

**ENZOOTIC ABORTION IN EWES(EAE)
(ENZOOTIC OVINE ABORTION (EOA))**

ENZOOTIC ABORTION IN COWS

DEFINITION

It is a highly contagious disease of sheep, goats and to a lesser extent cows.

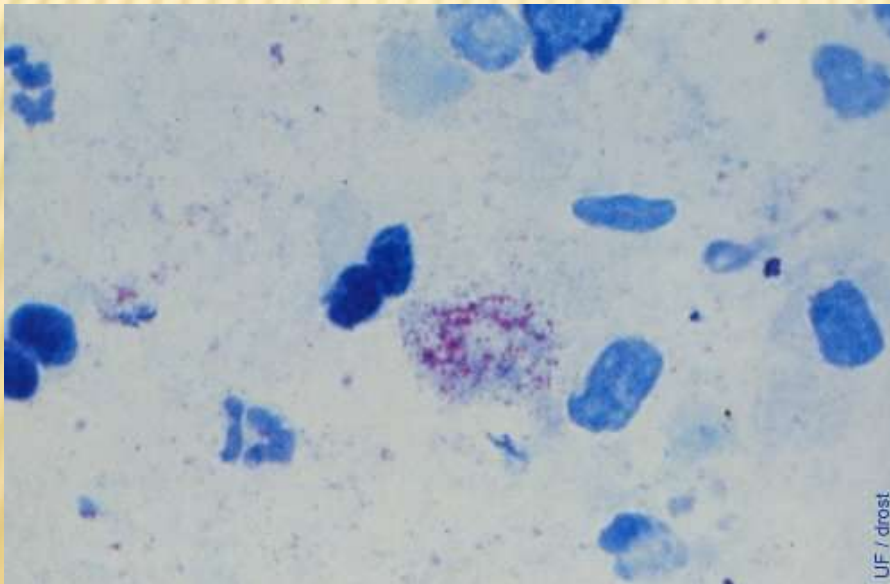
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Characterized by:

- ✘ Stormy abortion in last stages of pregnancy,
- ✘ Delivery of full-term stillborn lambs and weak lambs that generally fail to survive beyond 48 hours.
- ✘ It causes serious reproductive wastage in many sheep-rearing areas of the world,

CAUSE : *CHLAMYDOPHILA ABORTUS* (FORMERLY CALLED *CHLAMYDIA PSITTACI*)

- ✘ Gram-negative bacterium, obligate intracellular pathogen of eukaryotic cells.
- ✘ It can be zoonotic where an animal disease spreads and infects a human.



TRANSMISSION

Venereal transmission is uncommon

- ✘ **Ingestion: oral route** infection occurs and abortion is not apparent until the next pregnancy, when the organism invades the placenta at 90 days' gestation causing a **suppurative necrotising placentitis** at the time of rapid foetal growth.
- ✘ In some flocks ewes may become infected and abort in the same pregnancy if infection occurs at least 6 weeks before lambing.

✘

EPIDEMIOLOGY

- ✘ Ewes which **abort or drop stillborn or weak lambs** shed vast numbers of the organism in the diseased placenta and uterine discharges.
- ✘ The *Chlamydiae* organisms remain viable for several days and allow **spread of infection**. Survival is longer if temperatures drop or freeze.
- ✘ In rams, infection can be seen as **orchitis** and the organism is excreted in the semen, though venereal spread is thought to be uncommon.

