

# Pathogenesis of Abortions





# Reasons for Fetal Loss

- Malnutrition
- Trauma
- Hormonal
- Dystocia
- INFECTIONS





# Abortion and Stillbirth

- What is the difference?
  - Timing
  - Viability

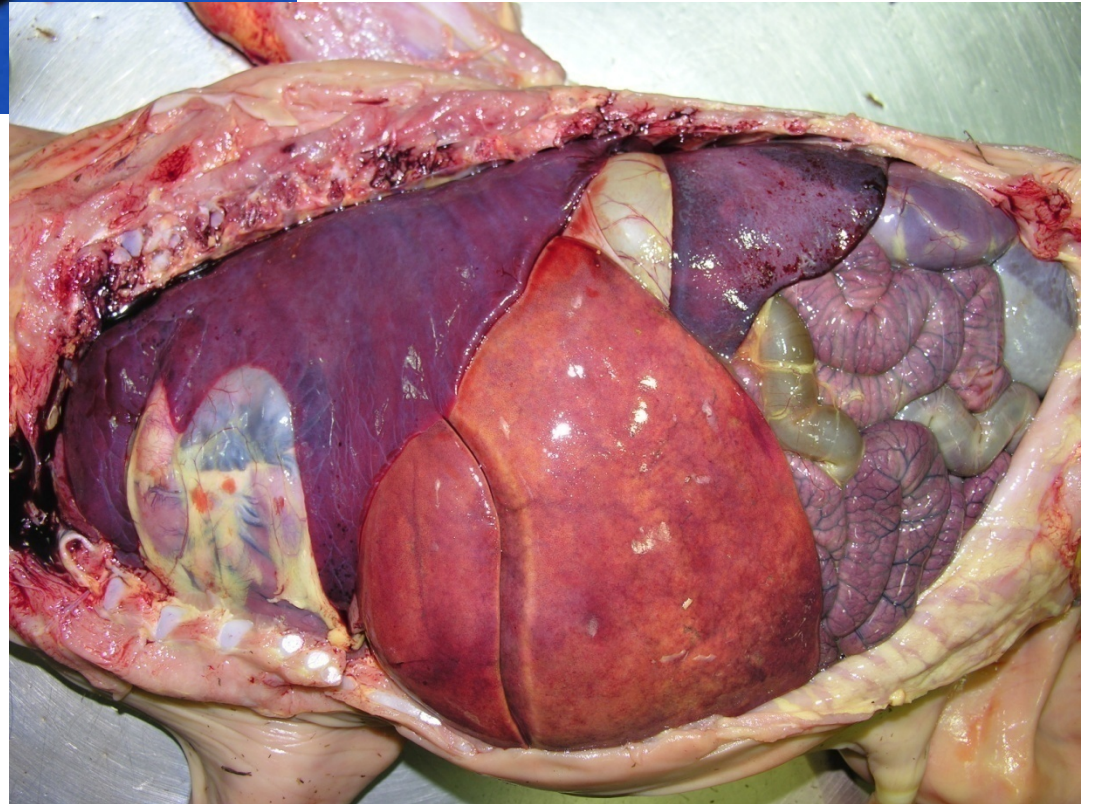
MAJOR cause of stillbirth:  
DYSTOCIA

How to diagnose dystocia????

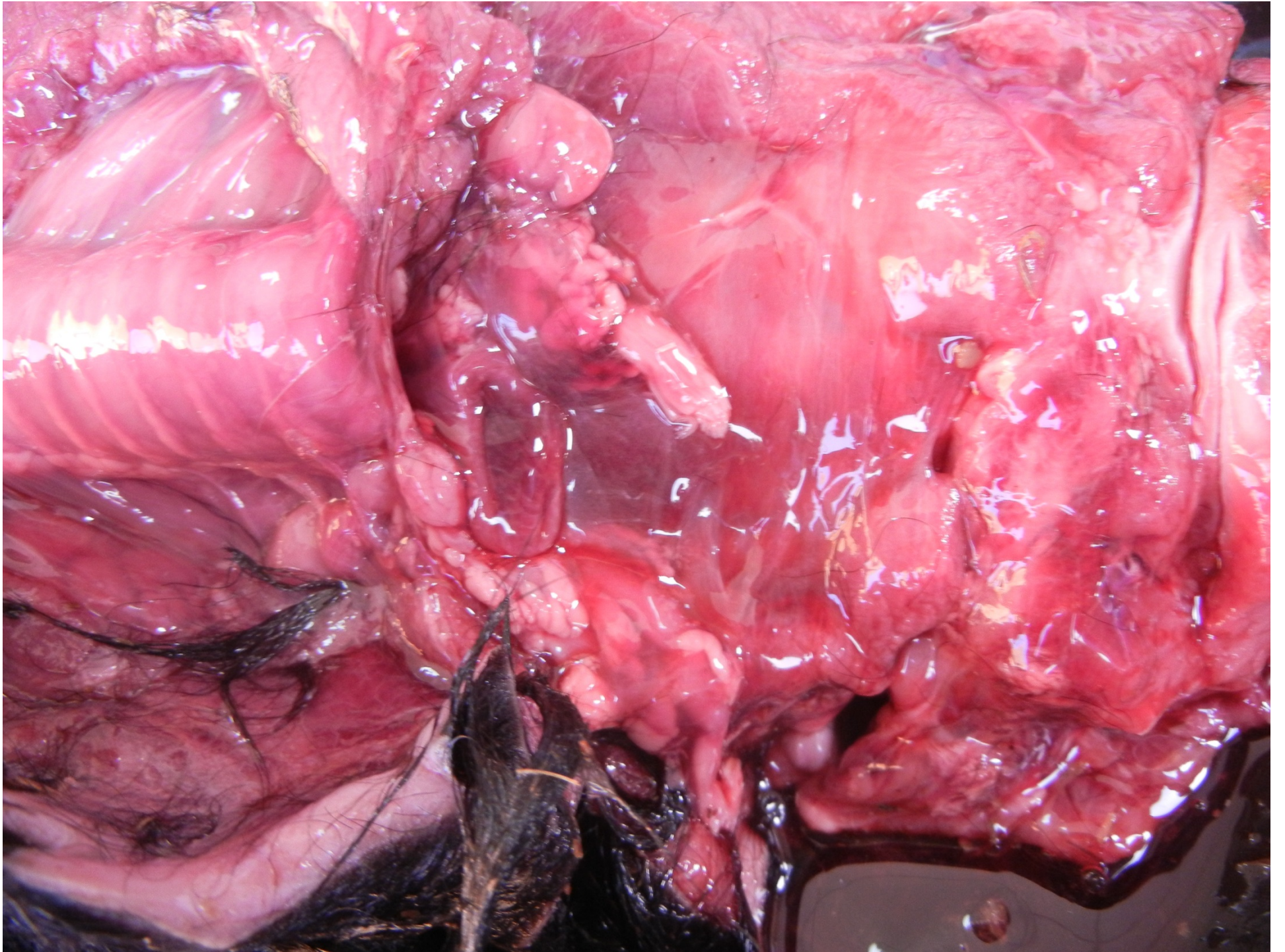
Born alive or dead?



















# Reasons for Fetal Loss

- Malnutrition
- Trauma
- Hormonal
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- INFECTIONS



# Abortion - Infectious

- Bacteria, fungus, protozoa – usually infect the PLACENTA
- Viruses – usually pass right through the placenta and into the FETUS

Fetus dies with infection for only two possible reasons –

- Infection enters fetus to kill tissue
- Infection causes placenta to be insufficient so fetus dies due to lack of nutrients

Diagram the ruminant fetus inside the uterus – how does it receive nutrition (blood supply?)

