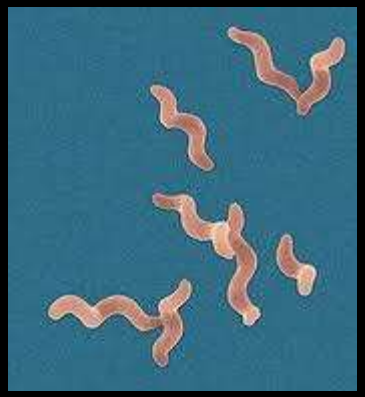


CAMPYLOBACTERIOSIS (VIBRIOSIS)

- It is a contagious disease of cattle and sheep characterized by abortion and infertility. It is the primary cause of ovine abortion world wide.

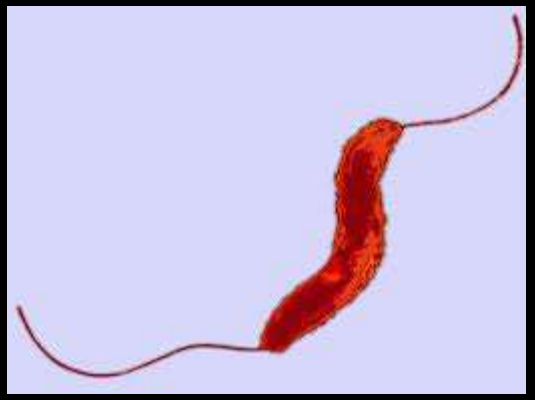
Bovine genital campylobacteriosis

- is a venereal disease characterized primarily by
- early embryonic death, infertility,
- a protracted calving season,
- occasionally abortion.
- Distribution is probably worldwide.

In ewes, campylobacteriosis is orally transmitted.

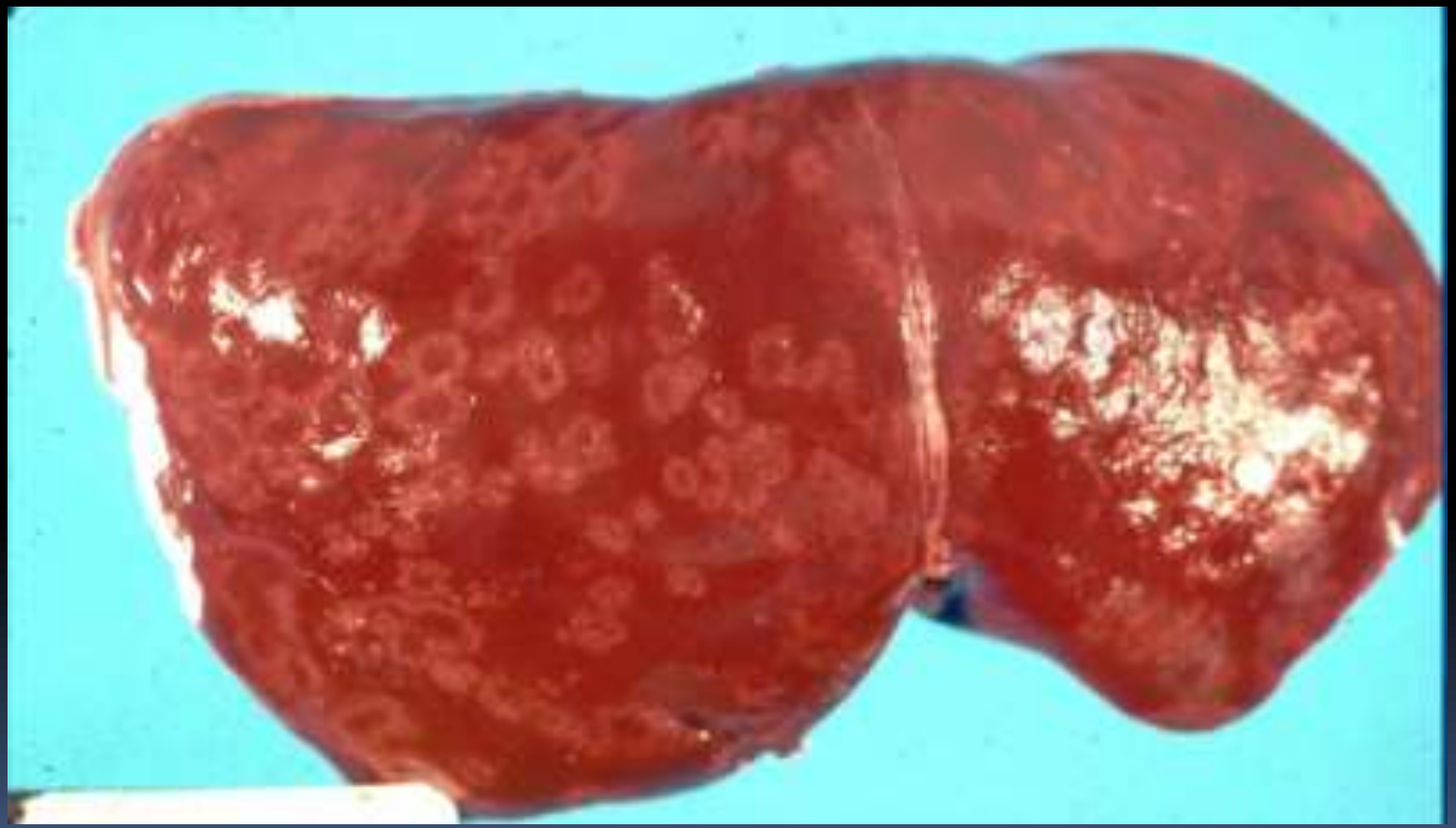
- Resulting in abortions in late pregnancy,
- stillbirths.
- Ewes may develop metritis after expelling the fetus.