TRANSMISSION

EAE is a highly contagious; from sheep to sheep disease,

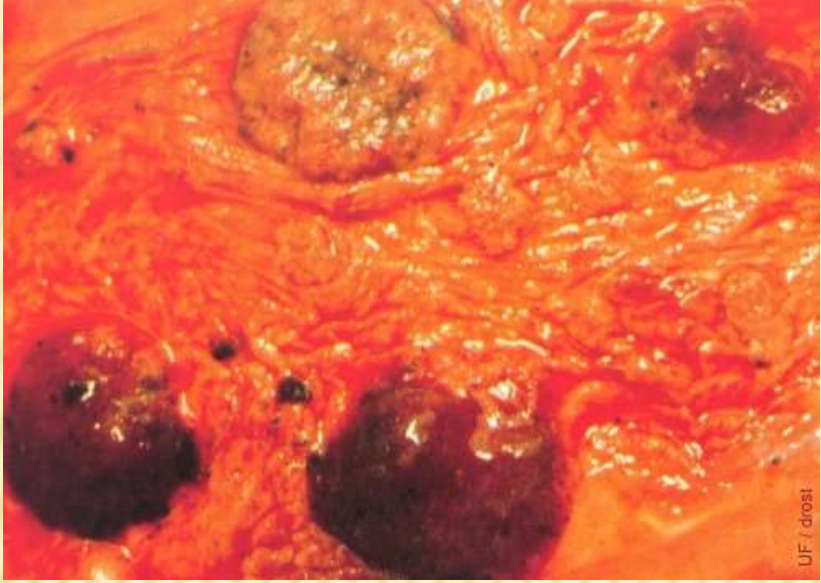
1. The **oral route(ingestion)**; and is not apparent until the next pregnancy, when the organism invades the placenta at 90 days' gestation causing a **suppurative necrotising placentitis** at the time of rapid foetal growth.
2. Aerosol transmission, suggested.

TRANSMISSION

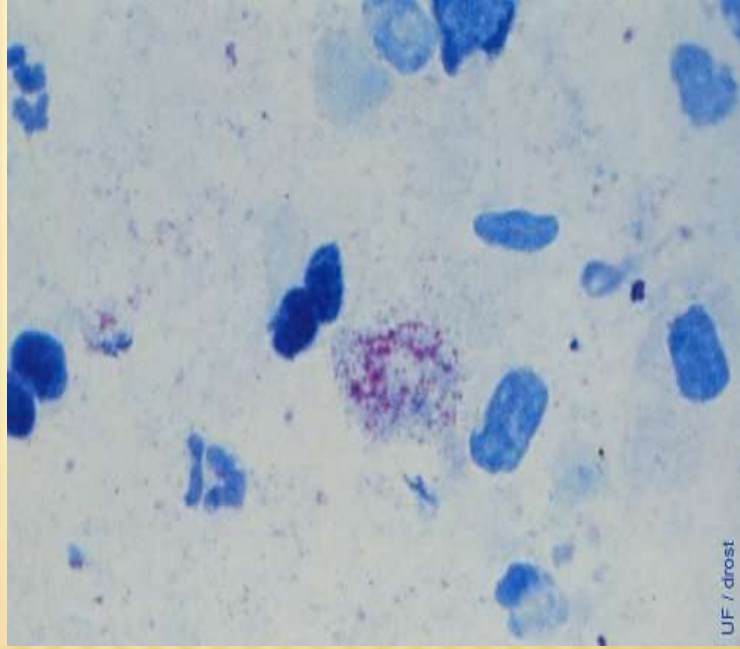
- ✘ Venereal spread is uncommon; although in rams, infection can be seen as **orchitis** and the organism is excreted in the semen.
3. Sparrows and pigeons may act as a reservoir of infection.
 4. Ticks and insects may also play a role in transmitting the disease.

CLINICAL SIGNS

- ✘ Infected animals show no clinical illness prior to abortion, although behavioural changes and a vulval discharge may be observed in ewes within the last 48 hours of pregnancy.



UF / drost



UF / drost

× **EAE Placentitis.**

Both cotyledonary and intercotyledonary areas are severely thickened and covered with exudate.



