



# Histological Injury Patterns in Children with Drug-induced Liver Injury

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for the DILIN Investigators

## BACKGROUND

- Pediatric drug-induced liver injury DILI is a rare cause of morbidity and mortality
- Liver biopsy can be a valuable part of causality and severity assessment
- The DILIN research database contains 2711 DILI cases, including 88 children, 22 pediatric biopsies

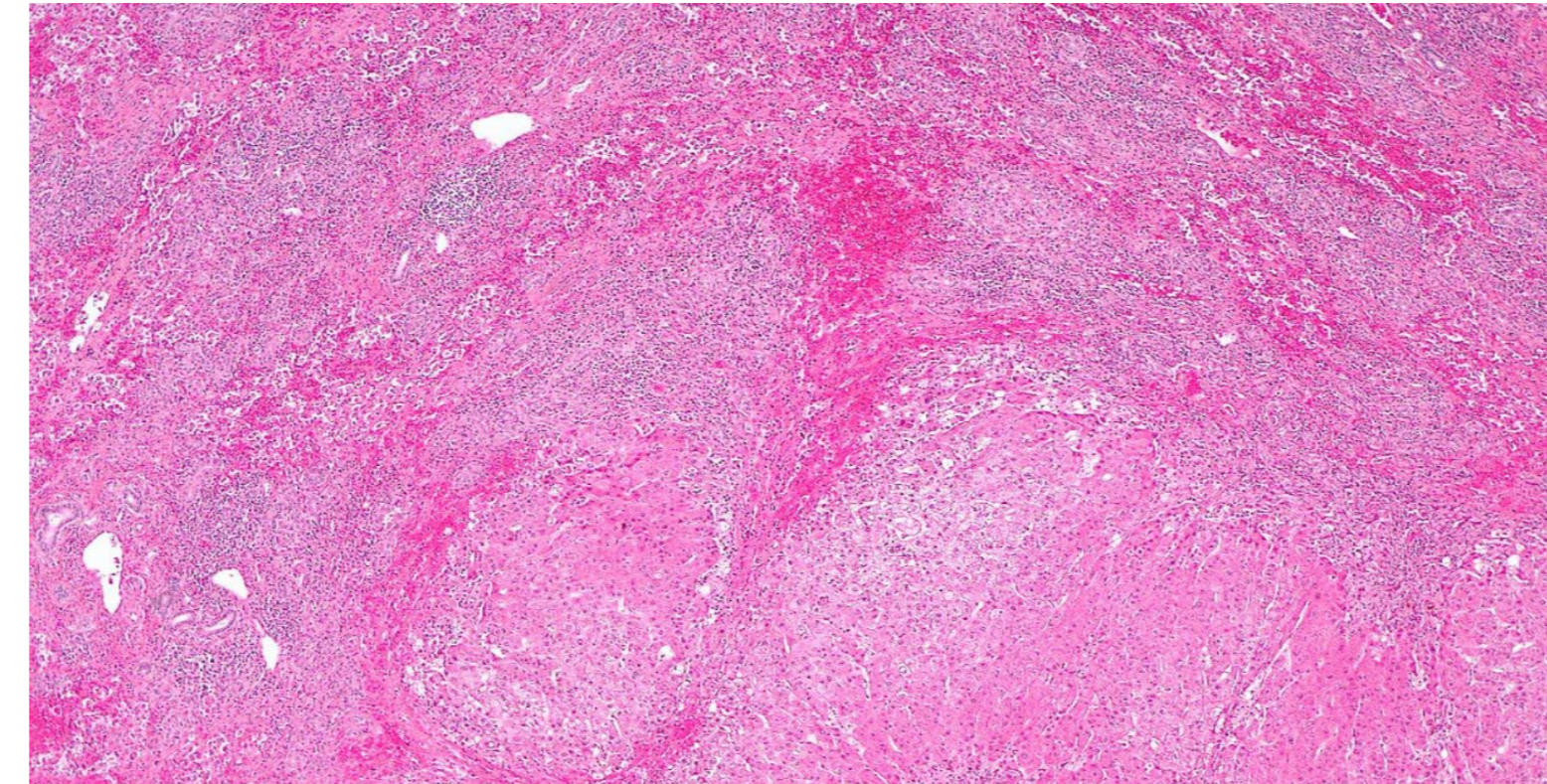
## CLINICAL CHARACTERISTICS

Mean age	13.8 (1.7-17.9) yrs
Female	73%