Cause:



- Campylobacter spp.
- is motile,
- gram-negative curved or coma shape bacteria,
- two may unite forming S- or sea-Gull form;
- many may unite forming long spiral.
- It is polar flagellated, microaerophilic bacteria.

- Species mostly included in animal abortion are:
- *Campylobacter fetus var. venerealis*. In cattle.
- *C. fetus var. fetus*. In sheep and cattle.
- *C. jejuni* In both.



morphology

Transmission: **In bovine,**

- Sexually transmitted disease.
- Vibriosis is not to spread from one female to another.
- It is possible for it to spread between bulls running together.

In ovine,

- Transmitted by ingestion of contaminated materials.
- **No sexual transmission.**

Pathogenesis:

- Asymptomatic carrier bull…venereal transmission to susceptible heifer or cow----- the organism passes through the cervix and establishes in the uterus-------inflammation of the lining of the uterus (mild endometritis) and of the fallopian tubes or oviducts (salpingitis)……no further conceptions …infertility for up to 5 months…….protective immunity by IgA in cervico-vaginal mucus and IgG in uterus .. inflammation subsides……recovery of fertility.

In ovine,

- Ingestion --------intestine------ absorption-------a period of bacteremia--------- The organism localizes in the placenta--------
- Placentitis ---------abortion at late gestation period.

Note: Only heavily gravid uterus is susceptible to infection, ewes infection in early gestation does not result into abortion.

Symptoms:

In cattle, Campylobacteriosis produces only a localized infection in the uterus and Fallopian tubes. The infected animal does not show any signs of a systemic illness.

- infertility, early embryonic death and a prolonged calving season.
- Abortions are uncommon but are occasionally seen.
- Mucopurulent endometritis causes early embryonic death, prolonged luteal phases, irregular estrous cycles, repeat breeding and, as a result, protracted calving periods

Disease may be noticed only when pregnancy examinations reveal:

- low or marginally low pregnancy rates.
- In subsequent years, infertility is usually confined to replacement heifers and a few susceptible cows.
- Bulls are asymptomatic carriers, remain infected.

