



# Case #93

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## Case #93

The decedent was a 40-year-old man with a history of sickle cell anemia and seizures who was found unresponsive with drug paraphernalia near the body.



Image 1 (Gross)



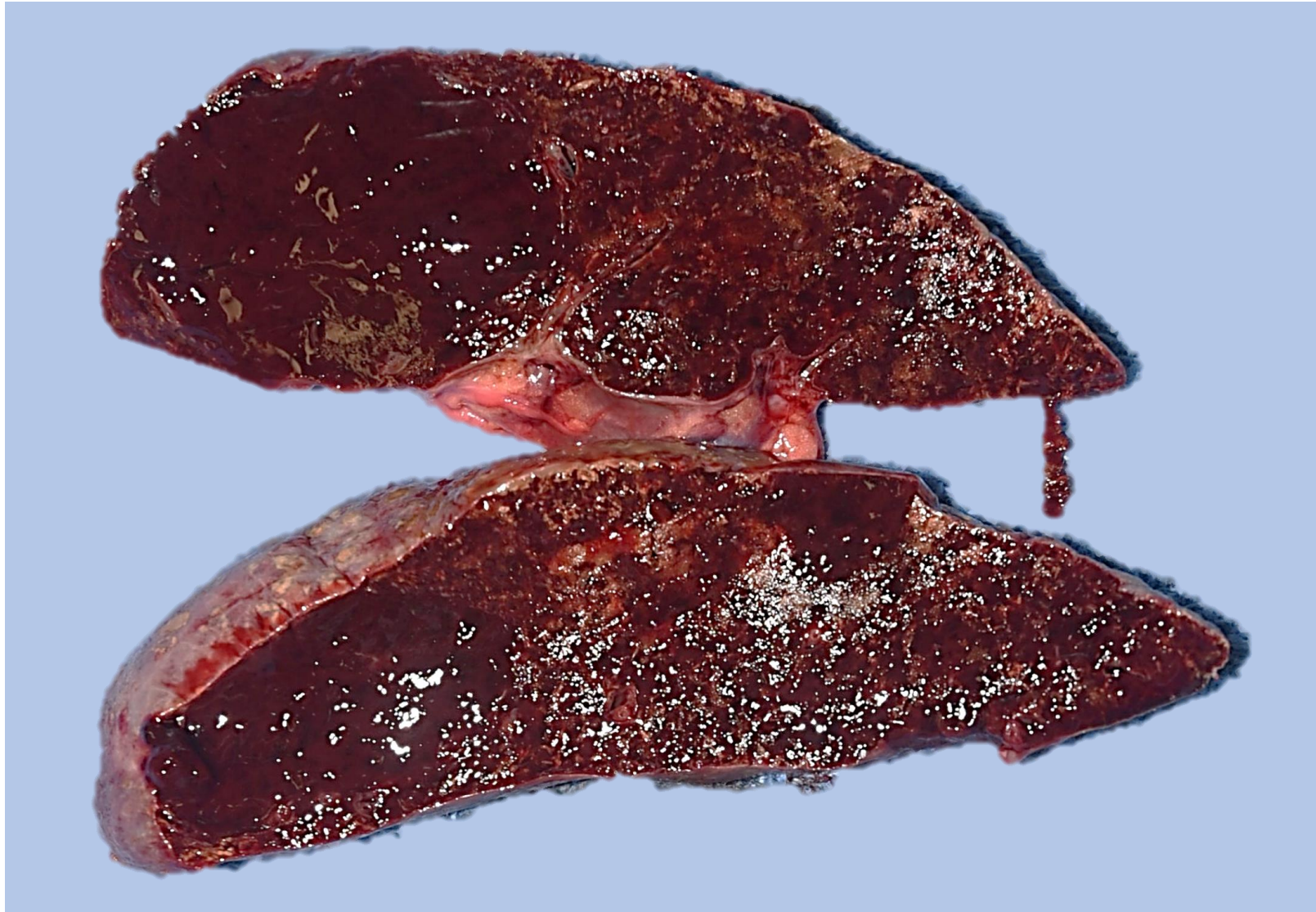


Image 2 (Gross)