Underlying liver disease	0
Needle biopsy	21/22
Time DILI onset to biopsy	16 (13-40)d
Treated with steroids	32%
Biochemical pattern	
--Hepatocellular	15 (68%)
--Cholestatic	3 (14%)
--Mixed	4 (18%)
Severity	
--Mild	32%
--Moderate/moderate-hospitalized	41%
--Severe	23%
Chronic injury at 6 mo	5 (20%)

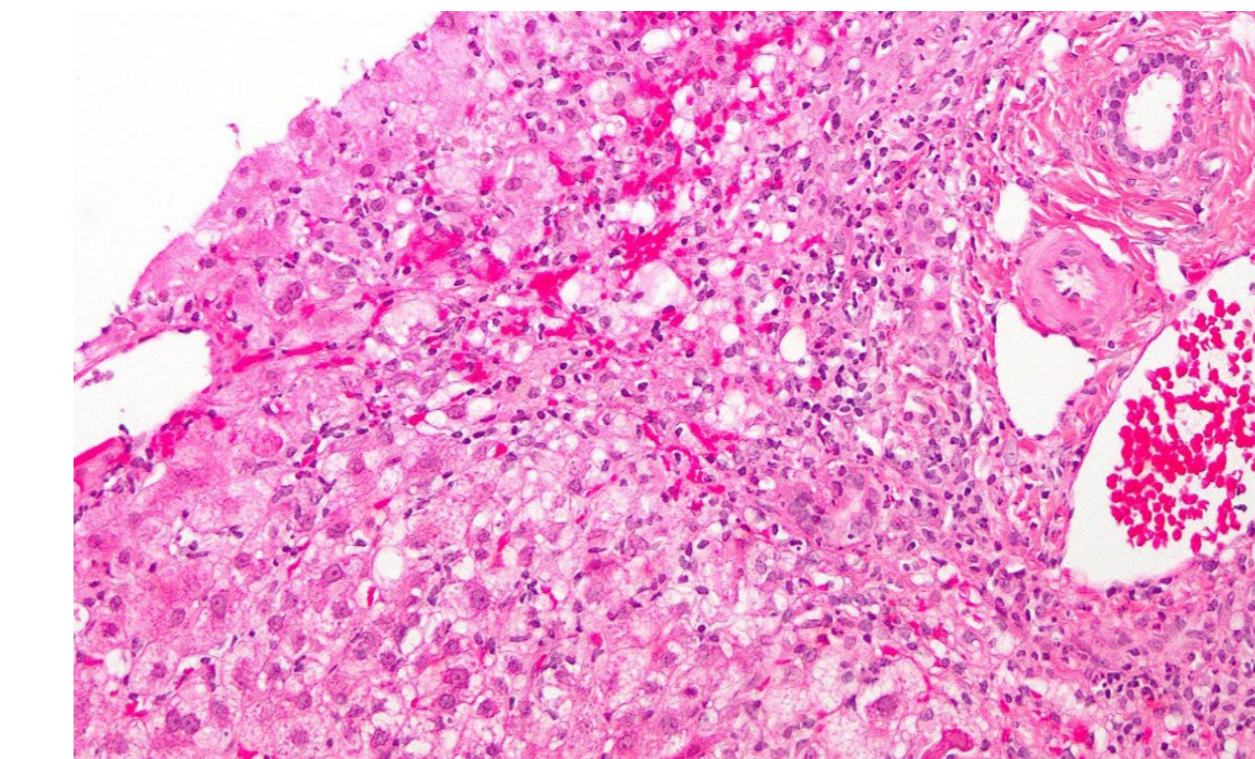
## IMPLICATED DRUGS

Minocycline	5
Azithromycin	3
Atomoxetine	3
Lamotrigine	2
Nicotine	1
Drospirenon/estradiol	1
Trikafta	1
Carbamazepine	1
Doxycycline	1
Infliximab	1
Amoxicillin	1
Augmentin	1
Isoniazid	1

