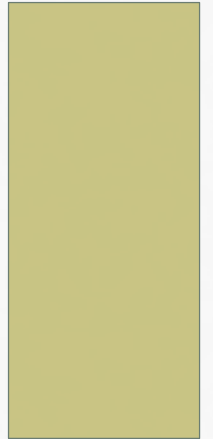
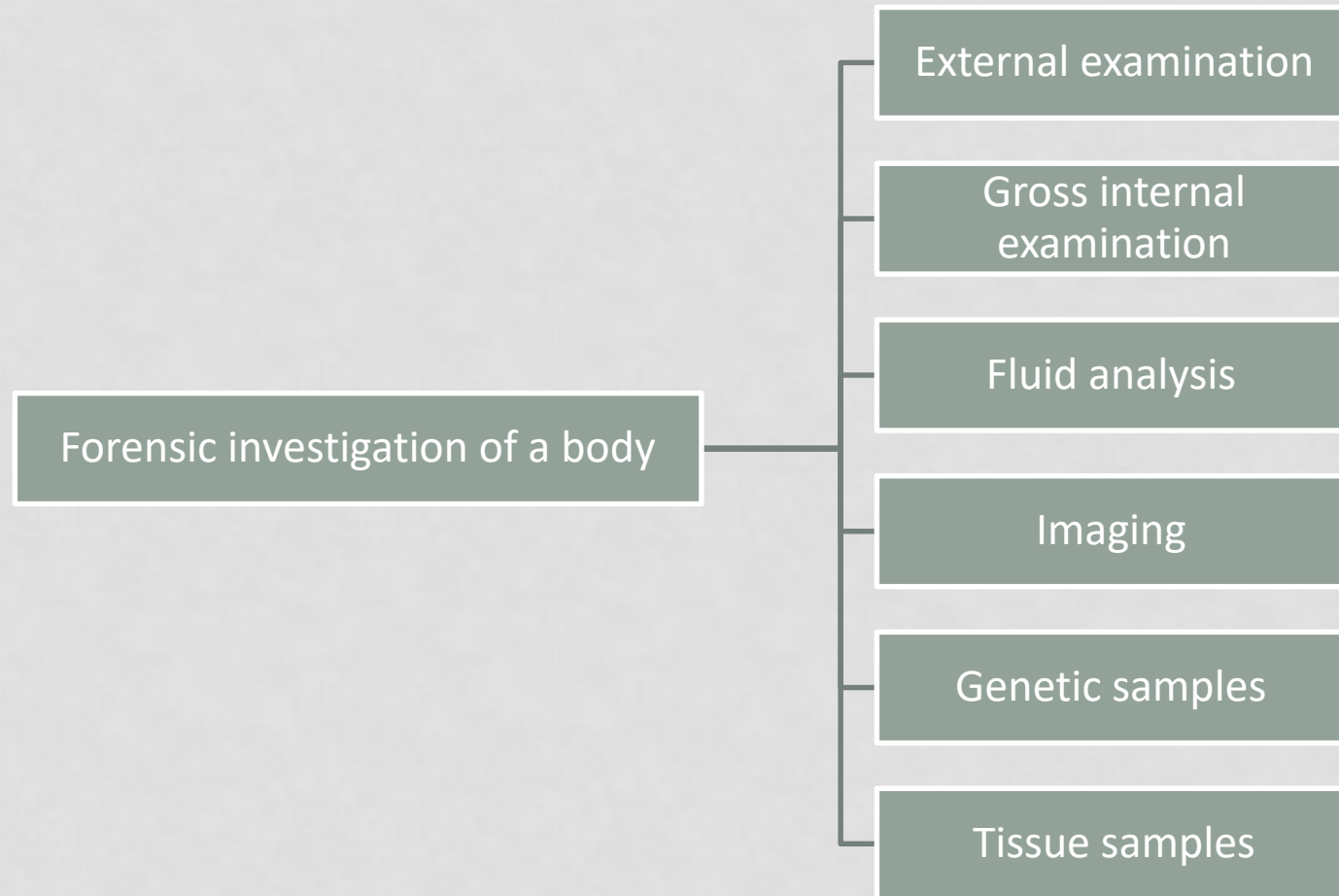


# **HISTOLOGY IN FORENSIC PRACTICE**

**MR FINLAY FINLAY**



# WHERE HISTOLOGY FITS IN



# OVERVIEW

This all feeds into the wider function of the forensic PM

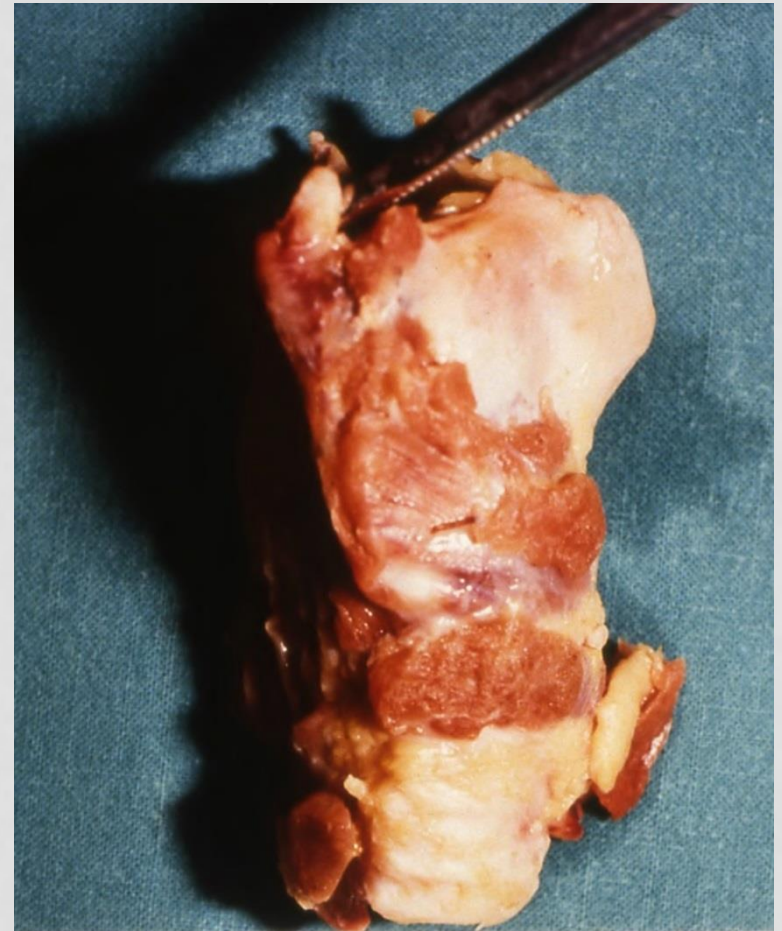
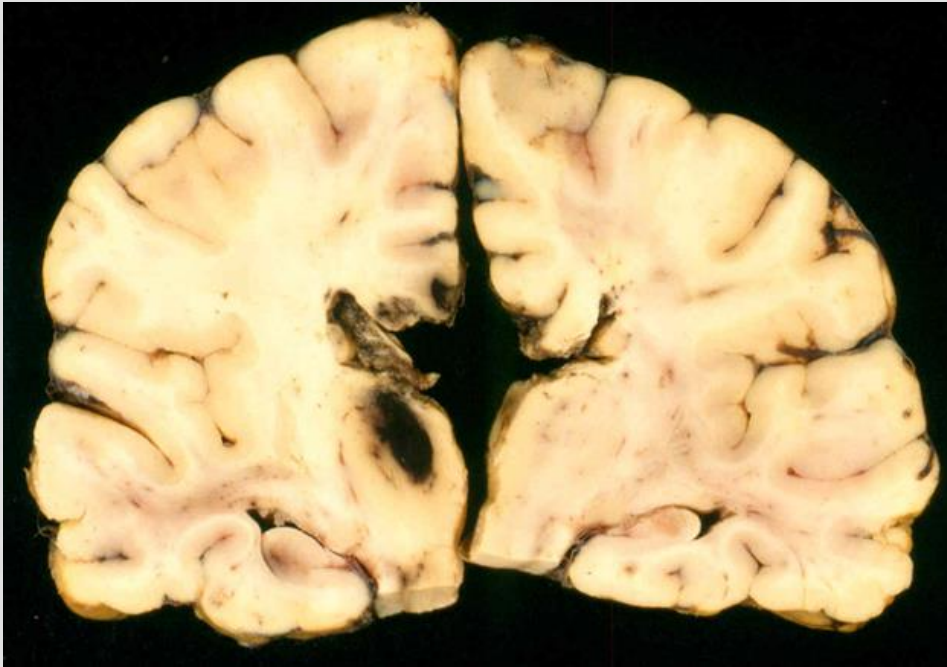
- Confirm - in-life diagnoses
- Exclude – natural disease
- Uncover – unknown pathology
- Support – other evidence

What can histology do?

