Cause
Coccidiosis in young calves is caused by infection by protozoan parasites called Eimeria spp. which parasitize the lining of the alimentary tract causing diarrhoea. E. zuernii, E. bovis and E. alabamensis are the most common and pathogenic. Infection causes a loss of absorptive capacity of the gut with consequent diarrhoea and possibly dysentery. Outbreaks of disease are commonly seen 3-4 weeks after mixing groups of recently-weaned dairy calves. Disease outbreaks occur in young dairy calves associated with overstocking and contaminated accommodation. Contaminated watercourses are a major risk of coccidiosis for young spring-born beef calves while at pasture during the summer.

Clinical presentation
In severe clinical coccidiosis there is sudden onset of profuse foetid diarrhoea containing mucus and flecks of fresh blood with staining of the perineum and tail. Straining with partial eversion of the rectum may occur in severe cases. Affected animals do not have an elevated rectal temperature but their appetite is greatly reduced and they develop a gaunt appearance.

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Fig 1 Outbreaks of coccidiosis can occur in calves associated with contaminated surface water (note the midden in the background).

Fig 2 Contaminated surface water is a risk for coccidiosis, paratuberculosis, leptospirosis and salmonellosis. This area must be fenced off and mains water supplied where available.

Fig 3 Coccidiosis in a group of beef calves showing sudden onset of profuse foetid diarrhoea containing mucus and flecks of fresh blood with staining of the perineum and tail. This outbreak occurred during hot summer weather which caused the stream supplying water to this field to dry up to pools of contaminated surface water.
Your veterinary surgeon will also consider:
Many calves affected - parasitic gastroenteritis such as type I ostertagiosis when at pasture during late summer, and salmonellosis.
If only one calf is affected - intussusception, abomasal ulceration, persistent infection with BVDV, necrotic enteritis, ragwort poisoning, peritonitis will be considered by the veterinary practitioner.

**Diagnosis**
Veterinary diagnosis is based upon typical clinical findings affecting a large number of calves in the group. Interpretation of faecal samples is not simple because there are low numbers of oocysts present in the faeces of many normal calves. The stage of infestation also greatly influences the number of oocysts present in faeces. The demonstration of large numbers oocysts in faecal samples is helpful but speciation to determine whether these coccidia are pathogenic (capable of causing disease) is expensive and rarely undertaken in field outbreaks. There is a good response to specific anti-coccidial therapy.

Histopathology findings of coccidiosis in the gut of a dead calf confirms the clinical diagnosis.

**Treatment**
It is very important to move calves from infected pastures/premises immediately. Toltrazuril and diclazuril can be used for both treatment and prophylaxis of coccidiosis. Oral fluid therapy may be indicated in certain cases. Your veterinary surgeon should be consulted on the best therapy in your situation.

**Prevention/control measures**
Strict attention to disinfection of buildings between batches of calves and clean feeding areas mean that coccidiosis is uncommon in modern clean dairy units. Decoquinate can be used in-feed for prevention of coccidiosis in dairy calves.

Disease in beef calves may result from contaminated water courses in pastured cattle during summer months where there is no other water supply. Fence off all surface water wherever possible and supply piped water to water troughs.

As survival of oocysts is possible from one year to another - calving on the same pasture each year may increase the risk of coccidiosis.

**Economics**
Weight loss and protracted convalescence may result in lower weaning weights in beef calves. Gathering calves for treatment, plus medicines, also adds to the costs of disease.
Fig 6 Poor growth/condition loss following coccidiosis.

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