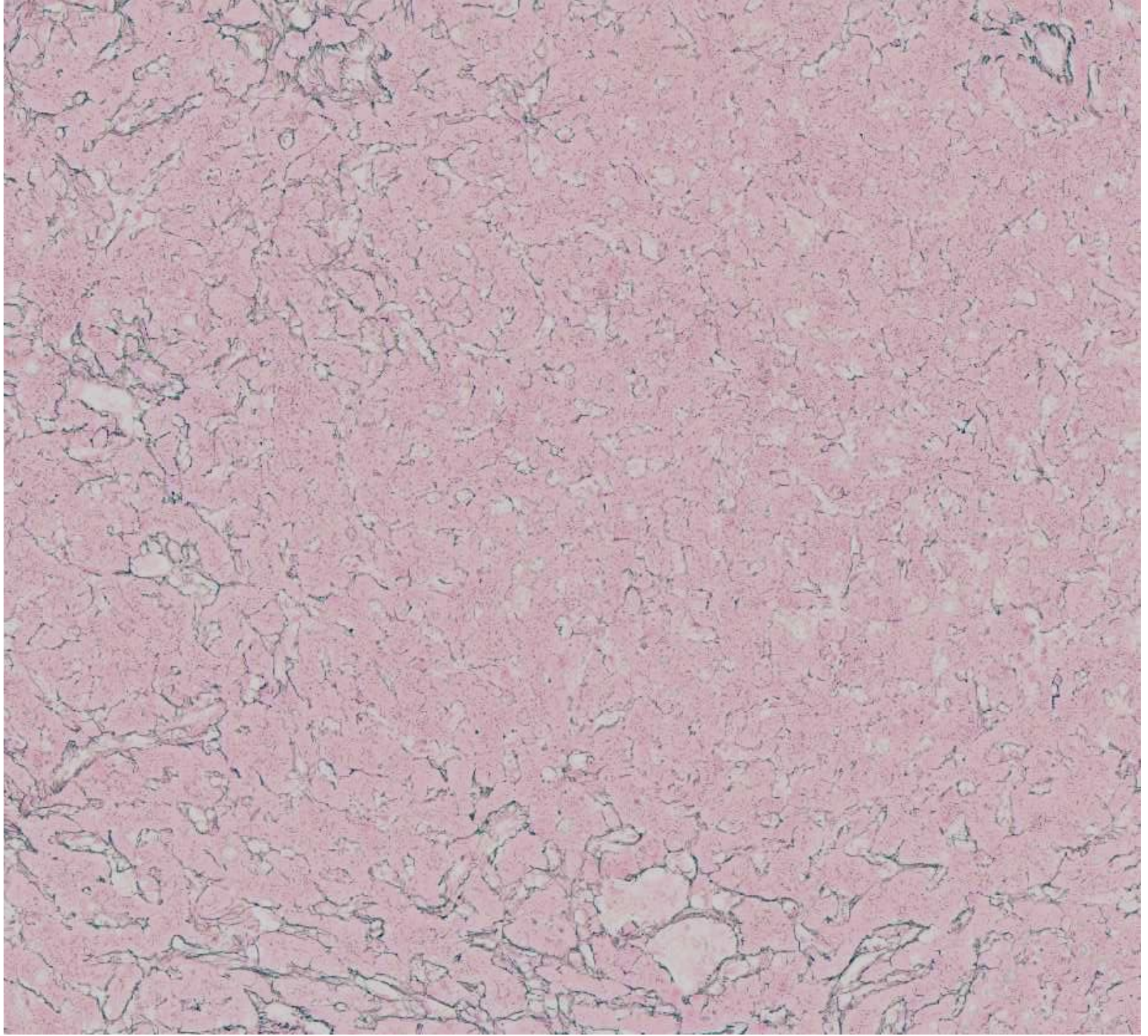
LL6 PSR



LL6 retic background



LL6 retic lesion



LL6 **M**ale 60 years

Background alcohol excess. Hepatoma screening identified exophytic lesion section II/III. AFP raised CT strongly suggestive hepatoma.

Lesion diagnosis:	
HCC	27
HCC with differential and extra stains	9
well differentiated hepatocellular lesion	4
FNH with differential of HCC	1
High grade dysplastic nodule, ? HCC	**2**
macroregenerative nodule or HCC	1
adenoma/FNH/HCC	1
adenoma, exclude HCC	1
HCC not mentioned:	
adenoma	9
focal nodular hyperplasia	11
adenoma v FNH	3
macroregenerative nodule.	4
arterialised large regenerative nodule	1
dysplastic nodule	1
no neoplasm	1
adenoma v dysplastic nodule	1
adenoma v macro-regenerative nodule	1

background	
no comment on background	24
insufficient background for assessment	3
cirrhosis NOS	18
cirrhosis ? ALD/steatohepatitis	13
steatohepatitis, not definite cirrhosis	8
steatosis	5
no neoplasm - all incpmplete septal cirrhsosis	1

Scoring: insufficient consensus for scoring

– 32 benign, HCC not included in differential;

27 HCC,

19 benign lesion but HCC included in differential.

Case LL 7

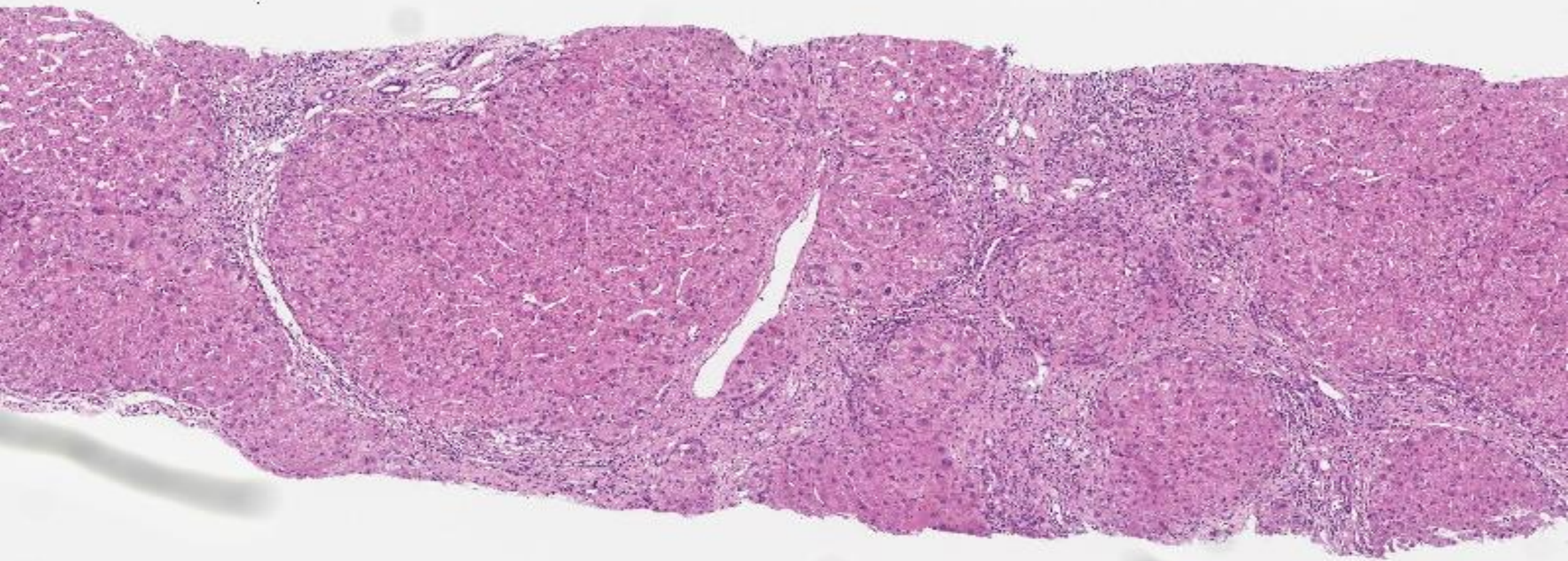
Female 44 years

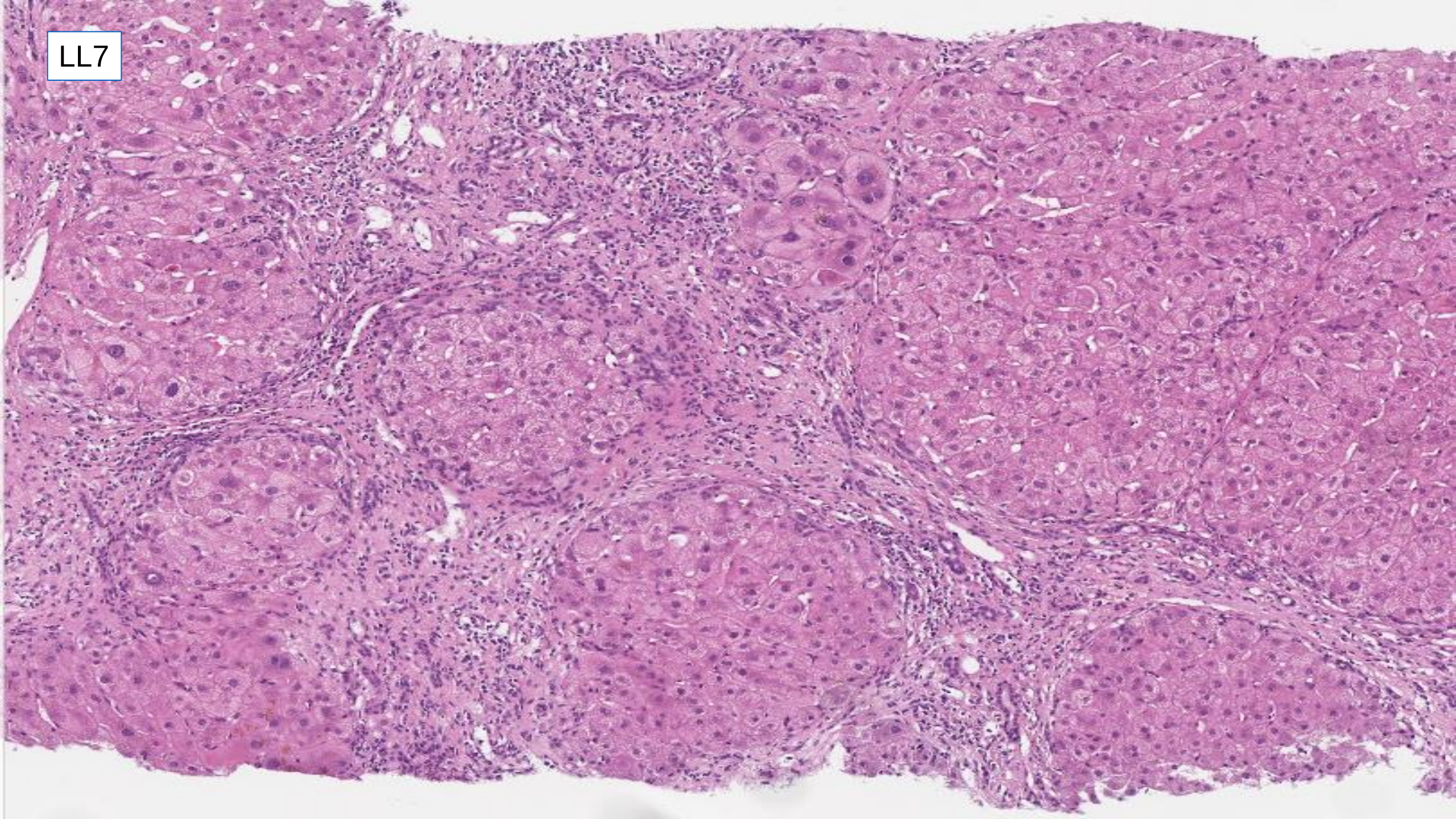
Rheumatoid arthritis, derranged LFT's ?source, from clinic letter - patient has been taking methotrexate for 10 years at 25mg per week for 6 years then 15mg per week for four years. Normal liver function tests, presented with low platelets. Liver screen - elevated IgG, nil else.

Specimen: Liver Biopsy.

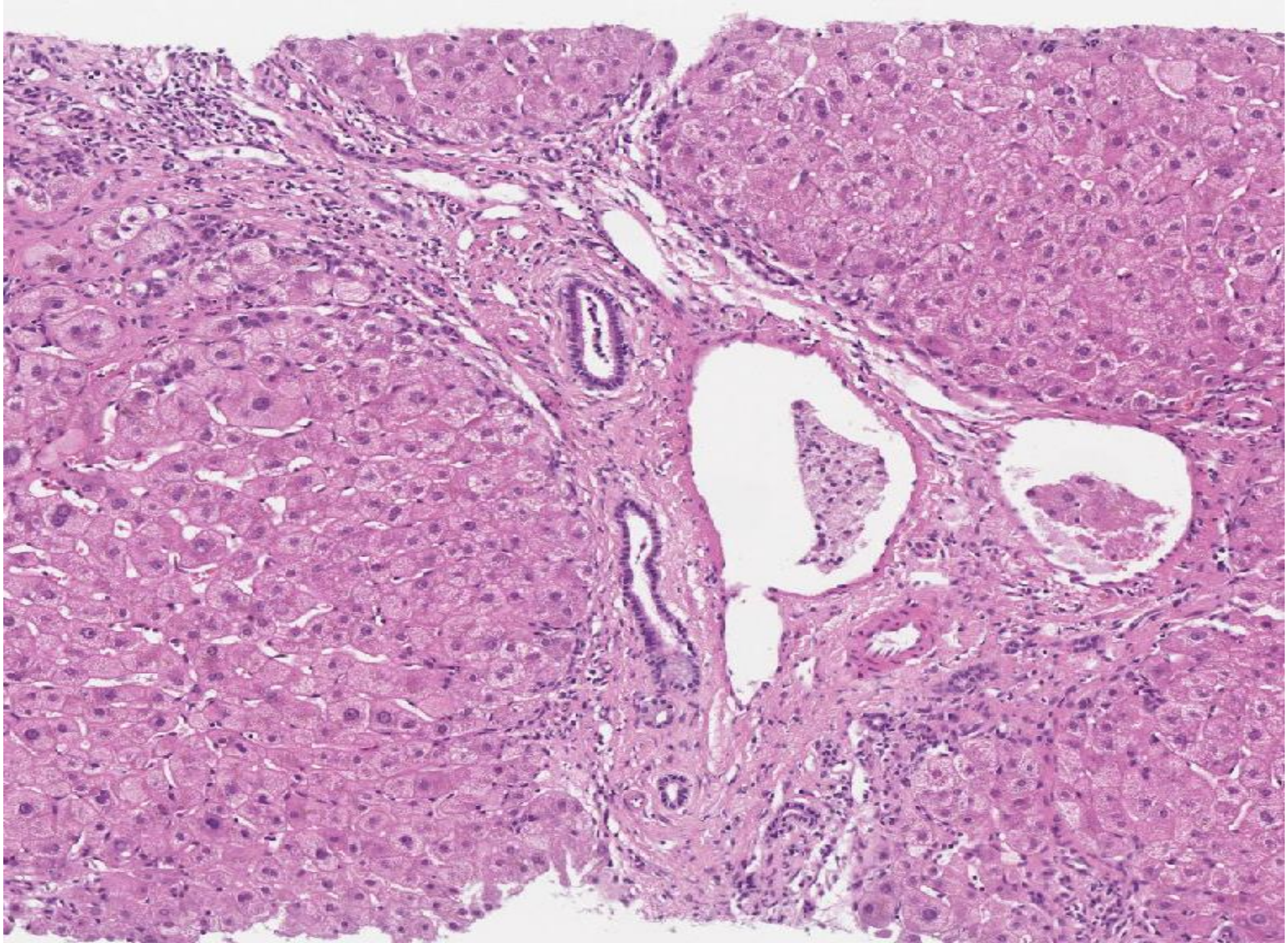
Macroscopic description:
One core 16mm.

LL7




LL7

LL7



LL7 Female 44 years

Rheumatoid arthritis, deranged LFT's ?source, from clinic letter - patient has been taking methotrexate for 10 years

cirrhosis	77
cirrhosis not mentioned	2
aetiology	
consistent with MTX	45
MTX in differential	13
? Relevance of MTX	13
not typical of MTX	2
MTX not mentioned	4
no clear relation to MTX	1
? Ground glass / hepatitis B	10

comments	
pigment ? Iron	5
several - that the dosage is in the toxic range >10g	
A few mention absence of AIH features.	

Scoring: for full marks need to include cirrhosis and comment on potential role of MTX

lose 5 points for either missing.

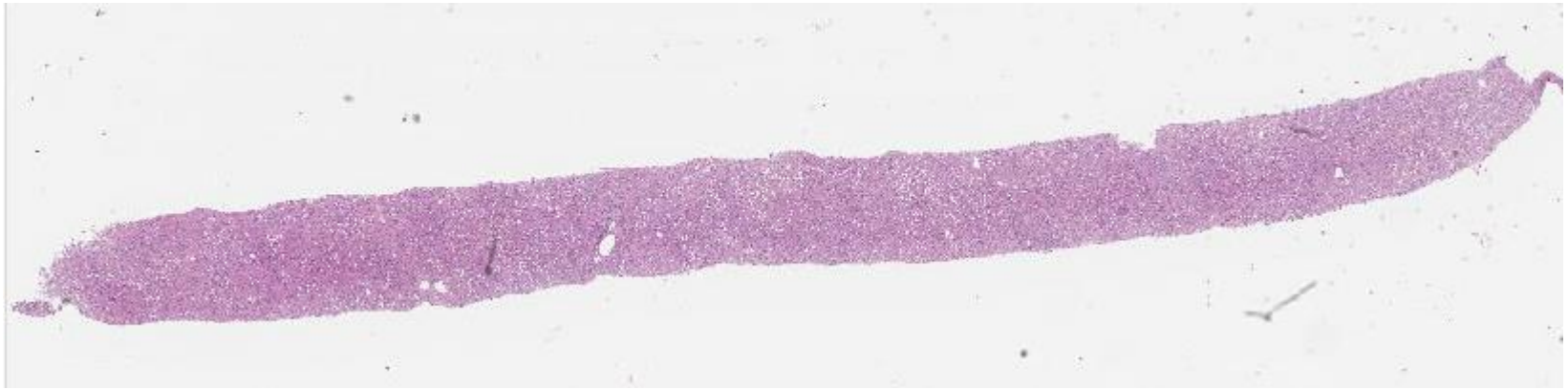
Case LL 8

Female 36 years

Chronic liver disease - maybe due to alcohol. Also has SMA +ve and EBV IGM +ve.

Specimen: Liver Biopsy.

Macroscopic description:
19mm core.