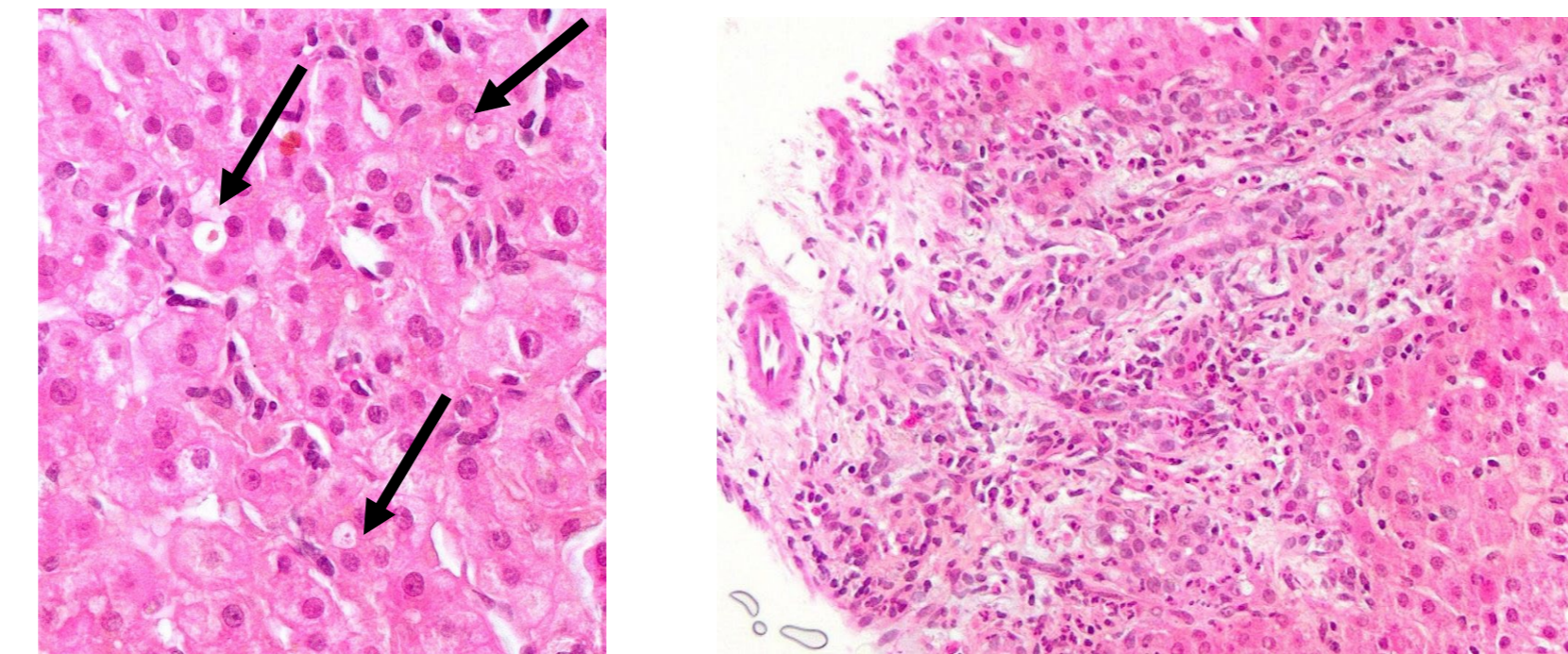
## SEVERE ADVANCED LIVER DISEASE: EXPLANT