- Limitations of body fluid analysis to show chronic pathology
- Some disease processes are not clear at the gross tissue level
- 40% of cases reveal a cause of death at histology that is not visible grossly
- 8% of cases cause of death is only revealed by histology
- Half of cases have prior conditions revealed by histology

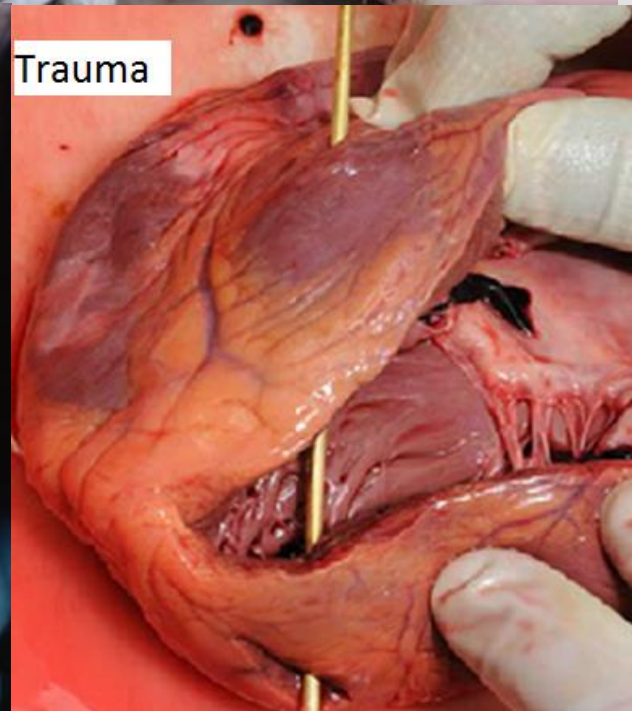
# HISTOLOGY IN FORENSICS

- Larger tissue samples
- Type of tissue
- Urgency
- Procedure

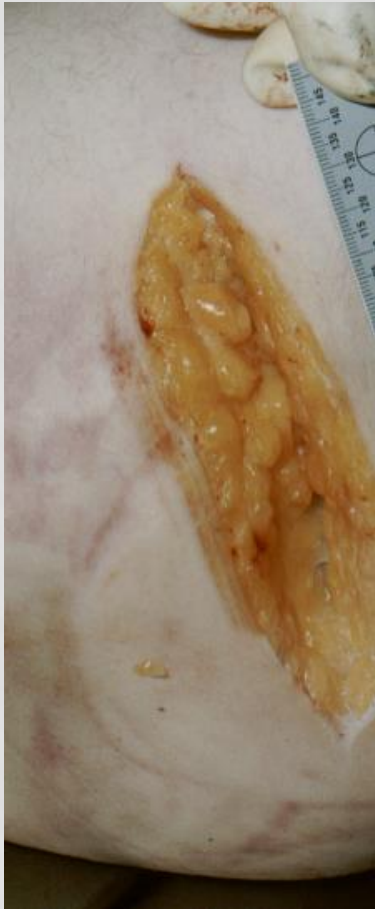




# COMPLICATING FACTORS



# POST MORTEM OR ANTE MORTEM?

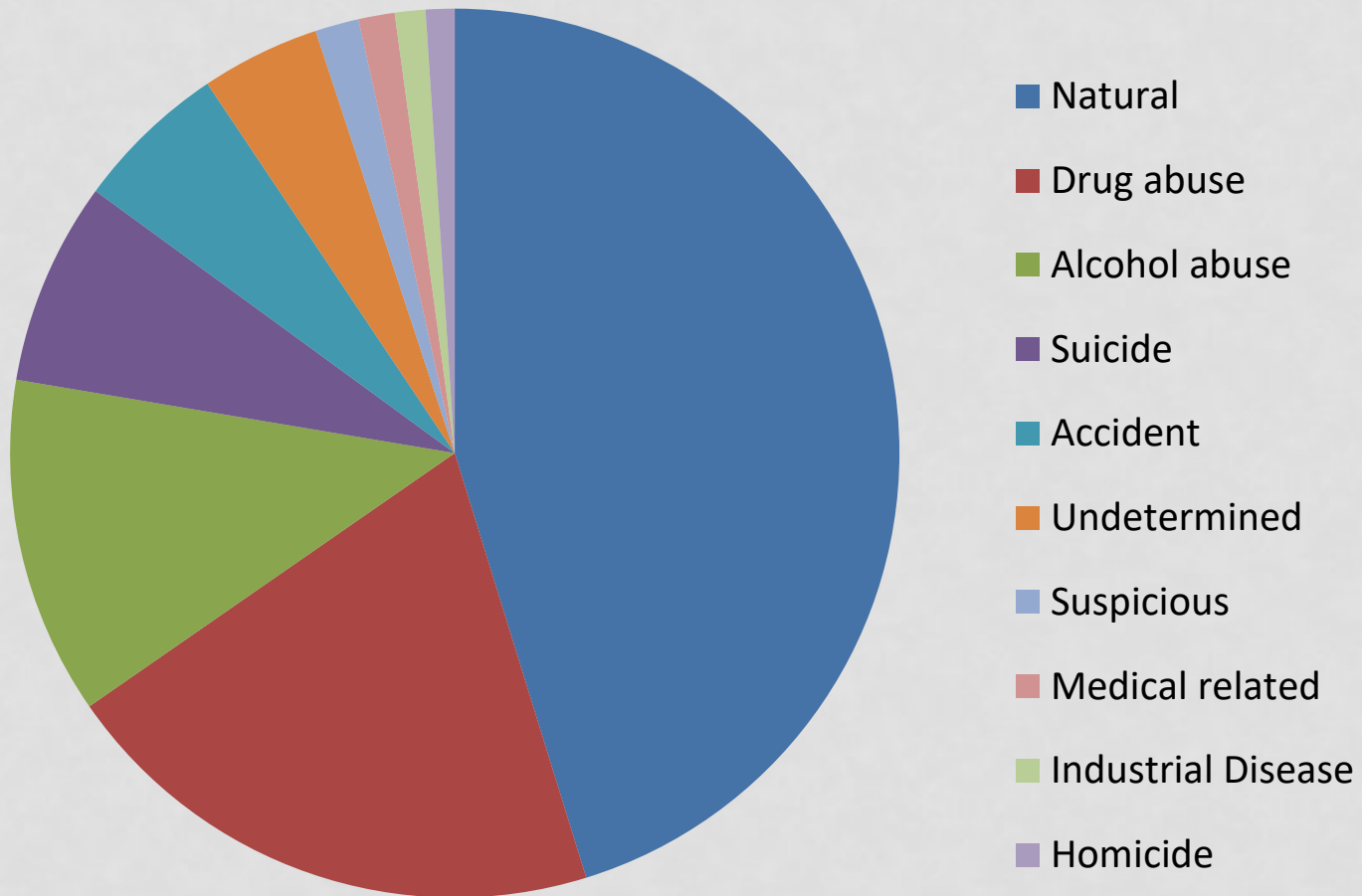


# A TYPICAL YEAR

2017

- 2443 *post mortems*
- 1927 with histological investigation (79%)
- Roughly similar to the proportion requiring toxicology
- Toxicology and histology often vary in importance depending on type of case