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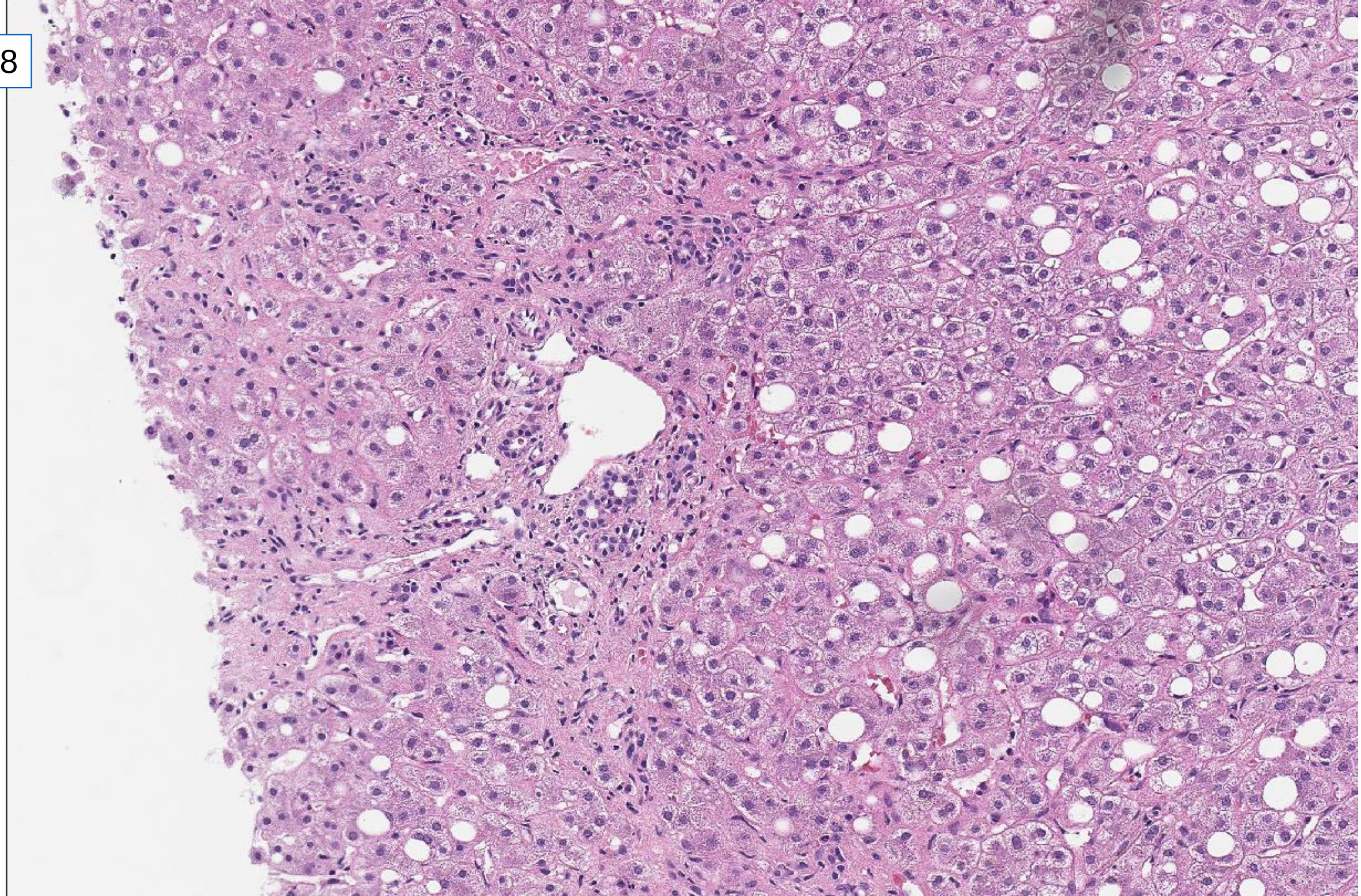

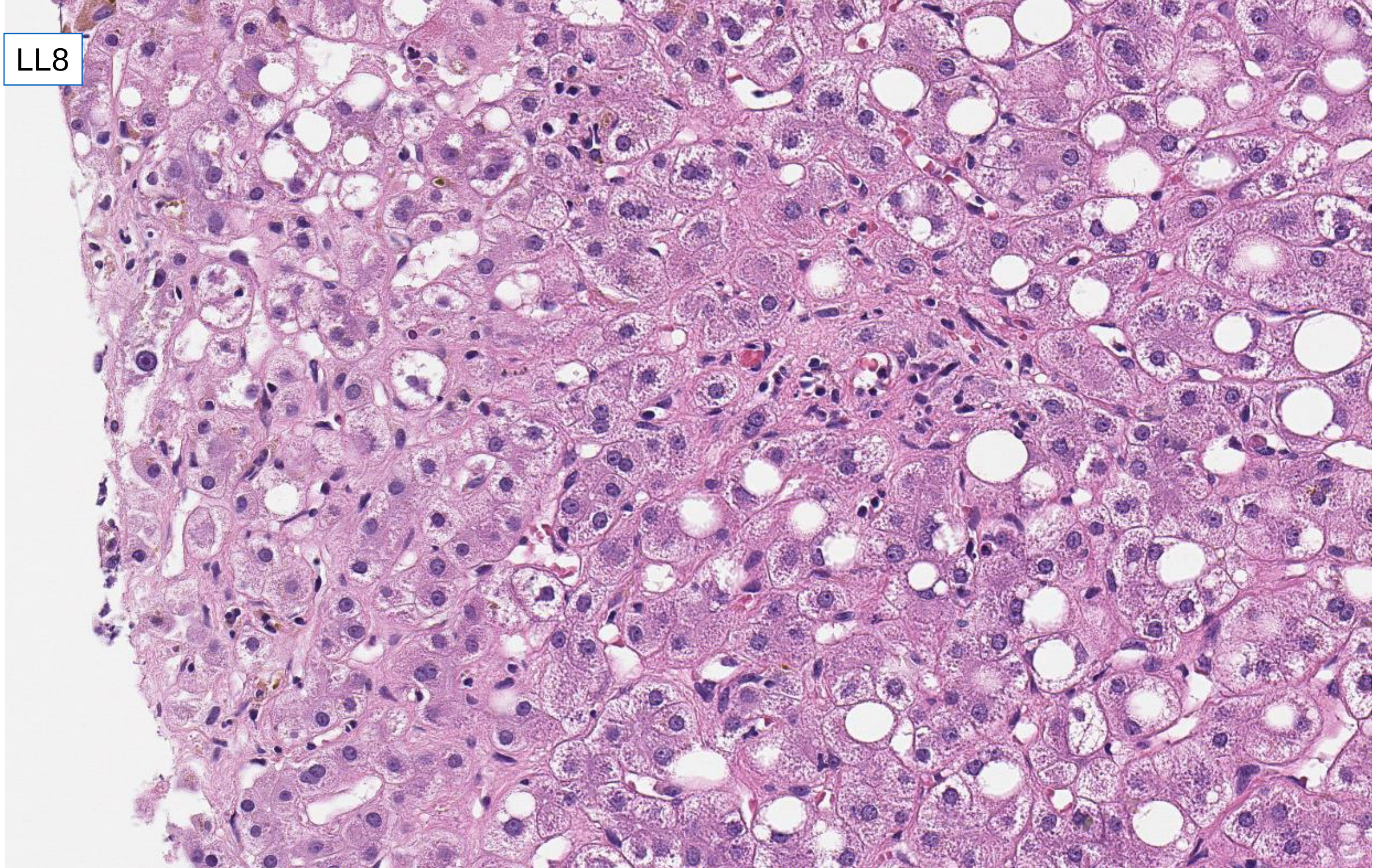
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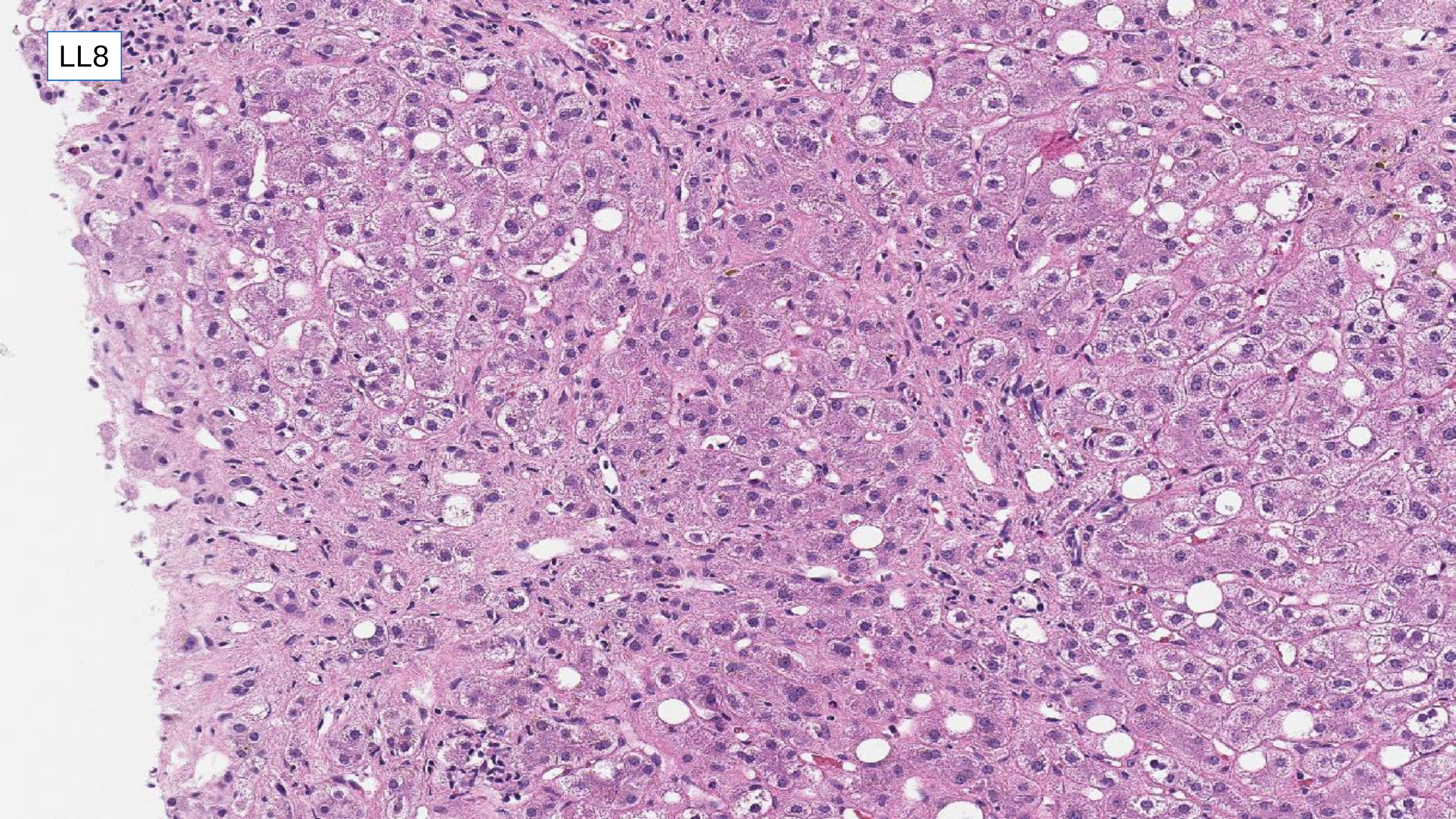
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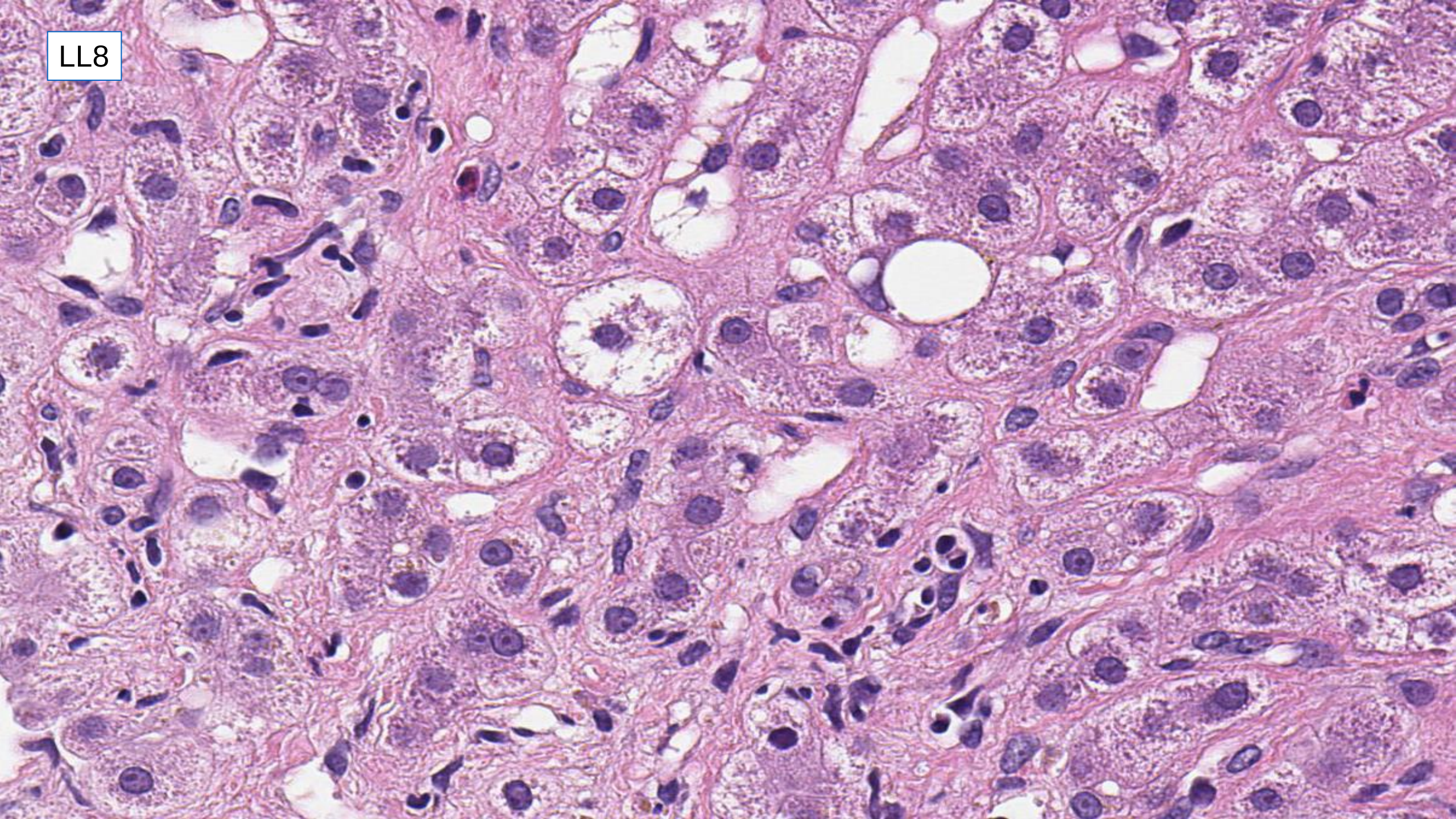
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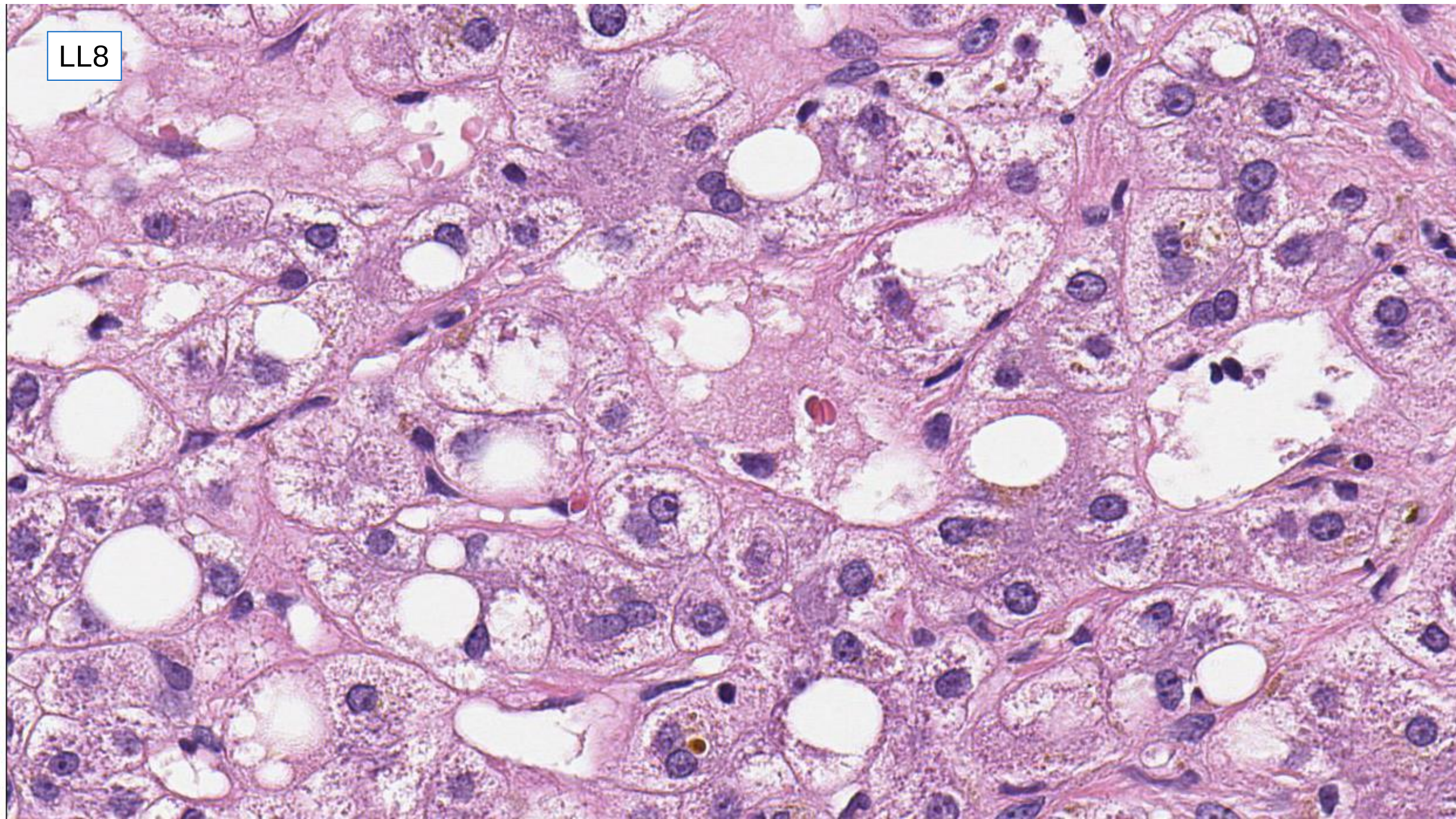
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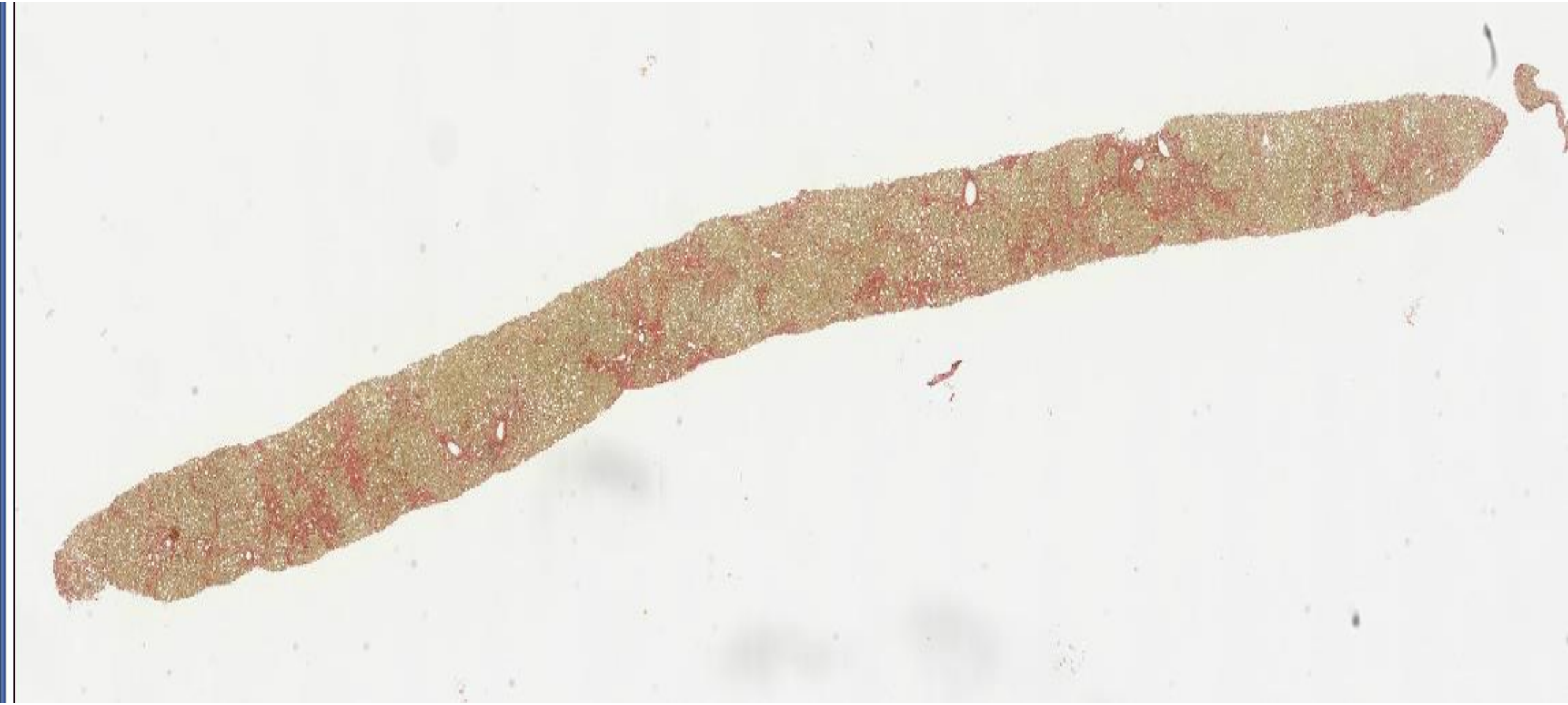
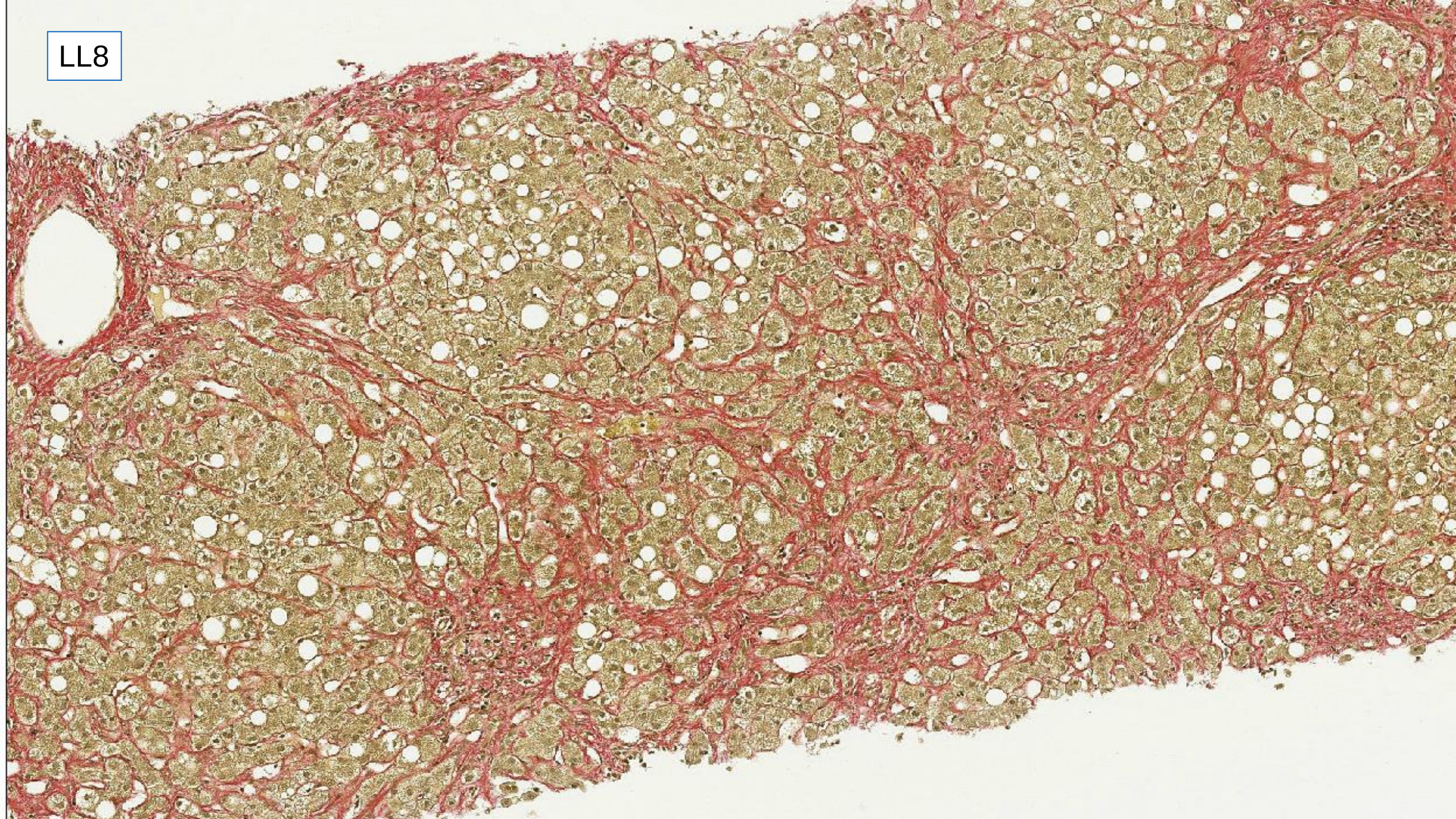
LL8