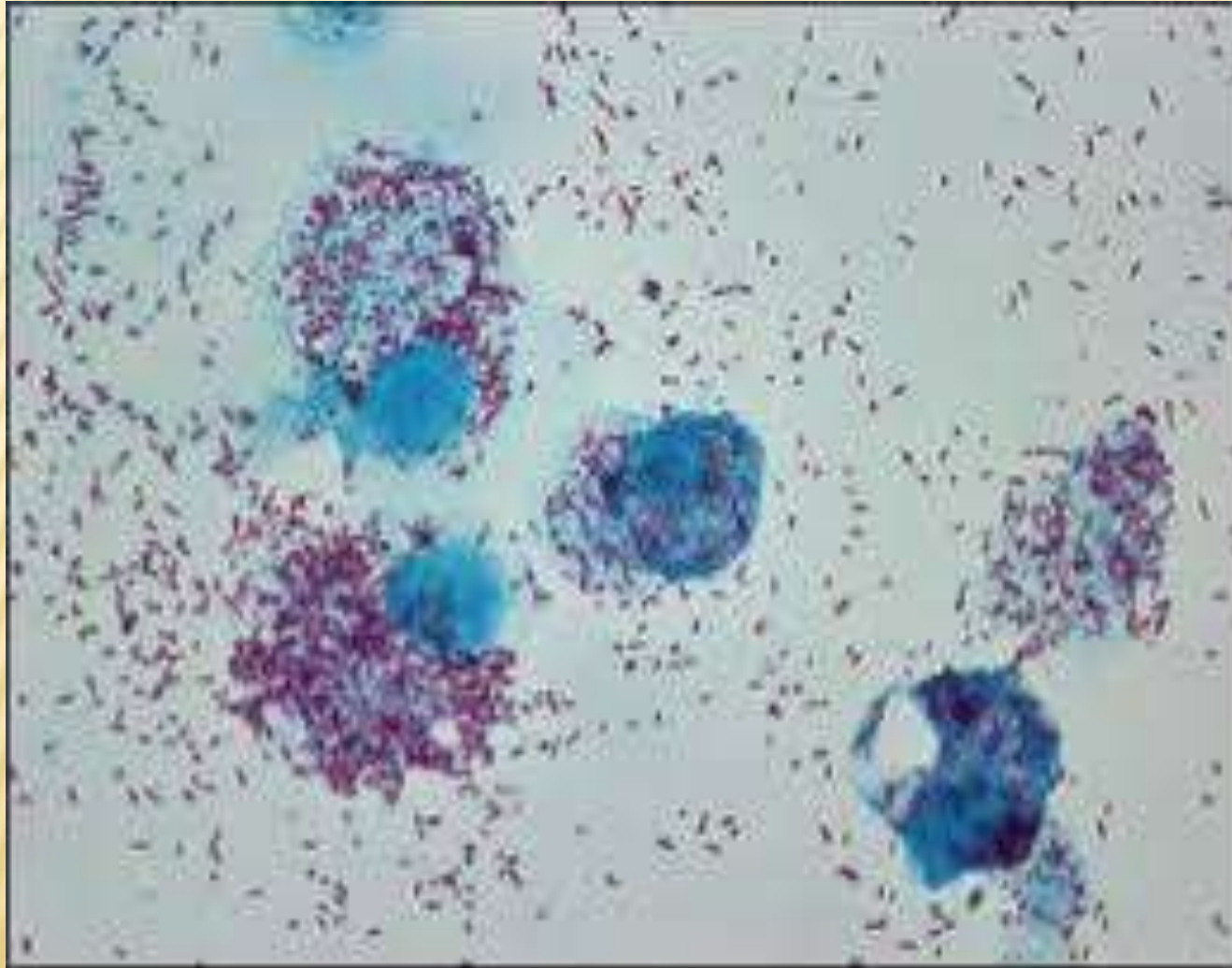
INFECTION IN EWES

- ✘ **Abortion storms** are a feature of EAE, especially in housed, intensively managed flocks.
- ✘ Abortions occur during the last 2–3 wk of gestation regardless of when infection occurs.
- ✘ The fetuses are fresh with minimal autolysis.
- ✘ There is placentitis with necrotic, reddish brown cotyledons and thickened brown intercotyledonary areas covered by exudate.
- ✘ Chlamydial elementary bodies can be found by examination of appropriately stained smears of the placenta or vaginal discharge, but the organisms cannot be differentiated from *Coxiella burnetii*, which occasionally causes abortion in sheep.

