

A RARE CASE OF FETAL MEMBRANE DROPSY IN THE COW

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Abstract

A case of fetal membrane dropsy (hydrallantois and hydramnion) in 8 years old Estonian Red Breed cow. Separately 42 l of amnion fluid and 158 l of allantoic fluid were measured, and additionally 83 l of mixed fetal fluids were collected. The total amount of fetal fluids was 283 l. The abdominal circumference measured 295 cm. The length of the pregnant horn was 290 cm along the greater curvature. The fetus had developed normally (male, 29 kg). The umbilical cord was twisted $3\times 360^\circ$. We suppose that increased amount of amniotic fluid caused appropriate conditions for turning of the fetus in amniotic sac. The fetus turns itself around in the uterus from the posterior to the anterior presentation during 6–7 months of normal pregnancy when the amount of amnion fluid is most high.

A case report

Dropsy of fetal membranes occurs sporadically, being most common in cows (Peek, 1997). According to Vandeplassche *et al.* (1965) hydrallantois is more common (88%), hydramnion occurs seldom (5%), and in the rest of the cases (7%) both forms occur together. The case under discussion belongs to the last category.

An eight-year old Estonian Red Breed cow was conspicuous in the eighth month of pregnancy in that her abdomen was extraordinarily large and growing rapidly. We were requested to visit the animal when she remained recumbent for two weeks. The case history and examination of the cow served as a ground for diagnosing the dropsy of fetal membranes. We recommended that the cow should be slaughtered, but the owner refused. On the next day (day 247 of pregnancy) the cow died.

Prior to the postmortem examination the abdominal circumference measured 295 cm. The cow had developed a right lateroventral uterine hernia. The right rectus abdominis muscle had ruptured 10 cm before becoming a tendon. There was another rupture in the broad ligament of the uterus, but haemorrhage into the abdominal cavity was slight. The abdominal cavity contained three litres of liquid with blood clots. The uterine horns filled almost the entire abdominal cavity (Fig. 1). The rumen was small and compressed forward and to the left. Its caudal boundary coincided with the left costal arch. The fetus was located in the right uterine horn with a length of 290 cm along the greater curvature. When opening the uterus we measured 158 l of allantoic fluid and 42 l of amniotic fluid. The allantoamnion ruptured thereafter and 83 l of mixed fetal fluids were collected. The total amount of fetal fluids was 283 l. Placentomes had developed only in the gravid uterine horn and were larger than usual. The largest placentomes were located in the middle of the greater curvature of the uterine horn and measured 19×10 cm, 15×13 cm, 15×10 cm and 15×9 cm.

The development of hydramnion is usually associated with fetal malformations (Long, 1996). In present case the fetus had developed normally (male fetus, weight 29 kg), and no pathological changes were observed during the postmortem examination. The umbilical cord was twisted $3\times 360^\circ$ (Fig. 2). Roberts (1986) claims that the bovine umbilical cord is short and therefore seldom gets twisted. Its torsion is not related to the development of dropsy of the fetal membranes. We have witnessed on a number of occasions a 360° twist of the umbilical cord during a Caesarean section when the fetus had developed in a normal way and was viable. We propose that the torsion of the umbilical cord was a consequence of the dropsy of fetal membranes rather than its cause. The present case proves how vigorously a fetus moves during pregnancy, and how much the presentation can change, if the amount of the amniotic fluid is increased. According to Arthur and Bee (1996), the fetus turns itself around in the uterus – from the posterior presentation to the anterior one – between the second half of the sixth month and the first half of the seventh month of pregnancy. By this time the amount of the amniotic fluid has achieved its peak (Noakes, 1997) and begins to decrease. We are of the opinion that this is not an accidental coincidence. Posterior presentation is more common in the case of twins, large fetuses, and malformations (Arthur and Bee, 1996). However, it explains far from all the cases. We are of the opinion that as important as the size of the fetus is the amount of the amniotic fluid in the period that is critical from the standpoint of delivery presentation of the fetus. We have found no data about the relationship between the amount of the amniotic fluid and the anterior and posterior presentations.