# CASE BREAKDOWN

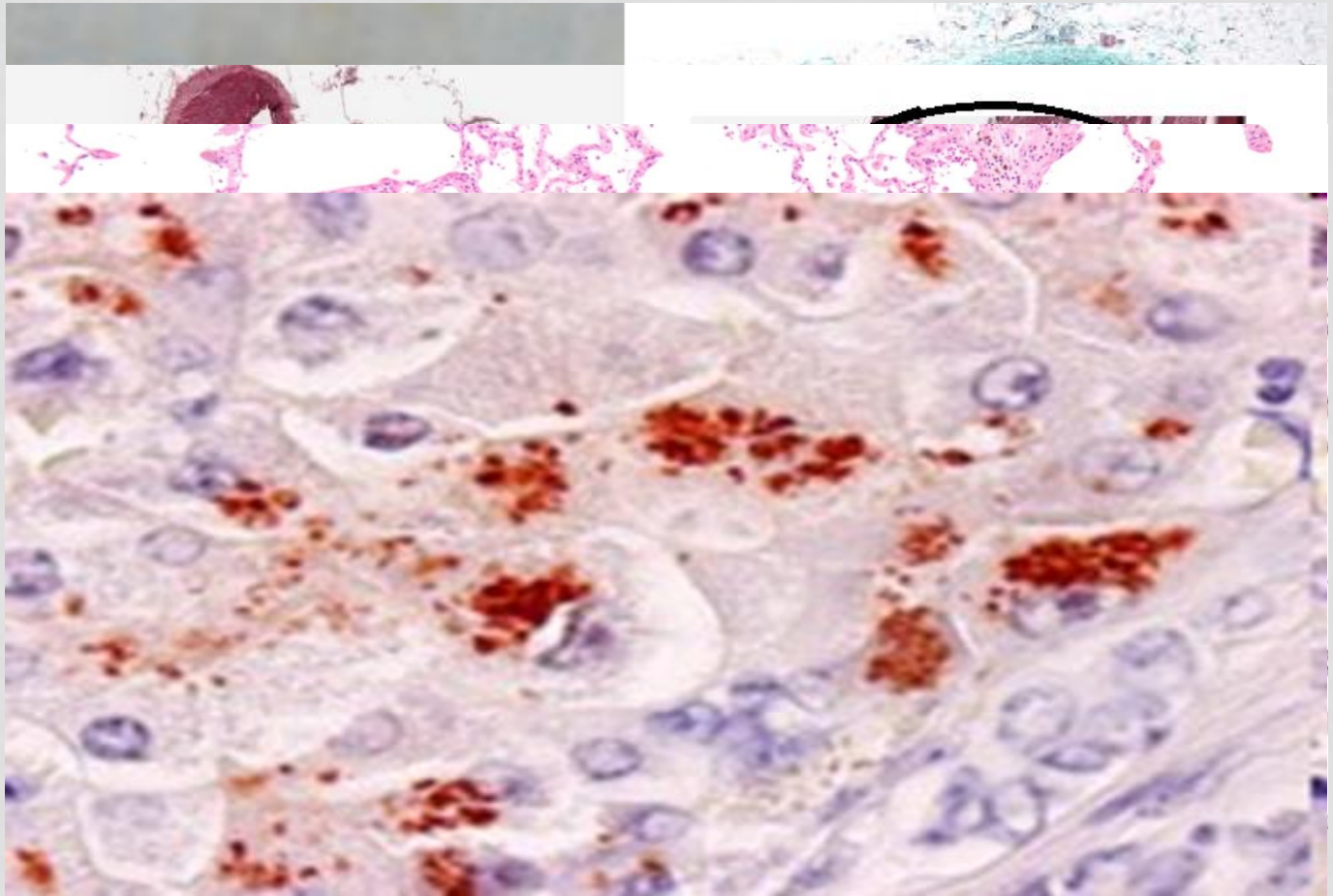




# NATURAL CAUSES

## Big 5 Killers

- Cancer
- Heart Disease
- Stroke
- Respiratory disease
- Liver disease

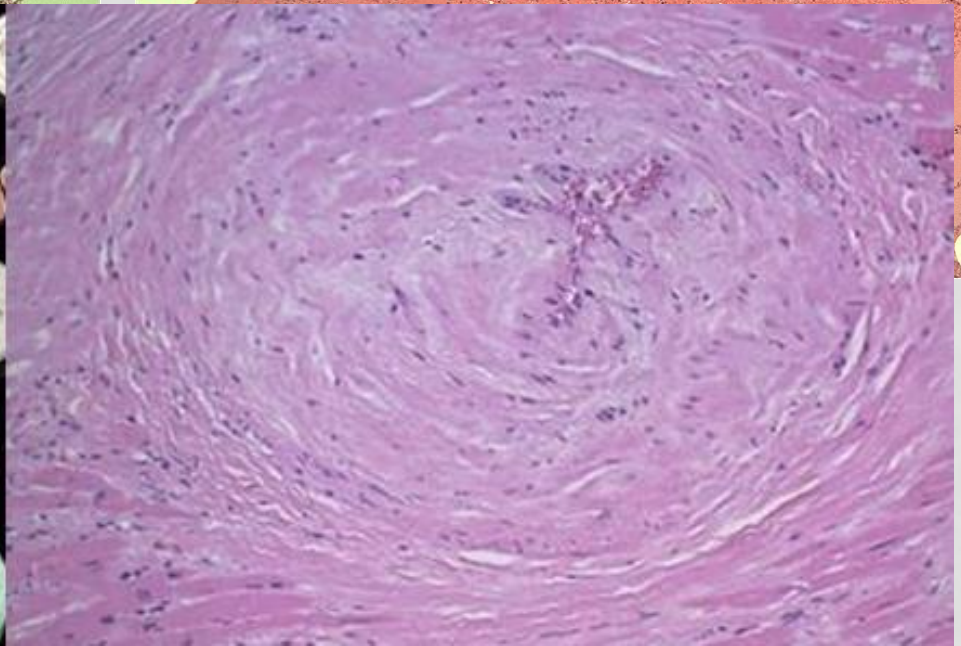
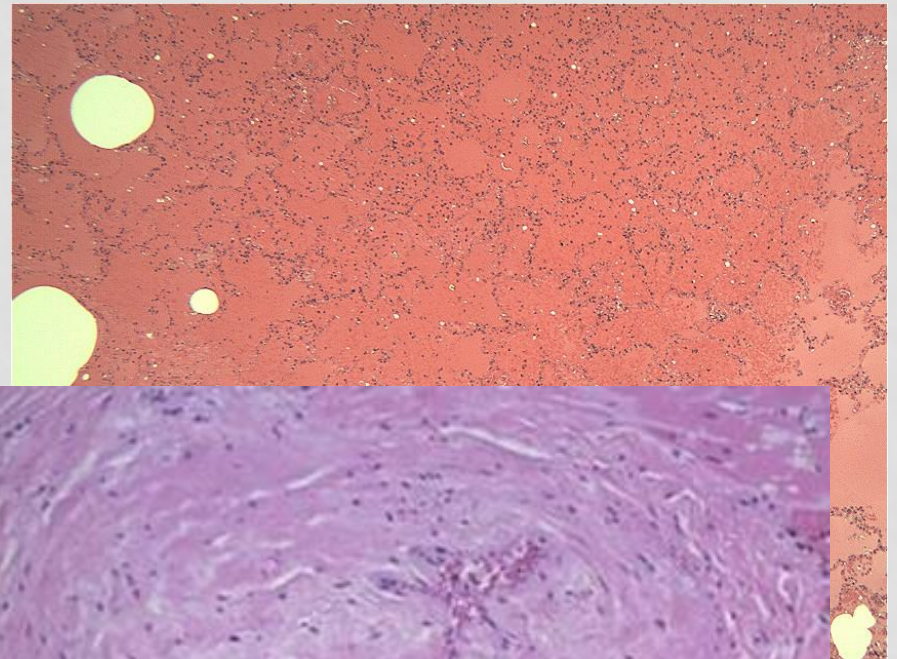
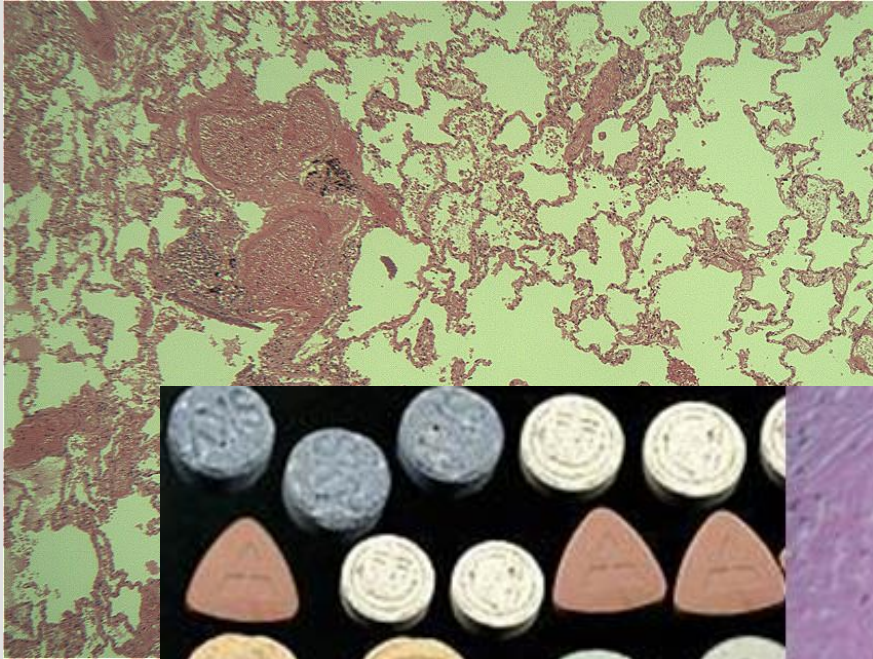


