

## Amorphous Globosus in a Cow: A Case Report

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### ABSTRACT

A Holstein Friesian cow in its third parity was presented with complaints of severe straining and complete anorexia since last 24 hours. The water bag had been ruptured 24 hours before albeit the term was of seven and half month. As evident from the history and symptoms, it was a case of dystocia associated with premature delivery. After delivery of one male fetus by manual traction, another fetus was delivered which was found to be a case of Amorphous globosus and had only insufficient digestive tract developed. The detailed handling of the case, obstetrical correction and post-delivery care and management is discussed.

**Keywords:** Amorphous globosus, Holstein Friesian, dystocia

The birth of an individual, after the culmination of gestation period, occurs in a normal physiological way when all the protagonist factors act in a synergistic way. However, due to the certain oddities the normal parturition process hinders leading to dystocia which strikes the health of the animal during pre and post-partum period severely (Noakes *et al.*, 2009), so it should be given instant veterinary assistance (Khatti *et al.*, 2016). Drost (2007) enumerated some of these factors which come in the midway during event of parturition and congenital abnormalities are one of the factors among them. Congenital disorders involve both hereditarily caused defects as well as malformations suffered during pregnancy but it do not occur frequently (Čitek *et al.*, 2009 and Jena *et al.*, 2016). *Amorphous globosus* is an imperfect zygote in condition of dizygotic twins and it has parasitic interaction with placenta of normal twin and never observed in single birth (Roberts 1971; Caroline 1976). The bovine *Amorphous globosus* usually appears as a round or oval, edematous structure, composed

mainly of stomach and intestinal tissues. These intestinal parts are enclosed in its own amnion (Roberts, 1971). According to Noakes *et al.* (2009) they are formed from connective tissues surrounded by skin and may be of different sex to that of normal twin. However, as there is not any gonadal development they do not pose a threat of freemartin development.

### CASE HISTORY AND CLINICAL OBSERVATION

A Holstein Friesian cow (about 7 years old) in its third parity was presented to the Referral Veterinary Poly Clinic, I.V.R.I., with complaints of severe straining and rupture of water bag albeit the pregnancy was of seven and half months. The animal was off-fed for last 24 hours with normal respiration, pulse rate and mild rise in temperature (103°F). The animal was attentive with standing posture. It was evident, from history and symptoms, that it's a case of premature delivery associated with dystocia. Relaxation of sacrosciatic ligament without any appreciable udder engorgement

was obvious through physical inspection. Transrectal examination showed position of fetus in pelvic cavity. Per-vaginal examination revealed that cervix was fully dilated and the fetus was in posterior presentation ( $P_1$ ), dorso-sacral position ( $P_2$ ) with both the hind limbs was extended in birth canal ( $P_3$ ). There was no viability reflexus marked during per vaginal examination. The fetus was edematous and the birth canal was dried owing to the rupture of water bags much before i.e. 24 hours before.

### TREATMENT & DISCUSSION

Animal was restrained properly in traxis and hind quarter along with the perineum region was cleaned properly by potassium permanganate solution. After adequate lubrication with liquid paraffin, traction was applied on both the limbs on the fetlock joint first then shifted to hock joint to extract the fetus. Then the traction was applied on single limb of fetus and subsequently the fetus was delivered. The exerted tractive effort was 115 kg which was exerted by two personnel (Jena *et al.*, 2016). The delivered male fetus was swollen and premature, as it was devoid of hairs over its body. Moreover, the fetus was affected with ascites (Fig. 1).



**Fig. 1:** Delivered dead fetus (male) with ascites condition

After delivery of one fetus, when the reproductive tract was examined, it was found that a round globular structure was in the birth canal. When it was extracted outside manually and examined, it was found to be a case of *Amorphous globosus*.

It was a round, edematous structure having developed only some sections of digestive tract and it was only about 750 gm. body weights. The fetal intestinal coils, liver and mesenteric lymph nodes were clearly visible (Figs. 2, 3 and 4).



**Fig. 2:** Exposed intestinal loops of the *Amorphous globosus* fetus through incision



**Fig. 3:** Appreciable footprints of liver development in the *Amorphous globosus* fetus



**Fig. 4:** Developing Mesenteric lymph nodes of the *Amorphous* fetus

In accordance to postpartum care, animal was administered six litre of fluid replacement therapy (Intalyte, Intas Pharmaceuticals Ltd.<sup>®</sup>) infused intravenously, calcium and magnesium borogluconate (Mifex, Novartis<sup>®</sup>) 300 ml slow I/V and 150 ml S/C, antibiotic Amoxicillin plus sulbactam (*Amoxirum forte*, Virbac<sup>®</sup>) 3.0 g intramuscularly for 5 days, NSAID meloxicam (Melonex, IntasPharmaceuticals Ltd.<sup>®</sup>) 15 ml intramuscularly for three days and six intrauterine nitrofurazone-urea boli (Furex, Vetsfarma Ltd.<sup>®</sup>) for 3 days. Oral uterine cleanser (Uterotone liquid, Cattle Remedies India Ltd.<sup>®</sup>) was given for 10 days to boost up uterine involution. The cow recovered uneventfully following post-partum therapeutic management.