**ACTIVITY – NOW!**

# Sheep and goats

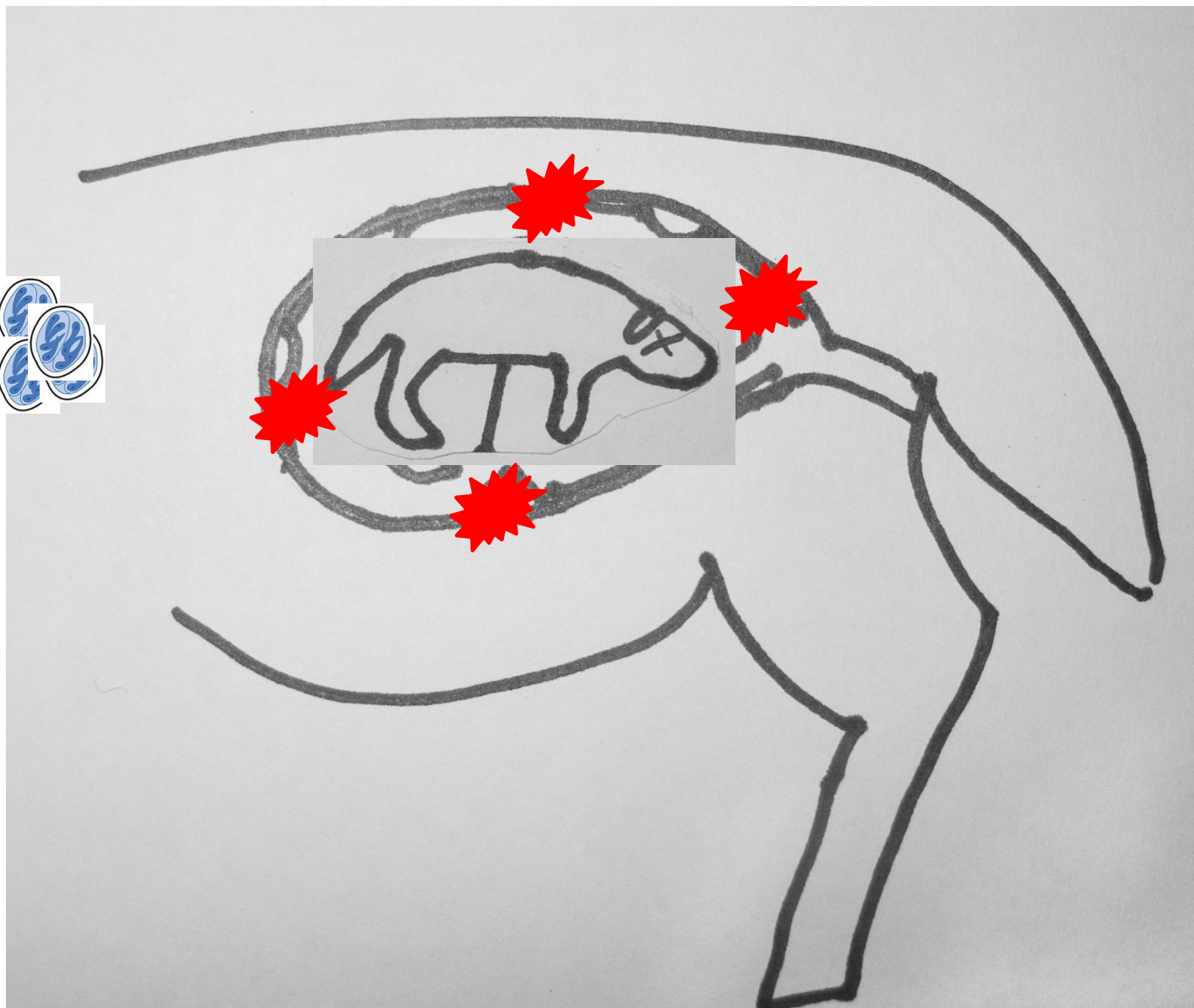
- *Brucella melitensis*
- *Chlamydophila abortus*
- *Toxoplasma gondii*
- *Campylobacter*
- *Q fever*













# Why did the fetus die? (PATHOGENESIS)

Pregnant mom picks up *Toxoplasma* from cat feces. She is NOT sick.



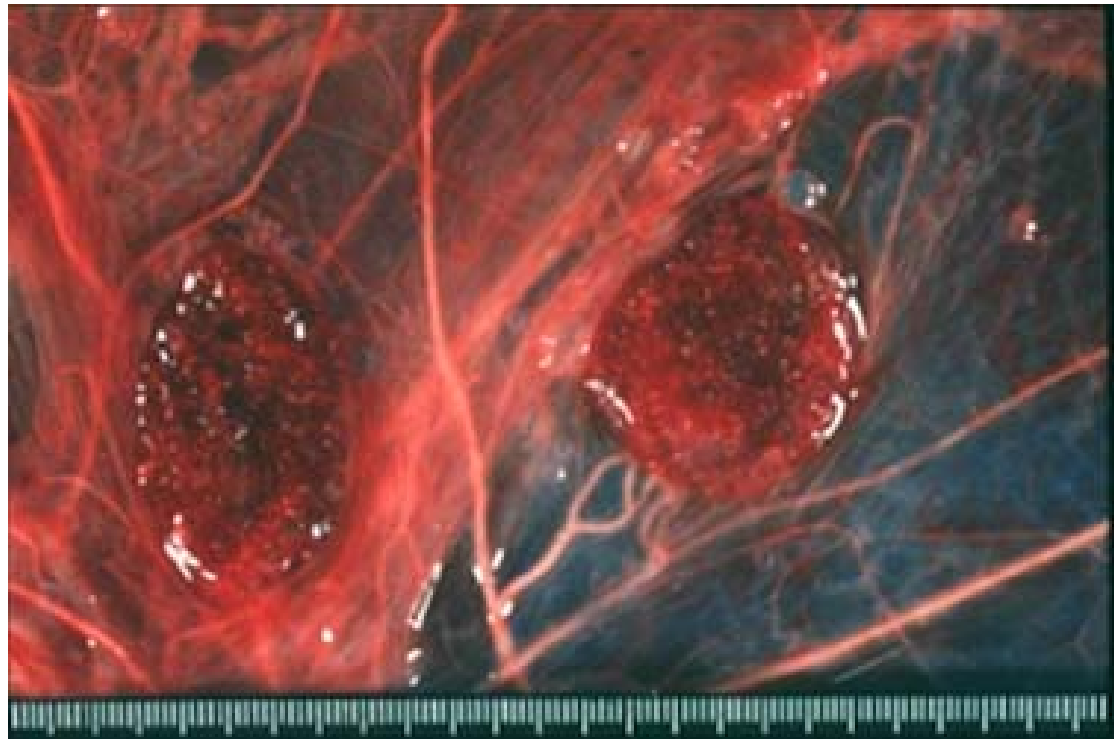
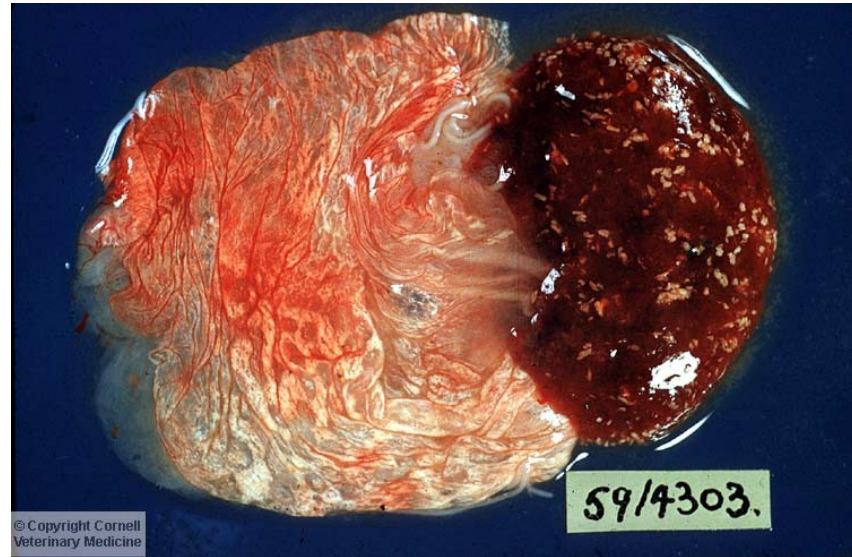
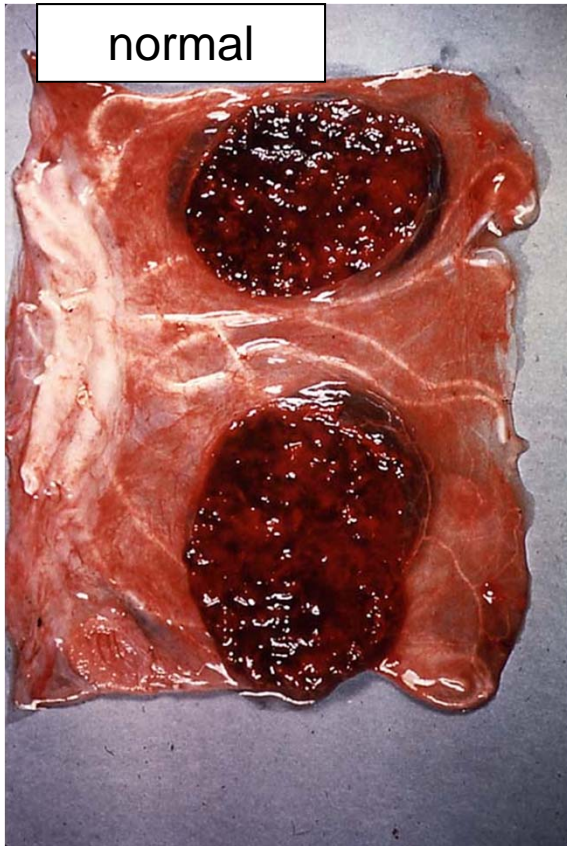
*Toxoplasma* finds placenta (cotyledons) very nice place to grow → →  
NECROSIS