LL8

LL8 Female 36 years

Chronic liver disease - maybe due to alcohol. Also has SMA +ve and EBV IgM +ve.

stage:	
bridging fibrosis	35
developing cirrhosis or bridging and nodularity	32
cirrhosis	4
severe fibrosis	4
fibrosis not mentioned	1
. 'portal/pericellular fibrosis ?viral hepatitis, ? Drugs'	1
aetiology	
steatohepatitis, alcohol related +/- NAFLD as well	61
not classical steatohepatitis ? ALD and AIH	1
. 'acute viral hepatitis c/w EBV'	1
steatohepatitis - NAFLD	1
. 'NASH in keeping with clinical history of alcohol'	1
steatofibrosis, no steatohepatitis	1
chronic hepatitis - mixed alcohol and drug induced	1
steatohepatitis - alcohol not mentioned	4
steatosis and advanced liver disease - alcohol not mentioned	2

comments on cholestasis:	
cholestasis	62
cholestasis not mentioned	12
cholestasis - also ? Chronic biliary disease	2
cholestasis ? Drug	7
cholestasis ? Due to EBV	6
alcohol, also AIH	4
alcohol, also EBV	2

Sscoring: For full marks, need to include steatohepatitis, alcohol, comment on fibrosis and comment on cholestasis.

Lose 5 marks for any of these missing

Rob - masterclass

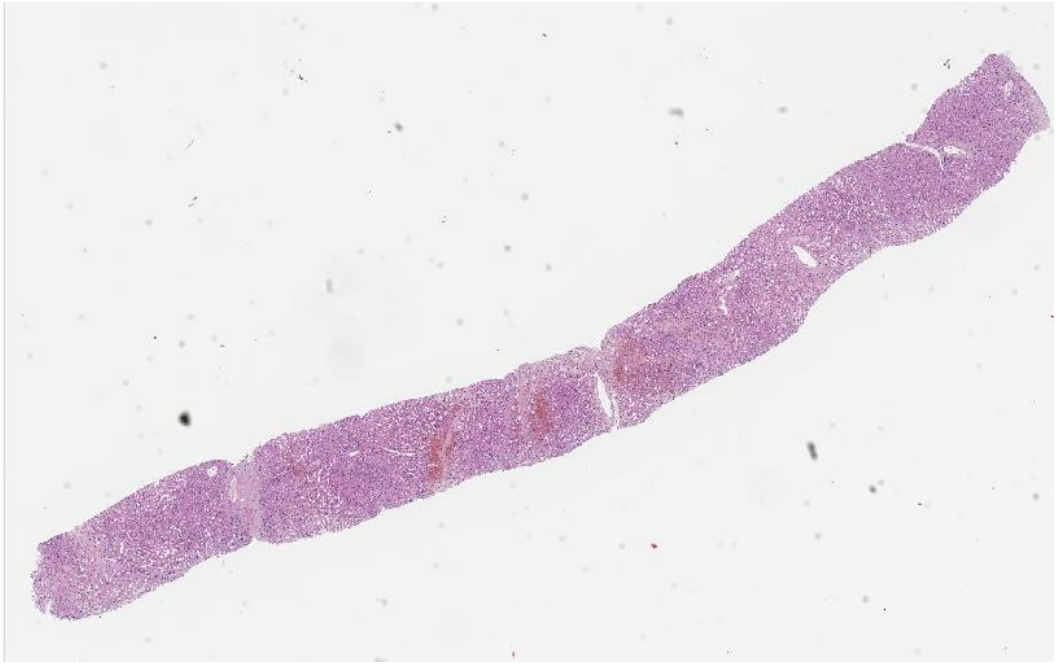
Case LL 9

Male 31 years

Cardiac disease, coarse echotexture on USS, fibroscan showing fibrosis of liver.

Specimen: Liver Biopsy.

Macroscopic description:
14mm core biopsy.



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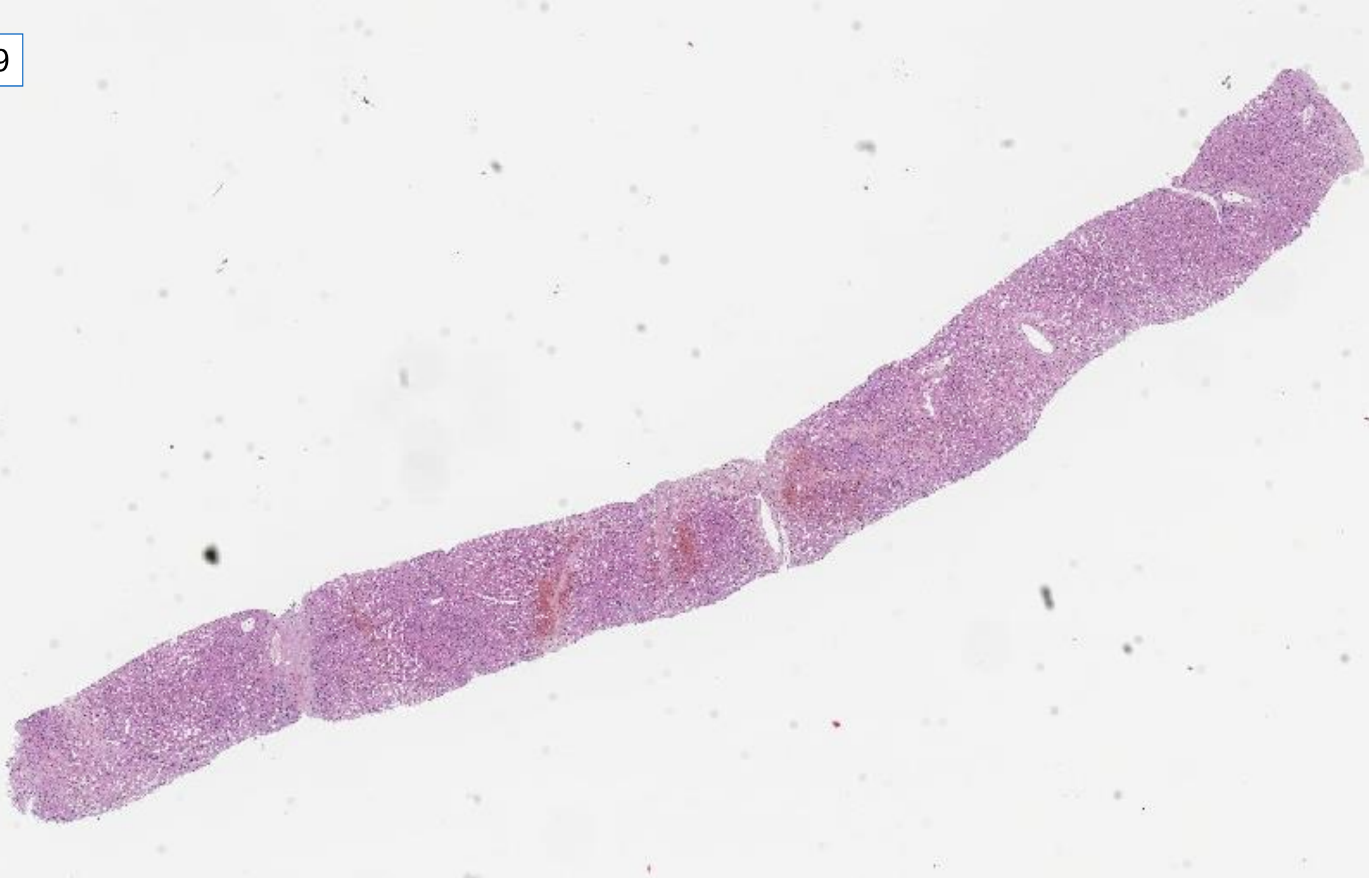
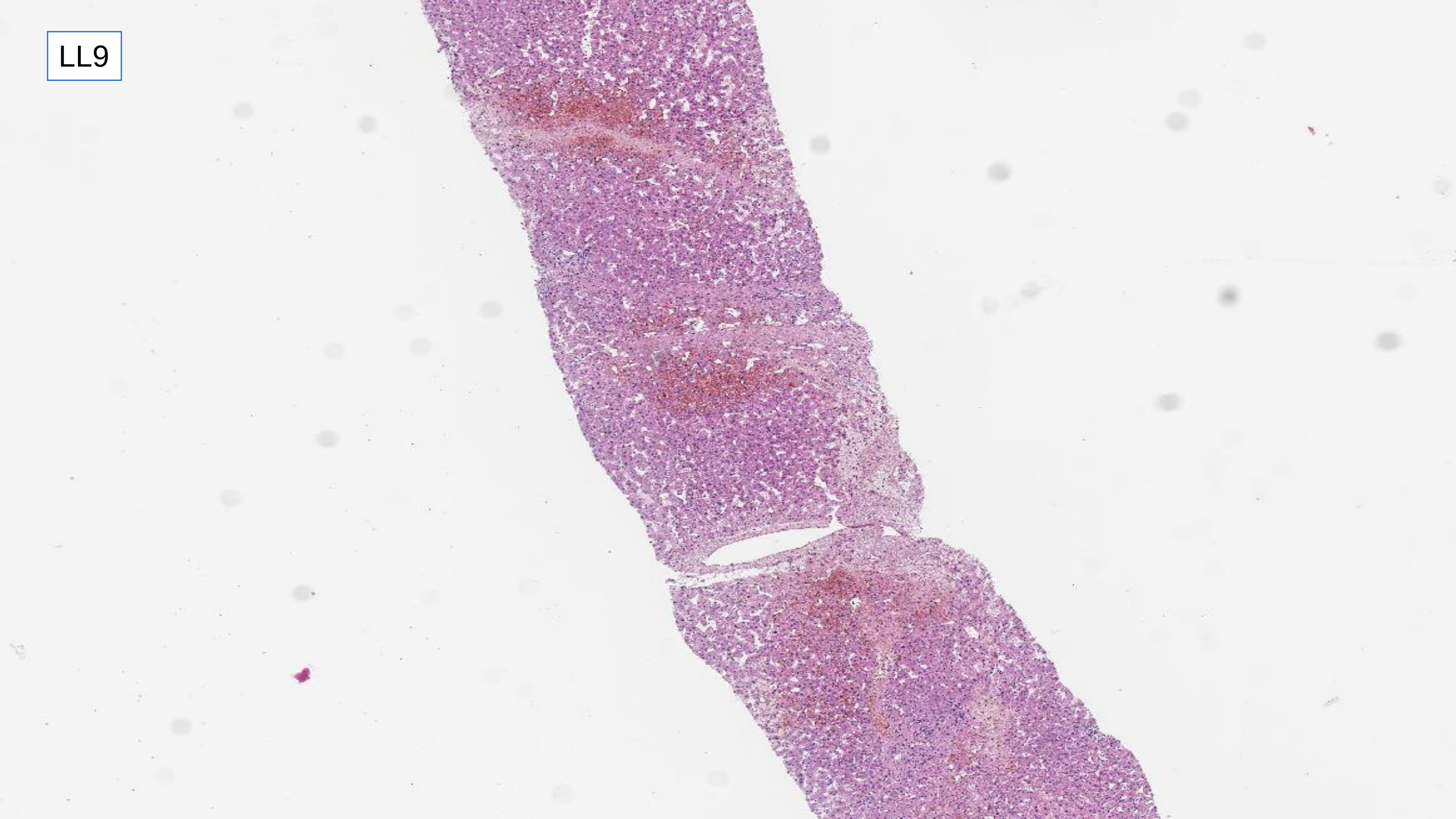
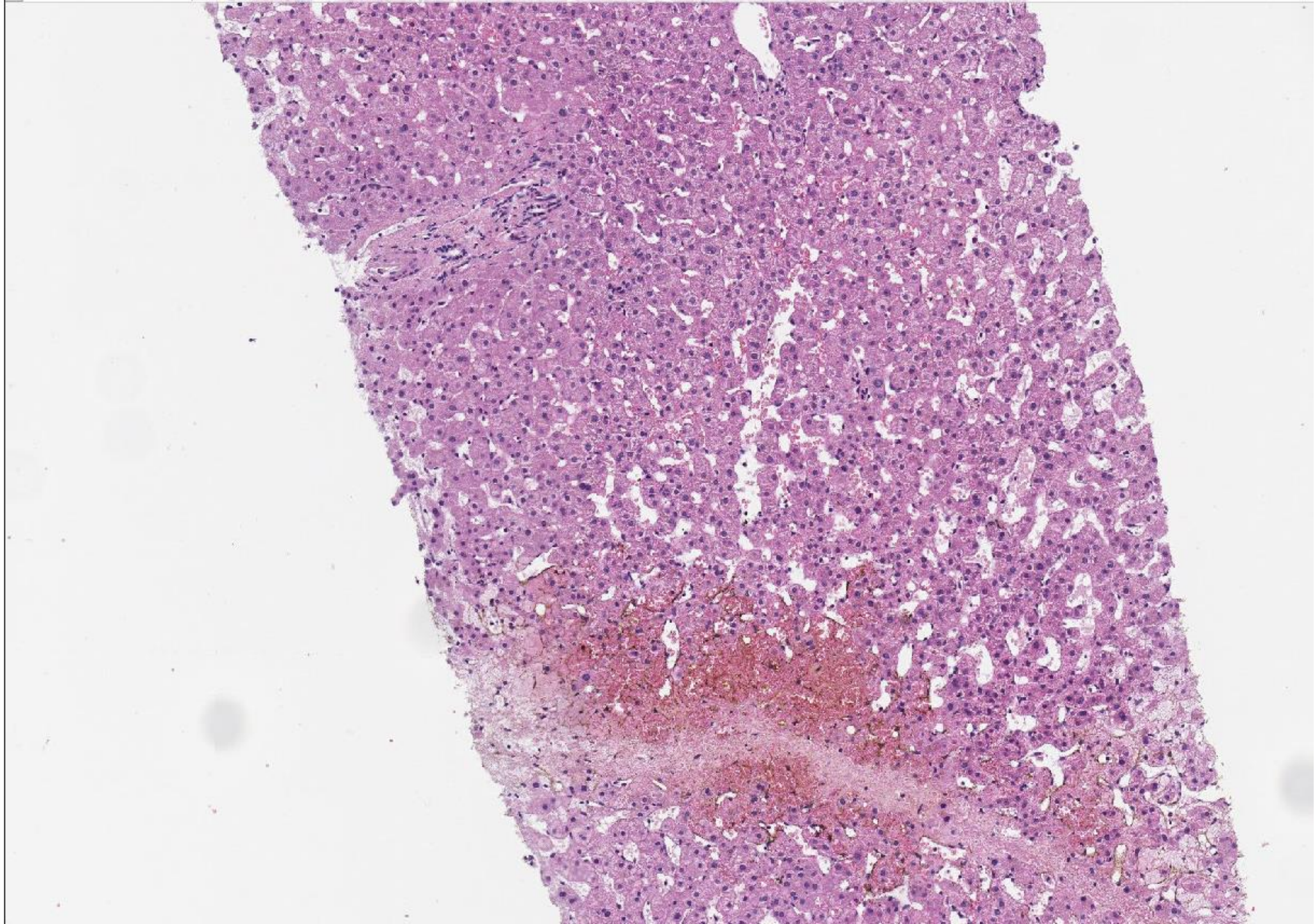
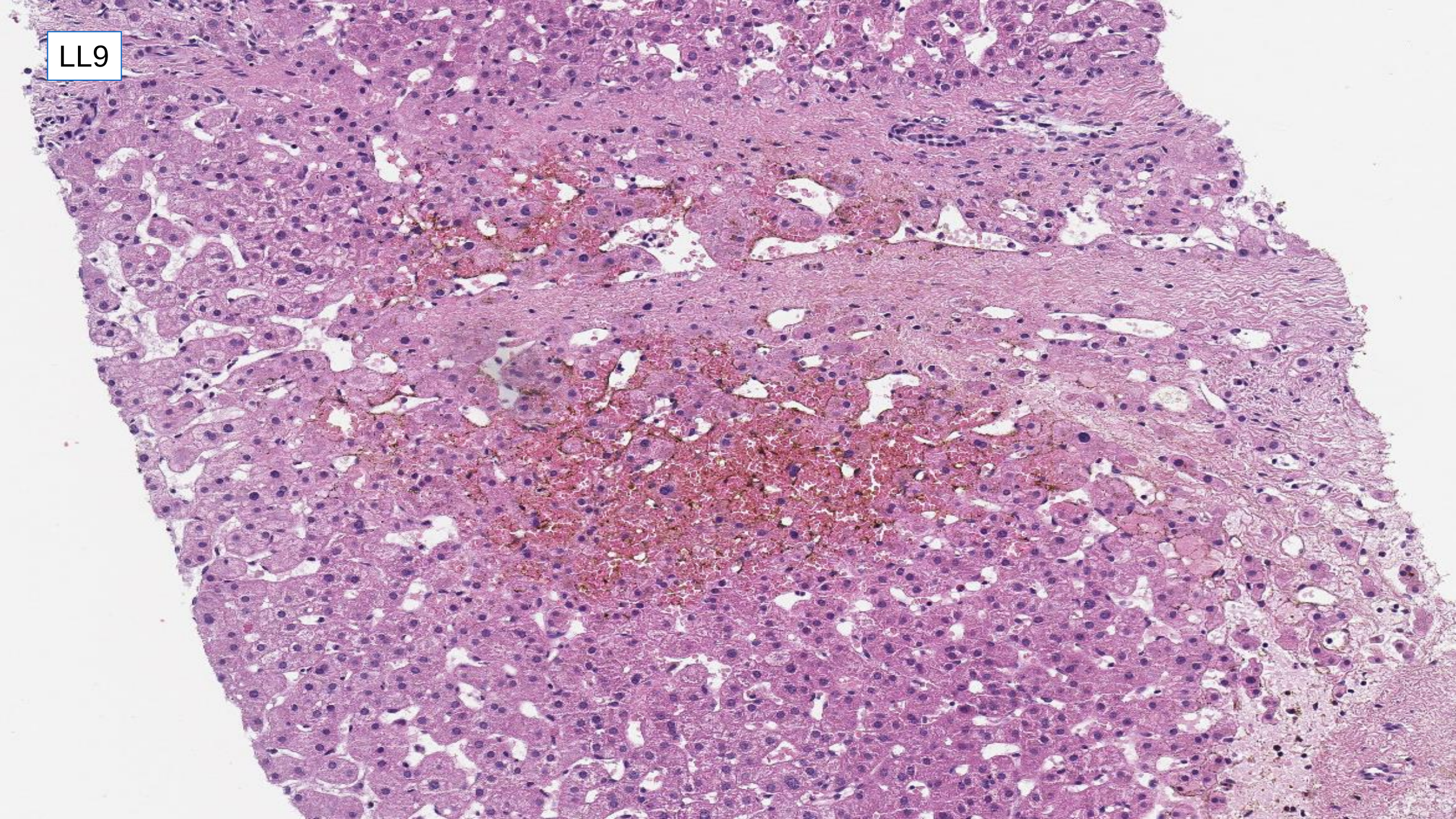