Congenital ailments are fiscal drain to the dairy industry as well as to farmer because of dead calf, production loss and cost expenditure of veterinary assistance (Mehrotra *et al.*, 2016). The occurrence of *Amorphous globosus* is a rare manifestation of congenital abnormality which arises in monochorial diamniotic twins (Fischer and Hofmeister, 2013). Few cases of Amorphous globosus have been reported in cattle (Hishinuma *et al.*, 1987), buffaloes (Singh *et al.*, 2014; Pushp *et al.*, 2015) and mare (Crossman and Dicken 1974) but its occurrence is very less in goat (Anwar *et al.*, 2009). It completely lacks gross tissue organisation and umbilical cord however microscopic development of body axis has been reported in humans (Hanley *et al.*, 2007). Incidence of *Amorphous globosus* usually exceeds its assumptions in farm animals (Anwar *et al.*, 2009). In humans it occurs in one of 35 thousands births. The patho-mechanism assumed is the so called TRAP (transversed arterial perfusion) syndrome (Fischer *et al.*, 2013).

## REFERENCES

- Anwar Md. Taslim, Khan, A.I., Balasubramanian, S., Jayaprakash, R., Thandavan, A., Manokaran, S., Sathiamangalam, A., Asokan and Veerapandian, C. 2009. A rare case of globosus amorphus in a goat. *Can. Vet. J.*, **50**: 854–856.
- Caroline, M.C. 1976. Bovine Holoacardius Amorphus Monster. *Can. Vet. Jour.*, **17**(4): 109-110.
- Čitek, J., Řehout, V. and Hájková, J. 2009. Congenital disorders in the cattle population of the Czech Republic. *Czech. J. Anim. Sci.*, **54**(2): 55–64.
- Crossman, P.J. and Dicken, P.S. 1974. *Amorphus globosus* in the mare. *Vet. Rec.*, **95**: 22.
- Drost, M. 2007. Complications during gestation in the cow. *Theriogenology*, **68**: 487–491.
- Fischer, U.R. and Hofmeister, B. 2013. Abnormal multiple pregnancy with septuplets in a cow. *TierärztlPrax.*, **41**: 253–256.
- Hanley, L.C., Boyd, T.K. and Hecht, J.L. 2007. Acardiac twin presenting as fetus amorphous with an attenuated umbilical cord. *Pediatr. Dev. Pathol.*, **10**: 487–490.
- Hishinuma, M., Takahashi, Y. and Kanagawa, H. 1987. Histological and cytological observation on a bovine *Acardius amorphus*. *Jpn. J. Vet. Sci.*, **49**: 195–197.
- Jena, D., Patra, B.K., Das, S. and Mohanty, D.N. 2016. Acephalic monster: A Case Report. *Indian Vet. J.*, **93**(2): 85 – 86.
- Khatti, A., Singh, S.K., Jena, D., Kavaya, K.M., Rautela, R. and Kharayat, N.S. 2016. Successful management of dystocia in holstein crossbred cow: an unusual finding. *International Journal of Science, Environment and Technology*, **5**(6): 4061 – 4064.
- Mehrotra, S., Khatti, A., Jena, D., Singh, S.K., Balamurugan, B. and Chaudhari, R.K. 2016. Schistosomus reflexus with eutocia in crossbred cow: a rare case report. *International Journal of Science, Environment and Technology*, **5**(6): 4473 – 4476.
- Noakes, D.E., Parkinson, T.J. and England, G.C.W. 2009. *Veterinary reproduction and obstetrics*. 9<sup>th</sup> ed. W B Saunders.
- Pushp, M.K., Purohit, G.N., Tripathi, A., Choudhary, A.K., Kumar, S., Mehta, J.S., Choudhary, A., Soni, Y. and Kumar, P. 2015. *Amorphus globosus* Monster Removed by Laparohysterotomy in a She Buffalo – A Case Report. *Theriogenology Insight* **5**(3): 153-156.
- Roberts, S.J. 1971. *Veterinary Obstetrics and Genital Diseases*. 2<sup>ed.</sup>, CBS Publishers and Distributers.
- Singh, G., Pandey, A.K., Kumari, S., Kumar, P., Yadav, D.V. and Mishra, P.K. 2014. Amorphous Globosus Monster in A Buffalo-A Case Report. *Haryana Vet.*, **53**(2): 160-161.