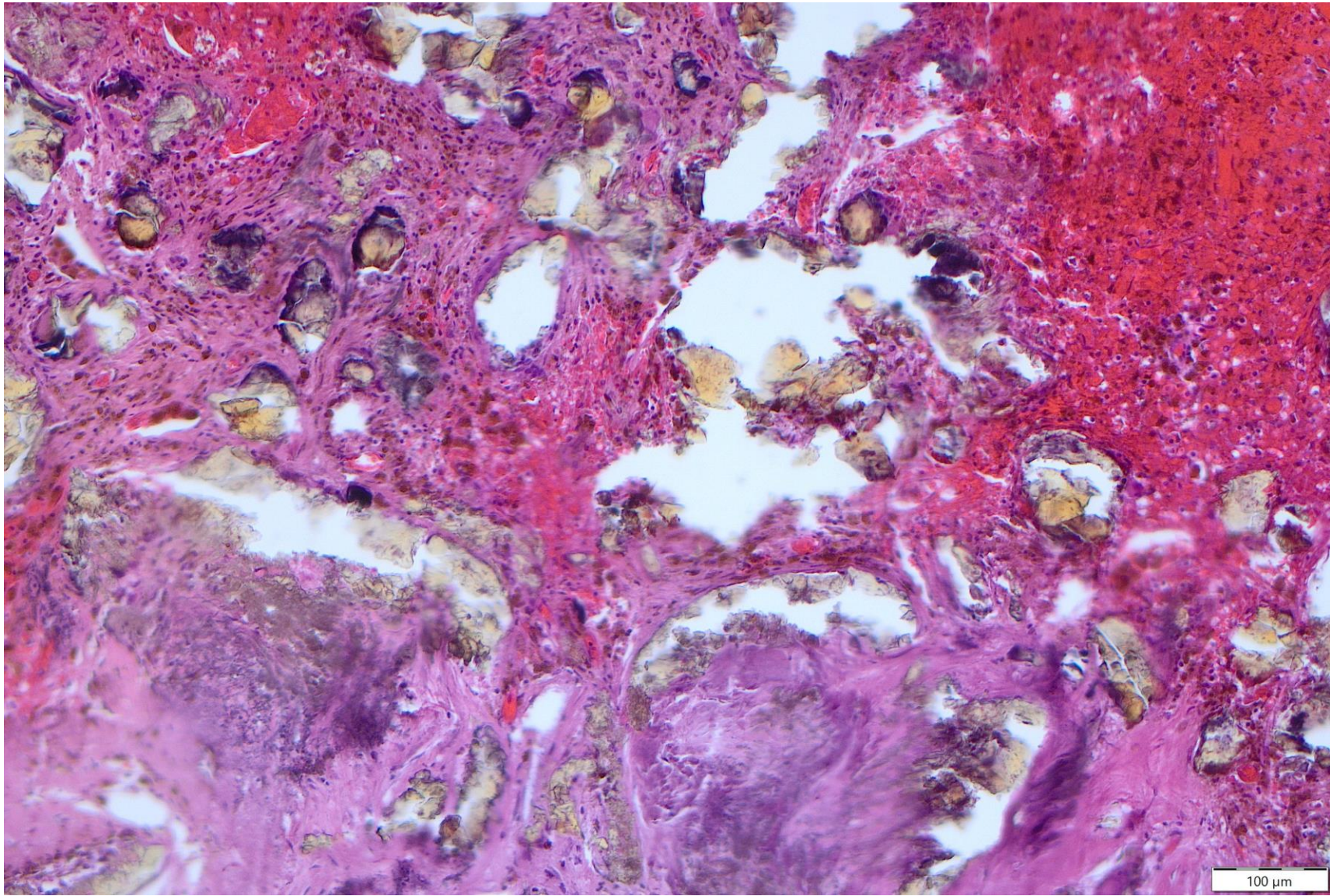


Image 3 (Microscopic)