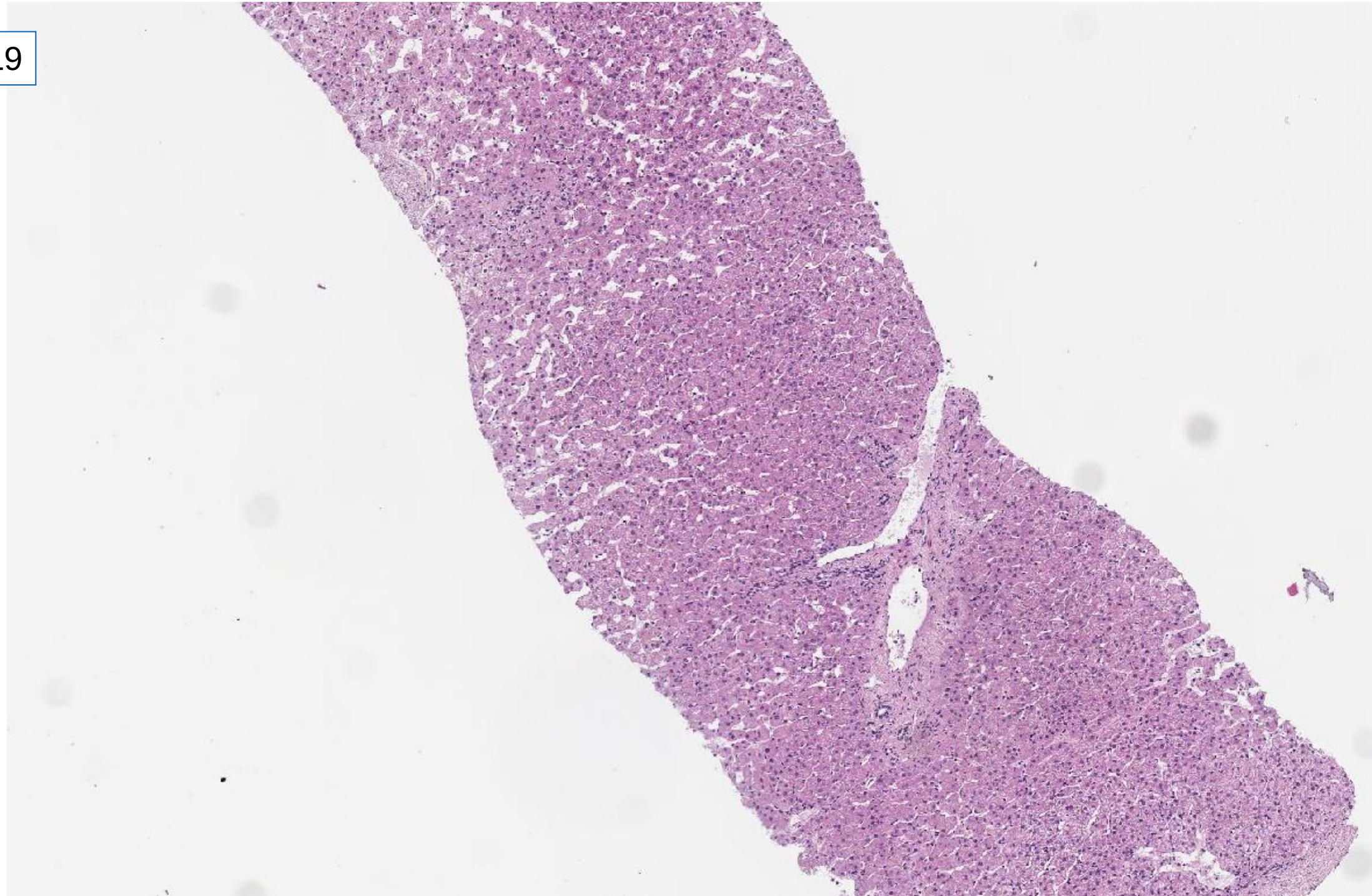

LL9

LL9




LL9

LL9



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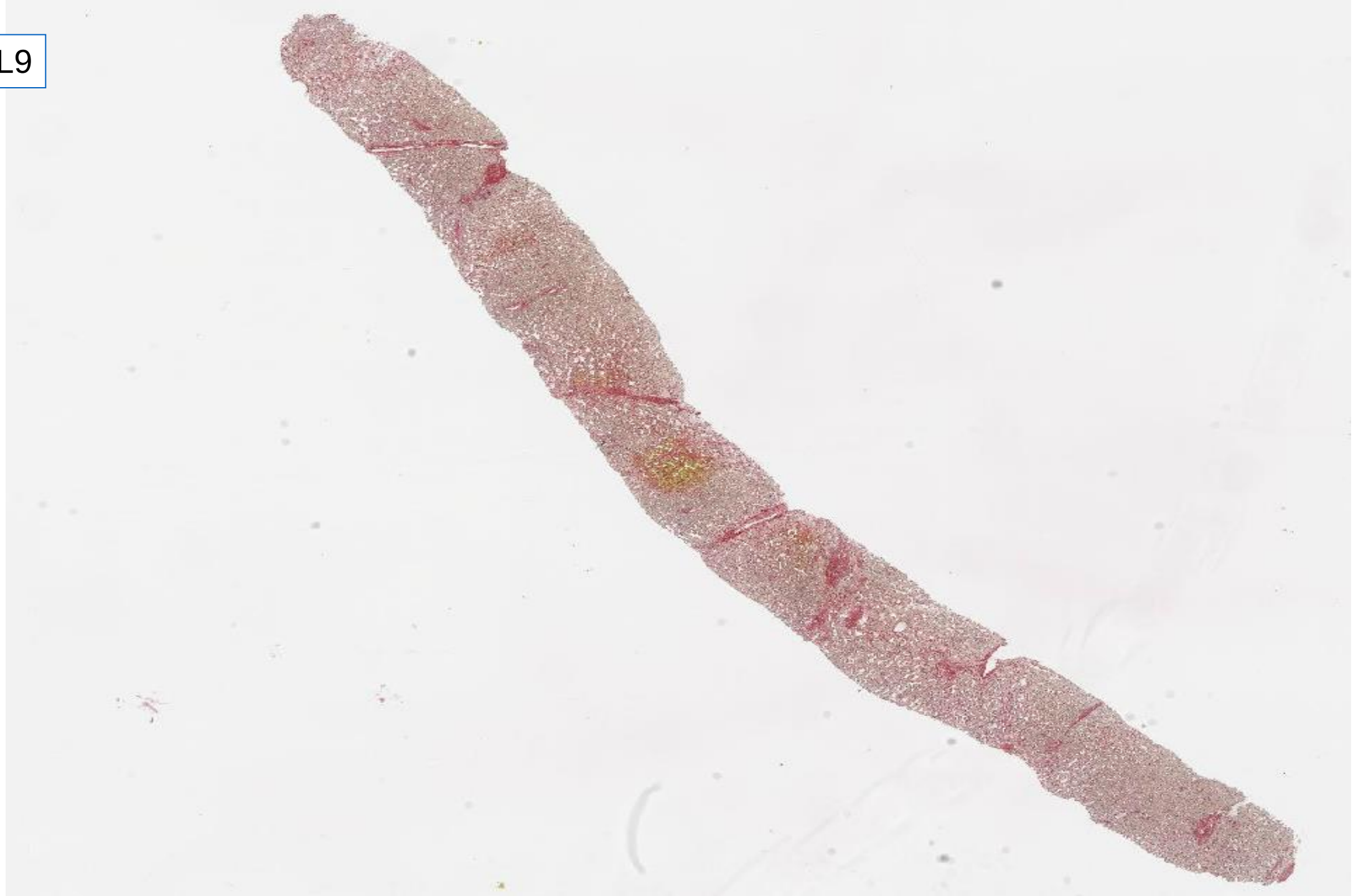

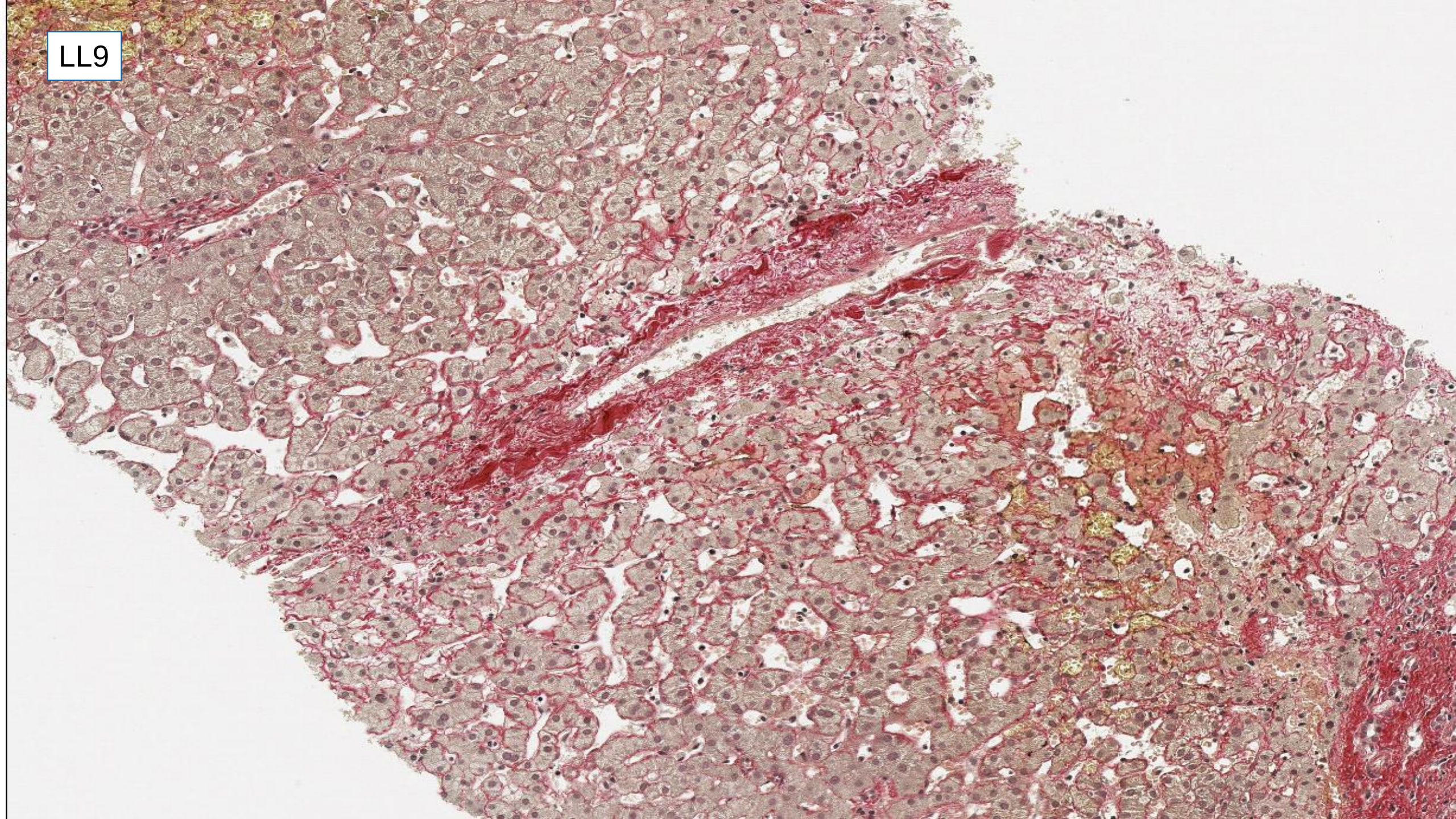
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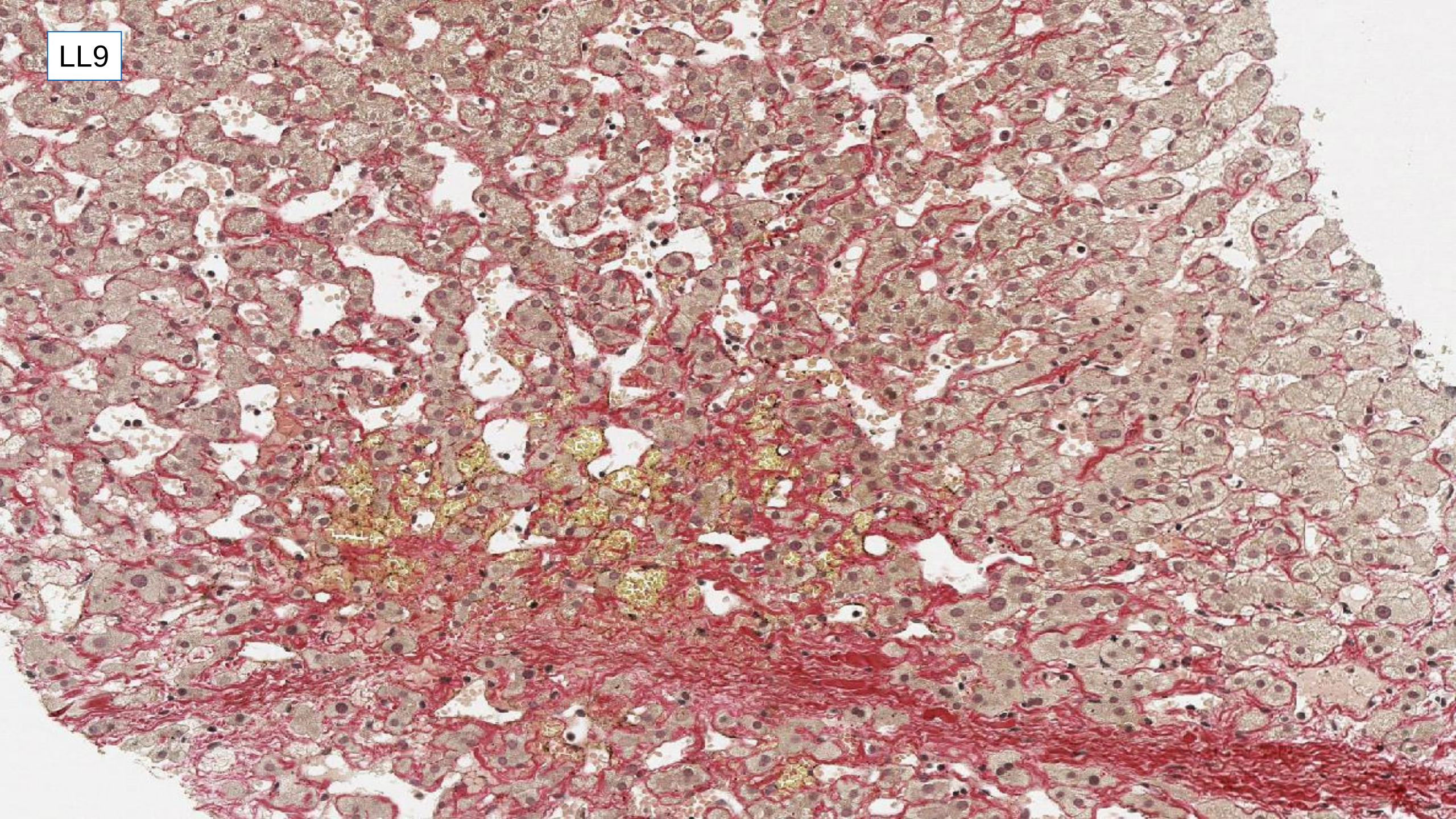