fetus does not get nutrients it needs → →

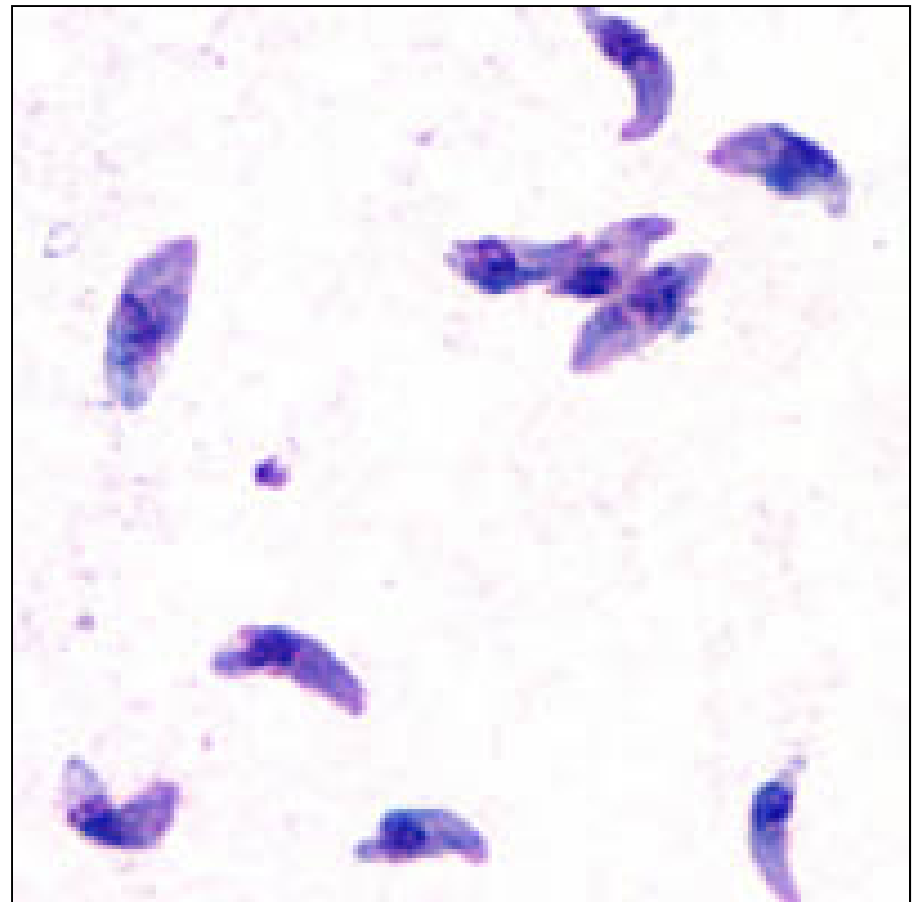
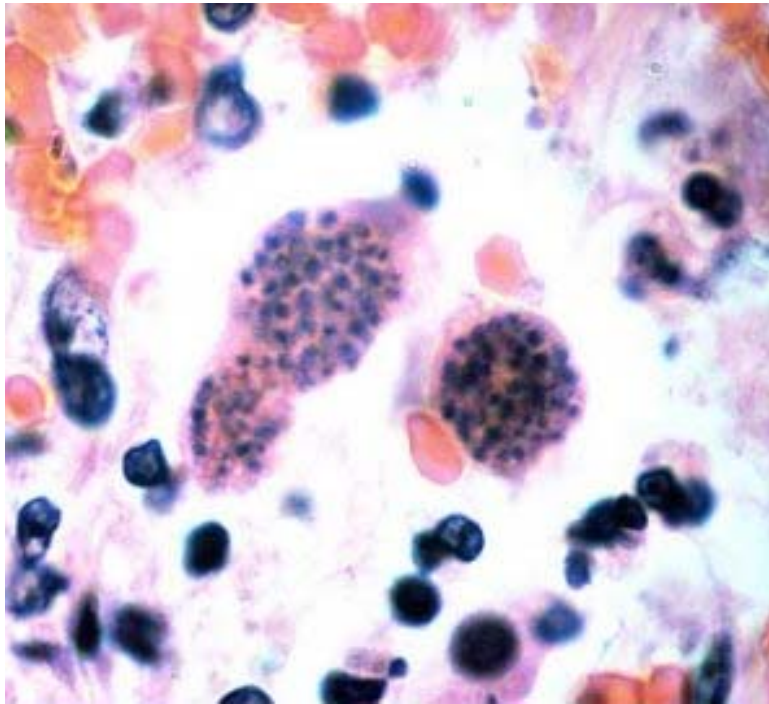
## DEATH OF FETUS

