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## A rare occurrence of hysterocele concurrent with uterine torsion in a crossbred cow

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### Abstract

Full term pregnant crossbred cow on its 3<sup>rd</sup> gestation was presented with the history of acquired right latero-ventral herniation due to accidental fall in the well. Further clinical examination revealed right lateral post cervical uterine torsion and dead fetus was confirmed by ultrasonography. Extensive uneven muscular damage, multiple uterine adhesion and fragile abdominal edges were unfavoured the correction procedure for herniation and it was recommended for emergency culling. Pursual of recent literatures revealed occurrence of uterine hernia concurrent with post-cervical right side uterine torsion is rare. Hence, this present paper document the unusual correlation between the uterine torsion and hysterocele in a crossbred cow.

**Keywords:** Cow, unilateral hysterocele, uterine torsion, Caesarean

### Introduction

Hernia defined as abnormal skin swelling due to protrusion of portion of or entire internal organ through acquired or congenitally related defective wall of the anatomical cavity. Based on the occurrence, etiology, anatomical location, herniated content and nature of the protruded organs hernia is classified in various pathological terms *viz.*, internal or external, congenital or acquired hernia, inguinal or abdominal hernia, hepatocele (liver) or hysterocele (uterus) and reducible or non-reducible respectively (Amare and Haben, 2020) [1]. Occurrence of abdominal hernia frequently reported in bovines and very few authors reported the unilateral uterine hernia or hysterocele in cattle (Selvaraju *et al.*, 2020) [8]. Uterine torsion is a very common obstetrical disorders occurs in farm animals from 70<sup>th</sup> day of gestation to early first and late second stage of the labour and well-known predisposing factors for the uterine torsion are, inadequate uterine tonicity due to lack of physical activity and calcium deficiency, anatomical features like broad ligament attachment and freely hanging grater curvature of uterus, reduced fetal fluid and vigorous fetal movement (Roberts, 1986 and Selvaraju *et al.*, 2020) [7, 8]. Periyannan *et al.*, (2022) [6] reported that prepubic tendon rupture in late gestation as an unusual predisposing factor or etiology for uterine torsion in a crossbred cow. Similarly, this present paper document the acquired hysterocele due to accidental fall in the well during late gestation and co-occurrence of uterine torsion in a crossbred cow.

### Case history and observations

A full term pregnant pluriparous crossbred cow admitted with the complaint of right lateroventral abdominal swelling to the Large Animal Obstetrics Unit, Veterinary Clinical Complex, Veterinary College and Research Institute, Namakkal. Further, owner reported that animal had a history of accidental fall down in the well one month ago and gradual right ventral enlargement was noticed over the period of past one week. Palpation of swollen abdominal part revealed presence of uterus with fetal parts in herniated sac and it was non reducible in nature. On vaginal examination spiral like vaginal twist towards right side was noticed. Ultrasonographic examination revealed fetal skeleton and definite signs for live fetus were absent. Hysterocele with post cervical uterine torsion was confirmed after the serious of clinical examination and it was decided to do caesarean section to save the life of the dam.

### Treatment

After the epidural anaesthesia (4 ml of 2% lignocaine HCL) the aseptic preparation of surgical site followed by restraining of the animal over the hindquarter elevator was done. Inverted L block by local infiltration technique with 2% lignocaine was achieved. The oblique skin incision was made over right lower flank and uterine mass was exposed immediately after the skin incision. Dead male fetus was removed after the uterine incision and uterine incision was closed with two layers of inversion suture pattern using chromic catgut No 2. After the correction of uterine torsion, abdominal muscles were thoroughly examined for the correction herniation. Extensive uneven muscle rupture, fragile necrosed muscle edges, multiple muscular adhesions to adjacent structures and greater loss of abdominal muscles were observed on assessment muscle tear. Finally, it was advised for emergency culling due to aforesaid nonreparable muscle loss.

### Discussion

The abnormal protrusion of the visceral organs through defective abdominal (based on the location) wall is called as ventral or ventrolateral hernia and it frequently reported in ruminants than the other types herniation (Farman *et al.*, 2017) [3]. Right Unilateral ventral herniation is more common than the left side due to presence of rumen (Choudhury *et al.*, 2016) [2]. Similarly in this present case also right lateral herniation was reported. Muscular tissue damage in abdominal region or prepubic tendon rupture due to accidental trauma, increased weight of the gravid uterus during last three months of gestation or twin pregnancy causes the ventral

hernia (Amare and Haben, 2020, Periyannan *et al.*, 2022) [1, 6]. The important clinical symptom for ventral hernia is predominant abdominal swelling without systemic involvement and most of the time intestinal or omental content reported in hernial sac. The common complication of herniation are torsion, strangulation, adhesion, incarceration, and hydrocele of the sac (Roberts, 1988) [7] and sever muscle loss due to necrosis of abdominal tissue reported in this present case. Reduced or complete lack of blood supply to the herniated contents due to uterine torsion or twisting may lead to gangrene and toxemia (Amare and Haben, 2020) [1] and further fetal death and discoloration of uterine muscle was recorded in this case. Diameter of hernial sac and degree of tissue damage play crucial role in correction of herniation although various correction techniques are available for the treating the different types hernia in farm animals (Fossum, 2013 and Farman *et al.*, 2017) [4, 3]. In this present case because of non-reparable extensive muscular damage herniorrhaphy was not done and it was advised for emergency culling. Unusual etiological correlation for the uterine torsion or concurrent occurrence of uterine torsion with other obstetrical condition *viz.*, uterine torsion on 70<sup>th</sup> day of gestation (Selvaraju *et al.*, 2020) [8], torsion with twin pregnancy (Periyannan *et al.*, 2021) [5], fetal maceration due to uterine torsion (Senthilkumar *et al.*, 2022) [9] and uterine torsion with prepubic tendon rupture were previously reported in various farm animals. Considering the rarity, this present report documents the concurrent occurrence of post cervical right side uterine torsion with right unilateral ventral hernia in a crossbred cow.



**Fig 1:** Right ventro-lateral abdominal enlargement



**Fig 2:** Fetus removed from herniated uterus by cesarean

## Conclusion

Very rare occurrence of right ventrolateral uterine hernia with right side post cervical uterine torsion was reported and early intervention is needed for saving the life of the dam during late gestation from unexpected accidents. Since extra pressure by gravid uterus during late gestation worsen the muscular damage and it turns the minor tissue damage to fatal irreparable herniation.

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