LL9

LL9 Male 31 years

Cardiac disease, coarse echotexture on USS, fibroscan showing fibrosis of liver.

aetiology:	
venous outflow obstruction/congestive hepatopathy	74
veno-occlusive disease	1
vasculopathy, correlate with Doppler, ? Outflow obstruction	1
. 'venous outflow obstruction' only text	1
stage	
fibrosis	65
no significant fibrosis	2
fibrosis not mentioned	2
established cirrhosis ? Incomplete septal form of PHT	1
steatohepatitis with perivenular, pericellular and periportal fibrosis, exclude drug related changes	1
several commented on portal fibrosis	
Ishak stage - 3 responses - stage 1, 3, 3-4.	

Scoring: for full marks – clear that the changes are due to venous outflow obstruction, and that there is fibrosis (i.e. not just acute).

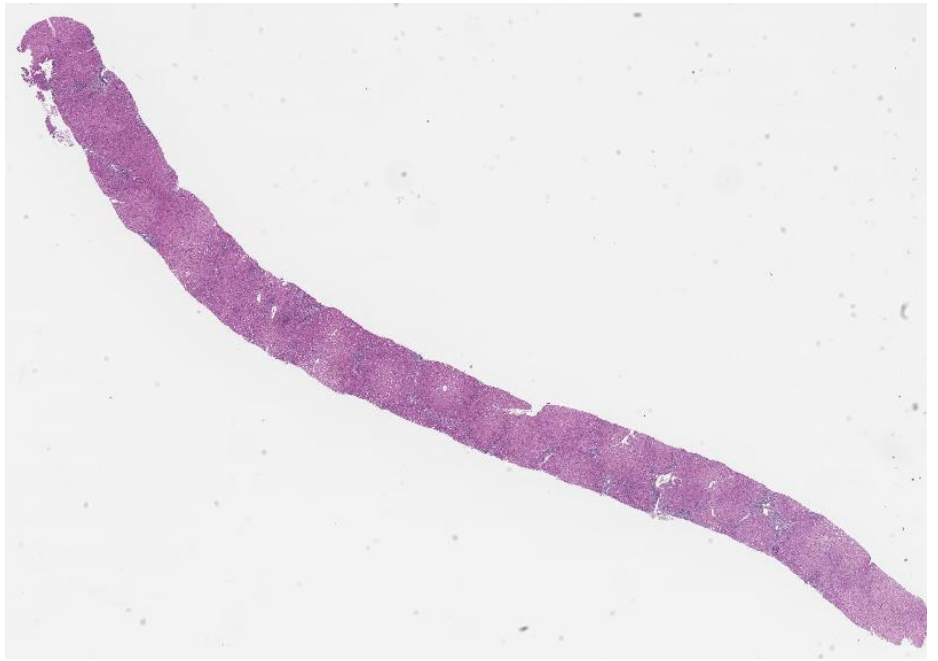
Case LL 10

Female 33 years

Raised IgG (27.6) and IgM (5.1) Positive AMA M2, LKM-1. persistently abnormal LFTs, USS splenomegaly ?AIH/PBC overlap.

Specimen: Liver Biopsy.

Macroscopic description:
One core 17mm long



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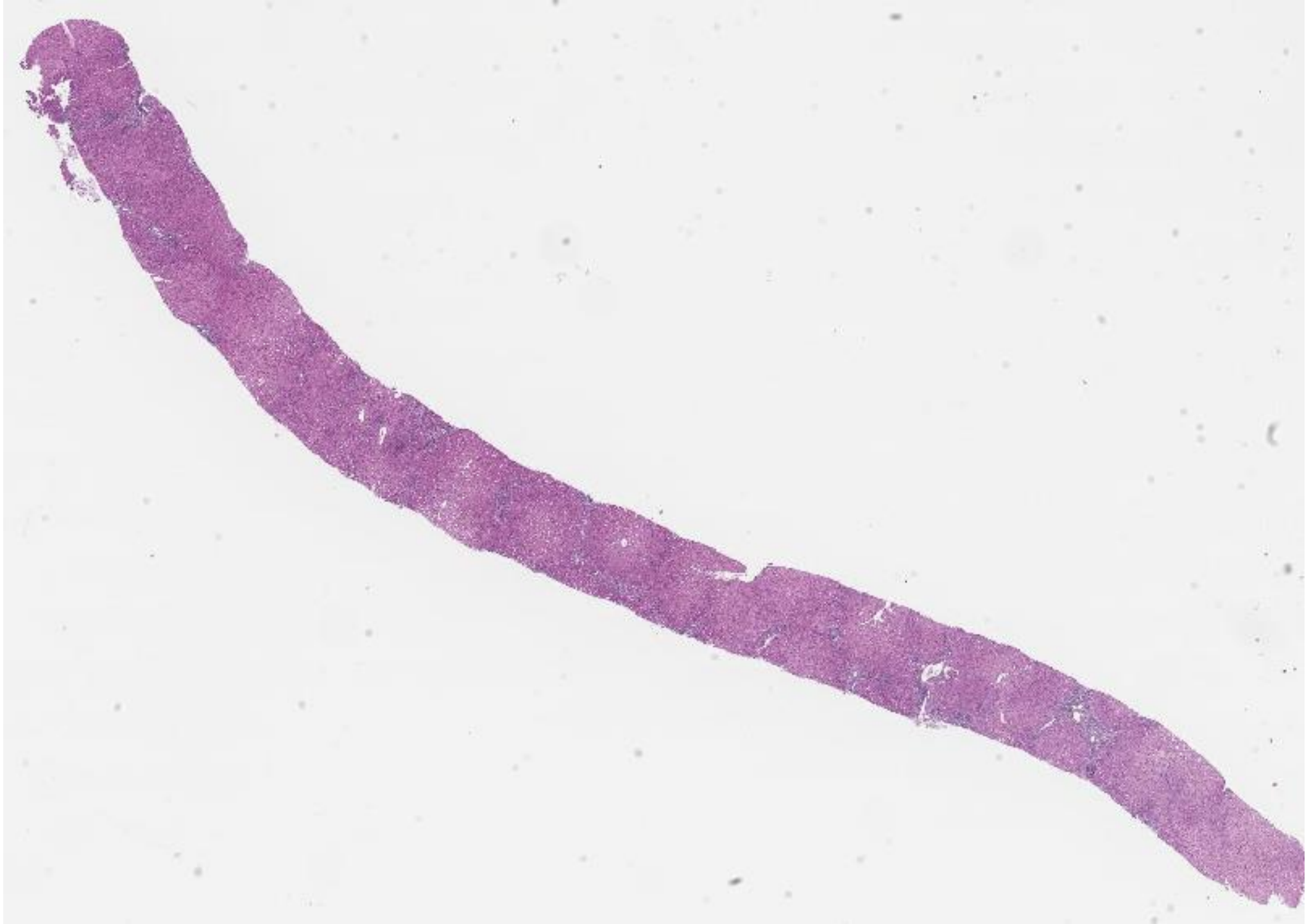

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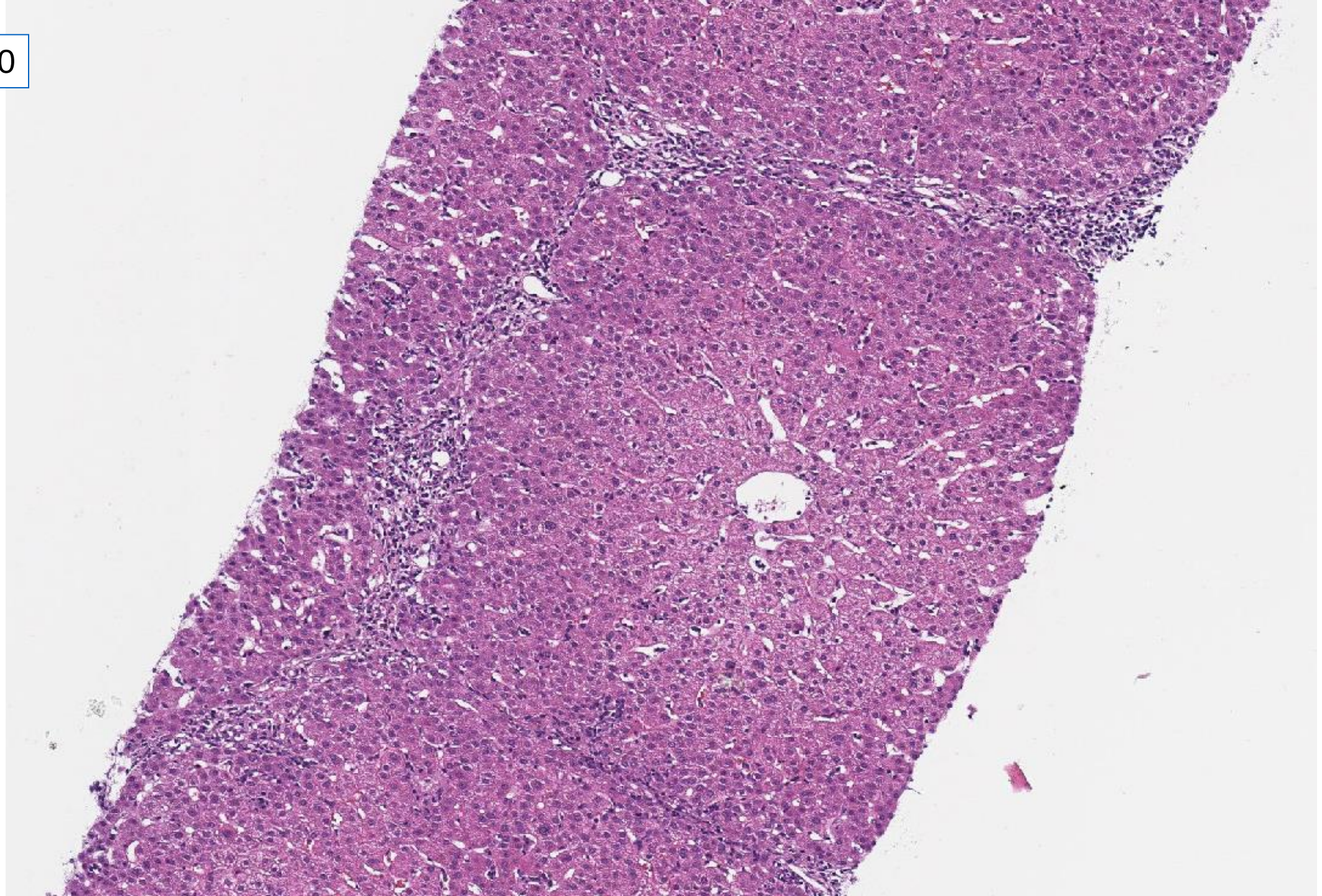