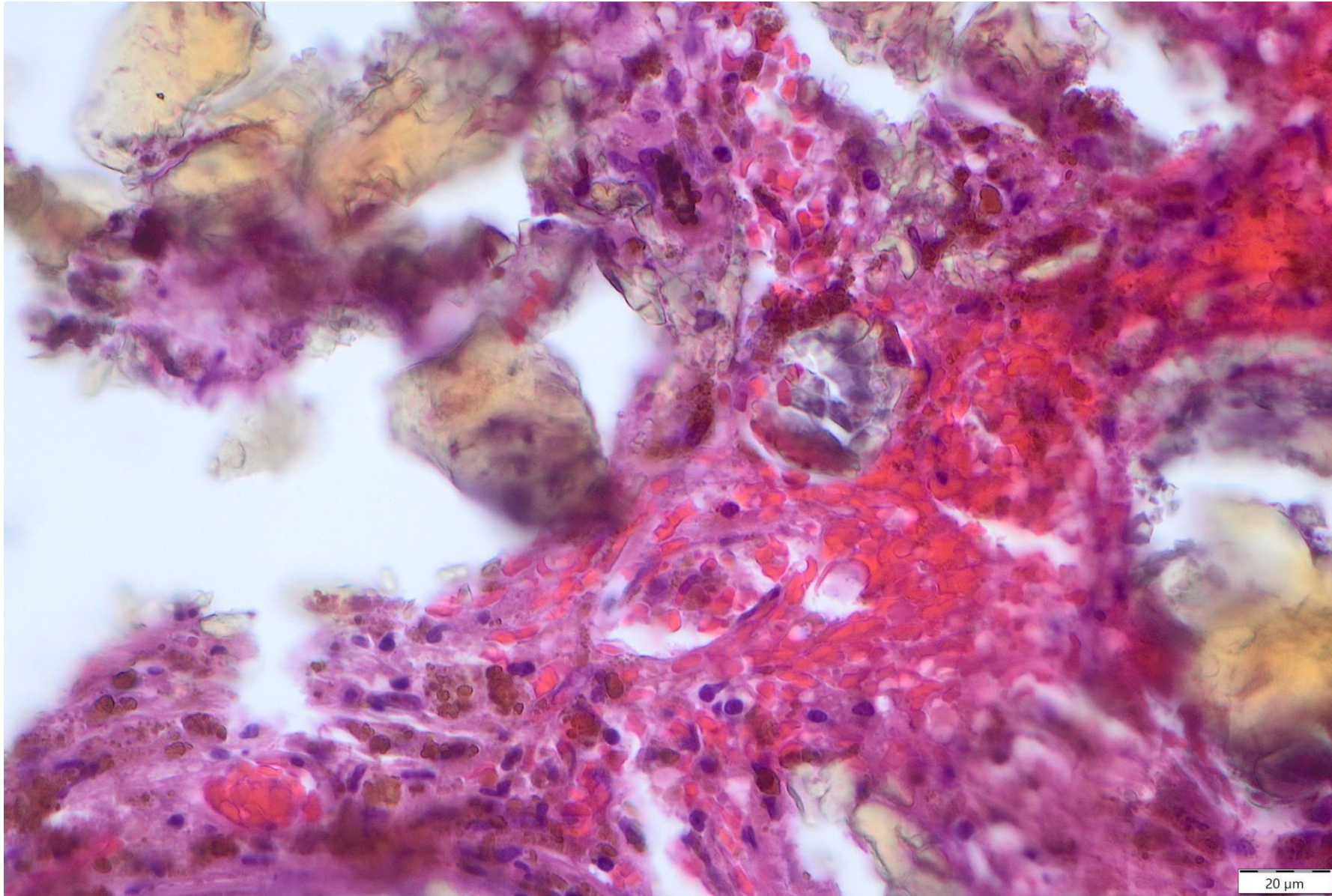


Image 4 (Microscopic)

The findings shown are most consistent with:

- A. Vaso-occlusive episodes and hemolysis
- B. Metastatic tumor with focal calcification
- C. Adulterants associated with illicit drug use
- D. Hepatic parasitic infection with splenic involvement



Answer...

## A. Vaso-occlusive episodes and hemolysis

Gamna-Gandy Bodies (GGBs), also known as splenic siderotic nodules, are organized foci found in the spleen parenchyma. Variable in size, GGBs were once thought to have a fungal etiology due to their branching mycelial-like structures.

GGBs are composed of iron, calcium sulfate, and fibrous tissue, likely resulting from organization and scarring of sites where small perivascular hemorrhages have occurred. GGBs can measure several millimeters and appear with a dark hemorrhagic center surrounded by a pale inner rim and a dark outer rim. This has earned GGBs the nickname "tobacco flecks."

Gamna-Gandy Bodies are most often associated with portal hypertension and sickle cell disease but can also be seen in cardiac myxomas and various splenic neoplasms.

In portal hypertension, increased blood pressure in the splenic circulatory system is likely to cause episodes of bleeding in the splenic parenchyma, and GGBs can occur with three different patterns: fine granular deposits in the red pulp; iron deposits associated with subcapsular infarcts; and periarterial deposits associated with fibrosis.

In sickle cell disease, the formation of GGBs is due to chronic episodes of vaso-occlusion and hemolysis in the central arteriole of the white pulp of the spleen with periarteriolar hemorrhages, where mineral elements of the blood will then deposit. Due to their iron content, MRI has been approved as the most sensitive form of imaging for GGBs. Recently, studies have posited that the formation of GGBs is age dependent.

Other responses



## B. Metastatic tumor with focal calcification

Some primary splenic tumors may be associated with GG bodies, but metastatic tumors are not. The distribution, size, and gross characteristics of the lesions in this case do not suggest metastatic tumor. In addition, the histology shows fibrotic parenchyma with hemosiderin-laden macrophages and GG bodies, but no evidence of malignancy.

### C. Adulterants associated with illicit drug use

The decedent had a history of drug use, and some adulterants such may be seen as crystalline material in the vasculature or lungs depending on the route of ingestion. However, GG bodies are not related to adulterants and (though crystalline) have a different microscopic appearance than common adulterants like talc.

Of note (the things you learn doing these cases...) there are apparently crystals that are sold for their healing splenic properties (if you feel like your spleen is acting up...)

[https://www.healingcrystals.com/Crystals for the Spleen Articles 17950.html](https://www.healingcrystals.com/Crystals%20for%20the%20Spleen%20Articles%2017950.html)

#### D. Hepatic parasitic infection with splenic involvement

As an organ located proximal to the liver and one that is supplied with a robust arterial circulation, the spleen is highly susceptible to a parasitic infection either as a primary or secondary target. The typical appearance of a spleen with direct involvement by parasitic infection is cystic. Those that are secondary infections often result in splenomegaly either through an increase in pressure from portal involvement or general immune response.



# References

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