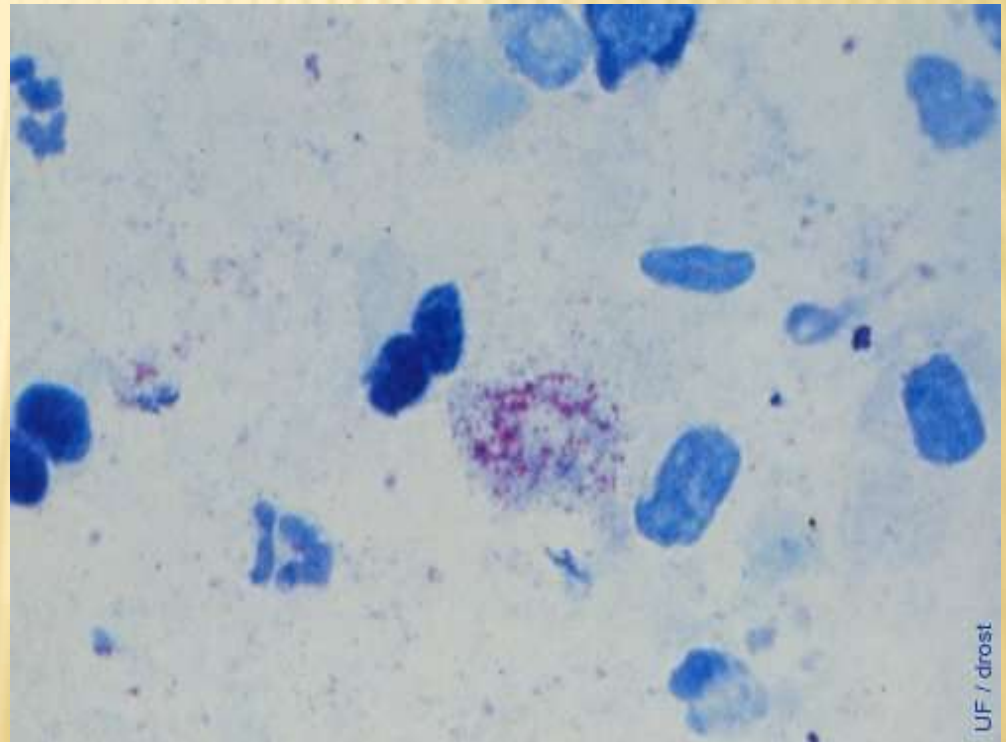
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- ✘ Ewes seldom abort more than once, but they remain persistently infected and shed *C abortus* from their reproductive tract for 2–3 days before and after ovulation.
 - ✘ Rams can be infected but rarely transmit the organism venereally.