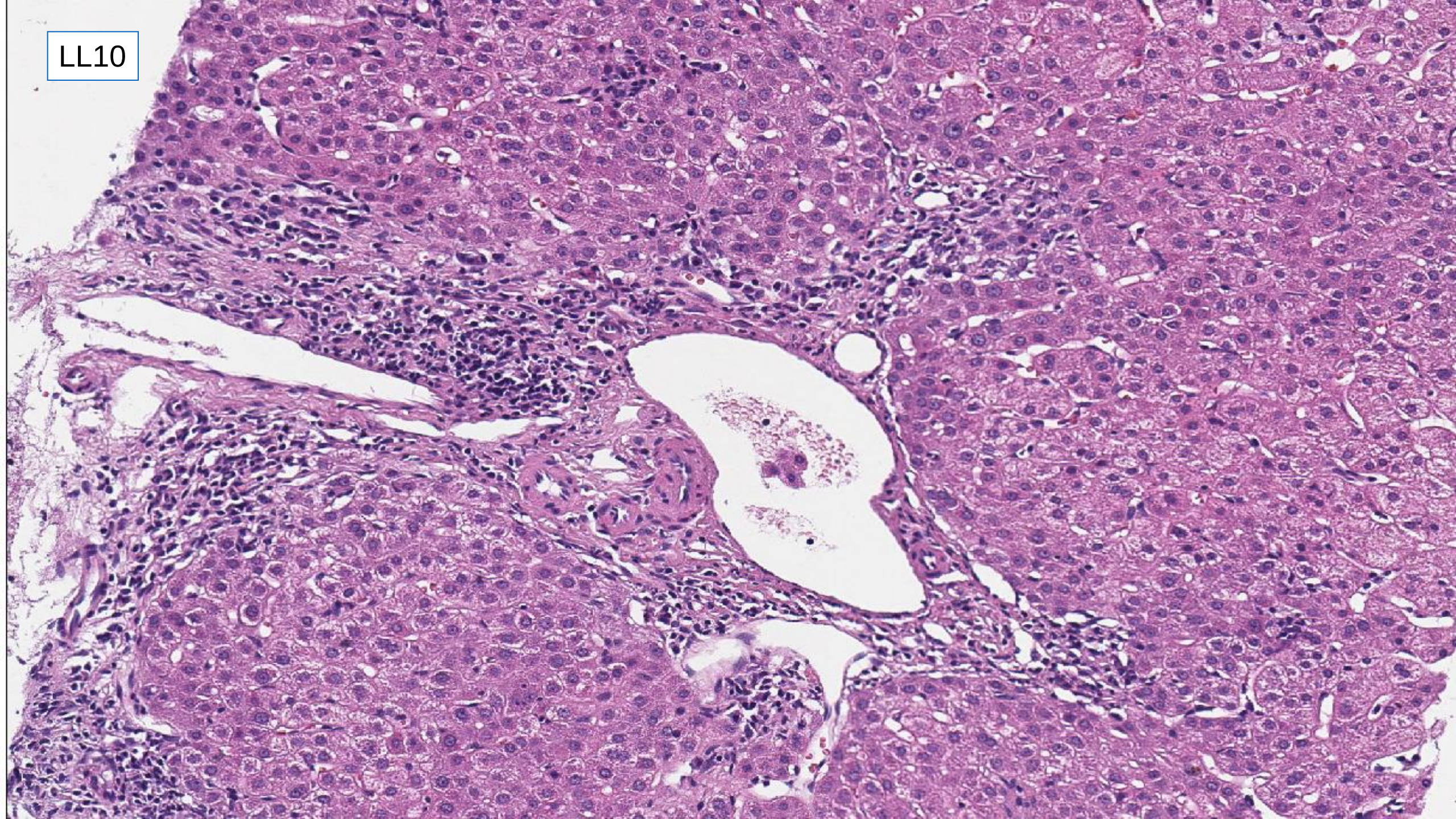
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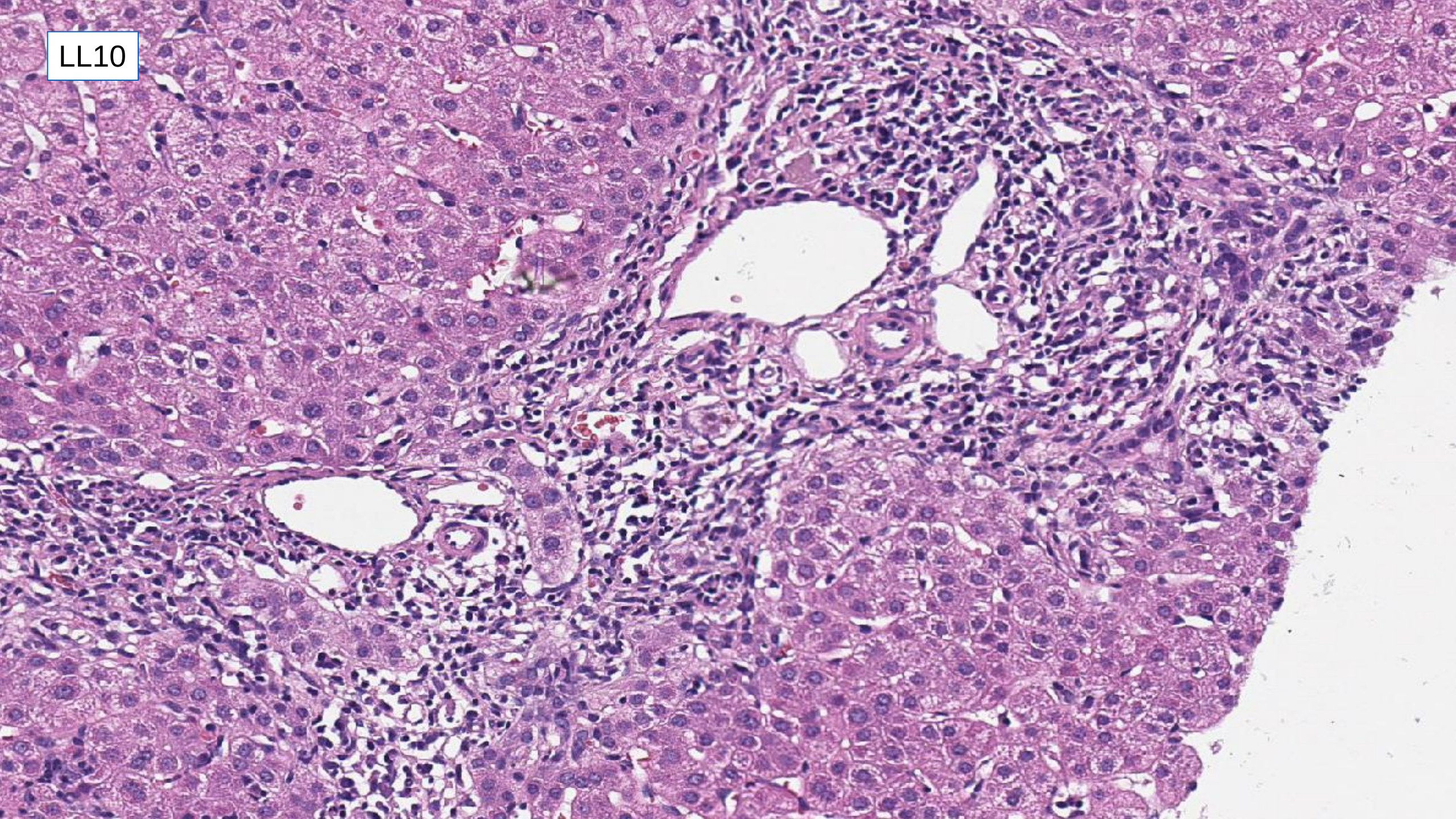
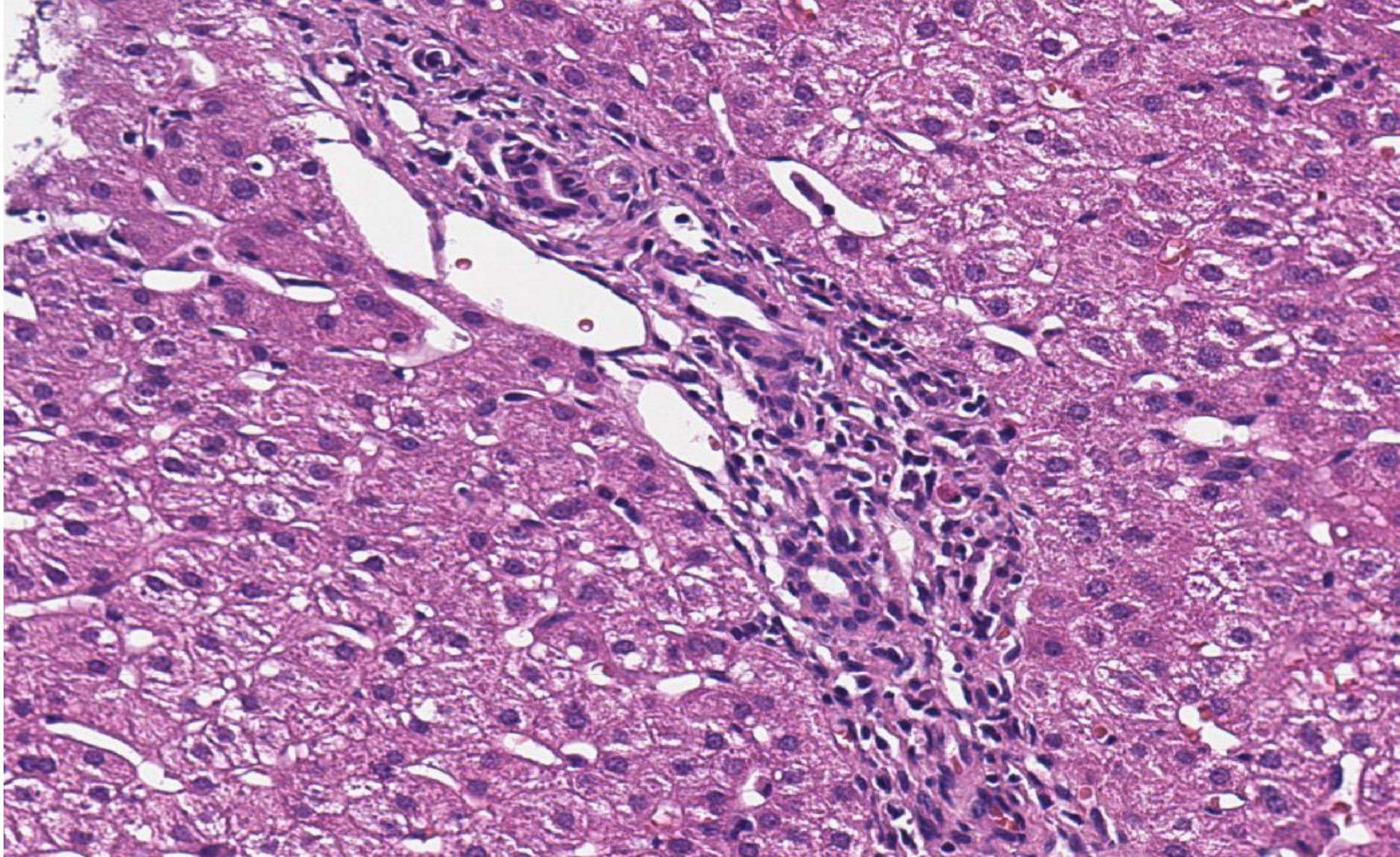
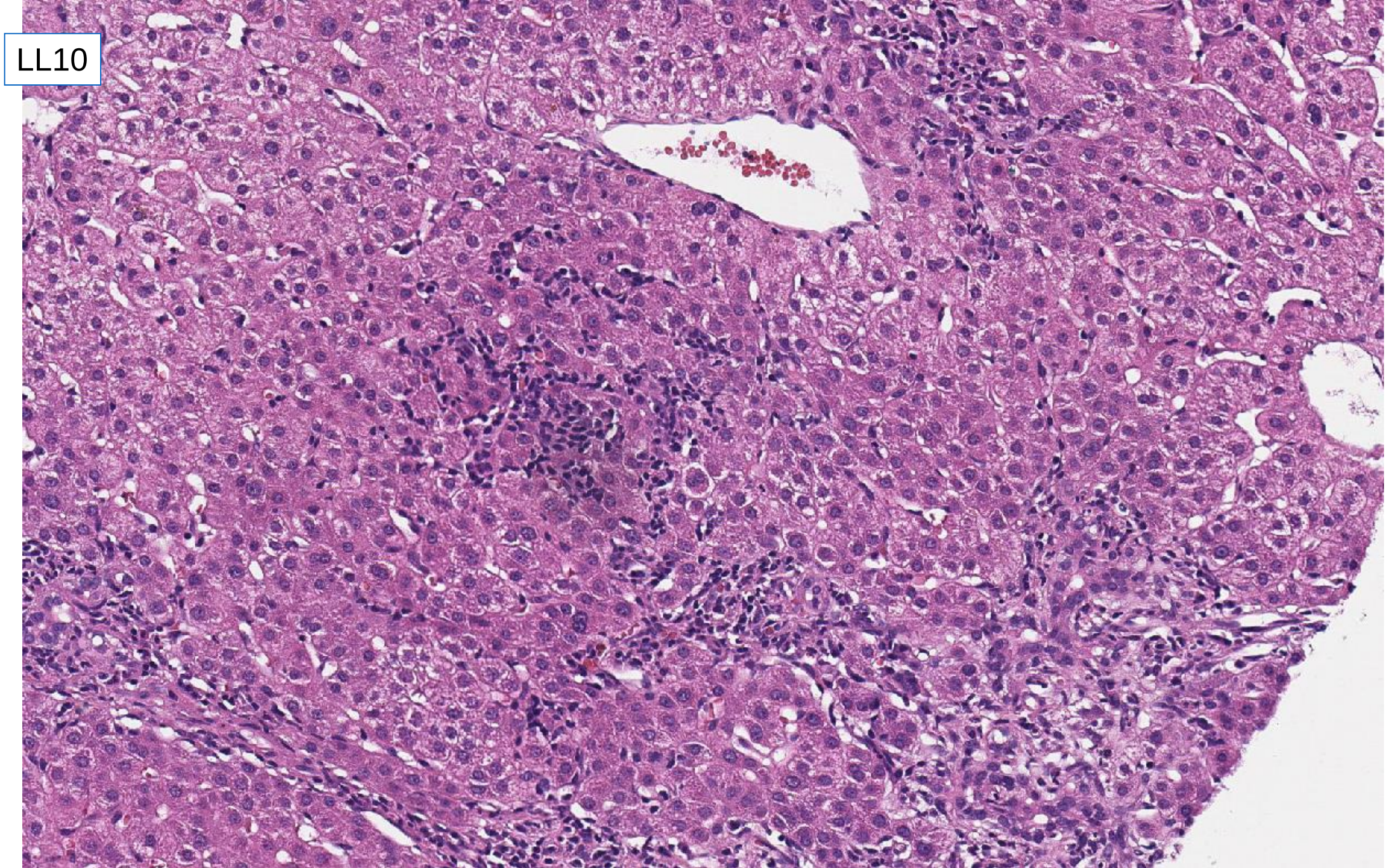

LL10

LL10




LL10

LL10 Female 33 years

Raised IgG (27.6) and IgM (5.1) Positive AMA M2, LKM-1. persistently abnormal LFTs, USS splenomegaly ?AIH/PBC overlap.

morphology	
some form of hepatitis	almost all
ductopenic	64
fibrosis	
none	4
fibrosis	7
bridging	20
developing cirrhosis	1
aetiology	
c/w overlap PBC/AIH	48
PBC ? Overlap - needs clinicopath correlation	16
PBC	8
chronic biliary - PBC or PSC needs imaging	1
AIH ? With PBC overlap	2
.'favour overlap' but doesn't say what	1

comments:	
needs orcein	23
needs fibrosis stains	22
needs CK7	13
IgG4	1

Scoring: for full marks needs to include PBC as definite component.

Can’t score stage since there were no connective tissue stains.

Lose 5 marks for PSC in differential, and 5 marks if AIH is the main diagnosis, with possible PBC overlap.

Case LL 11

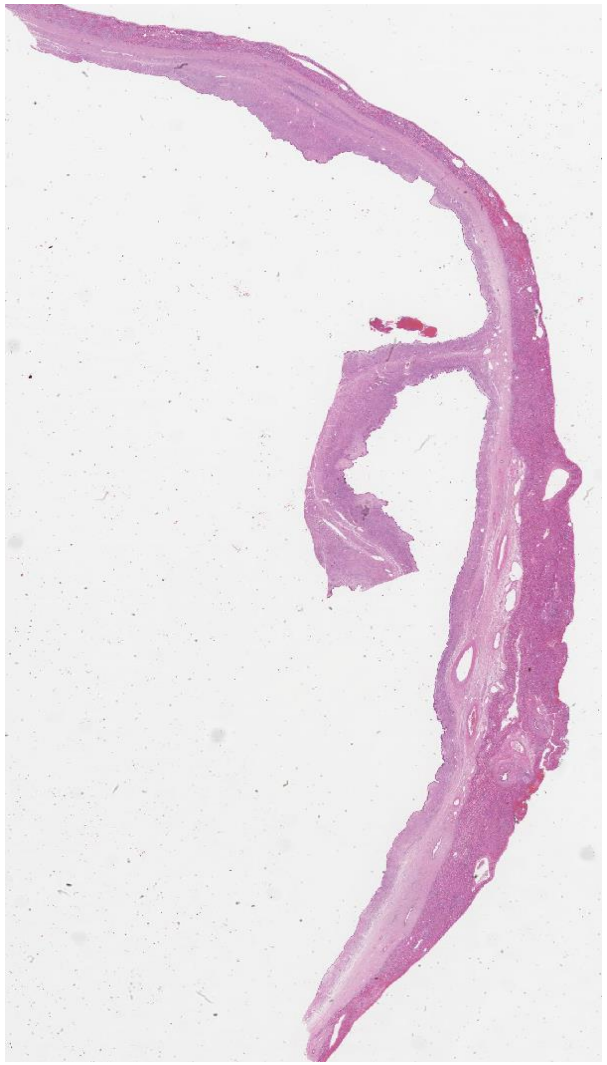
Female 24 years

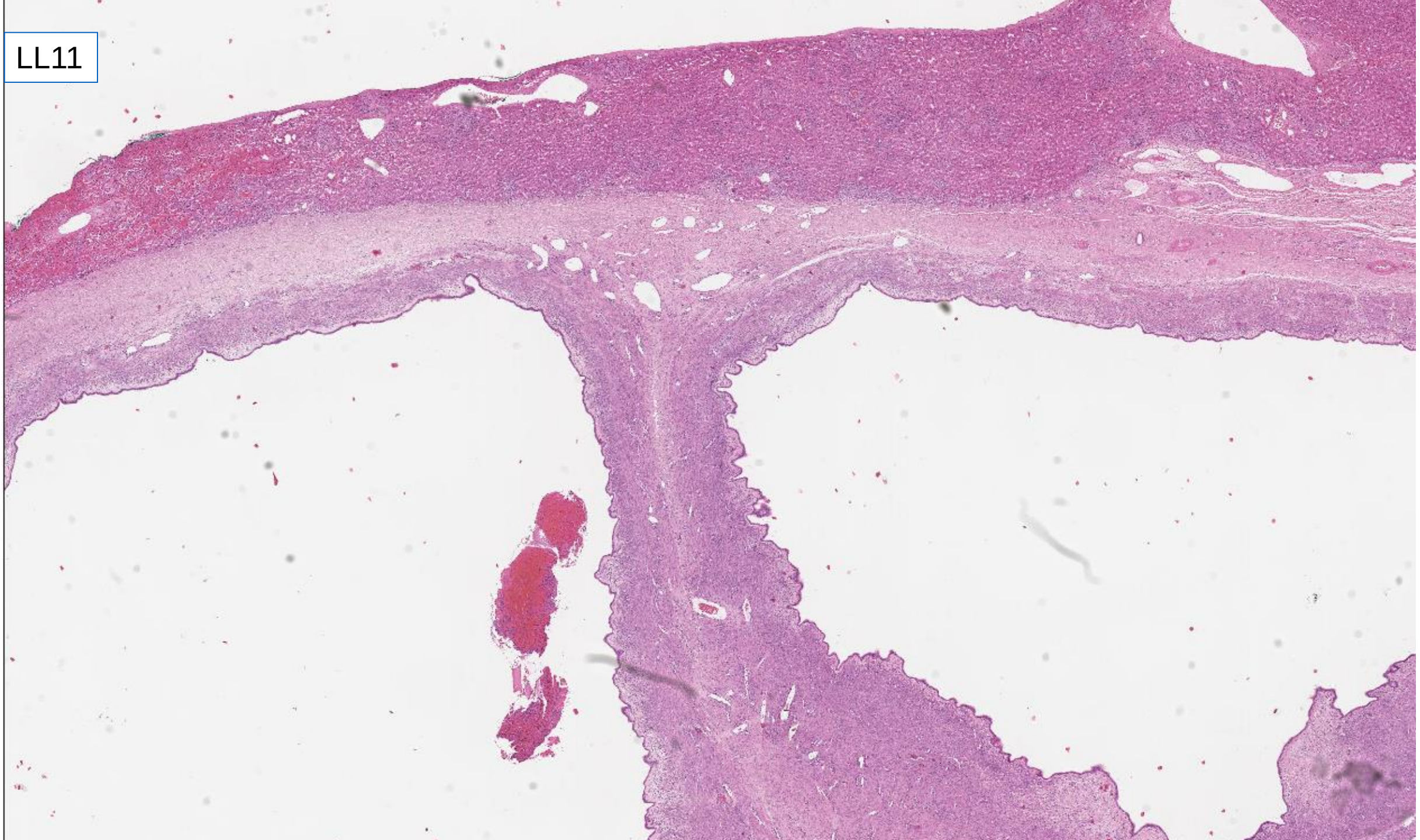
Suspicious liver cyst. No history of cholecystitis.