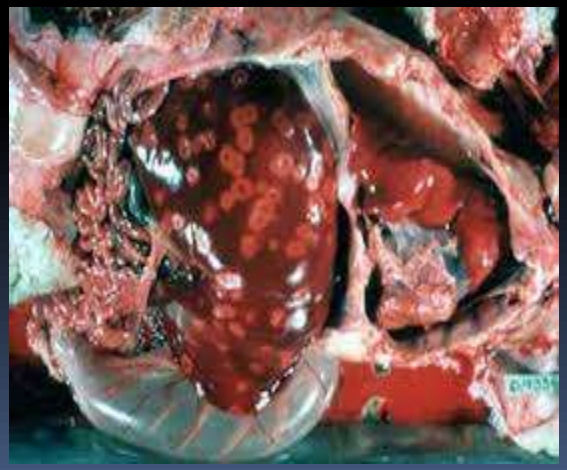
In sheep, C. fetus subsp. *fetus and C. jejuni* can cause

- late term abortions,
- stillbirths and weak lambs.
- Infection in ewes can cause abortion in the last 6 weeks of pregnancy,
- fever, diarrhea, depression, and vaginal discharge **may** appear on the dam before parturition.

- Infections in sheep are sometimes followed by metritis and occasionally deaths.
- Recovery, with immunity to reinfection, is typical.
- Sheep can become persistently infected and continue to shed bacteria in the feces.

Lesions in the fetus and placenta:

In sheep, there is placentitis with hemorrhagic necrotic cotyledons and Oedematous or leathery intercotyledonary areas. The fetus is usually autolyzed, with 40% having orange-yellow necrotic foci (1–2 cm diameter) in the liver.



- The 'normal' or anticipated rate for abortion in a large number of sheep varies from 1 to 5% and for stillbirth to be from .7 to 6%.

Diagnosis

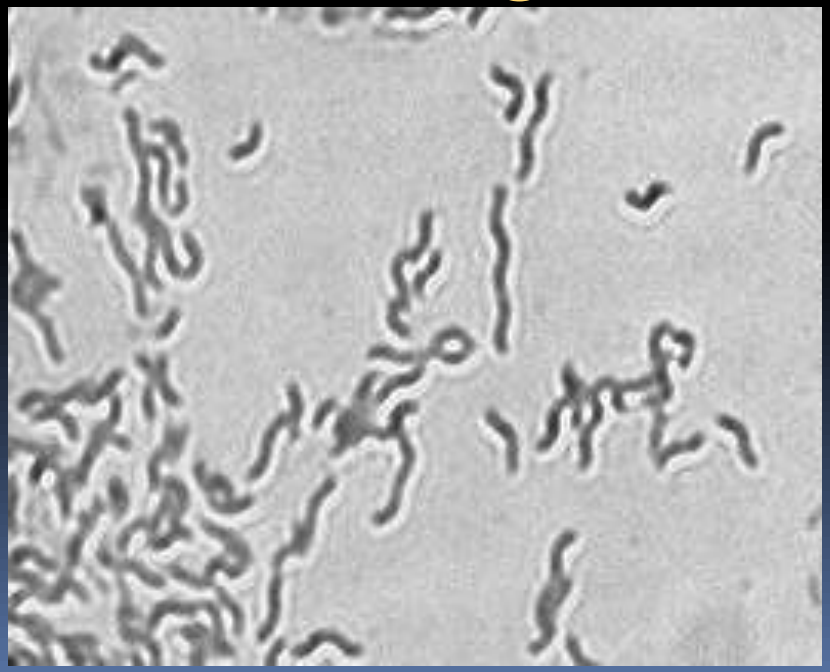
- In cattle Identifying vibriosis is difficult because of the absence of clinical signs.
- Systemic antibody responses are not helpful because they are often due to nonpathogenic Campylobacter spp.
- Vaginal mucus agglutination test (VMAT) is useful.
- An ELISA test has been developed for use on vaginal mucus and is said to be more sensitive and able to detect a wider range of antibody