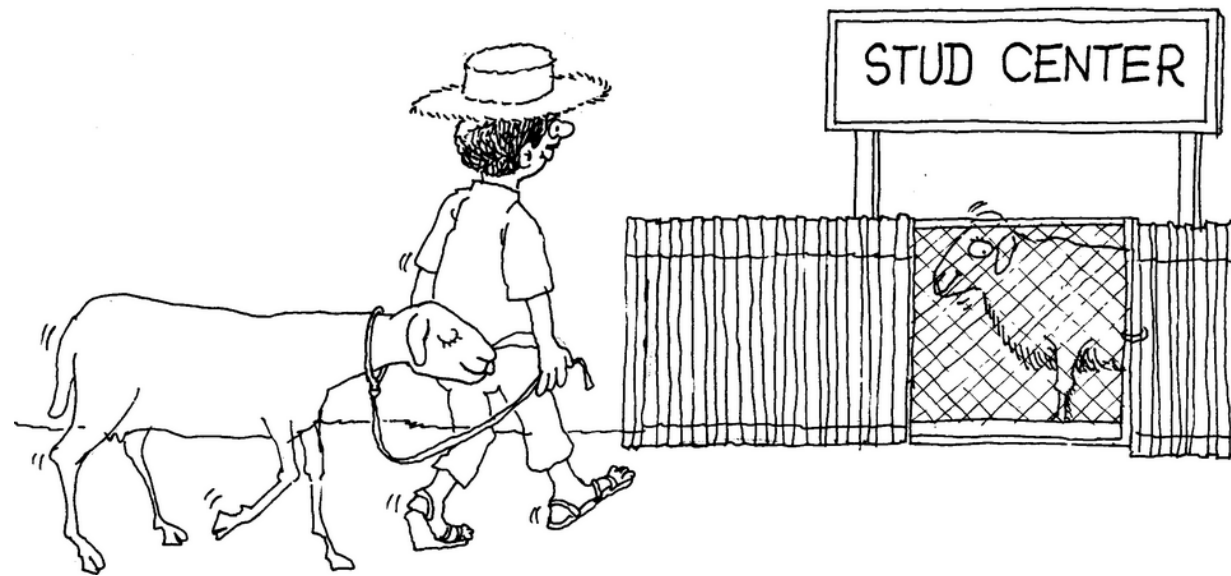
## MOM IS FINE, COTYLEDONARY NECROSIS

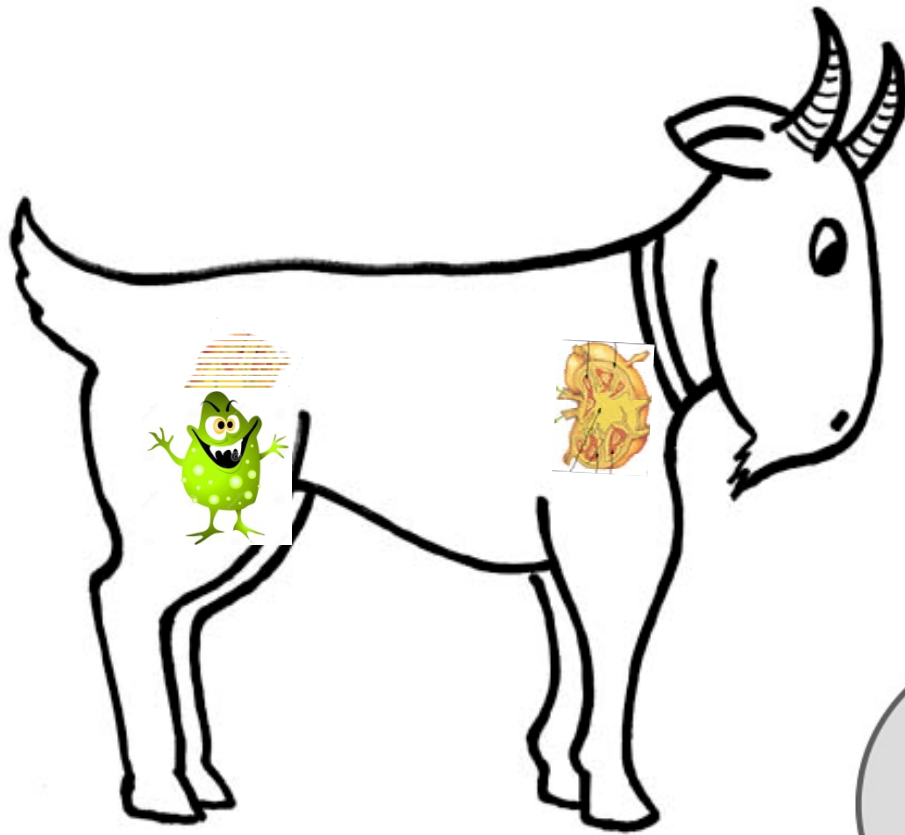
# Toxoplasma



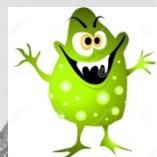




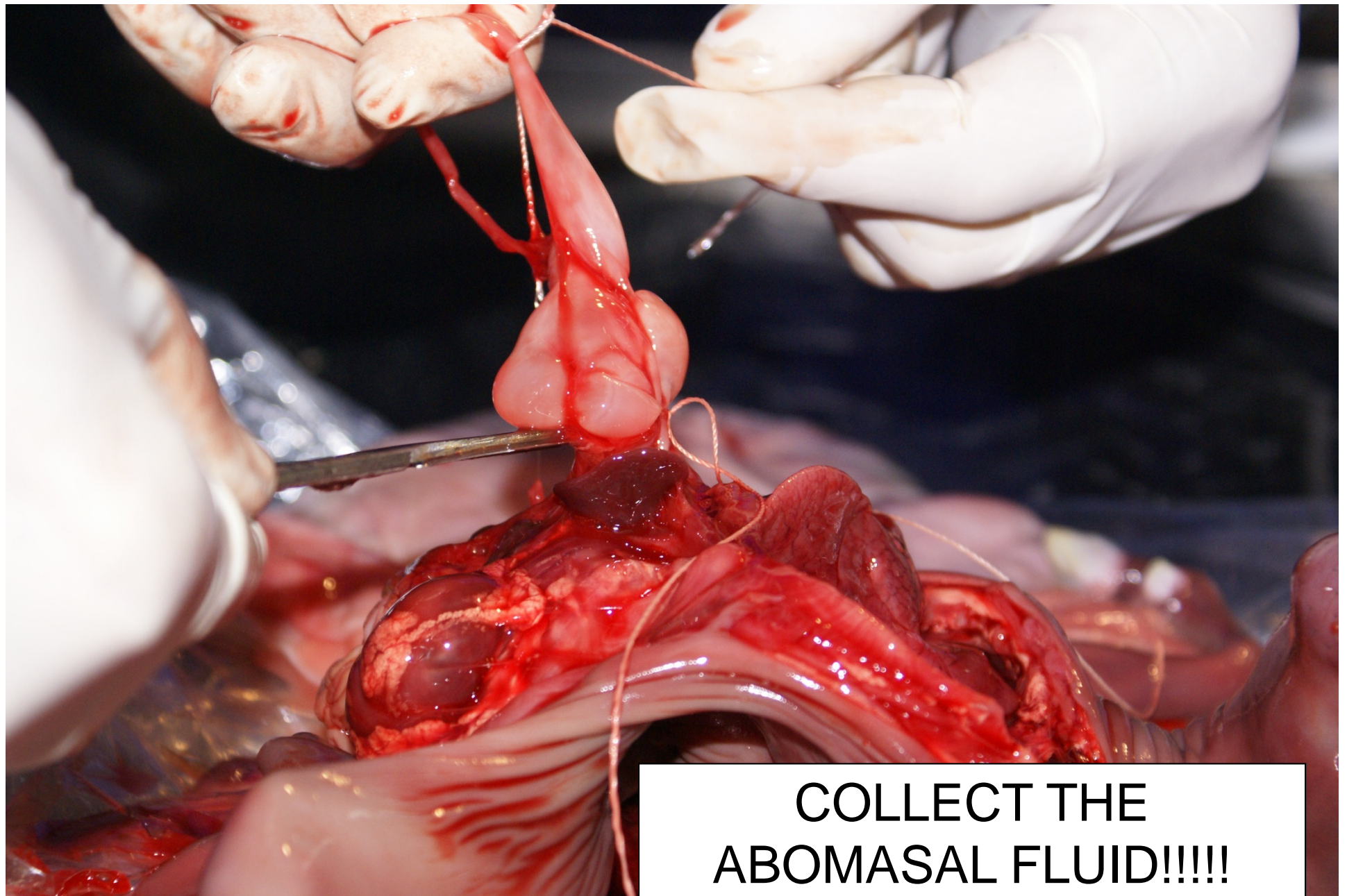




WOW, ERYTHRITOL –  
WATCH ME GROW!!!!







**COLLECT THE  
ABOMASAL FLUID!!!!**













Remember BIOSAFETY!!!!

# Why did the fetus die? (PATHOGENESIS)



Dam is infected with *Brucella*

*Brucella* periodically ventures outside of cells to circulate. If it finds the placenta, it goes WILD (ERYTHRITOL) → → replication, inflammation of both cotyledons AND intercotyledonary areas PLUS fetal infection, especially LUNGS