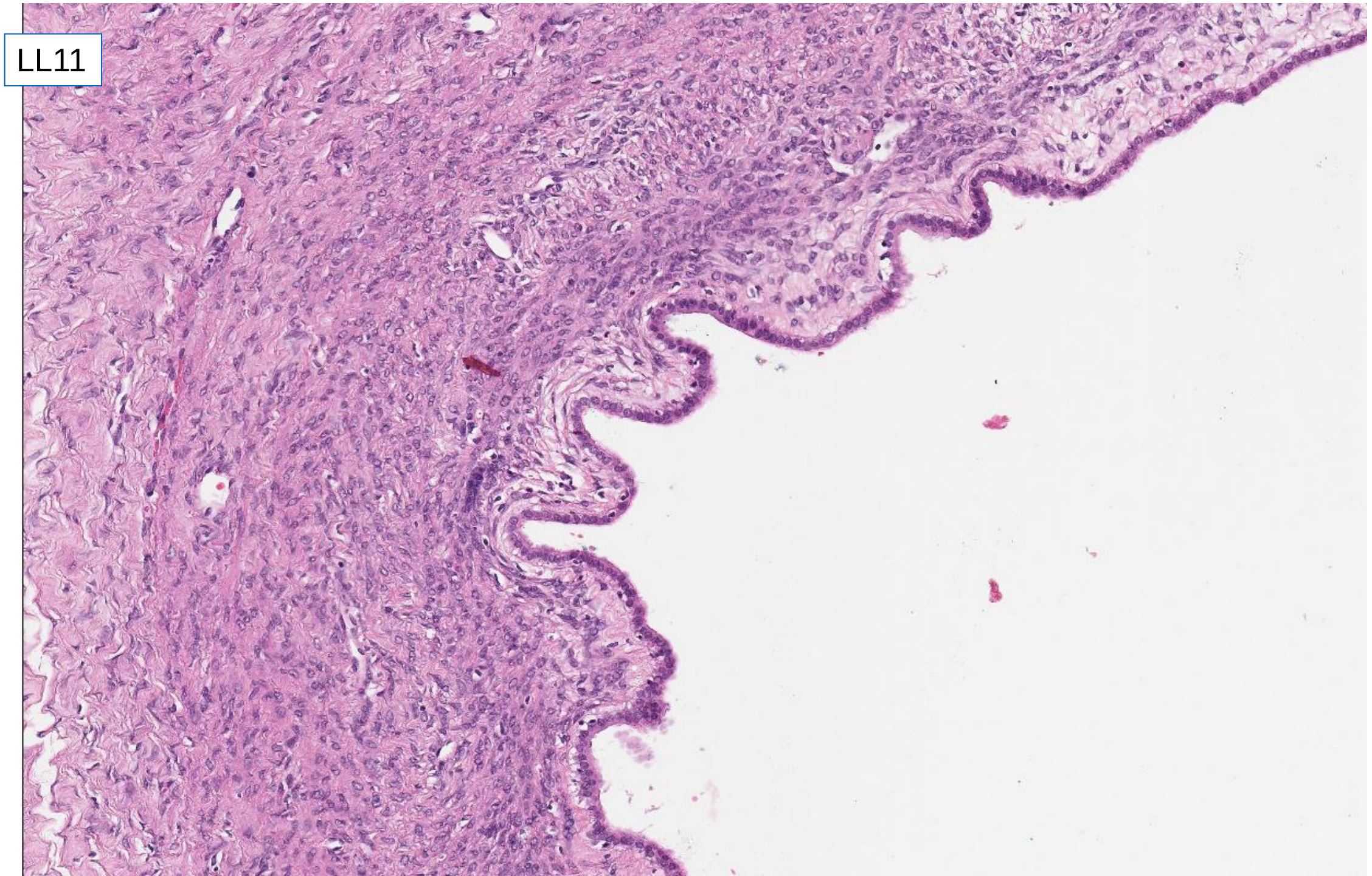
Specimen: Liver Cyst.

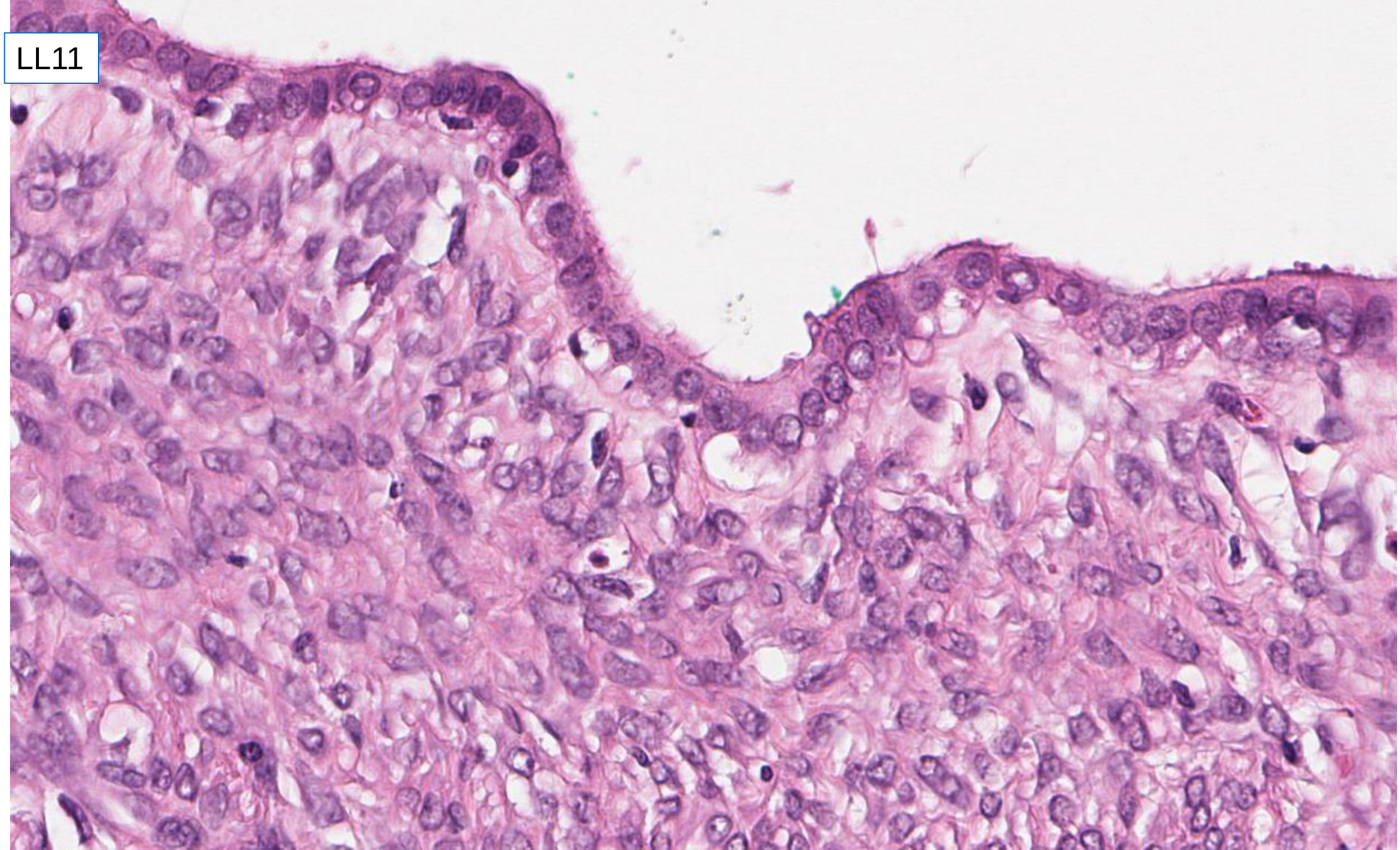
Macroscopic description:
Cystic structure measuring 84x55x41 mm with a smooth external surface. It weighs 112 grams.

It is a multilocular cyst with thin simple septations. No papillae identified. Cyst fluid was clear.




LL11


LL11


LL11

LL 11 Female 24 years

Suspicious liver cyst.

multilocular cyst with thin simple septations. No papillae identified. Cyst fluid was clear.

diagnosis:	
mucinous cystic neoplasm (only terminology)	27
biliary cystadenoma with stroma	31
MCN (cystadenoma)	6
biliary cystadenoma (MCN)	5
biliary cystadenoma - stroma not included	6
biliary mucinous neoplasm	1
benign serous cystadenoma	1
ciliated foregut cyst	1
benign biliary cyst	1
comments;	
immunohistochemistry - e.g. ER, PR, inhibin	5
multiple sampling necessary	4

Scoring: for full marks – either terminology for MCN and /or hepatobiliary cystadenoma.

The terminology being used is gradually changing to mucinous cystic neoplasm, in line with the pancreatic terminology and that used in the 2010 WHO book.

No marks for other types of cyst.

Case LL 12

Female 43 years

Completion hepatectomy colorectal liver mets.

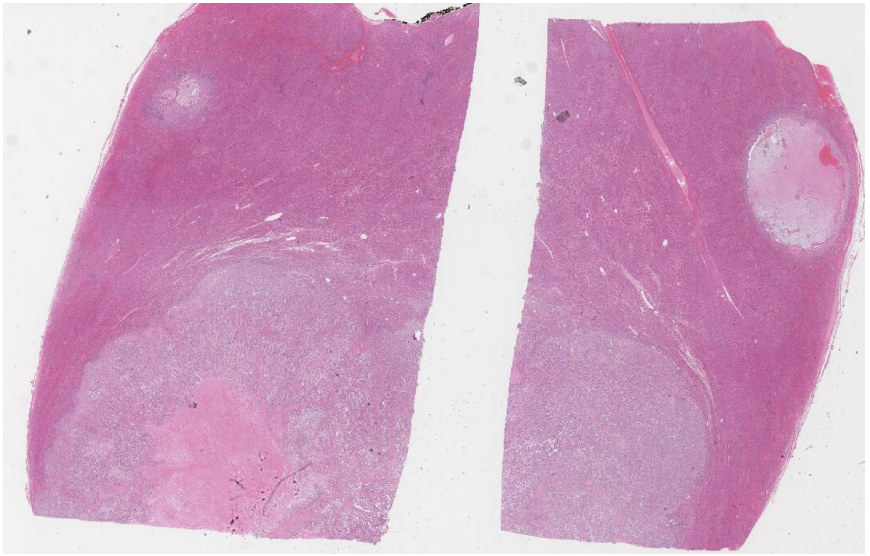
Specimen: Right Hepatectomy.

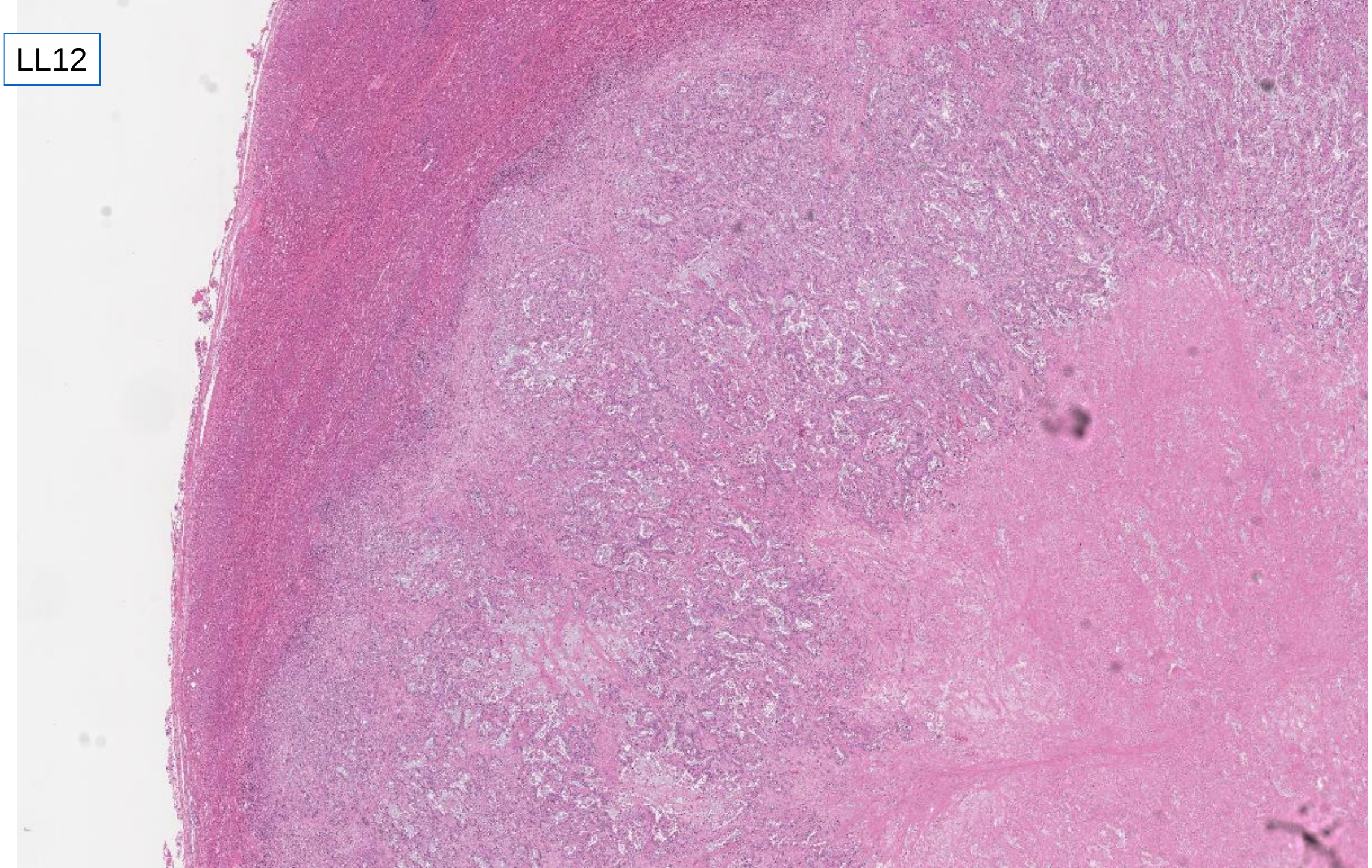
Macroscopic description:

Liver 17.5x12x7cm weighing 633g.

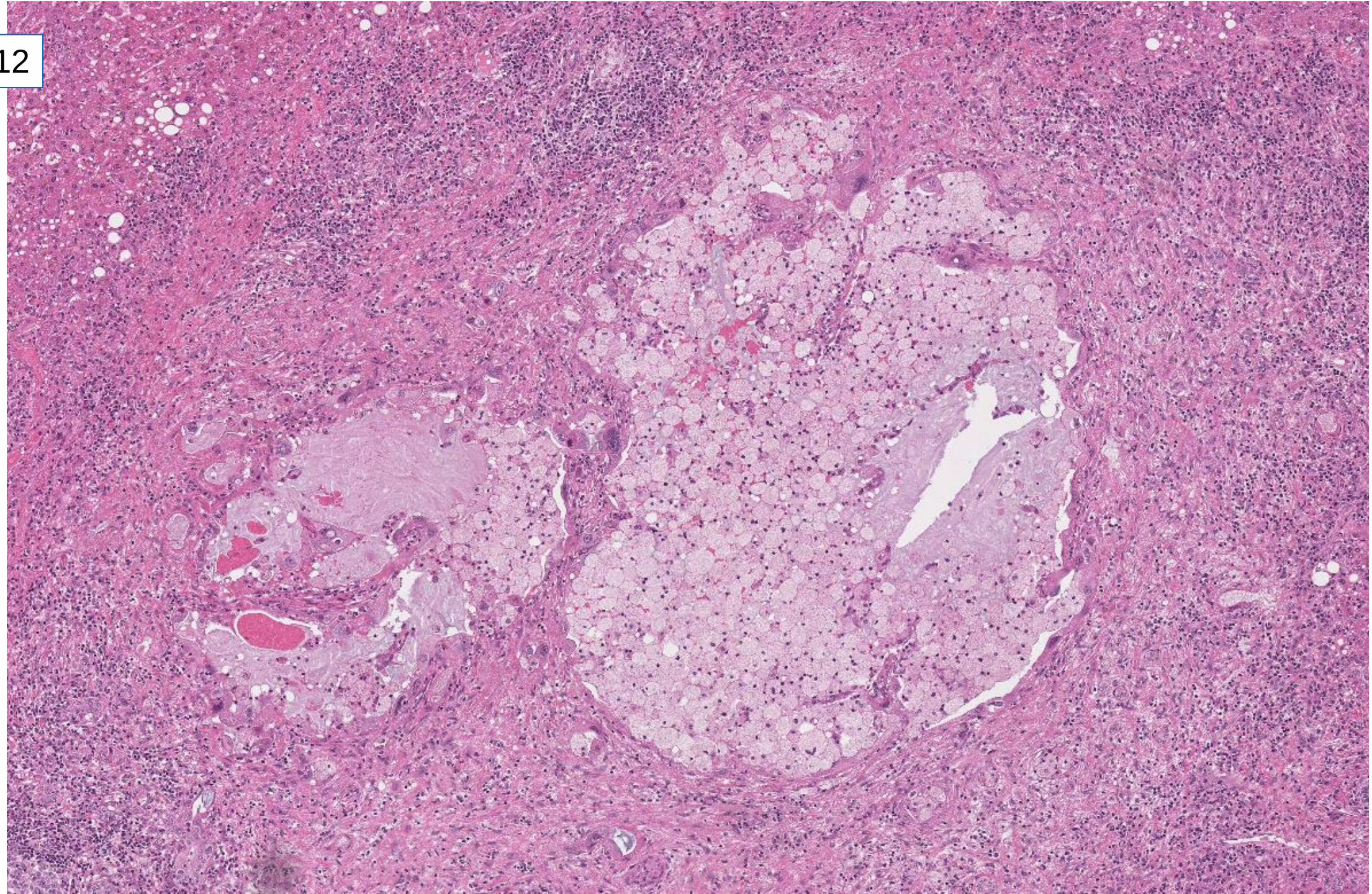
On slicing there is a nodular tumour measuring 8.3x8.3x7. tumour shows evidence of focal necrosis and possible embolisation coil material within some nearby vessels.

Background liver appears finely nodular.