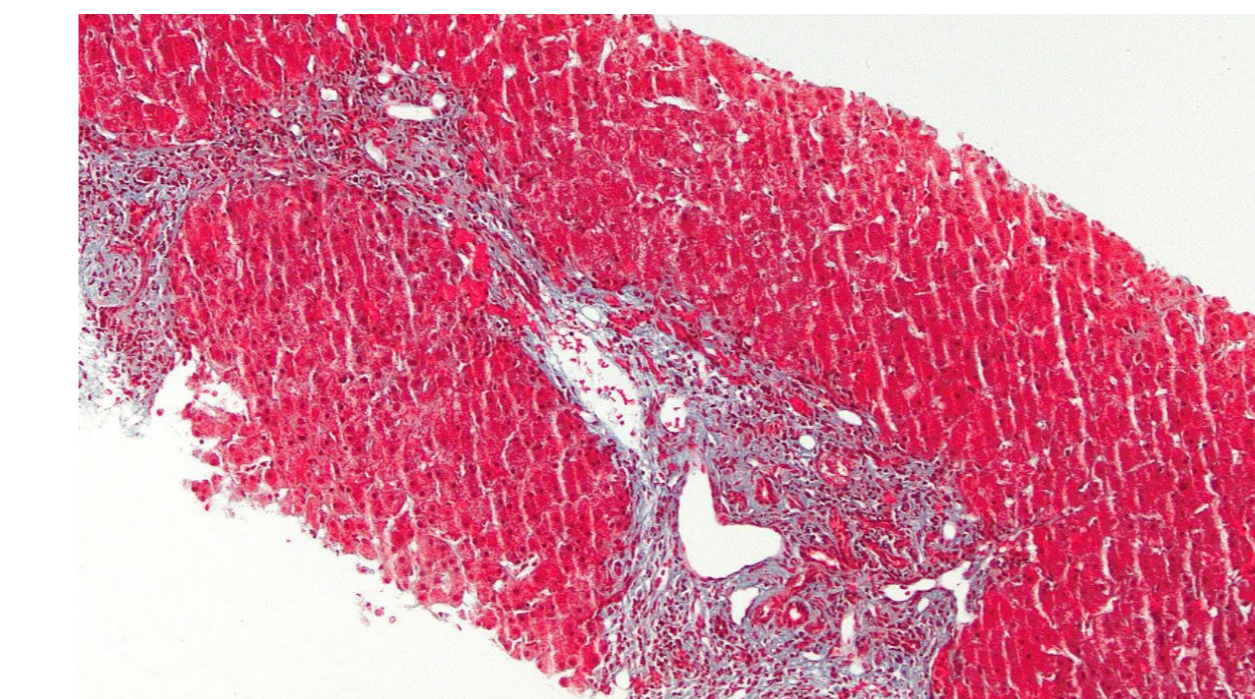
## HEPATOCELLULAR DILI



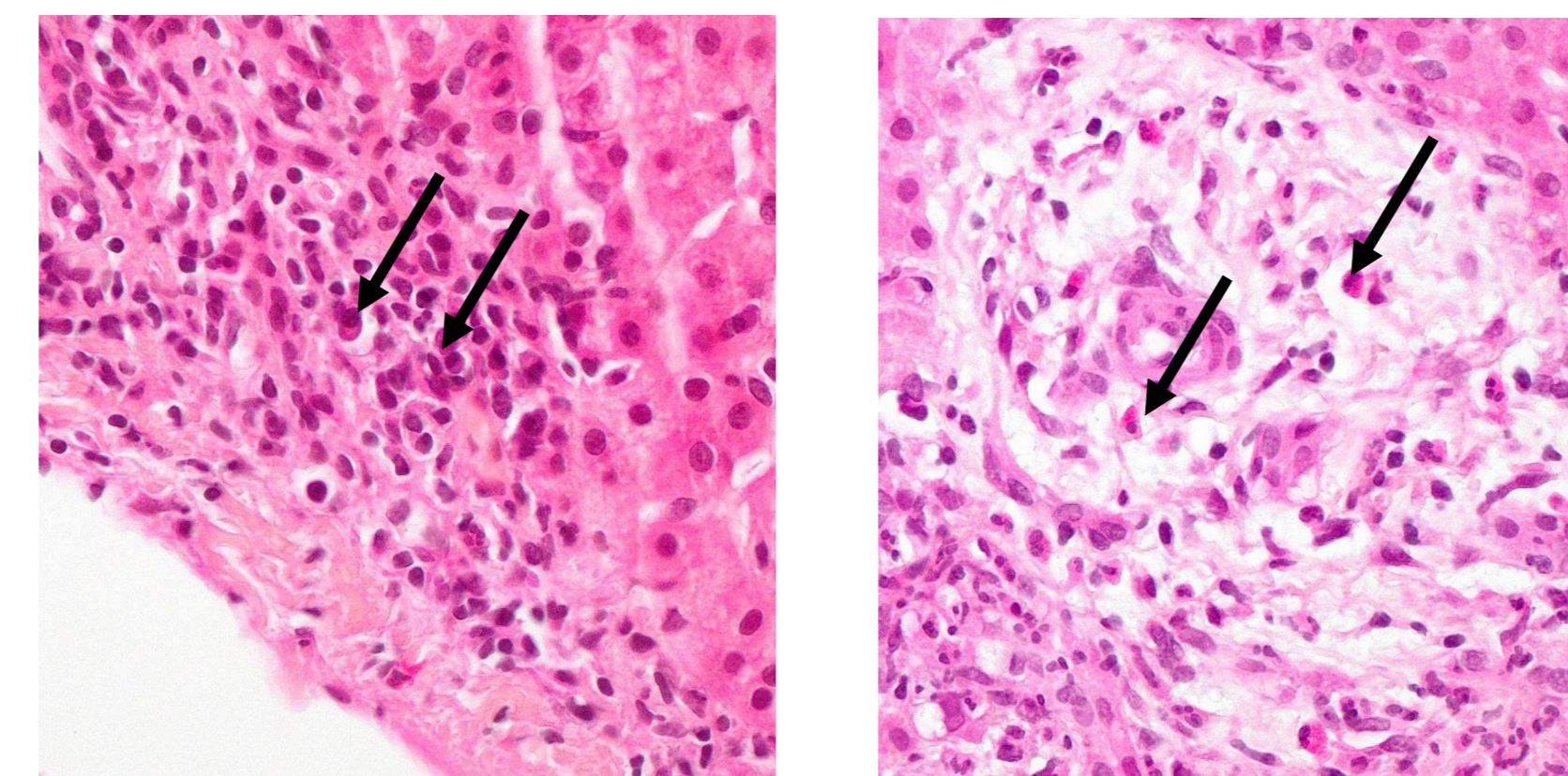
## CHOLESTATIC DILI



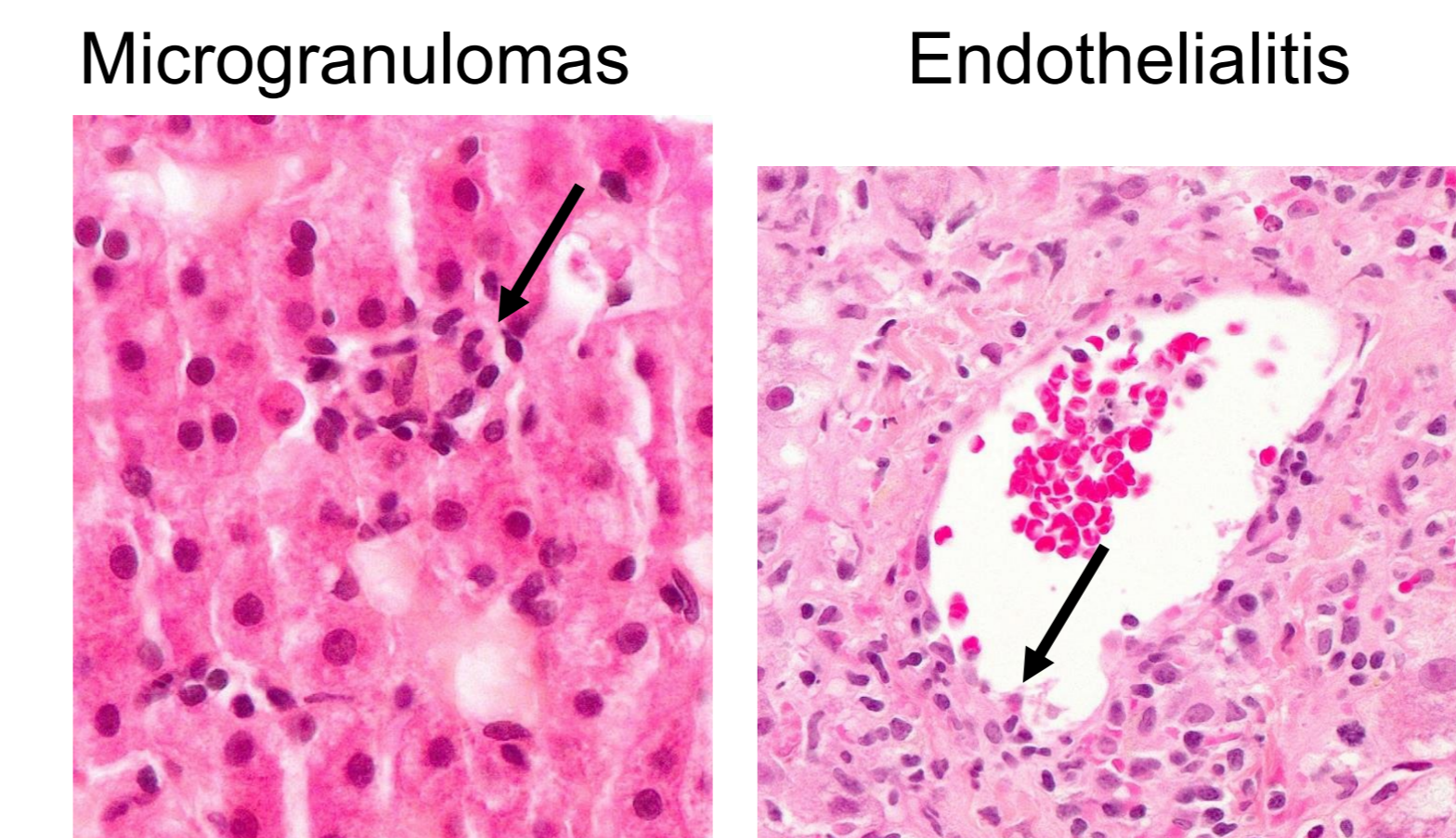
## BRIDGING FIBROSIS



## PLASMA CELLS, EOSINOPHILS IN BIOPSY



## OTHER HISTOLOGIC FINDINGS



## PATHOLOGY: PATTERN OF INJURY

Pathology pattern of injury	N
--Cholestatic hepatitis	6
--Acute (lobular) hepatitis	5
--Chronic (portal) hepatitis	5
--Acute (bland) cholestasis	3
--Minimal findings	2
--Bridging multiacinar necrosis/nodules	1 (explant)

## HISTOLOGY

Inflammatory activity min/mild/mod/severe	6/6/3/5
Bridging fibrosis	3
Increased eosinophils	9 (41%)
Increased plasma cells	7 (32%)
Microgranulomas	7 (32%)
Steatosis	6 (27%)
Endothelialitis (portal or central vein)	3
Bile duct loss	1

## CONCLUSIONS

- Pediatric DILI most commonly involves antibiotics or psychoactive drugs
- Children with DILI experienced similar range of pathology as seen in adults, with both hepatocellular and cholestatic liver injury represented.
- Eosinophilia was seen in less than half, and plasmacytosis in one third of biopsies.
- While most cases showed mild injury overall, a few showed severe inflammation, necrosis, or bridging fibrosis.

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