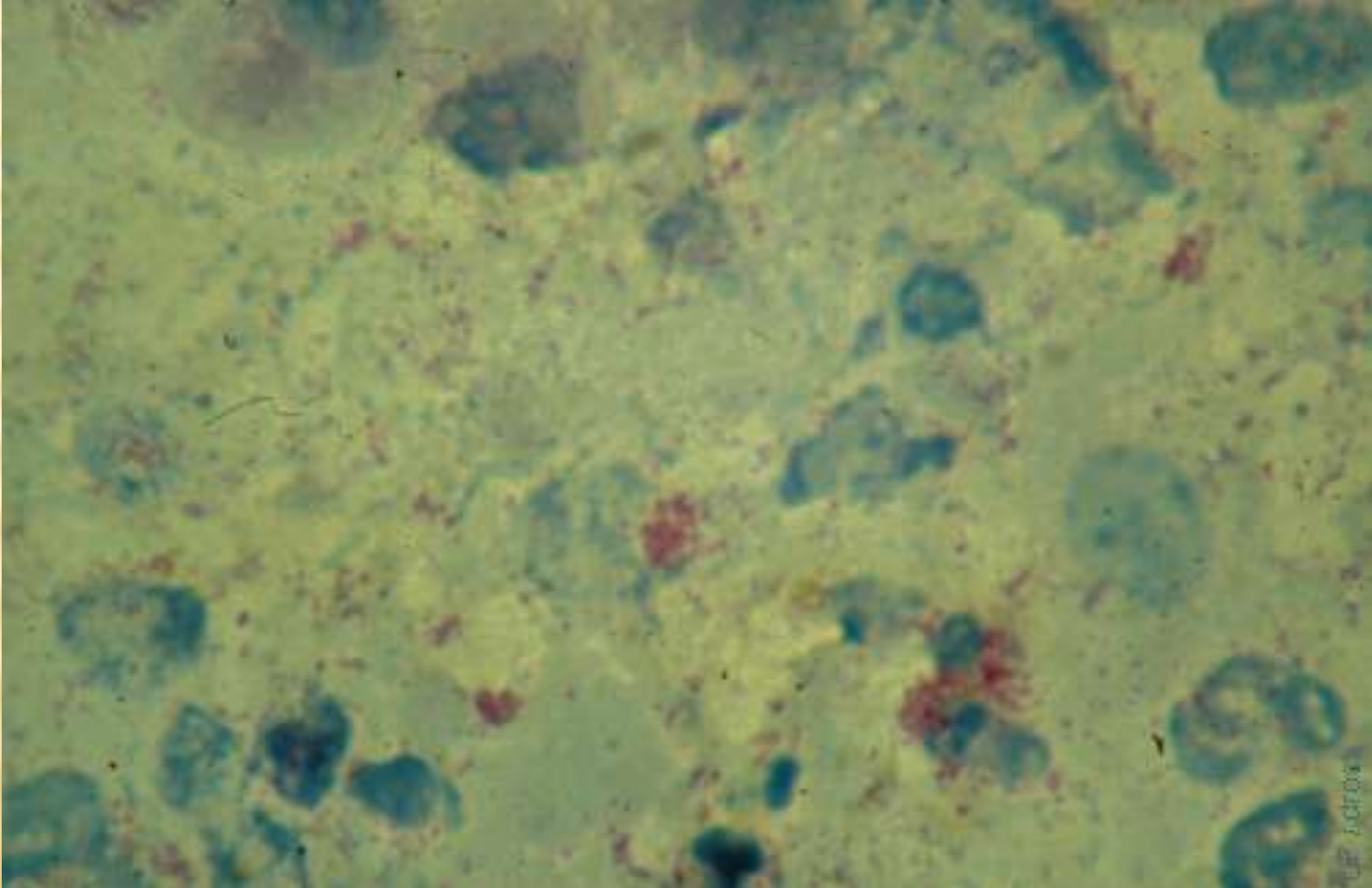
DIAGNOSIS

1. Direct smear: The still moist fleece of fetuses or vaginal swabs of females that have freshly aborted, inflamed cotyledons; stained with modified acid fast stain(Stamp stain). Demonstrating large number of bright red intracytoplasmic (intracellular) small elementary bodies.