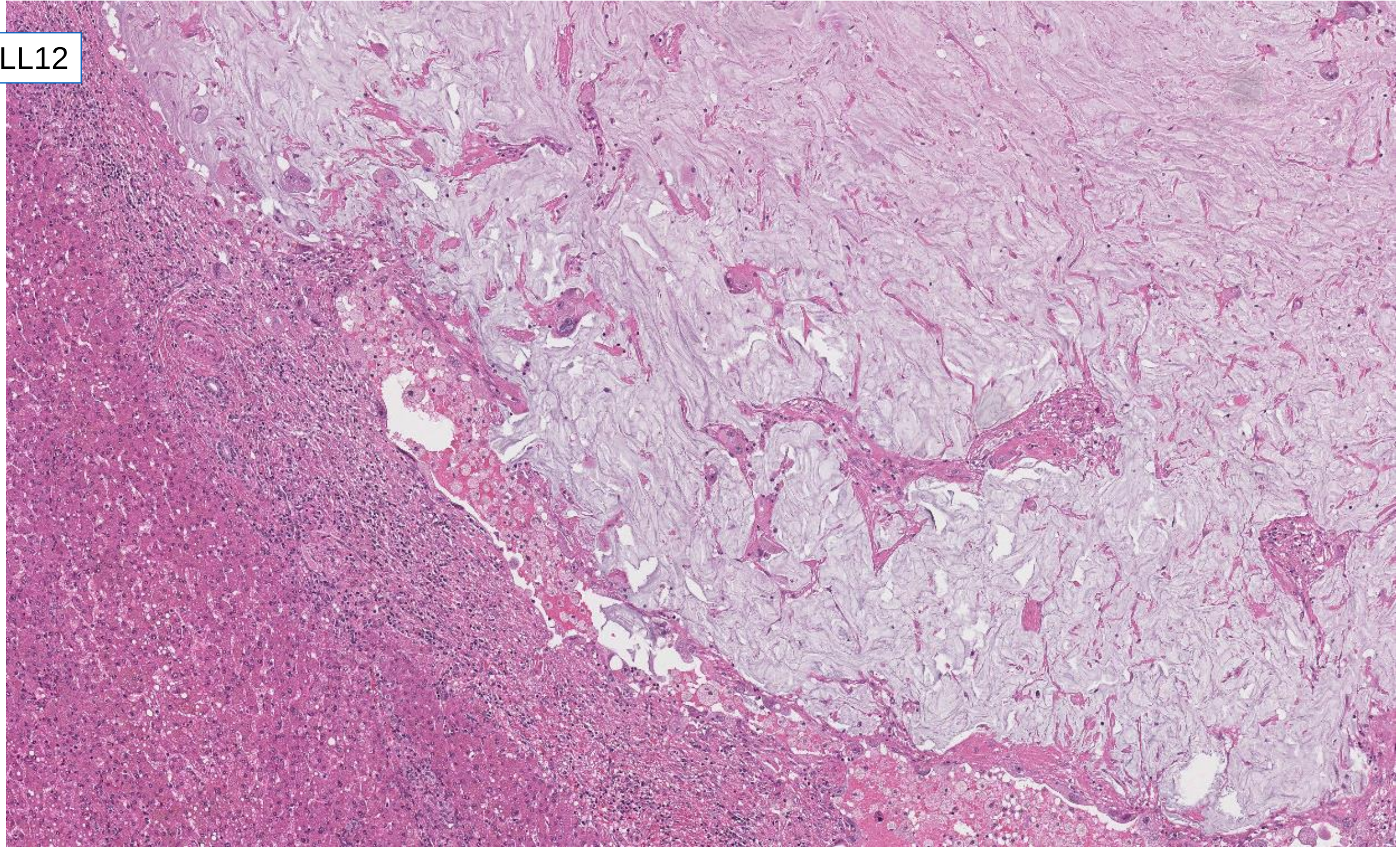



LL12

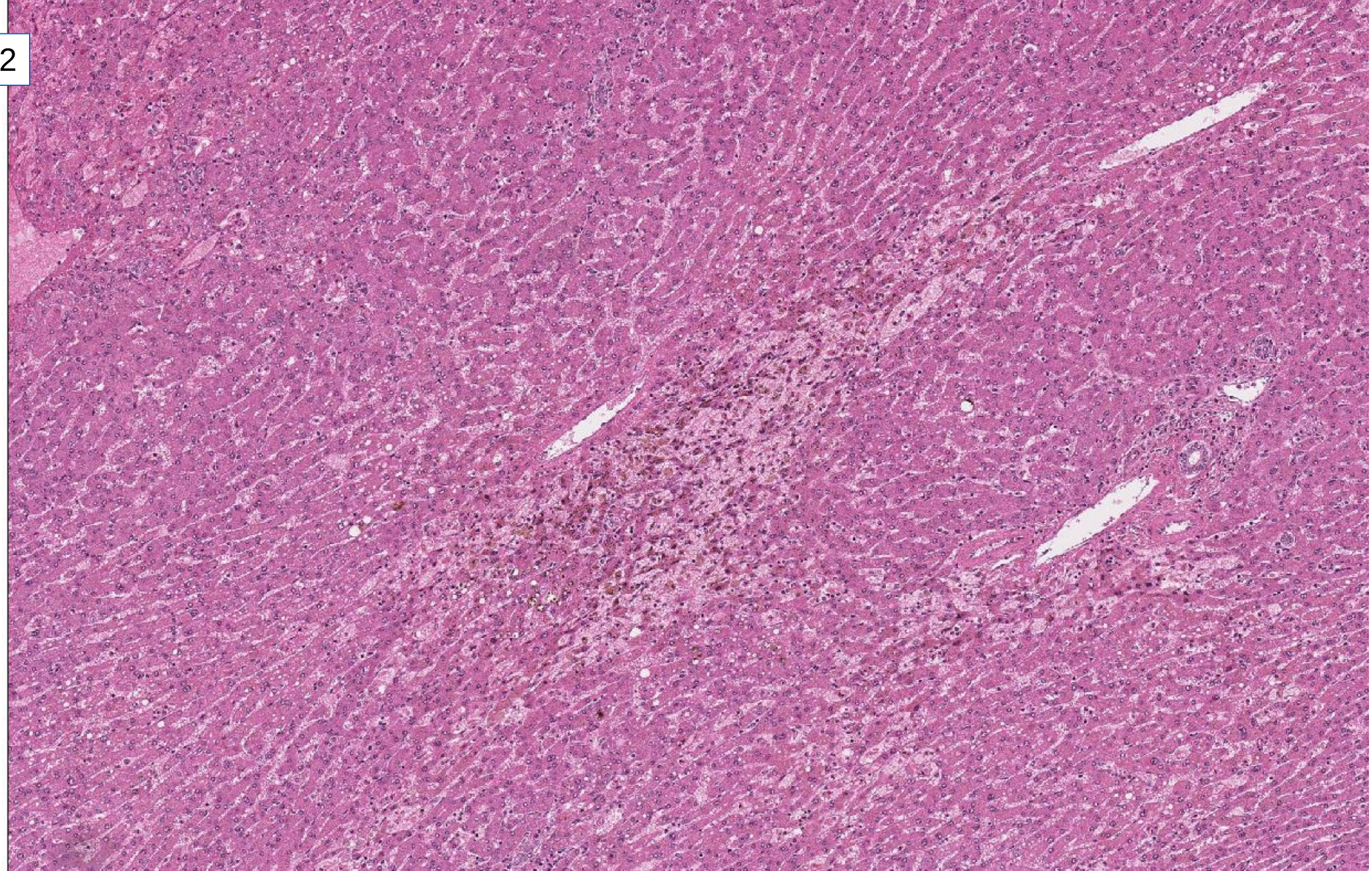
LL12

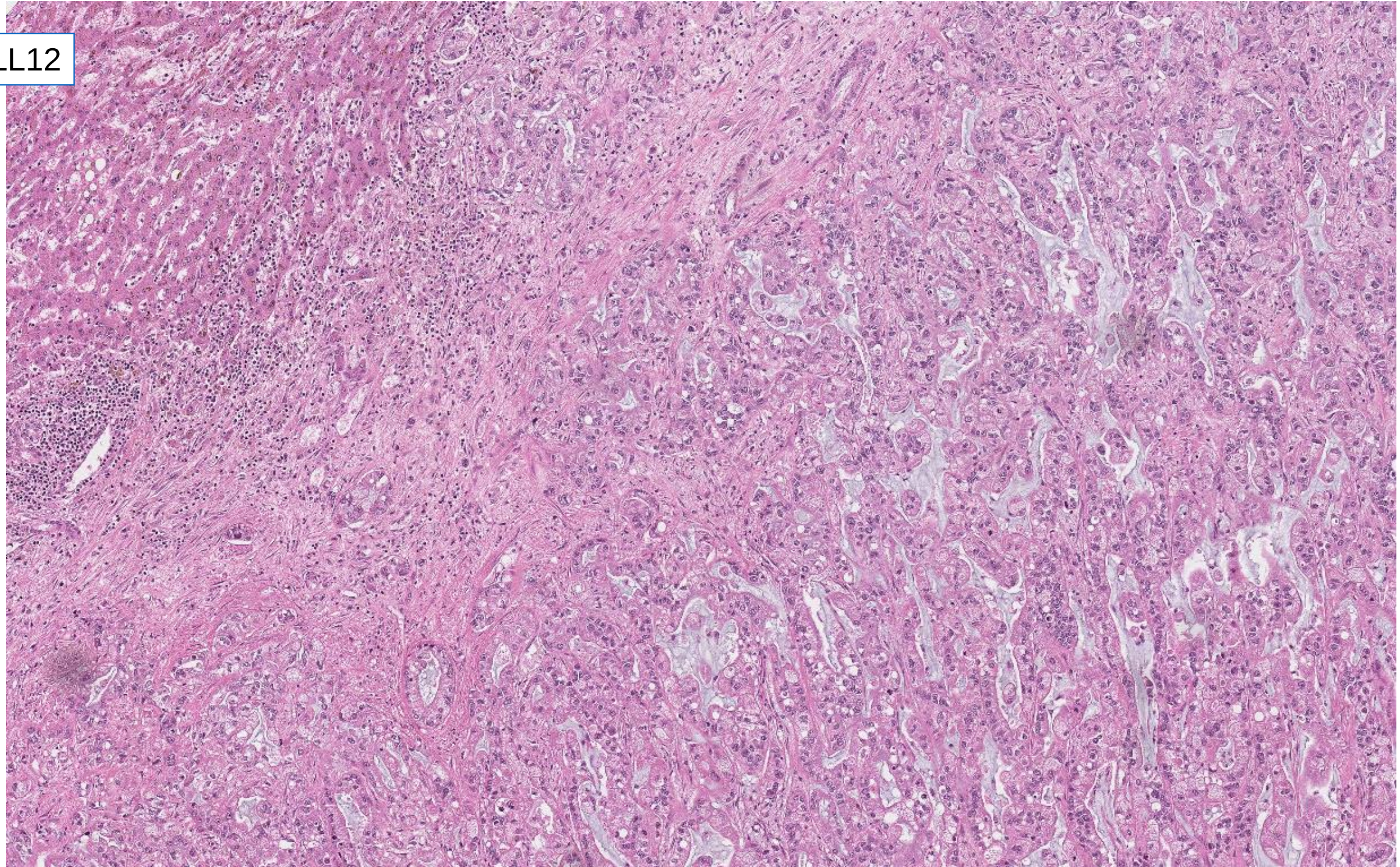


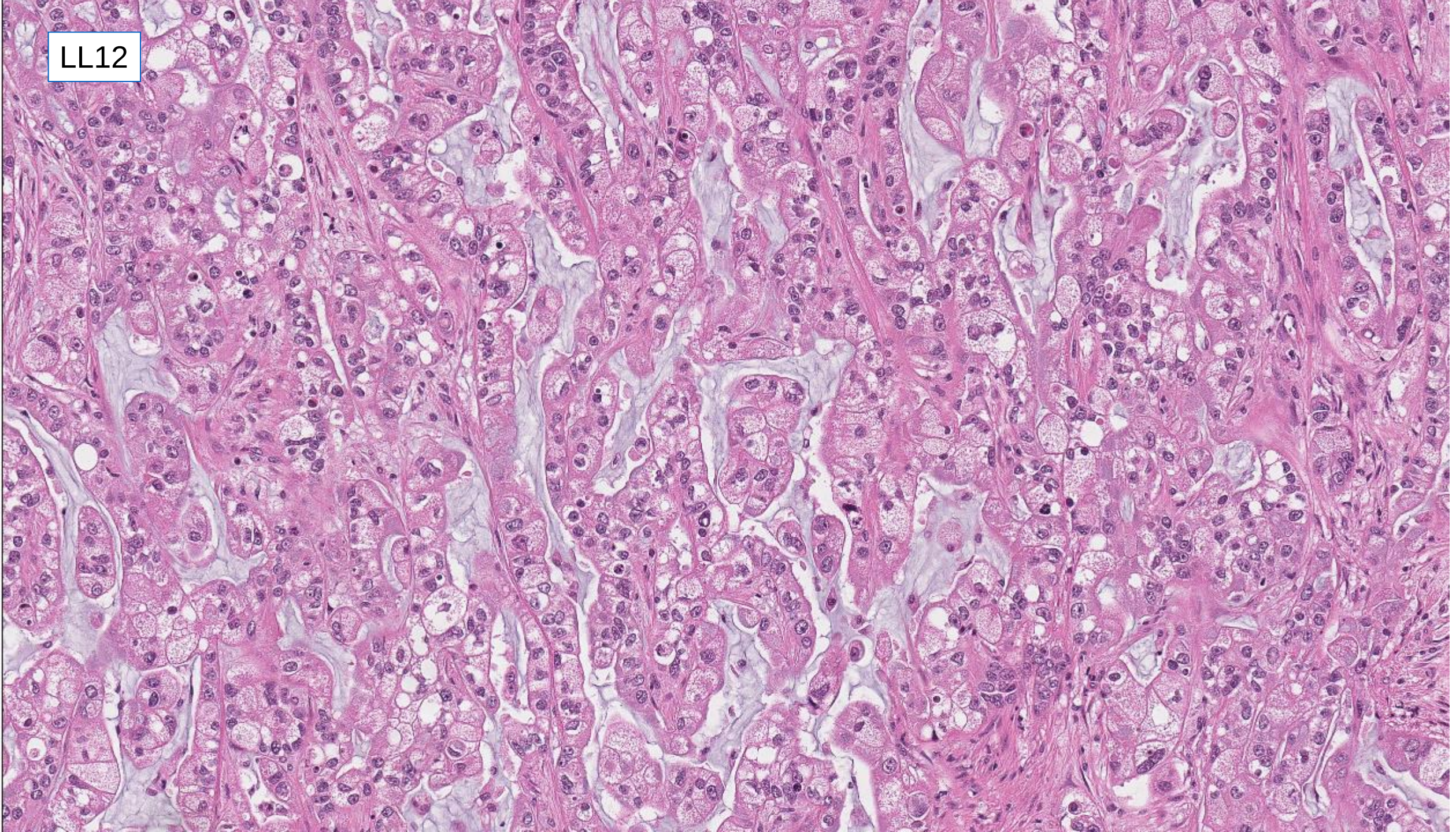
LL12



LL12




LL12


LL12

LL 12 Female 43 years

Completion hepatectomy colorectal liver mets.

diagnosis:	
metastatic colorectal cancer (CRC)	23
metastatic CRC, do immunos to confirm	11
not typical of metastatic CRC, needs immunos	34
metastatic adenocarcinoma, no comment on origin	8
not typical of metastatic CRC, immunos not mentioned	1
fibrolamellar HCC	1
? Renal cell carcinoma for immunos	1
degenerate tumour - compare with original	1
background	
chemotherapy changes	11
compressive effect of lesion	7
sinusoidal dilatation	5
steatosis	5
nodular regenerative hyperplasia	6
background normal/not cirrhotic	6
no comment on background liver	33
many comment of treatment effect on tumour - not listed	

Scoring: for full marks, any that include metastatic colorectal carcinoma.

Lose 5 marks for metastatic adenocarcinoma with no comment on the origin

score no marks for responses that are not adenocarcinoma.

Further comments on scoring:

- The liver EQA uses free text answers, in two sections – morphological description and clinicopathological comment.
- An example of the spreadsheet of responses is in the next slide
- Scoring is subjective
  - – initial collation stage, into main categories, by organiser
  - - organiser also proposes scoring, based on minimum items that need to be included, and which achieve a consensus of >80%
- All participants invited to review suggestions for scoring before the meeting, and to send in comments using the Surveymonkey link.
- Responses shown in green had specific questions about how they should be scored.
- This feeds into discussion at open meeting, where the scoring criteria are finalised.

	A	B	C	D
1	413	2	Appearance consistent with hepatocellular carcinoma but additional immunostaining is required (and AFP levels in blood would be helpful).	Partly trabecular tumour composed of hepatoid cells. No bile seen. Non-neoplastic liver looks partly nodular. Loss of reticulin in tumour. Canalicular pattern not evident in tumour with CD10. Additional immunostaining for hepatocellular differentiation e.g. Hep Par 1, pCEA is needed. The proximity of tumour prevents assessment of the general
2	413	3	Consistent with moderately differentiated hepatocellular carcinoma but confirm by ICC, background non-cirrhotic with space occupying effect	4 cores, two with solid tumour: broad trabeculae of large cells covered by endothelium, mitoses, some inclusions, no definite bile, infiltative into liver Background: non-cirrhotic, focal necrosis, significant sinusoidal dilatation and portal tract expansion with inflammation Morphological appearances consistent with moderately differentiated hepatocellular carcinoma but confirm with HepPar-1 or Arginase-1 as non-cirrhotic, no definite bile production and CD10 not showing canalculae, (exclude renal and adrenal carcinoma); background in keeping with effects of adjacent space occupying pathology and outflow obstruction without cirrhosis
3	413	8	HCC, well differentiated. Background probably not cirrhotic, but needs biopsy elsewhere to evaluate chronic liver disease if important for treatment.	well differentiated hepatocellular carcinoma. Background peri-tumoural effects, but doesn't look firbrotic/cirrhotic. May be some fibrosis. CD10 -ve for canalicular pattern in tumour, reticulin deficient.
4	413	10	Mod well differentiated HCC arising in a non-cirrhotic liver.	4 cores. One showing liver with dilated sinusoids with portal fibrosis and mononuclear inflammation. Another shows similar but more severe features with focal hepatocyte necrosis and possible bridging fibrosis.. The third core is exclusively moderately well differentiated HCC - dilated hepaocytes with loss of lobular structure some cellular atypia, loss of reticulin and CD10 canlicular staining. The fourth core has a small focus of HCC at one end with the features of the rest of the biopsy in the remainder. No vascular invasion is seen.
5	413	11	HCC, arising in non-cirrhotic liver.	1. Lesional tissue has appearances of HCC, moderately differentiated, and shows loss of CD10 and reticulin. 2.Non-lesional tissue shows changes in keeping with reaction to a nearby mass lesion. Also focal necrosis ? significance. No obvious evidence of cirrhosis.
6	413	12	Hepatocellular carcinoma (well differentiated)	Lesion showing loss of reticulin composed of cells in a trabecular and acinar pattern with occasional pseudoglandular areas. CD 10 shows a canalicular pattern. The background liver shows fibrosis but not
7	413	15	Moderately differentiated HCC	Lesion composed of atypical hepatoid cells in thickened trabecula with reticulin loss. Canalicular CD10. Adjacent liver is uninflamed with likely bridging fibrosis, but this is close to tumour so may not be representative of liver away from the lesion.
8	413	16	Moderately differentiated hepatocellular carcinoma.	Cirrhotic liver infiltrated by tumour which is reticulin poor and forms thick trabeculae. There is moderate nuclear atypia. CD10 staining is negative.
9	413	21	moderately differentiated HCC	HCC loss of reticulin focal necrosis CD10 negative
10	413	22	Moderately differentiated HCC	Back ground liver shows large duct obstruction and infarction. Need retic
11	413	23	In keeping with clinical impression of HCC Negative canalicuar CD10 is a little unusual. I would check clinical history (any other malignancy?) and do pCEA, AFP and hep par 1 to check they are	Hepatocellular carcinoma Background liver is sparse but looks noncirrhotic Area of infarction/ necrosis also seen
12	413	24	HCC - (could do confirmatory HepPar 1 and polyclonal CEA staining)	Probable Hepatocellular carcinoma, moderately differentiated; background liver possible mild fibrosis, possible space-occupying lesion

Comments on pre-meeting comments on scoring using surveymonkey:

Questions about the process - 8 replies each time (but 5 pathologists did both)	
The members should be required to comment on the suggested scoring as part of their membership	3
I think that commenting on the suggested scoring was a useful and important thing for me to do	12
This is a good format to enable members comments to be made	13
There should be another CPD point for members who submit comments on the scoring	8
The scoring should be decided during the open meeting, no need to do this first	2
The scores can just be assigned by the organiser and presented during the open meeting without further discussion – focus discussion on the diagnostic points of the case	0
It is useful to also see the full set of responses in the excel spreadsheet	6
I didn't look at the full spreadsheet of responses – just the collation	8
I expect that I will do this again	14
I started but didn't manage to finish doing this	0
Scoring should be done in a different way, e.g. cases should be assigned to individual EQA members to be collated, not done by the organiser	1

The end.