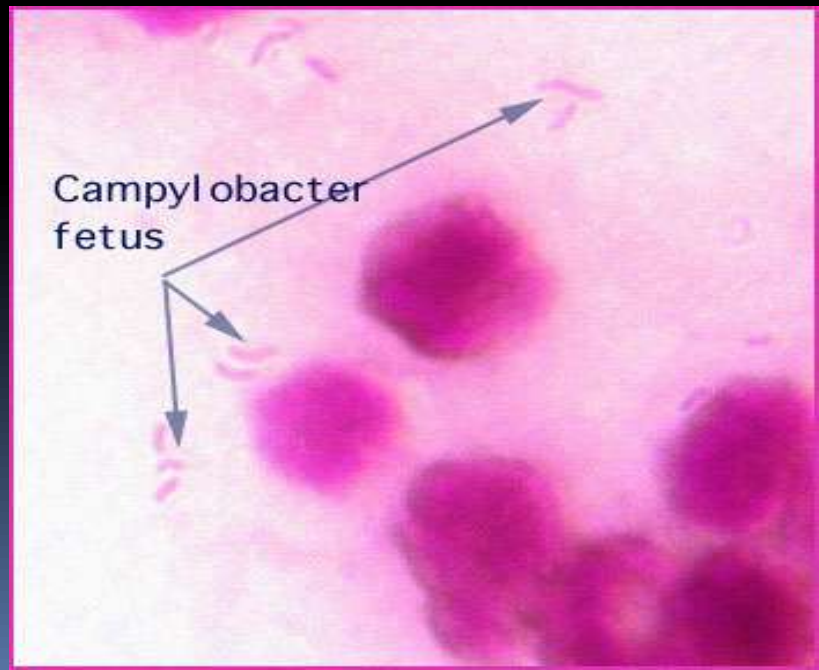
Diagnosis by detecting bacteria

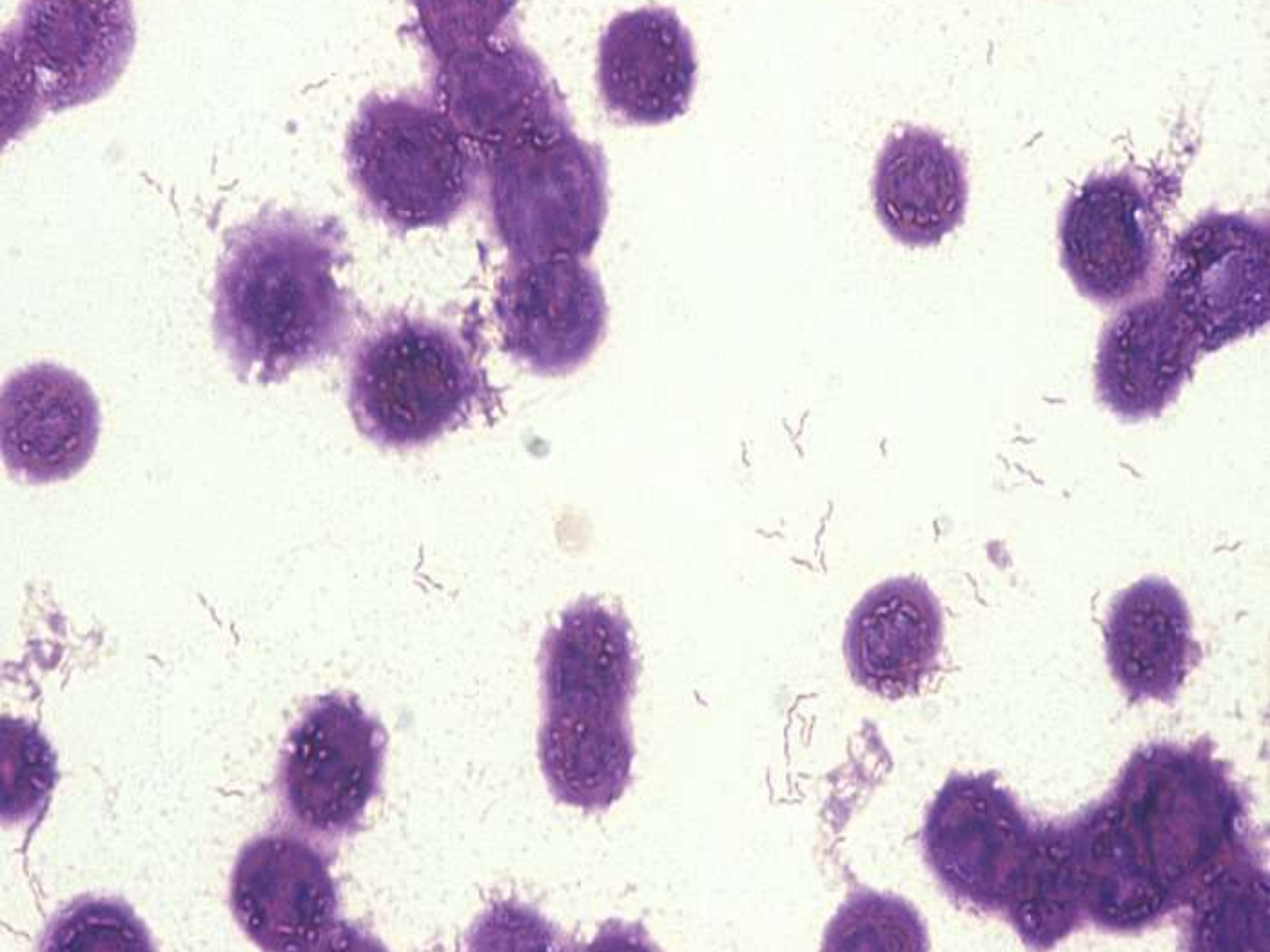
1. Direct smears prepared from:

- Stomach content of fetus.
- Early vaginal discharge.
- Preputial washing or scrapings from the bull.

- stained with gram´s stain will reveal varying number of the characteristic Gram negative curved rods. They may be seen arranged as S- form, sea- Gull form or as long spirals. Careful time consuming examination is a must.







Culture,

- the same samples are inoculated on blood agar or Thiole agar. Thiole broth or Thioglycolate semisolid medium are excellent for growing campylobacter spp.
- All media are incubated in microaerophilic conditions (10%CO_2+reduced O_2 tension) by applying candle-jar method.
- Growth under the surface of broth or semisolid media is characteristic.
- Colonies on blood ager will appear in 3-4 days, they are initially small smooth glistening , non haemolytic and yellowish grey in colour. Biochemical tests are applied to differentiate species.

Treatment and Control: Campylobacteriosis is a vaccine preventable disease.

- Vaccination should start as soon as genital Campylobacteriosis is diagnosed.

  Both infected cows and cows at risk should be vaccinated.

- Vaccination of infected cows hastens the elimination of C fetus and, although cows may remain carriers, fertility is greatly improved.
- In routine use, the vaccine should be given once, ~4 wk before breeding starts; because antibody responses are short-lived, cows should be revaccinated halfway through the breeding season.

- Bulls are vaccinated for treatment as well as for prophylaxis, but are given twice the dose used for cows, 3 wk apart.

- The infection can also be eliminated in bulls by treatment with streptomycin (20 mg/kg, SC, 1–2 treatments) together with 5 g of streptomycin in an oil-based suspension applied to the penis for 3 consecutive days.

- For practical reasons, cows are not usually treated for genital campylobacteriosis.

- Artificial insemination is an excellent way to prevent or control genital campylobacteriosis. Because C. fetus has been isolated from cows for >6 mo after the end of pregnancy, it has been suggested that artificial insemination should continue until all the cows in a herd have been through at least 2 pregnancies.

- Vaccines are available for both Vibrio and Chlamydia, often in the same injection.