# DRUG ABUSE



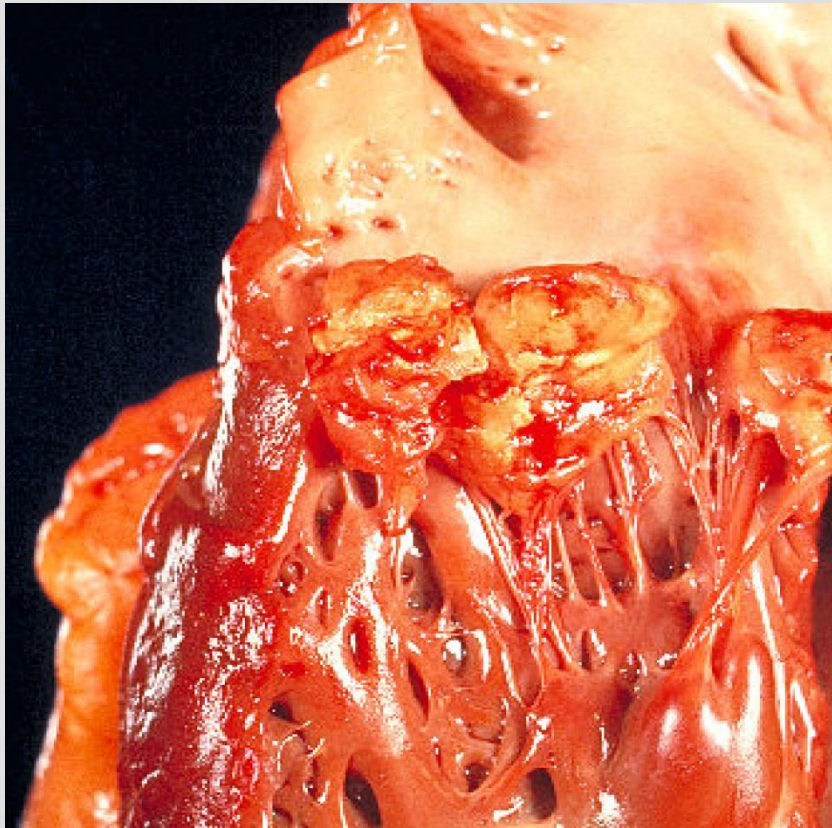


# DRUGS

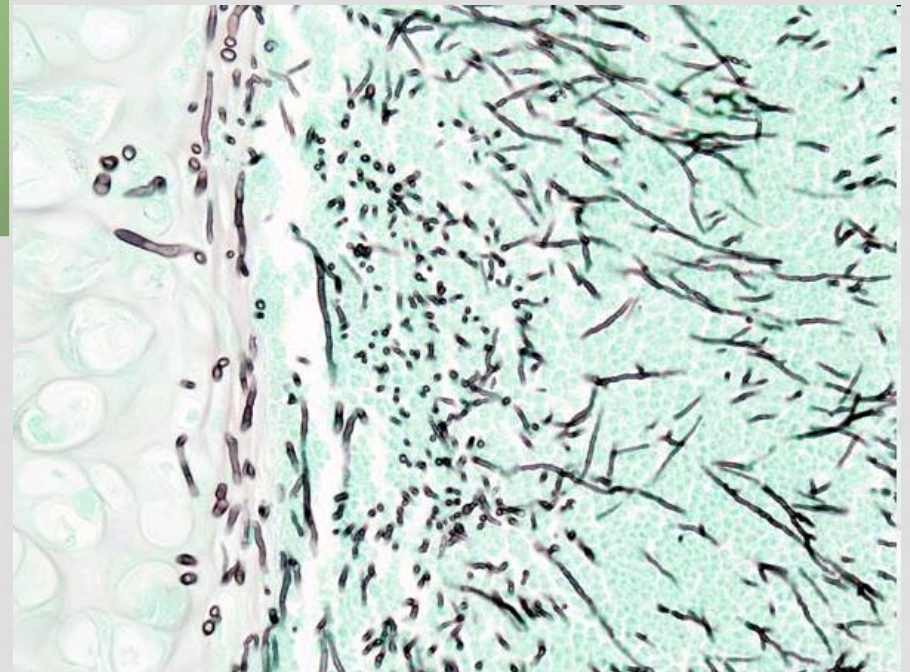
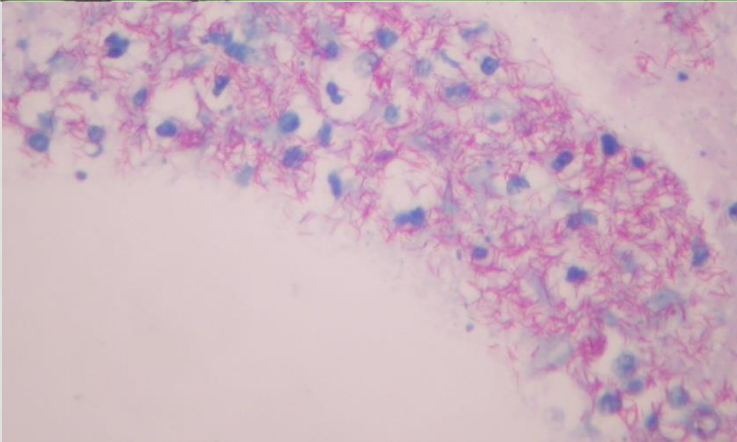
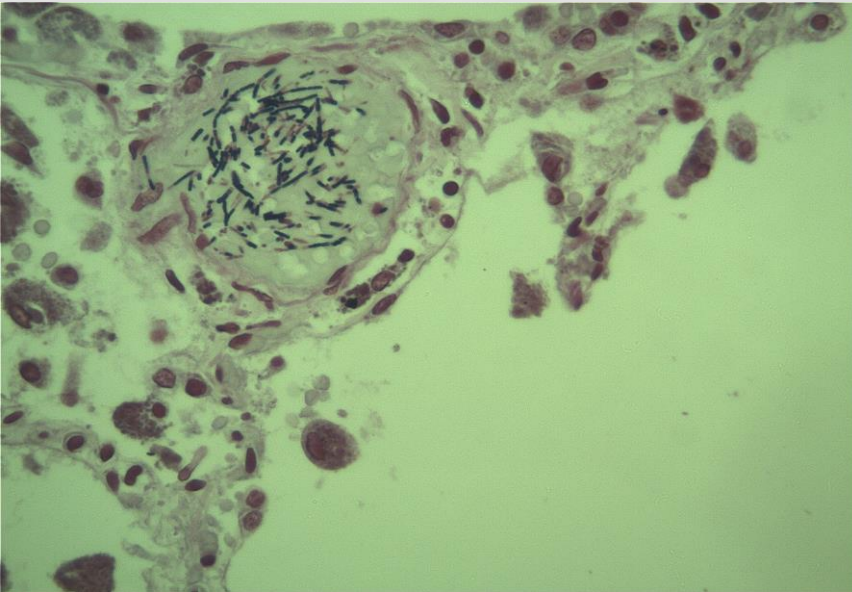