fetus does not get nutrients it needs → →

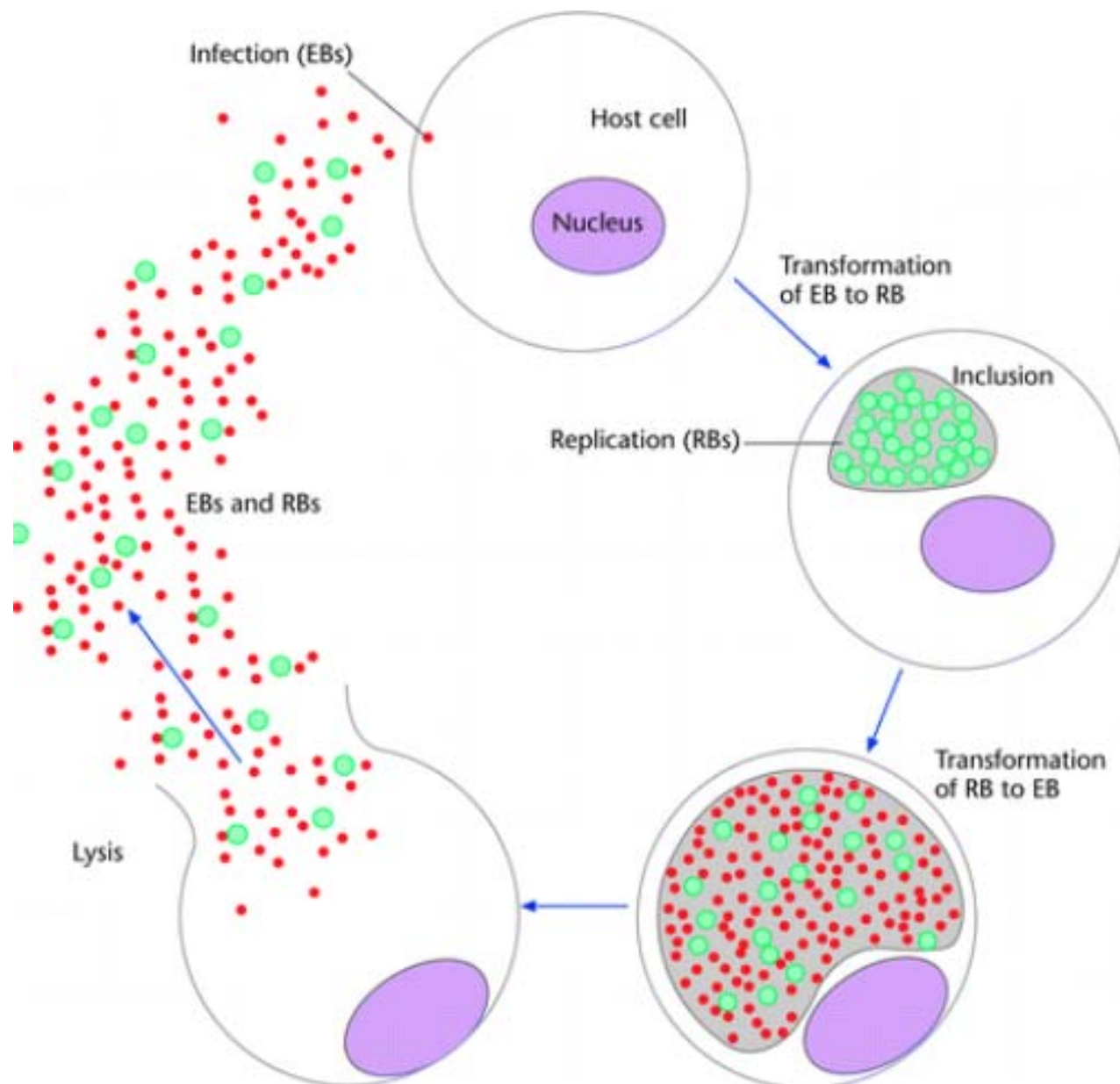
## DEATH OF FETUS

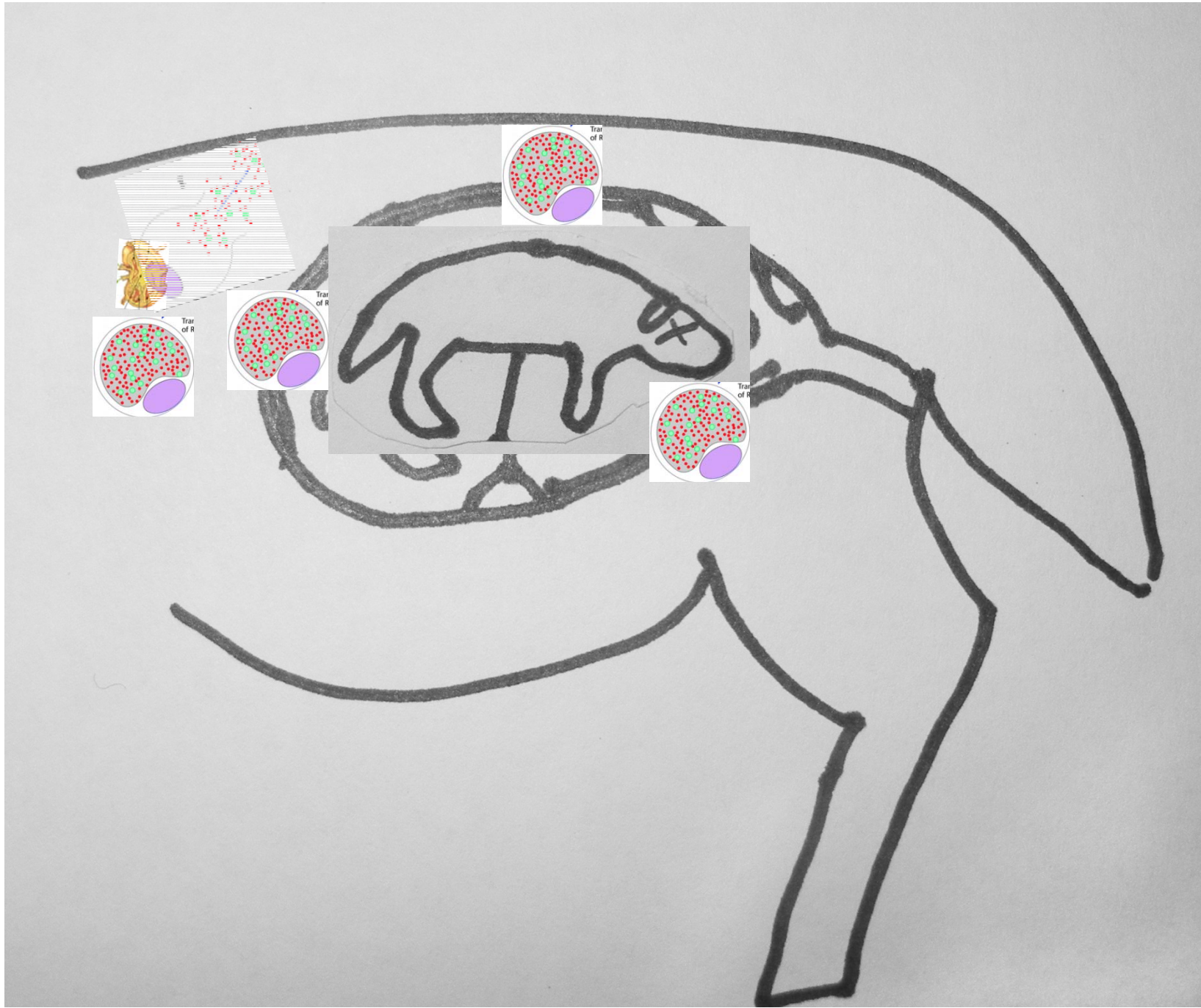
## PLACENTITIS, FETAL PNEUMONIA





**Remember BIOSAFETY!!!!**





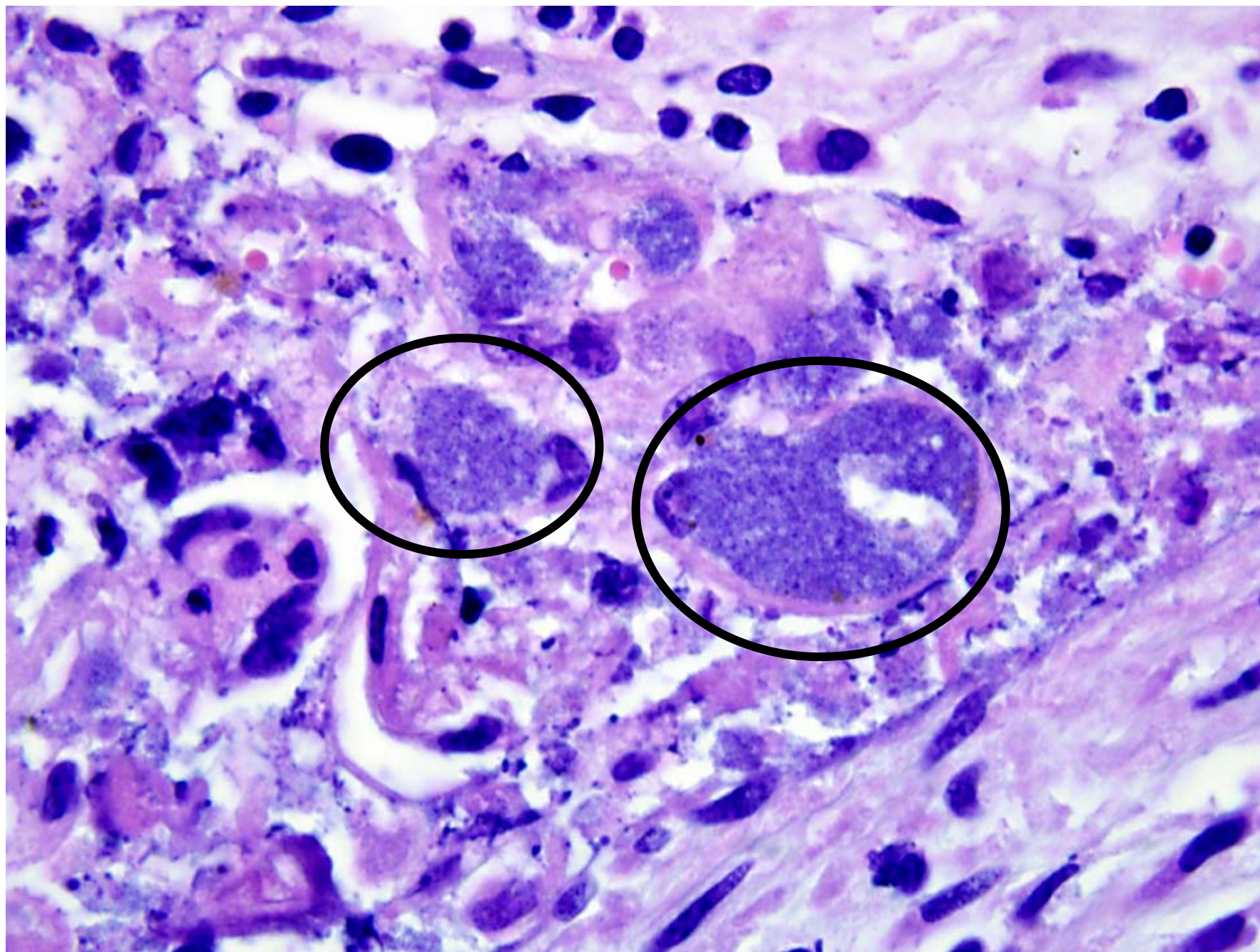


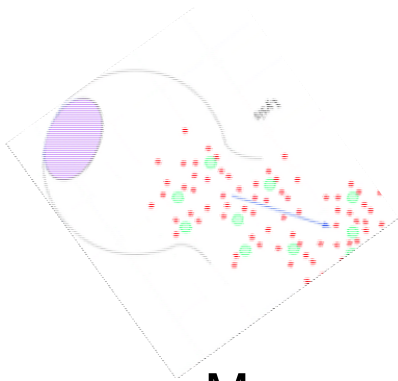












# Why did the fetus die? (PATHOGENESIS)

Mom was infected with *Chlamydia*. Organisms survive  
INSIDE cells. She is NOT sick.

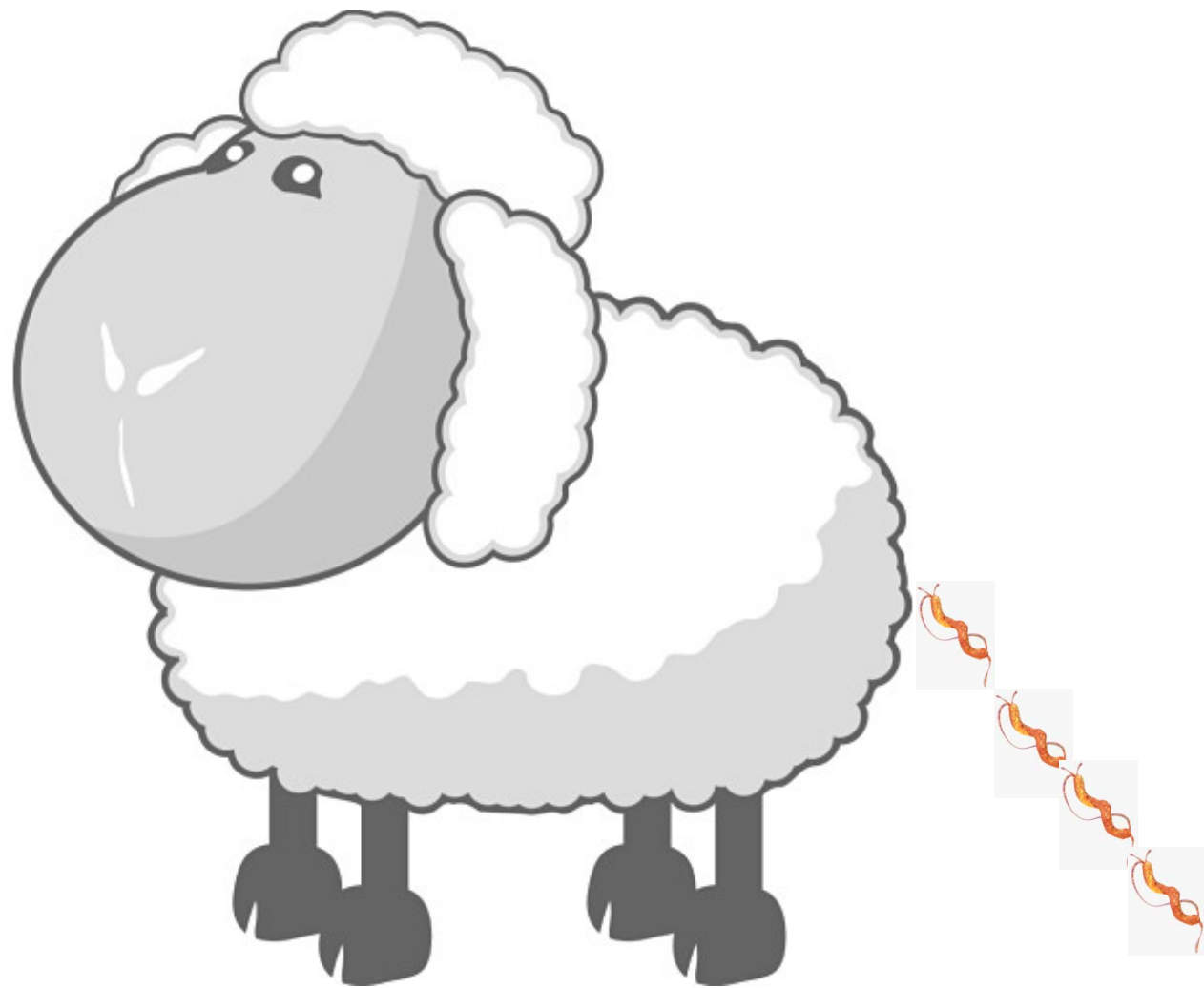
Mom gets pregnant. *Chlamydia* venture outside of  
their cells, circulate, FIND THE PLACENTA → →

