Out of Hours

The hidden hazards of spring:

why pregnant women and the immunocompromised should avoid lambing

There are 41 000 sheep farms in the UK on which around 14 million ewes lamb between January and April. The majority of ewes lamb unaided, but around 5% require assistance where the lamb is not presenting with the forelegs first and head pointing forwards. In these sheep, the shepherd will attempt to correct the presentation by manipulating the head and limbs of the lamb in the birth canal to deliver it; very few require caesarean section by a veterinary surgeon.

Many people are familiar with the process of lambing through TV programmes such as *Lambing Live* and *Countryfile*, but doctors may be less aware of the hazards of lambing to anyone who is immunocompromised, especially to the shepherdess, whose smaller hands are often in demand to manipulate lambs in a tight pelvis.

Most lambing takes place in a shed with limited washing facilities and minimal to non-existent personal protection, exposing the shepherd to amniotic fluid and to dead and diseased fetuses. The UK sheep flock is endemically infected by toxoplasmosis (*Toxoplasma gondii*) (N Wheelhouse, personal communication, 2014) and enzootic abortion (EAE; caused by *Chlamydia abortus*, formerly known as *C. psittaci*).

EAE is introduced into a flock by infected replacements or carried on infected placentas by carrion birds flying between farms. It has a latent period, there is no current test for it, and ewes show no symptoms until 2 or 3 weeks before their lambs are due when weak or dead lambs are born prematurely. The lambs and birth fluids are heavily contaminated, the bedding becomes infected, and other ewes are drawn to the smell of amniotic fluid, so readily inhale or ingest chlamydiae. These ewes become infected, but show no sign until they themselves abort the following year.¹ If only one or two sheep abort in the first year, the farmer may be unaware that his sheep are a risk to pregnant women.

Contact with EAE may result in a flu-like

illness and rarely myocarditis. Women between 24 and 36 weeks of pregnancy are especially at risk and may become seriously ill with disseminated intravascular coagulation with renal and hepatic complications, generally ending in stillbirth within a week of the onset of symptoms. There seem to be no sequelae for the baby if the pregnancy survives.²

Toxoplasmosis in sheep is acquired by consumption of infected faeces of juvenile cats. While it causes lamb losses, the greatest risk is to fetuses of women infected early in the pregnancy, even though the actual risk of transmission from the mother is lower at this time than later in pregnancy. Although most infected babies show no sign of infection at birth, they may develop retinchoroiditis, while learning disabilities, ocular complications, and hearing loss may not become evident until their 20s or 30s.³ Toxoplasmosis may also be contracted from contaminated soil, uncovered sand pits, cat litter, and both uncooked and undercooked meats.

Another threat to farm workers, in particular pregnant women, is from handling silage that has been contaminated with *Listeria monocytogenes*, which can infect pregnant ewes and may be transmitted to women. Although the symptoms are those of a mild flu-like illness, the organism may cross the placenta and cause septicaemia, meningitis, and fetal death. There may be long-term consequences for babies who survive. There are up to 25 cases of listeria reported each year, although it is not clear how many of these are associated with lambing; and also pregnant women are advised to avoid dietary sources of listeria such as soft cheeses, prepared salads, and pâté.⁴

There are a number of other ovine diseases which pose a risk for pregnant women, including *Coxiella burnetii*, which causes Q fever, salmonella, *Campylobacter*, tick borne fever, and Border disease (also known as Hairy shaker disease) caused by a flavivirus. Risks are not confined to lambing, but include assisting with calving

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or kidding, which should also be avoided when pregnant. Those at risk include not only farmers themselves, but also veterinary personnel and abattoir workers. The risks extend to handling live vaccines used to prevent these diseases.

Any woman who knows she is pregnant should avoid contact with livestock giving birth and should not handle or wash contaminated clothing and boots. She must avoid handling sick newborn animals, which should not be brought into the house. If anyone consults with a flu-like illness, the history should include exposure to livestock and zoonoses should be in the differential diagnosis of doctors practising in rural areas in the spring.

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