# DRUG ABUSE: MICROORGANISMS



# MICROORGANISMS





# ALCOHOL ABUSE

Healthy



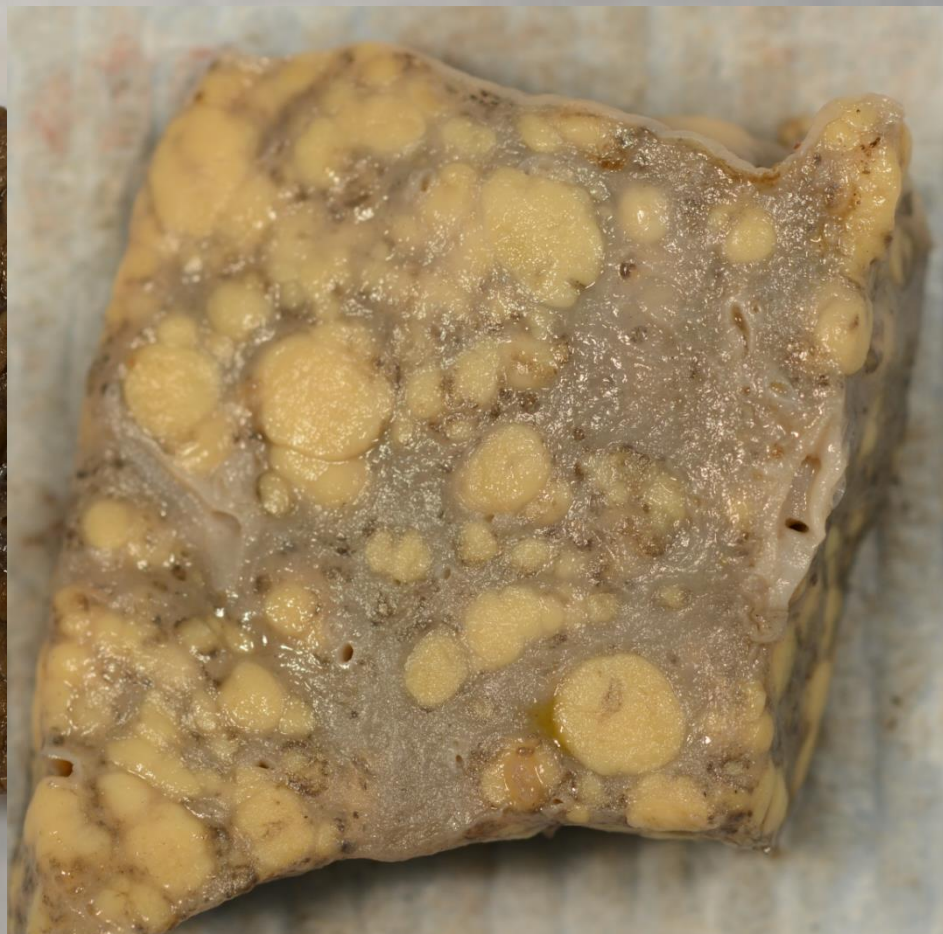
Fatty



Early cirrhosis



Advanced cirrhosis





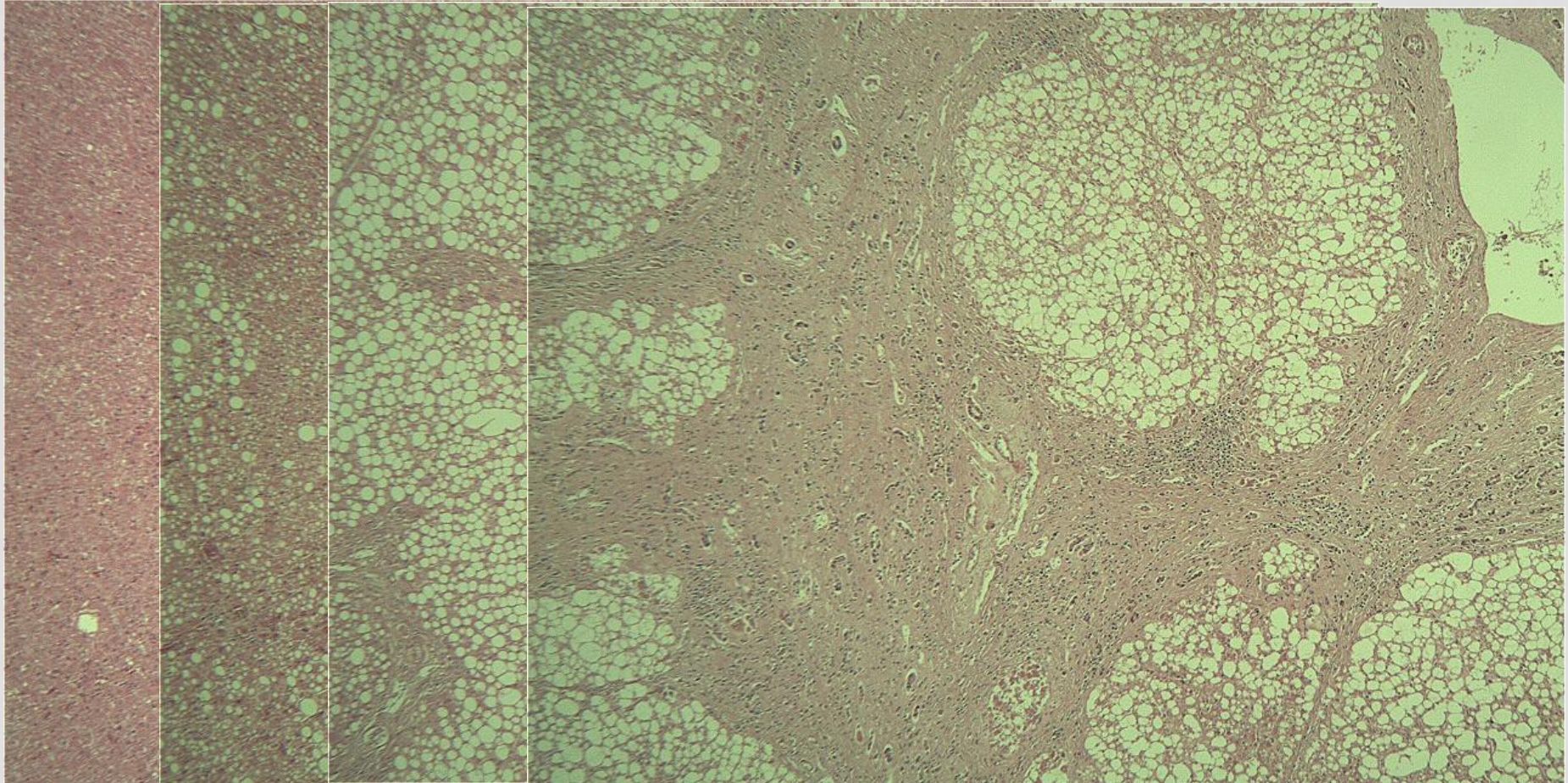