*Chlamydia* grows VERY WELL in TROPHOBLASTS,  
replicates there, cells LYSE → → NECROSIS → → fetus does  
not get nutrients it needs

## DEATH OF FETUS

## COTYLEDONARY NECROSIS

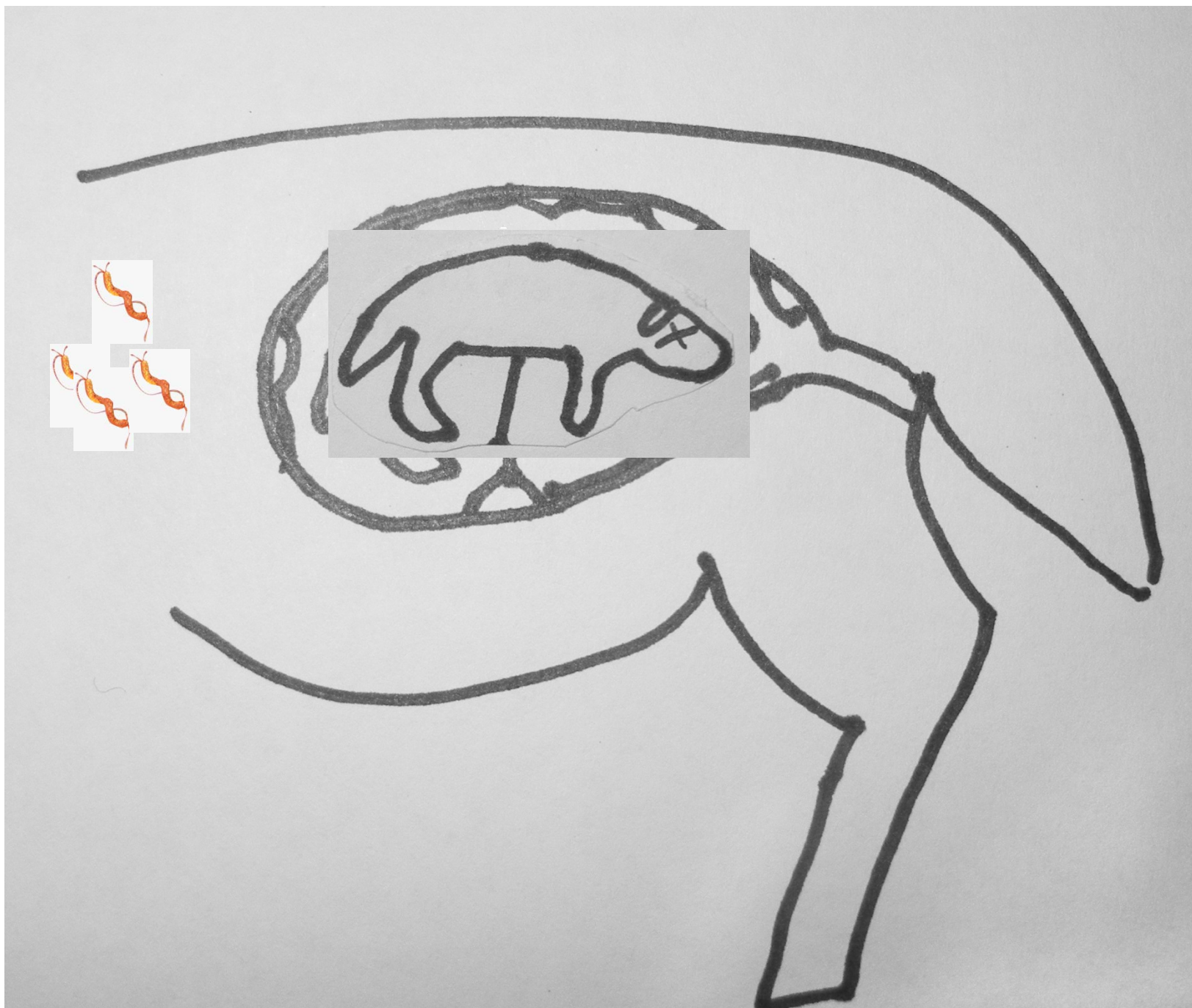




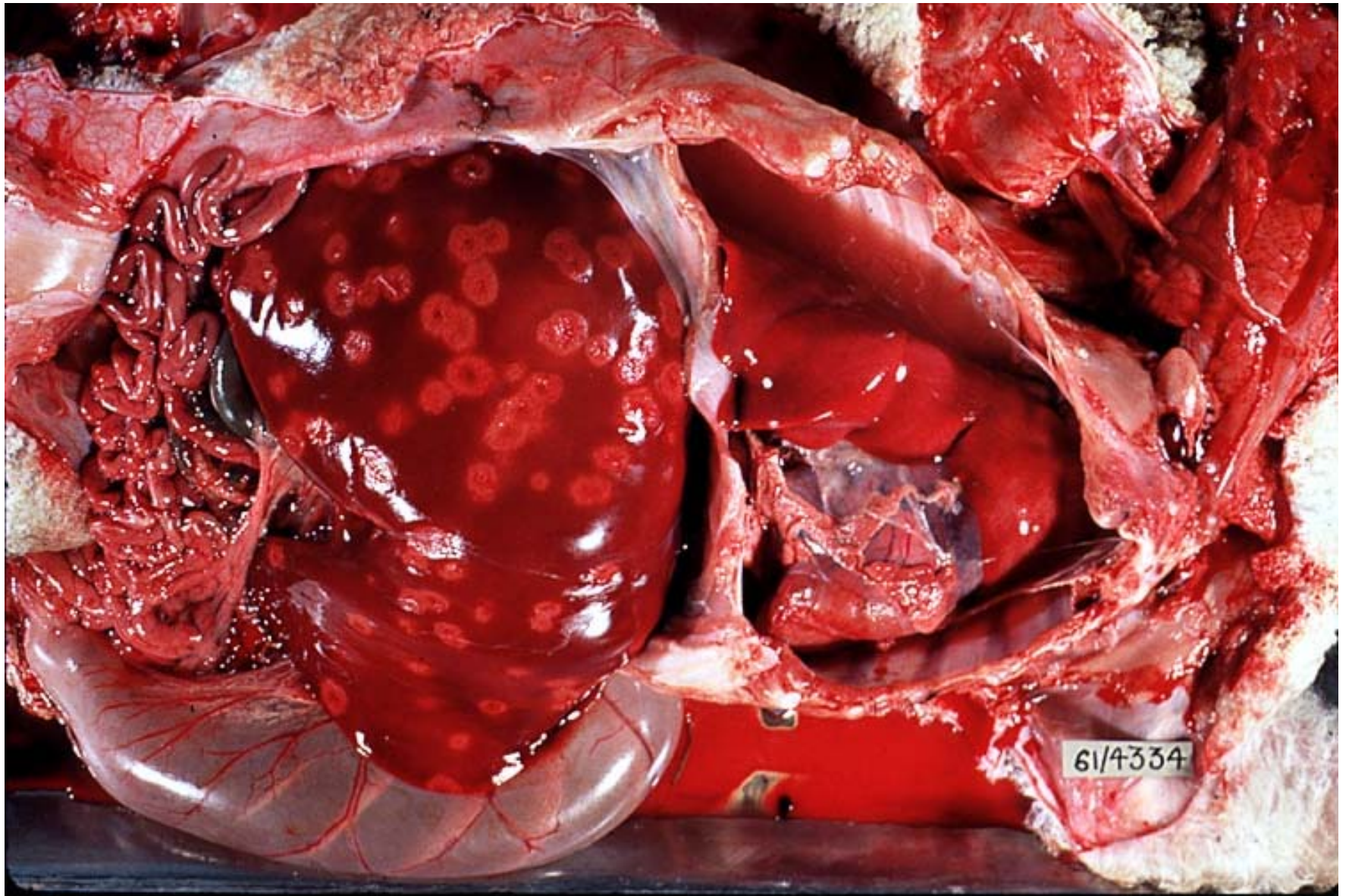
# *Campylobacter fetus*















# Why did the fetus die? (PATHOGENESIS)

Pregnant dam ingested *Campylobacter fetus*, went to placenta  
and swam on into LIVER → →

