

UNILATERAL UTERINE TORSION IN A LABRADOR PREGNANT DOG

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Abstract: A two-year-old pregnant Labrador female dog was presented because of sudden abdominal distension due to fall with severe discomfort. Transabdominal ultrasound revealed an enlarged, fluid filled uterus with dead fetuses. Exploratory laparotomy revealed more than 360-degree torsion of the left uterine horn in clock wise direction. Recovery following ovariohysterectomy was uneventful.

Keywords: Uterine torsion, pregnant dog, ovariohysterectomy.

Uterine torsion is defined as twisting of the uterus or uterine horn perpendicular to its long axis (Roberts, 1971). Uterine torsion is an uncommon, but life-threatening condition in the female dog (Johnston *et al.*, 2001; Kumru *et al.*, 2011). Higher occurrence in the gravid (Biddle and Macintire, 2000) and unilateral torsion is more likely (Doğruer *et al.*, 2018). Various causes of uterine torsion include jumping, running or rolling behaviour during excessive play, premature uterine contraction in late pregnancy, foetal physical activities, partial abortion, hereditary weakness or variations in length and mobility of the proper ovarian and uterine ligaments (Stone, 2003) and the use of oxytocin (Noakes, 2001). The degree of torsion varies from 180° to 2160° and is an important factor affecting the clinical signs and thus the prognosis, as it could cause fatal consequences during corrective surgery (Seyrek-Intas *et al.*, 2011). The clinical signs of an obstructive dystocia in such cases would be very difficult to determine precisely (Noakes, 2001). Uterine torsions result in a quickly deteriorating shock-like state associated with severe abdominal pain (Darvelid and Linde-Forsberg, 1994). This short communication describes the clinical findings, surgical management and clinical outcome in a Labrador dog with a late-gestational uterine torsion.

CASE HISTORY AND CLINICAL FINDINGS

A two year-old female primiparous 61 day pregnant Labrador Dog was presented with a history of fall from table a day before and exhibited continuous abdominal straining and

greenish vaginal discharge. On physical examination, the dog was reluctant to lie down and abdominal wall was tensed with bulging towards left side. Clinical examination revealed tachypnoea, tachycardia, temperature 101.2° F, with signs of dehydration as evident by delayed capillary refilling time (>2sec) and skin tenting. Colposcopic examination revealed greenish mucoid discharge and sufficiently relaxed vagina without any palpable fetal parts.

DIAGNOSIS AND TREATMENT

On basis of clinico-gynaecological examination and subsequent transabdominal ultrasonography it revealed that gravid uterus with dead foetuses and it was diagnosed as a case of dystocia. As health status of the bitch was poor, it was decided to perform caesarean section considering the case as a surgical emergency. The surgical site was prepared aseptically for caudal mid-ventral approach and general anaesthesia was achieved with Atropine Sulphate (0.04mg/kg) premedication, Diazepam (0.5mg/kg) preanaesthetic and Propafol anaesthetic (3mg/kg induction) and maintenance dose of 0.2mg/kg/min. Following laparotomy and exteriorization of the uterus, left horn was cyanotic and necrotic, while right horn was normal. Careful examination revealed that the left horn was found to be twisted at its base (>360°) (Fig.1). Two dead foetuses from left horn and a live fetus were removed from right horn by hysterotomy. Due to necrotic condition of uterus, ovario-hysterectomy was performed without correcting torsion. Post operative antibiotic (Inj. Ceftriaxone @10 mg per kg b.wt.) and supportive fluid (Inf. Ringers lactate @10 ml per kg b.wt.) was given for five days. The bitch recovered uneventfully.

RESULTS AND DISCUSSION

During exploratory celiotomy, the bitch was found to have greater than 360 degree torsion of the left uterine horn along the long axis in clockwise direction. The torsion was between the proper ligaments of the ovary and cranial aspect of the uterine bifurcation (Figure 1) and the rotated horn was devitalised (cyanotic and necrotic) presumptively.

Uterine torsion has been reported both in gravid (Umamageswar *et al.*, 2014) and non-gravid (Misumi *et al.*, 2000) female dogs, but its occurrence is higher in gravid than non-gravid uterus (Biddle and Macintire, 2000). In the present case, gravid horn was twisted at caudal portion of uterine horn. Similar finding was also reported by Raut *et al.* (2008) and Umamageswar *et al.* (2014). The increased uterine weight or contractions during late or early gestation predisposes for uterine torsion. In dog, uterine torsion is also caused due to lack of foetal fluid or violence or sudden falls or rolling (Roberts, 1982 and Jackson, 2004). The fetus prior to birth is in ventral position and rotates through 180° just before entering the

pelvis in dog. In the present case sudden fall may have resulted into uterine torsion. Chamber *et al.* (2011) reported that site of torsion relative to major vascular supply, duration of torsion and extent of vascular compromise may be more relevant factors in progression and severity of clinical signs.

Dogs with uterine torsion may be presented with life threatening systemic derangements requiring prompt medical and surgical intervention. Severe torsion can cause obstruction of the blood supply to the uterus, with resultant thrombosis or rupture of uterine vessels, congestion, shock, fetal and/or maternal death (Johnston *et al.*, 2001).

Early diagnosis of uterine torsion is of vital importance (Forsberg, 2015). Diagnosis is based on the history, clinical findings and ultrasonographic examination of the abdomen (Johnston *et al.*, 2001). Ultrasonographic examination enables the detection of both dead and live fetuses (Kacprzak *et al.*, 2014). In the present case study, ultrasonographic examination revealed dead fetuses and a live foetus. Nonetheless, the diagnosis of the unilateral uterine torsion could not be accomplished based on these findings. But, Biddle and Macintire (2000) and Kacprzak *et al.* (2014) have advocated colour-flow Doppler ultrasonography or exploratory laparotomy for diagnosis of uterine torsion. In the present case, diagnosis was accomplished at the caesarean section.

The prognosis following ovario-hysterectomy, without prior correction of torsion, is expected to be good in absence of generalised peritonitis, systemic inflammatory response or disseminated intra vascular coagulation. Ovario-hysterectomy has been recommended to prevent systemic effects associated with release of bacteria, bacterial toxins and other cardiovascular depressant compounds present within a potentially devitalised hollow viscous organ (Jutkowitz, 2005). Thus, signs of sudden discomfort in an advanced pregnant dog should always be suspected for uterine torsion in dogs with the history of fall or external violence and an exploratory laparotomy is indicated to make a definitive diagnosis.

The treatment of choice for uterine torsion is partial or en-bloc ovariohysterectomy (Bekyurek and Macun, 2013). Emergency surgical intervention is warranted when thrombosis and gangrene are already set-in, and fetuses to be delivered by hysterectomy (Johnston *et al.*, 2001; Thomas, 2010). In the present case, in view of the twisted uterine horn being necrotic and fragile, and the animal owner was not intending any future whelping for the dog, it was decided to perform a total ovariohysterectomy. In conclusion, uterine torsion known to be a life-threatening condition usually associated with systemic disorders which require emergency medical and surgical intervention, as was followed in the present case.

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