# ALCOHOL ABUSE

Healthy

Fatty

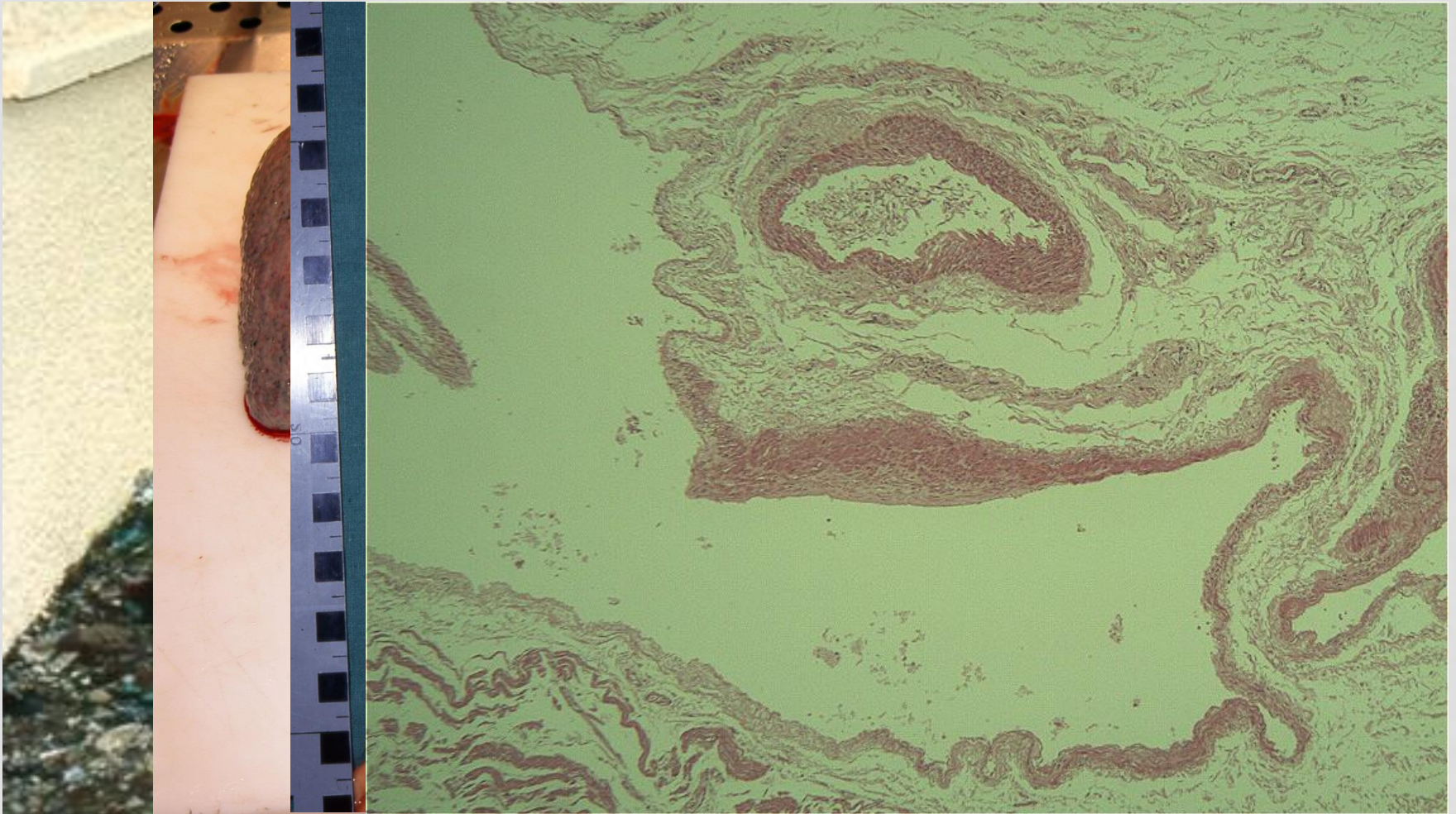
Early cirrhosis

Established cirrhosis



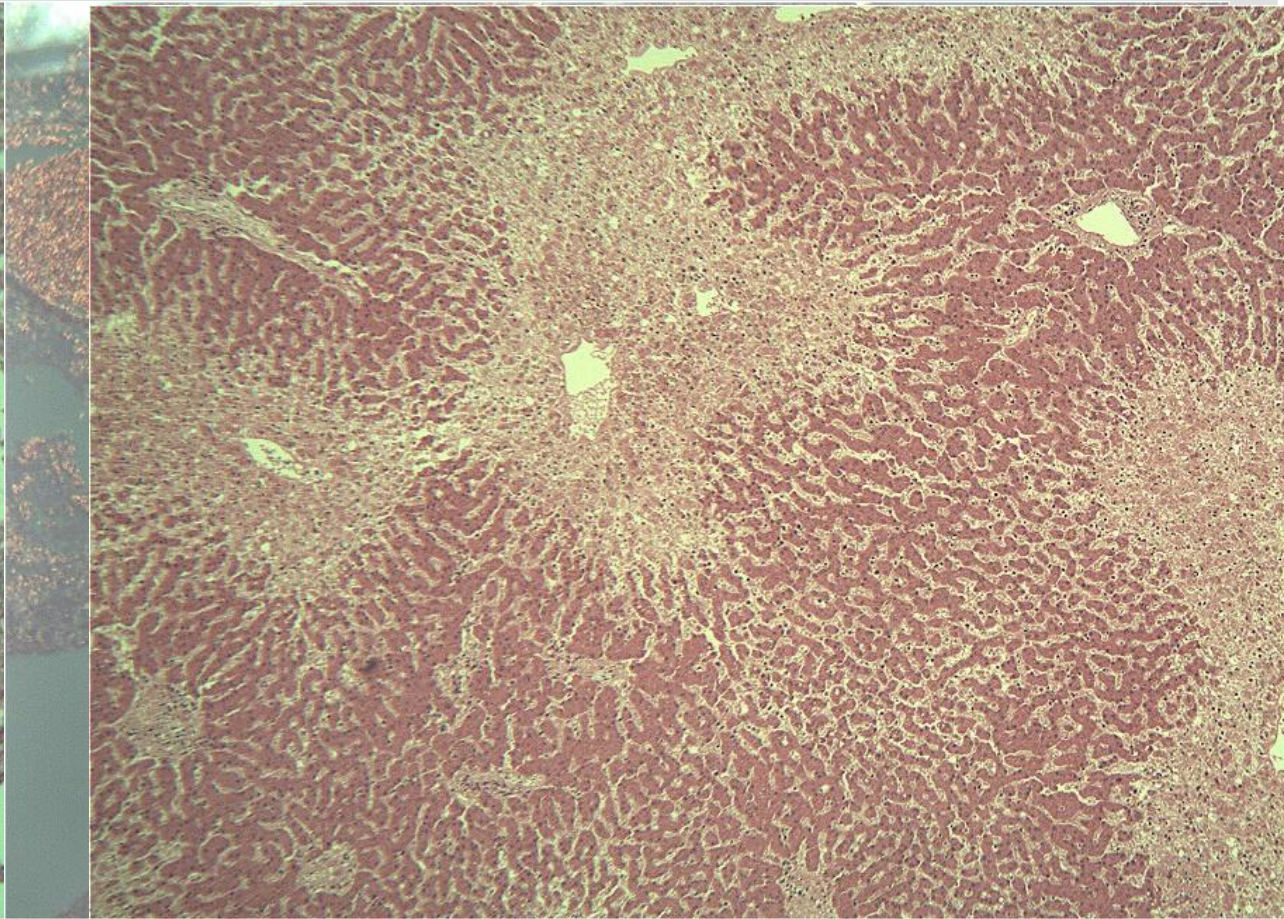
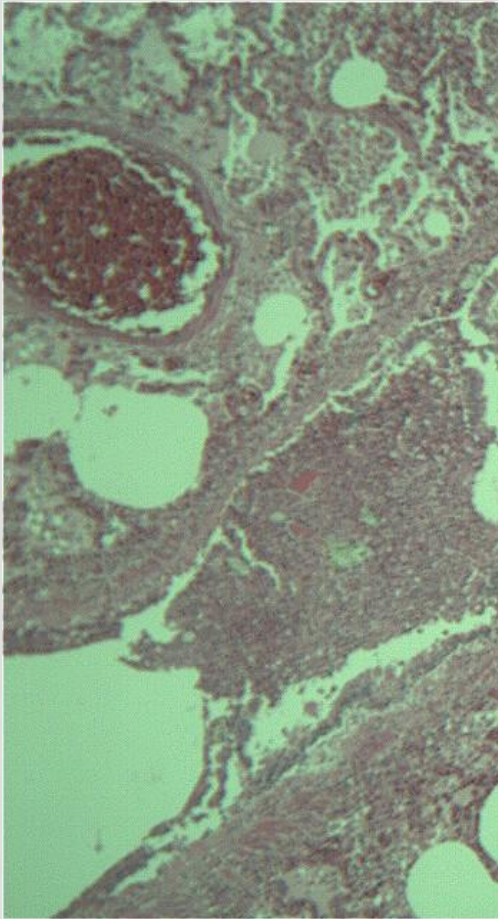