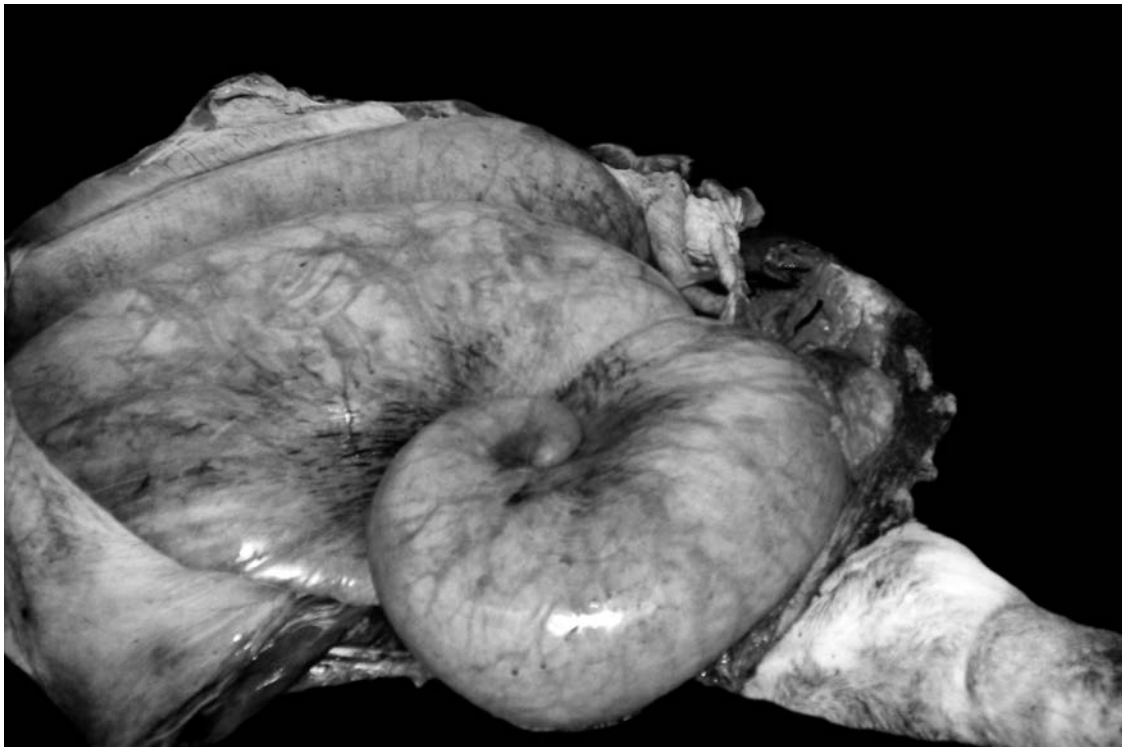


Figure 1. Uterine horns filled with fetal fluids
Joonis 1. Looitevedelikega täitunud emakasarved



Figure 2. Umbilical cord with a 3x360° twist
Joonis 2. 3x360° keerdunud nabaväät

Harukordne lootekestade vesitõve juhtum lehmal

Lootekestade vesitõbe esineb kõige sagedamini lehmal, aga ka temal sporaadiliselt (Peek, 1997). Vandeplasseche jt (1965) andmetel on sagedamini hüdrallantoisi (88%), harvem hüdramnioni (5%) ja ülejäänud juhtudel (7%) esinevad mõlemad koos. Viimaste hulka kuulub ka kirjeldatav juhtum.

Eesti punast tõugu 8 a vanal lehmal märgati 8. tiinuskuul, et looma kõht on ebaloomulikult suur. Kõhu ümbermõõt suurenes kiiresti ja meid kutsuti looma juurde, kui ta kahe nädala möödumisel jäi lamama. Anamneesiandmete ja lehma välise vaatluse alusel diagnoosisime lootekestade vesitõve. Soovitasime lehma tappa, millest aga omanik keeldus. Järgmisel päeval (247. tiinuspäeval) lehm suri.

Enne lahkamist mõõdetud lehma kõhu ümbermõõt oli 295 cm. Tekkinud oli parempoolne latero-ventraalne emakasong. Parempoolne kõhusirglihas oli rebenenud 10 cm kaugusel enne kõõluseks üleminekut. Ka emaka laisidemes oli rebend, kuid verejooks kõhuõõnde oli väike. Kõhuõõnes oli 3 liitrit verehüübeid sisaldavat vedelikku. Emakasarved täitsid peaaegu kogu kõhuõõne (joonis 1). Vats oli väike ning kokku surutud ette ja vasakule. Tema kaudaalne piir ühtis vasakpoolse roidekaarega. Loode oli paremas emakasarves, mille pikkus mööda suurt kurvatuuri oli 290 cm. Emaka avamisel õnnestus eraldi mõõta 158 liitrit allantoisi vedelikku ja 42 liitrit amnionivedelikku. Seejärel allantoamnion rebenes ja lootevedelikud segunesid. Segunenud lootevedelikku oli 83 liitrit. Lootevedelike kogumaht oli 283 liitrit. Platsentoomid olid arenenud ainult tiines emakasarves ning olid normaalsest suuremad. Emaka suure kurvatuuri keskkohal olid kõige suuremad platsentoomid mõõtmetega 19×10 cm, 15×13 cm, 15×10 cm ja 15×9 cm.

Hüdramnioni tekkimist seostatakse enamasti loote väärarenguga (Long, 1996). Antud juhul oli loode normaalselt arenenud (isasloode, kaalus 29 kg) ja lahingul patoloogilisi muutusi ei leitud. Nabaväät oli keerdunud 3×360° (joonis 2). Roberts (1986) väidab, et veisel on nabaväät lühike ja seepärast keerdub harva ning tema keerdumine pole seotud lootekestade vesitõve tekkega. Oleme mitmel korral näinud 360°-list nabaväät keerdumist keisrilõike korral, kui loode on olnud täiesti normaalselt arenenud ja elujõuline. Ka antud juhul arvame, et nabaväät keerdumine oli pigem lootekestade vesitõve tagajärg kui põhjus. Käesolev juhtum demonstreerib kujukalt, kui energiliselt loode ennast tiinusajal liigutab ja kui head võimalused selleks, kaasa arvatud presentatsiooni muutmine, loob suurenenud amnionivedeliku kogus. Arthuri ja Bee (1996) andmetel pöörab loode ennast emakas ringi – tagapikiasetusest eespikiasetusse – ajavahemikus tiinuse kuuenda kuu teise poole algusest kuni seitsmenda tiinuskuu esimese poole lõpuni. Selleks ajaks on amnionivedeliku hulk saavutanud maksimumi (Noakes, 1996) ja hakkab langema. Arvame, et see pole juhuslik kokkusattumus. Tagapikiasetust on sagedamini kaksikute, suurte loodete ja väärarendite korral (Arthur, Bee, 1996), kuid kaugeltki mitte kõik juhud ei ole sellega seletatavad. Arvame, et sama oluline kui loote suurus, on amnionivedeliku kogus sellel loote sünnitusaegse presentatsiooni võtmise seisukohalt kriitilisel perioodil. Kahjuks pole me leidnud uurimisandmeid amnionivedeliku koguse ja ees- ning tagapikiasetuse seose kohta.

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