Replicates and causes necrosis in fetal liver → →

Fetus dies of LIVER FAILURE

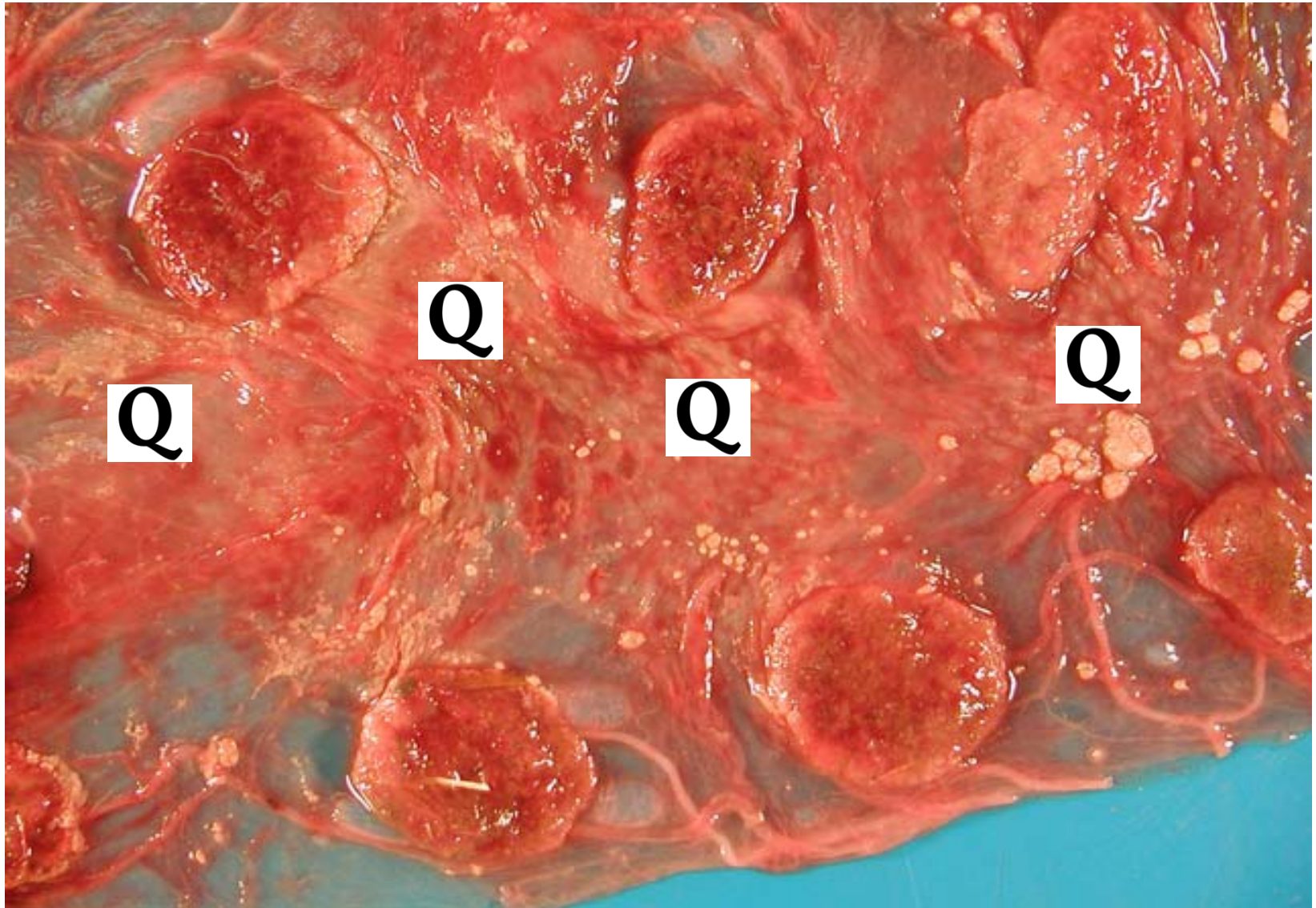
## DEATH OF FETUS

Placental lesions minimal;  
**FETAL LIVER NECROSIS**

Q











**Remember BIOSAFETY!!!!**

# Sheep and goats

- *Brucella melitensis*
- *Chlamydophila abortus*
- *Toxoplasma gondii*
- *Campylobacter*
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**QUIZ TIME!!!!**

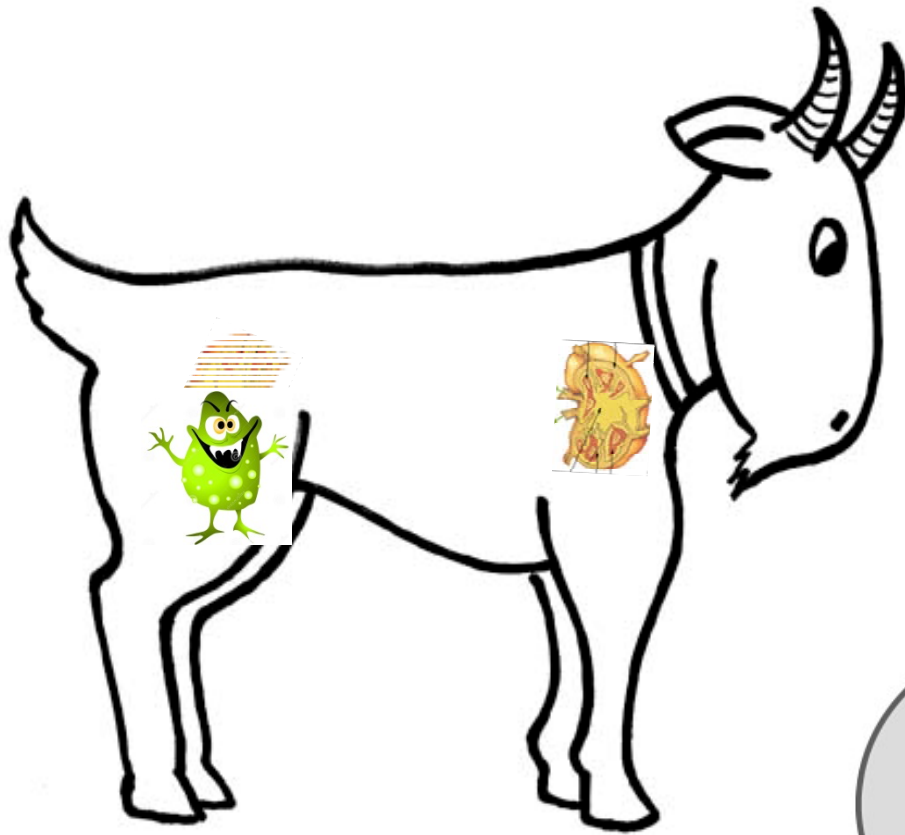




# Which are true of BRUCELLA abortions?

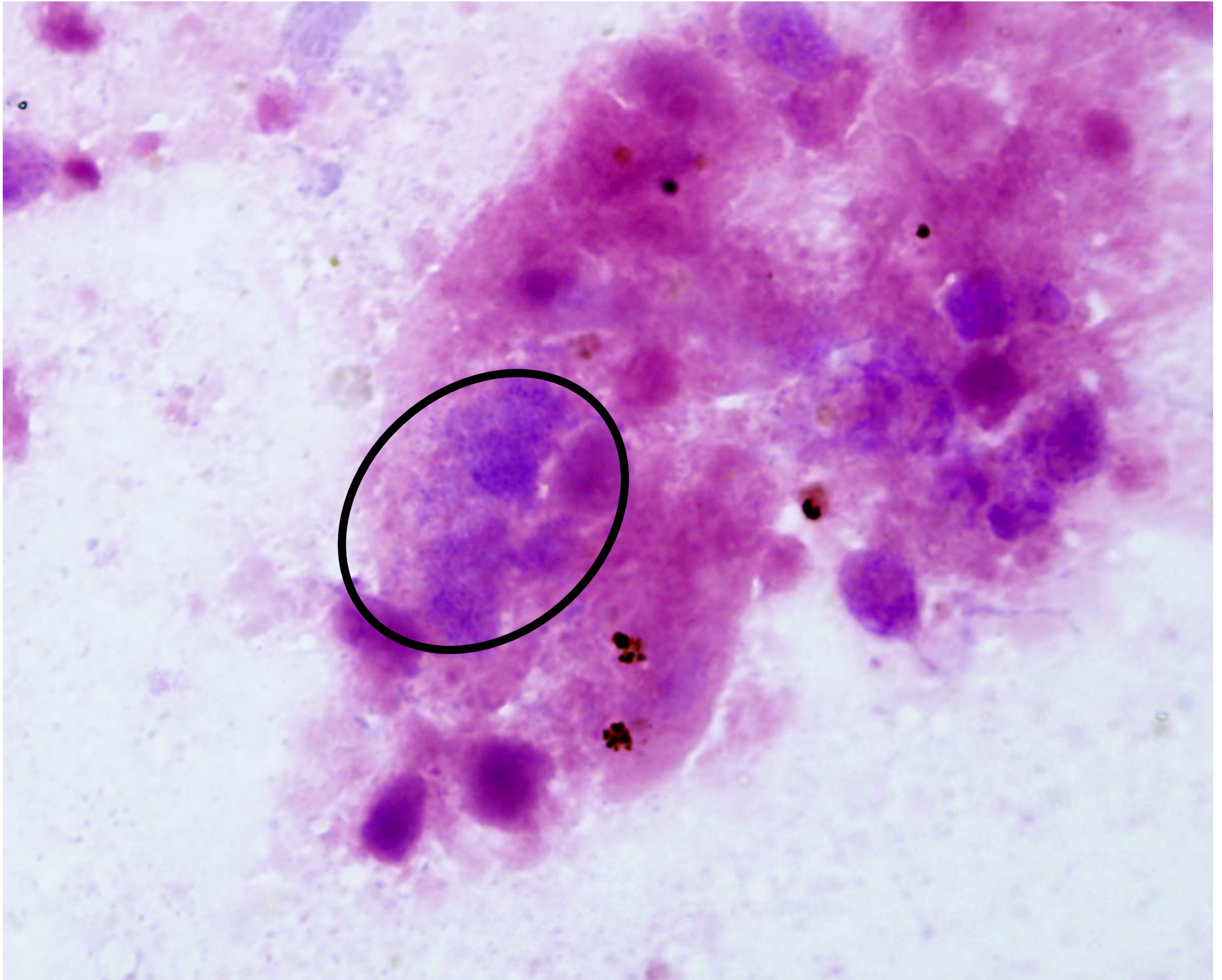
- ➡ A. It is a zoonotic organism so be careful!!!
  - B. The organism goes straight through to kill the fetus so there are no placental lesions
- ➡ C. The fetus dies because the placenta fails to transfer nutrients (placentitis)
- ➡ D. It is a CHRONIC infection
- E. It is carried by cats