# ALCOHOL ABUSE



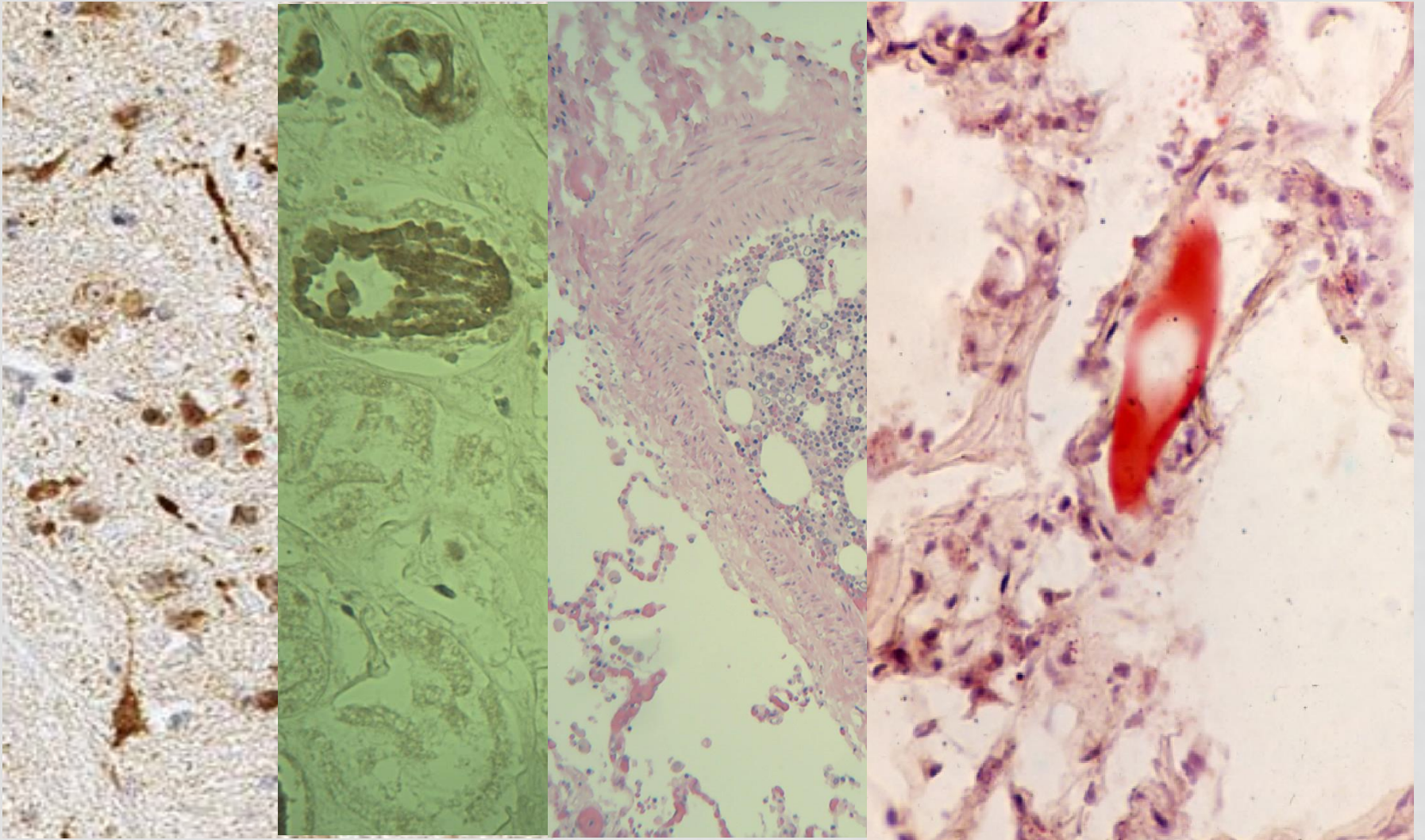


# SUICIDE



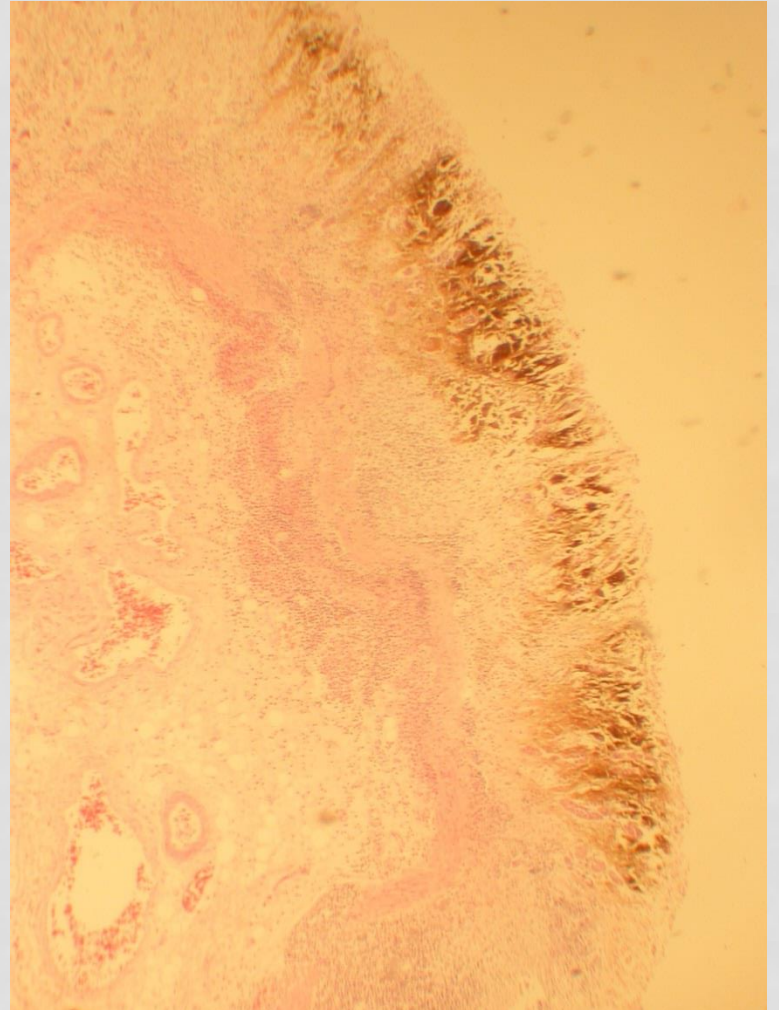


# ACCIDENT - TRAUMA

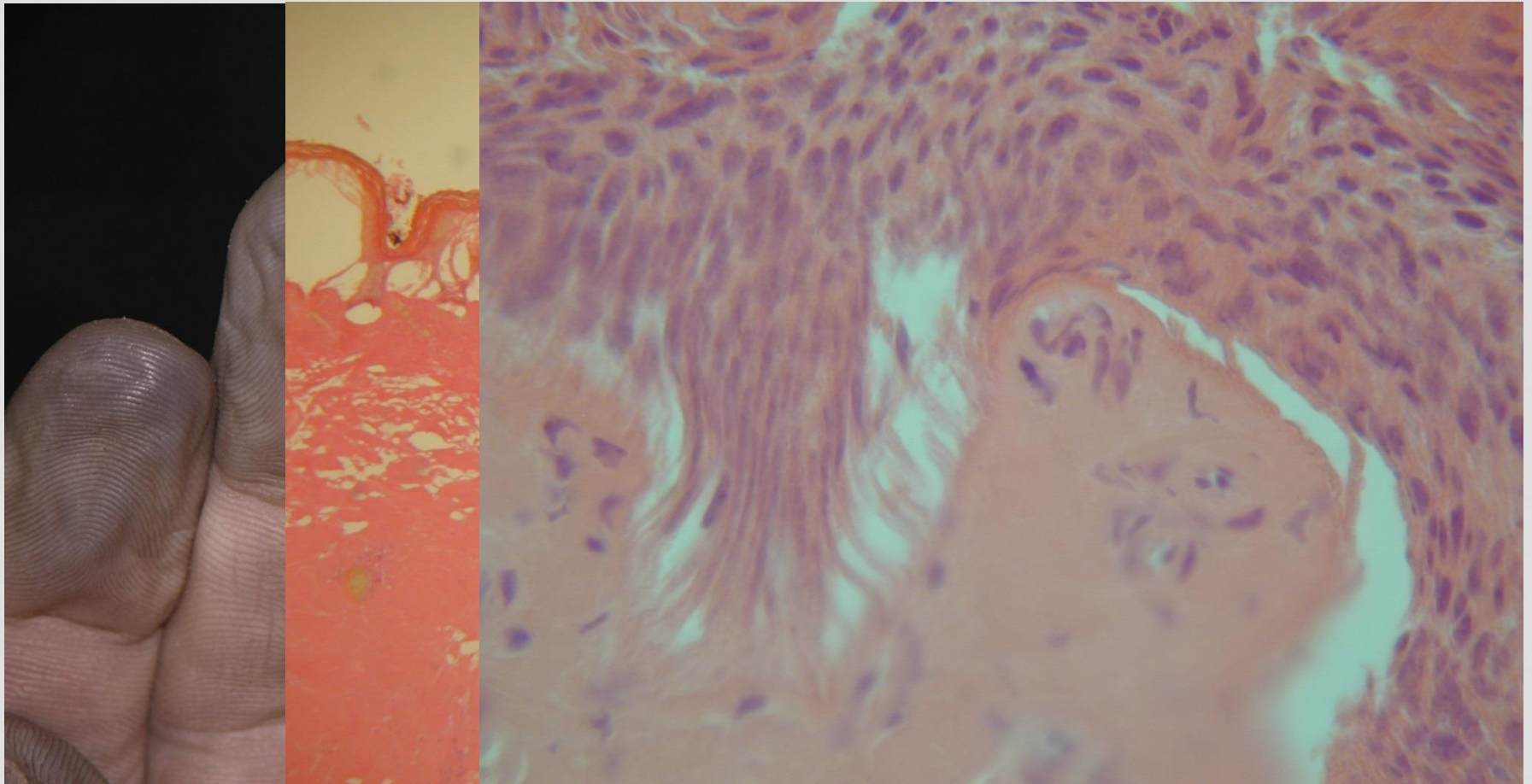




# ACCIDENT - COLD

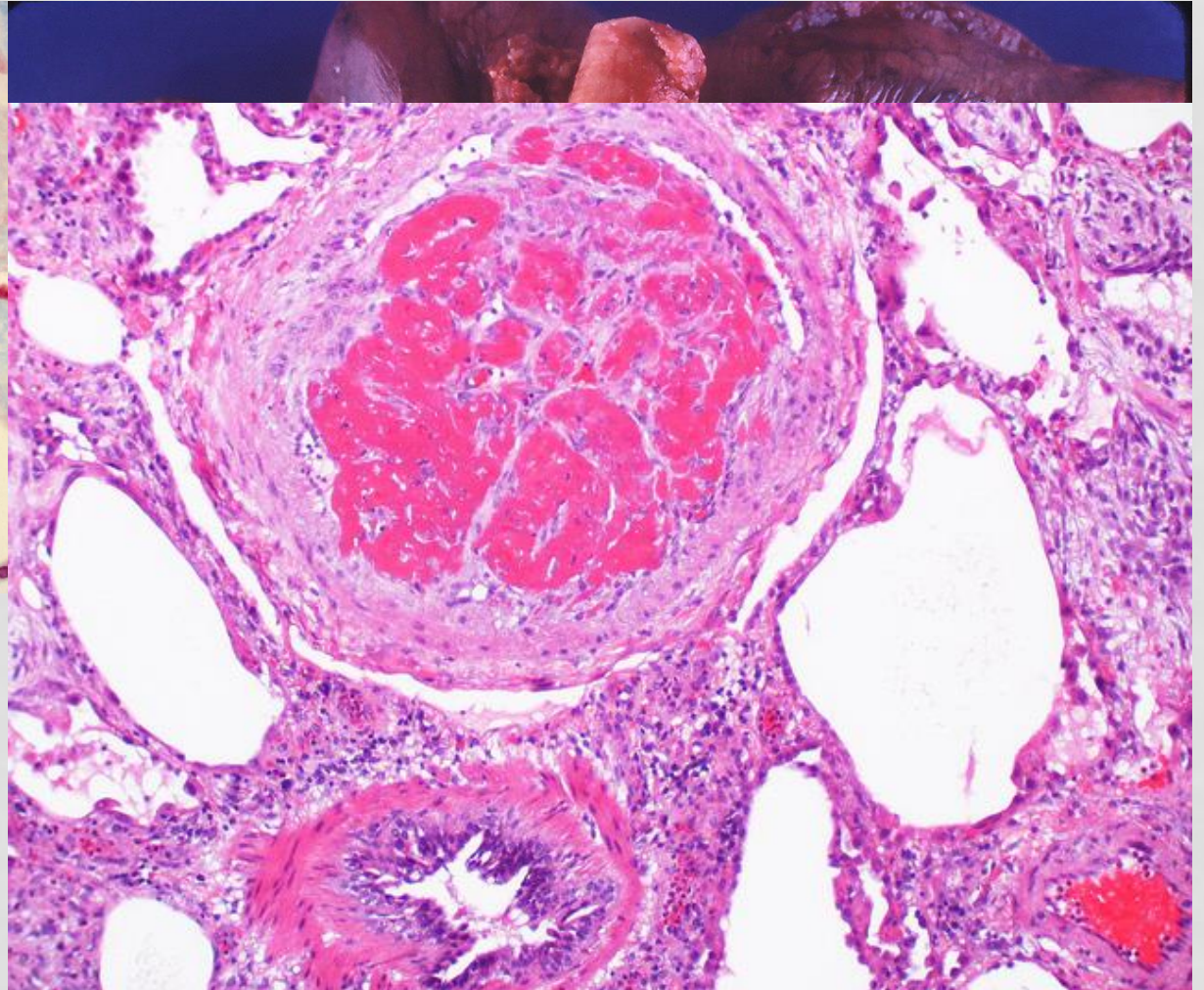
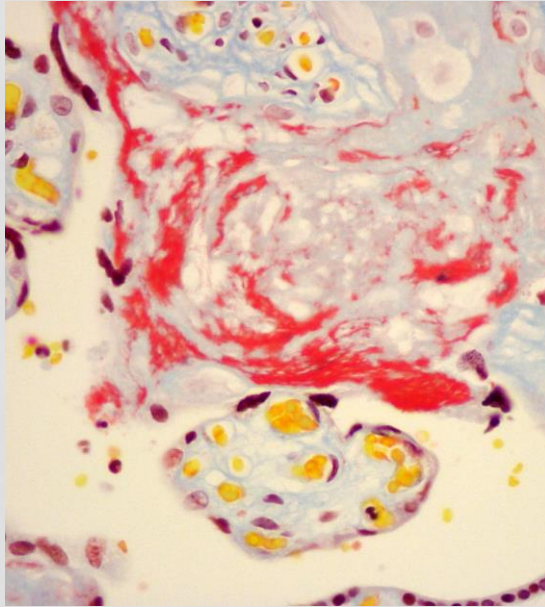


