**Uterine prolapse(evertion)**

Prolapse of the uterus is a common complication of the third stage of labour in the cow and the

ewe. It occurs less frequently in the sow and is rare in the mare and bitch. In the ruminants the prolapse is generally a complete inversion of the gravid cornu, while in the sow and the bitch inversion is generally partial and comprises one horn only.

In the cow the incidence varies from 2 per 1000 calvings in beef cattle to 3 per 1000 calvings in dairy cattle. The occurrence seems to be affected by seasonal as well as regional factors, the condition being commoner in some years and in some localities.

Multigravida (of the dairy breeds) are more often involved than are heifers. In the majority of instances the prolapse occurs within a few hours of an otherwise normal second-stage labour, although in some it may be delayed several days. In the latter group the condition is generally associated with a grossly protracted and assisted labour. Rarely, where delivery is achieved by heavy traction, the uterus prolapses immediately after the calf is withdrawn.

**Aetiology**

The cause of prolapse of the uterus is not clear, but there is no doubt that it occurs during the third stage of labour, within a few hours of the expulsion of the calf, and at a time when some of the fetal cotyledons have separated from the maternal caruncles. The only conceivable force that could lift the heavy uterus out of the abdomen into the pelvis and thence propel it to the exterior is **abdominal straining**. One can imagine the uterus being more affected by abdominal straining when it is relatively **flaccid**, and it is a particularly apt clinical observation that many cases of uterine prolapse show a simultaneous hypocalcaemia (milk fever) which is known to be conducive to uterine inertia. It is believed, therefore, that uterine inversion and prolapse are associated with the onset of uterine inertia during the third stage when a portion of detached afterbirth occupies the birth canal and protrudes from the vulva.

The **signs** of this condition are obvious. As a rule the affected cow is recumbent, and if in lateral recumbency rumenal tympany will be prominent, but occasionally the cow is standing with the everted organ hanging down almost to its hocks.

**Prognosis**

The prognosis will depend firstly on the type of case, secondly on the duration of the condition before treatment is forthcoming, and thirdly on whether the organ has sustained severe injury. Nevertheless, as the condition is generally encountered, that is, as a sequel to a normal parturition, and professional assistance is forthcoming within an hour or two of its occurrence, the prognosis is good. It has been reported that 40% of cows became pregnant after uterine prolapse.

Occasionally prolapse of the uterus is followed in a matter of an hour or so by the animal’s death. On post-mortem examination in such cases it is found that death was due to internal haemorrhage consequent on the weight of the everted organ having torn the mesovarium and the ovarian artery.

Even in those cases in which there has been delay and in which the endometrium is grossly contaminated and deeply congested, the prognosis is not hopeless, for the recuperative powers of the organ are quite astonishing, and thus when dealing with dairy cattle amputation of the everted organ should be considered only when injury is gross and when resolution is clearly impossible.

**Treatment**

***Replacement of the everted organ.*** On notification of the case, the farmer should be instructed to wrap the prolapsed viscus in a large towel or other suitable material to prevent further contamination if, as is likely, the cow is recumbent; if she is standing, the organ should be supported by a large towel or sheet held by people on either side, until professional assistance is forthcoming. It is good practice to give a preliminary injection of calcium borogluconate (as for milk fever) and to relieve rumenal tympany, if present, by passing a stomach tube.

The cow is placed in sternal recumbency with both hind legs pulled out behind her (weight therefore being taken on her stifles).The assistant sits astride the cow, facing the rear, and holds the cow’s tail up vertically. This manoeuvre causes the slope of the vulva to be upwards.The veterinary surgeon kneels between the cow’s hocks and supports the weight of the prolapsed organ on his or her thighs, prior to replacement.

Whether the cow is standing or recumbent, an **epidural anaesthetic** should be given. This will prevent straining, and also has the advantage that defaecation is in abeyance during the operation. The everted organ should be thoroughly washed with warm normal saline solution. If the fetal membranes are already partially detached and their complete removal can be carried out easily and without injury to the caruncles, this should be done. But when attachment is complete or when attempts at detachment are associated with haemorrhage, it is better that the organ be replaced with the membranes still adherent.

The prolapsed organ should be palpated in order to detect the possible presence within it of a distended urinary bladder; if such is the case, it should be relieved by the use of a catheter. The uterus should be supported by assistants holding the corners of a towel beneath the mass or upon a piece of board about 1 m long covered by a clean cloth or towel.

The operator commences to replace the uterus little by little, starting with those portions nearest the vulval lips. By gentle pressure, the nearest cotyledons are pushed into the vagina, taking care that the lips of the vulva remain well apart and do not become turned inwards. It is generally best to replace portions of the upper and lower surfaces alternately. When the last portions only remain to be replaced, an assistant should press against these, using the palms of both hands, while the operator endeavours to draw the lips of the vulva over the prolapse. As the mass disappears through the lips of the vulva the operator, using a clenched fist, should then continue to press it forward to the full length of the arm. It is important that the uterus should be pressed forwards beyond the cervical ring; to ensure this the operator locates the margins of the dilated cervix, draws them towards him- or herself and, if possible, at the same time pushes the uterus in a forward direction with the other hand.

To help restore uterine tone, and thus to prevent recurrence of the prolapse, oxytocin should be given. Preoperative treatment with oxytocin, although reducing the size of the prolapsed organ, increases the turgidity of the everted organ and makes replacement more difficult. Even if the animal shows no clinical signs of hypocalcaemia, calcium borogluconate therapy should be given, together with parenteral antibiotics.

A final advantage of caudal epidural anaesthesia is that for an hour or so after replacement of the organ straining will be revented; the duration will be extended if xylazine is used as well. It has been customary to insert vulva sutures to prevent the possibility of re-prolapse. This practice is controversial; many consider that it serves no useful purpose since, if the prolapse has been replaced correctly, it should not recur. It may even stimulate the cow to strain, allowing the prolapse to recur within the animal and thus not be detected. Others consider that, provided the cow is reexamined 24 hours later and the sutures are removed, it can prevent the recurrence of a complete

prolapse which will be much more difficult to replace a second time.

In **the ewe** The method of replacement is similar to that described for the cow, except that it is easier to perform because of the facility with which the hindquarters of the ewe can be kept raised by an assistant; caudal epidural anaesthesia should always be used except in those situations where a long delay may occur before it could be treated by a veterinarian. However, because of their different physical relationship to the caruncles, the fetal cotyledons cannot readily be detached and rather than damage the uterus by persistent attempts to separate them, it is preferable to leave them attached and return them with the uterus; failure to detach them at this stage will not significantly affect the prognosis. Anaerobic infection should be anticipated and prophylactic antibiotic used.