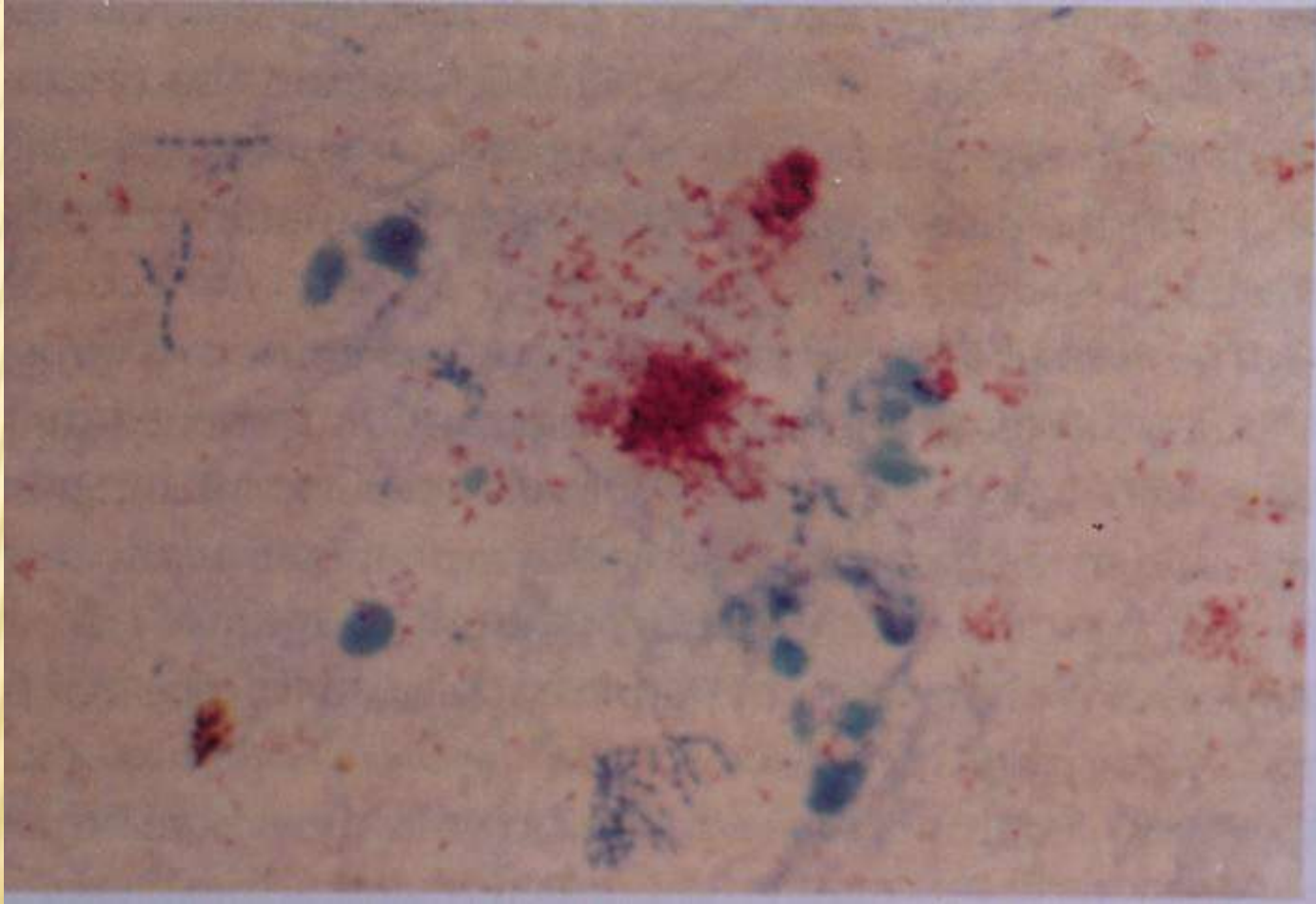


**LARGE NUMBERS OF SMALL
(300 NM) COCCOID ELEMENTARY BODIES
ARE SEEN SINGLY OR IN CLUMPS STAINED
RED AGAINST THE BLUE BACKGROUND OF
CELLULAR DEBRIS.**





BRUCELLA NESTS



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- × Definitive diagnosis is by identification of *C abortus* by ELISA, fluorescent antibody staining, PCR, or isolation

TREATMENT AND CONTROL

1. Mark and isolate the aborting ewes, dispose of the bedding and aborted products and disinfect the pen thoroughly.
2. Treating in-contact ewes with long-acting oxytetracycline(**Terramycin LA** /1ml per 10kg into muscle as a single injection) will greatly reduce the number of sheep aborting; or oral tetracycline.

3. Vaccination:

- a. *C. abortus* bacterins are effective in reducing abortions; usually given with *Vibrio* vaccine.
- b. Modified live vaccine. live-attenuated vaccines can only be used in **non-pregnant females** but the inactivated vaccine can be used **during pregnancy**.

POTENTIAL ZOOONOSIS

- ✘ *C abortus* is zoonotic but human cases are rare.
- ✘ All have involved pregnant women, who developed life-threatening illness. Only in a few cases in which the fetus was delivered by cesarean section did the infant survive.
- ✘ Pregnant women should not work with pregnant sheep, especially if abortions are occurring.

DIFFERENTIAL DIAGNOSIS

- × Other causes of abortion in small Ruminants:
- × Campyloacteriosis.
- × Toxoplasmosis,
- × Leptospirosis,
- × Brucellosis,
- × Listeriosis,
- × Q Fever