# ACCIDENT AT WORK





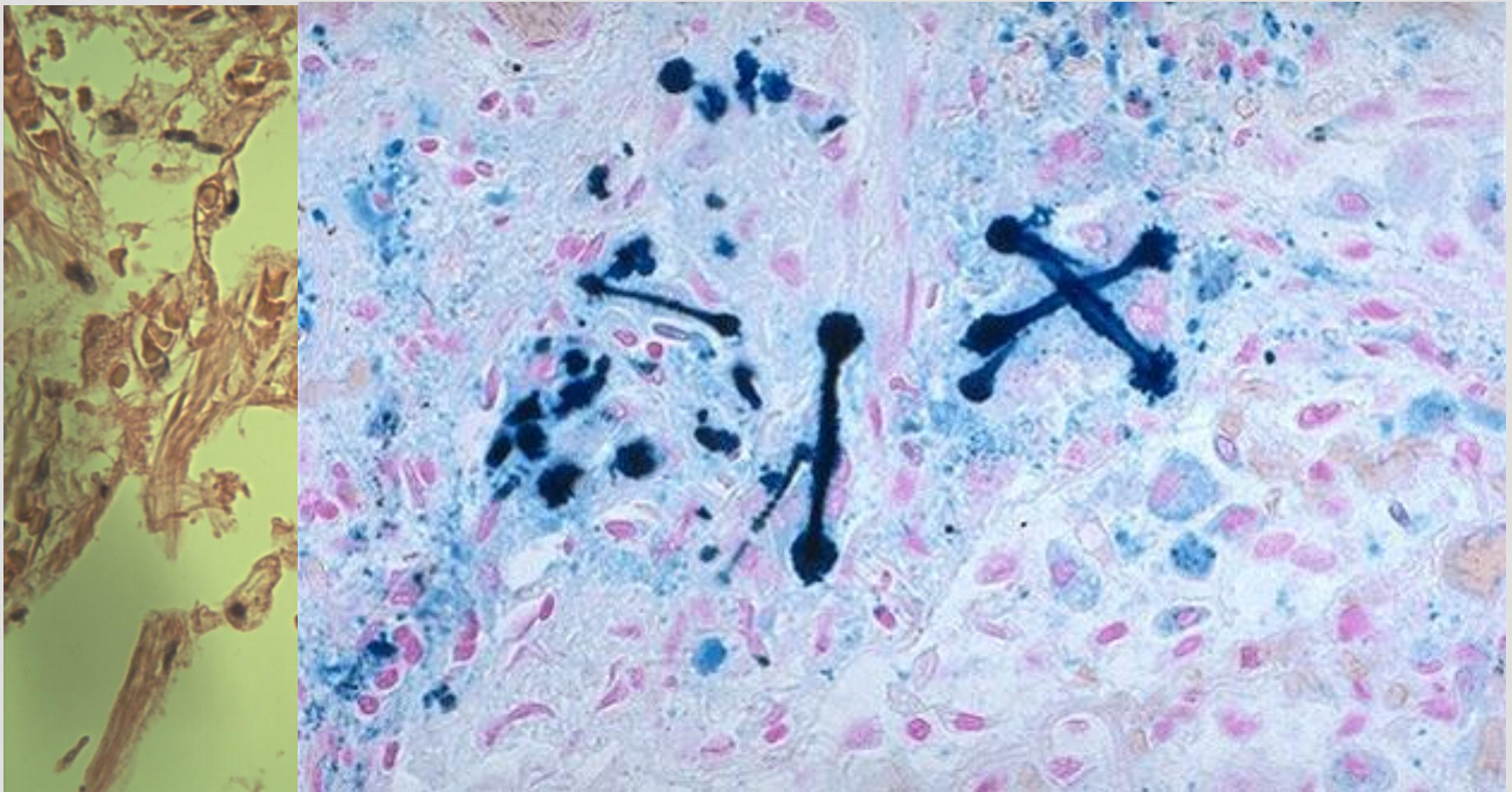
# MEDICAL RELATED





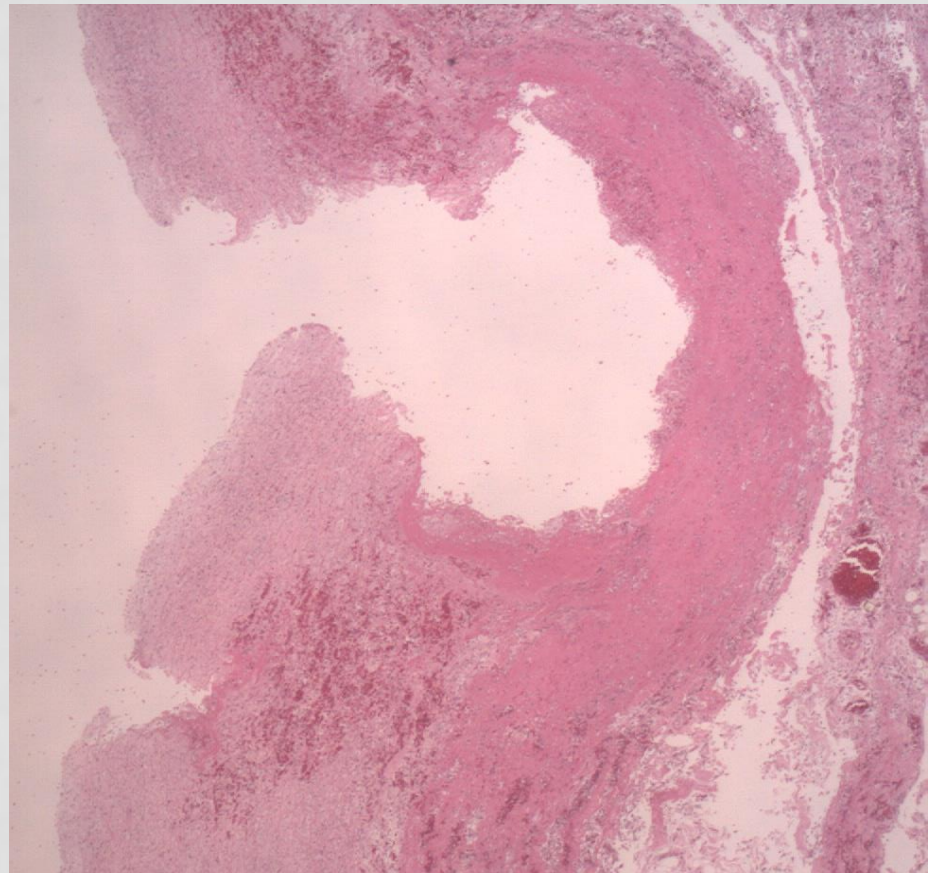
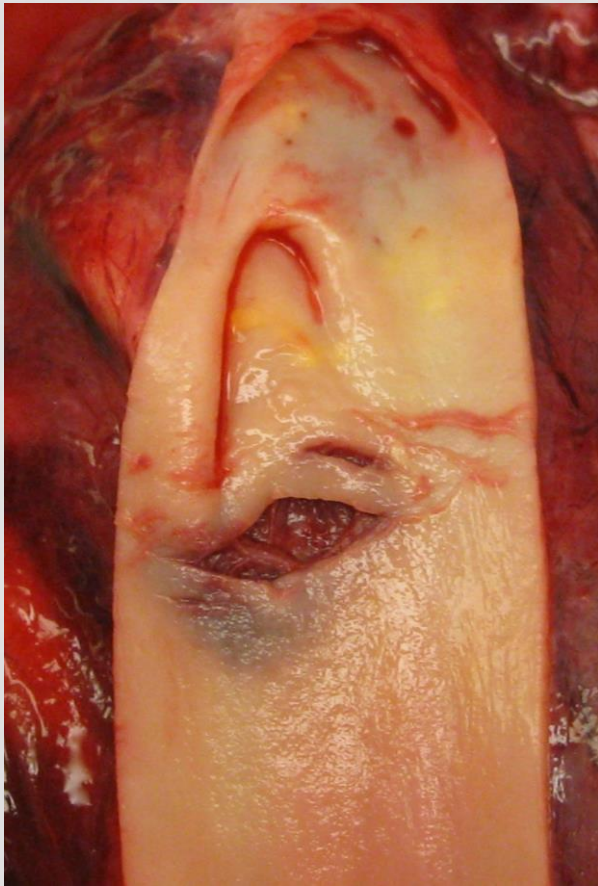
# INDUSTRIAL DISEASE

Asbestos bodies



# HOMICIDE AND SUSPICIOUS

Carotid artery tear





# BOSNIA



BOSNIAN JOURNAL OF  
BASIC MEDICAL SCIENCES

RESEARCH ARTICLE

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## Histological observations on adipocere in human remains buried for 21 years at the Tomašica grave-site in Bosnia and Herzegovina

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### ABSTRACT

The Tomašica grave-site near Prijedor in the north of Bosnia is reported to be the largest primary mass grave discovered thus far relating to the 1992–95 war. A total of 275 complete bodies and 125 body parts were exhumed from it in 2013. Post mortem examinations of the victims showed that nearly all had died from gunshot injuries but an additional striking feature was the degree of preservation of many of the bodies, even 21 years on, with skin, soft tissues and internal organs still present in abundance and gross structures clearly identifiable. Histology was performed on 68 samples of soft tissue from a total 13 bodies, on both skin and internal organs, and the degree of preservation was assessed in terms of the ability to recognize microscopic structure. Further comparison was made with samples taken a month or so later (56 tissue samples from 9 bodies, all but one different from the first group), after the bodies had been covered in salt as a means of general preservation. Generally, at a microscopic level, skin and subcutaneous tissues were better preserved than internal organs, while tissues sampled at the time of autopsy were better preserved than those sampled weeks later.

**KEY WORDS:** Tomašica mass grave; adipocere; histopathology

DOI: <https://dx.doi.org/10.17305/bjbms.2018.3343>

Bosn J Basic Med Sci. 2018;3(3):234–239. © 2018 ABMSFBH



# BACKGROUND

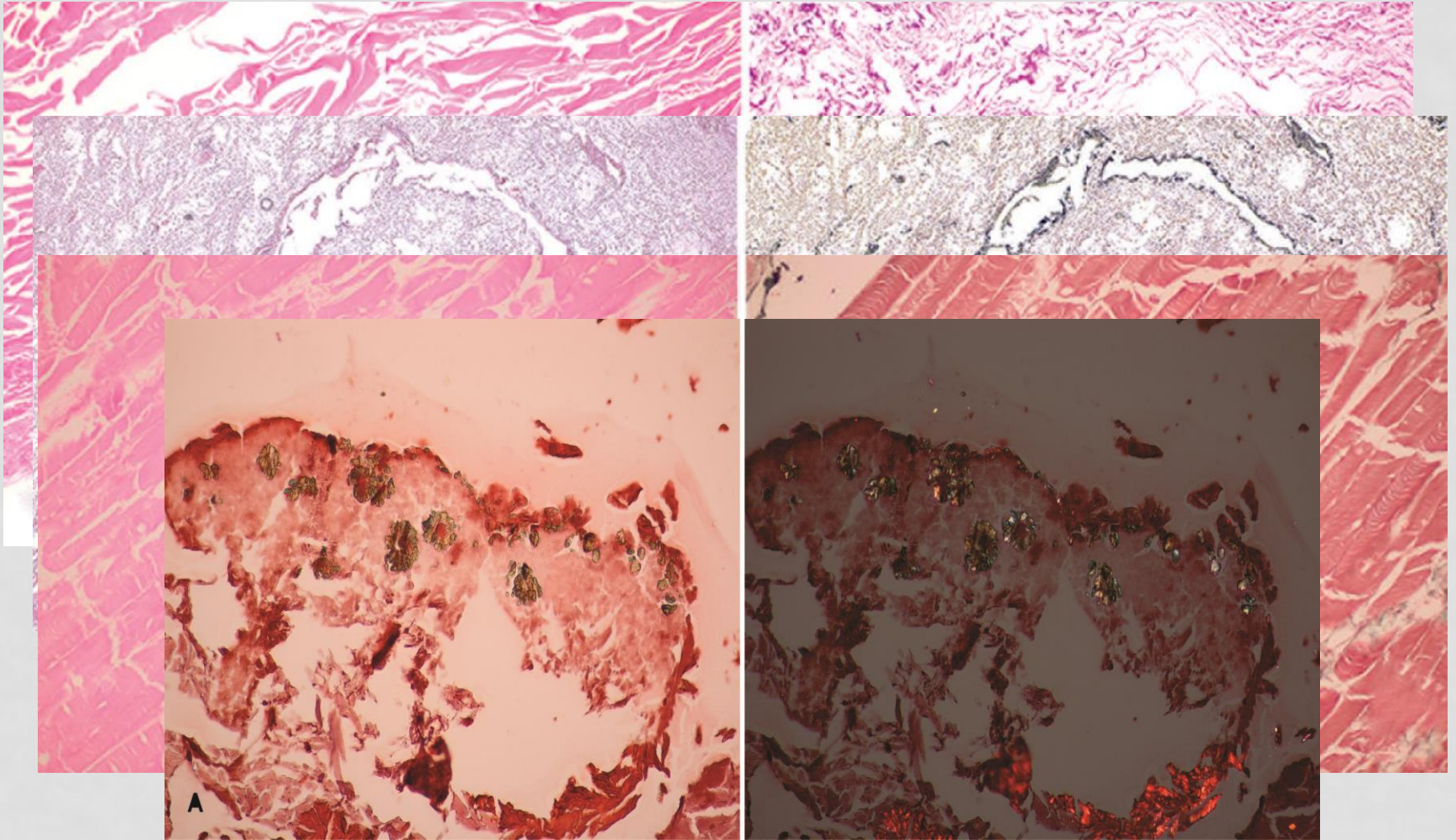
- Tomašica mass grave, Bosnian men (and 3 women) from villages west of Prijedor
- Buried in a former iron ore mine in July 1992
- Grave disrupted in 1993 and many bodies moves to secondary mass grave
- Full exhumation late 2013 (21 years underground)
- 275 complete bodies, 125 body parts (293 individuals)
- Striking degree of preservation in some bodies
- Histology performed on 68 samples

# GROSS PATHOLOGY





# HISTOLOGY



# SO, WHAT IS THE ROLE OF HISTOLOGY?

- Discover unknown pathology
- Histomorphological chronology of a disease
- Postmortem histological findings as evidence of an intravital event
- Confirm in-life diagnoses and legal notes
- Exclude natural disease from forensic cases
- Corroborate in-life and toxicological results
- Histomorphological determination of a timeline or aetiology