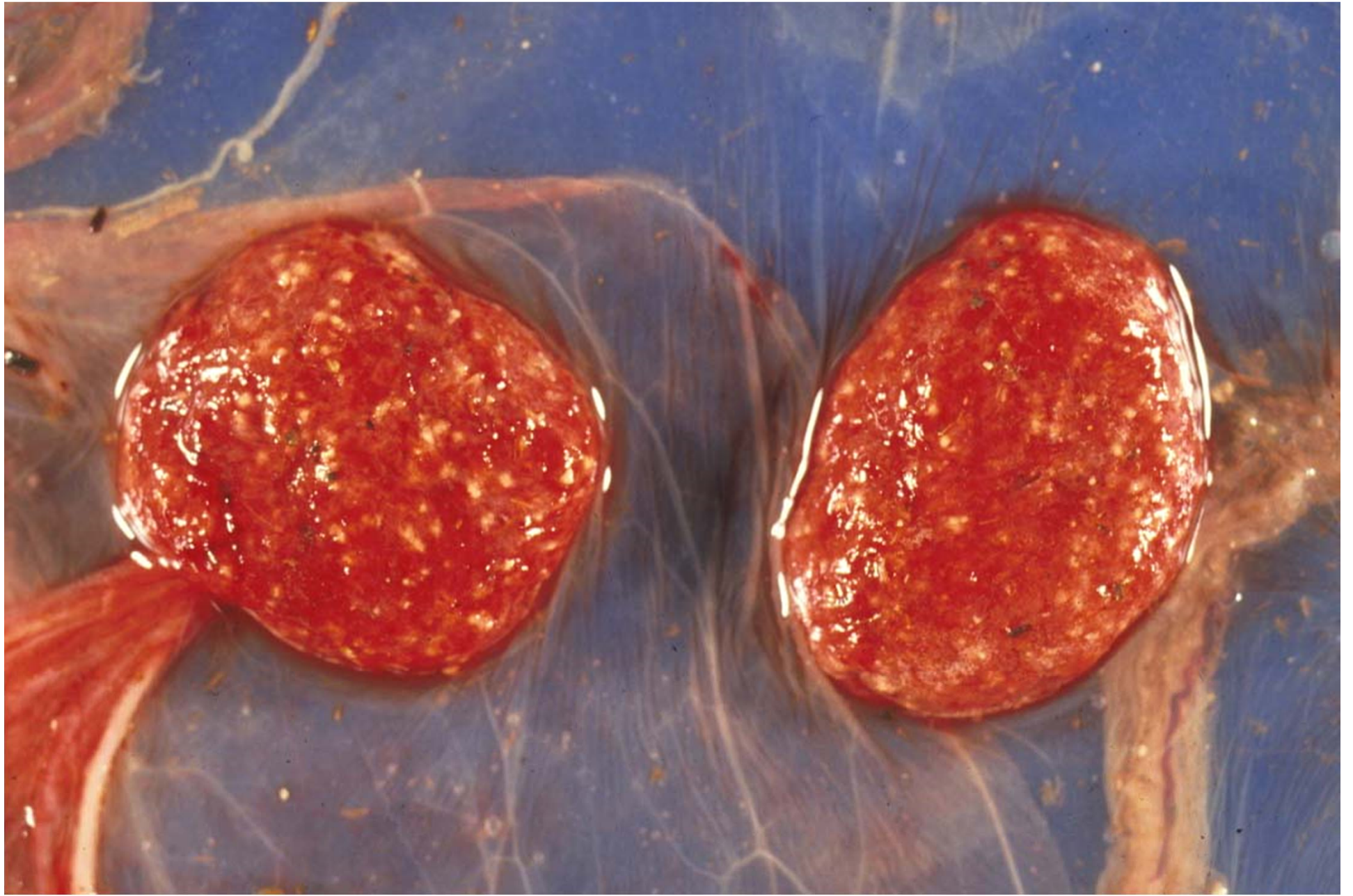


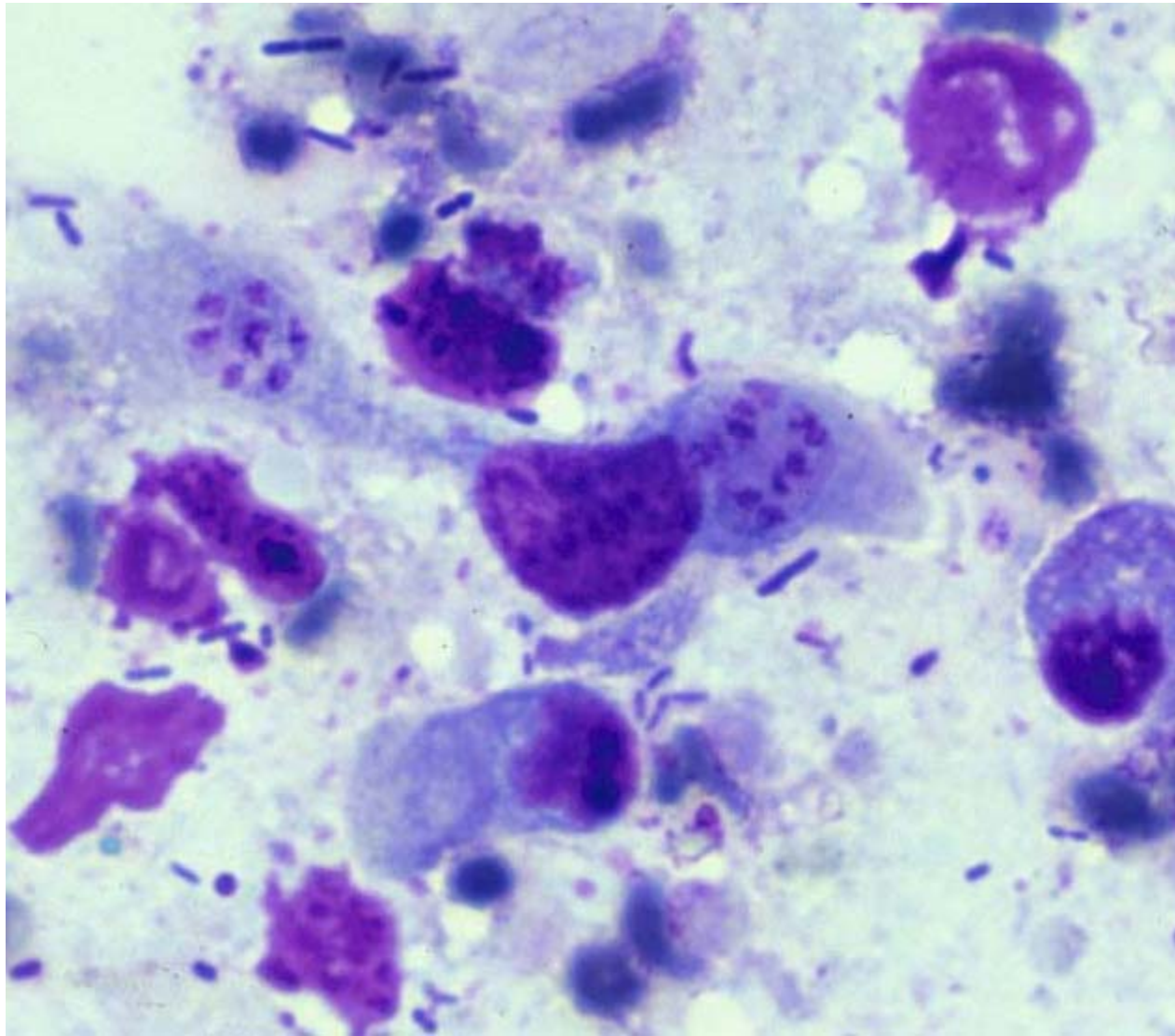
# Which are true of CHLAMYDIA abortions?

- ➡ A. The fetus dies because of the BAD placental lesions
- B. It is a zoonosis
- C. The organism goes straight through to kill the fetus so there are no placental lesions
- ➡ D. It is a CHRONIC infection
- E. It is carried by cats









# Which are true of TOXOPLASMA abortions?

- A. The organism goes straight through to kill the fetus so there are no placental lesions
- B. It will also cause fetal pneumonia
- C. It is carried by cats
- D. Necrotizing placentitis







