

Short Communication

FIRST REPORT ON UTERINE INTUSSUSCEPTION AS A CAUSE OF DYSTOCIA IN GERMAN SHEPHERD DOG

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Received 12 June 2022, revised 12 November 2022

ABSTRACT: Uterine intussusceptions are a rare emergency clinical condition and have been reported in immediately postpartum female dogs in a few recent case reports but never as a cause of dystocia. A 20-month-old primiparous German shepherd dog with complete gestation and showing greenish-black vaginal discharge was presented. The animal was hyperactive with abdominal discomfort, hyperpnoea, and tachycardia. Radiographic examination revealed at least 3 fetal skeletons while ultrasonography revealed multiple fetuses with no heartbeats. Based on the initial tentative diagnosis of primary uterine inertia oxytocin, calcium gluconate, and dextrose normal saline was administered but subsequently, no expulsion of fetuses occurred. Hence, the cesarean section was the only option to deliver the fetus. After incising the abdomen from the left flank approach, it was found that there was telescoping of the uterus. The complete right and half left uterine horns were telescoped with each other while, the half left uterine horn was normal. Two fetuses were present in the telescoped cyanotic right uterine horn while one fetus was there in the normal left uterine horn. First, the fetuses were removed by incising both uterine horns separately so that the size of the uterus could be reduced by removing the telescoping part of the uterus. Then, the telescoping was removed and an ovario-hysterectomy was done to prevent toxemia. The animal recovered uneventfully after surgery. Thus, this case presents the first report of uterine intussusceptions causing dystocia and its successful surgical management in a dog.

Key words: Uterine intussusception, German shepherd dog, Dystocia, Cesarean section.

Intussusception, a clinical emergency is usually defined for the intestines where the telescoping of one part occurs with the other part of the intestine (Allman *et al.* 2013). Uterine intussusception is a rare clinical condition and has been reported in immediately postpartum female dogs in a few recent case reports (Pinto *et al.* 2015, Angrimani *et al.* 2020). The telescoping or intussusception of the organ leads to an interruption in arterial blood supply leading to cyanosis and necrosis thereby; surgical excision of the affected part is deemed to be the treatment of choice (Pinto *et al.* 2015, Angrimani *et al.* 2020).

Although usually intussusception is associated with the intestines, it has also been reported in other tubular organs like the stomach (Allman *et al.* 2013), Esophagus (Rohwedder and Hellmuth 2021), and postpartum uterus (Pinto *et al.* 2015, Angrimani *et al.* 2020). But, a perusal of the literature revealed that no report is available which depicts uterine intussusception as a cause of dystocia. This case report is the first finding to describe

uterine intussusception as a cause of dystocia in a primiparous dog and its successful surgical management.

Case description

A primiparous 20 months old German shepherd female dog was presented in the university clinics with a history of gestation period of 65 days with greenish-black vaginal discharge since last 2 days but no signs of straining. A history of high temperature of 40°C was observed 2 days before while; on the day of presentation, the rectal temperature was 38.6°C. The animal was quite hyperactive with abdominal discomfort, hyperpnoea (68/min), and tachycardia (120 beats/min) with normal pinkish mucus membranes and lymph nodes. Abdominal palpation revealed the presence of fetuses while, on per-vaginal examination the birth canal was empty with no fetal parts palpable.

X-ray examination revealed at least 3 fetal skeletons present *in utero* (Fig. 1) while ultrasonography revealed

multiple fetuses with no heartbeats. The presumptive diagnosis revealed that it could be a case of primary uterine inertia. The animal was treated with oxytocin @ 0.21 U/Kg IV (Evatocin®), calcium gluconate and lactobionate 5 mL IV, and 5 mL SC (Calcium Sandoz®), and dextrose normal saline @10 mL/kg IV (DNS 500 mL®). The animal was awaited for about 6 h but no signs of straining were observed with failure of the expulsion of fetuses. Therefore, exploratory laparotomy for cesarean section was opted as the treatment of choice. The hemato-biochemical profile of the animal was analyzed before the surgery using an auto analyzer (Ortho Clinical Vitros 350 Chemistry System) which depicted mild leukocytosis with neutrophilic left shift while, biochemical parameters were in the reference range.

Exploratory laparotomy under general anesthesia [Pre-anesthetics- Acepromazine maleate @ 0.05 mg/kg (Acepromazine®), Atropine sulphate @ 0.04 mg/kg (Tropine®), Butorphanol @ 0.2 mg/kg (Butodol®)- 2 ml IV; Induction of anesthesia with Ketofol [Ketamine @ 2 mg/kg - Aneket®), and Propofol @ 2mg/kg (Neorof®) IV] (Wamaitha *et al.* 2019) and maintenance with Isoflurane (Isotroy® 250) was done for cesarean section.

After incising the abdomen from the left flank approach, it was very difficult to exteriorize the uterus. The left flank approach was preferred as while performing from the right flank the intestines interrupts during the surgery. It was observed that there was telescoping of one complete (right) and one half (left) uterine horn (cyanotic with 2 fetuses) with another half-normal left uterine horn with one fetus in it. The right uterine horn was incised and two dead fetuses from the telescoped part were removed after that telescoping was removed. Then, another dead fetus from the normal left uterine horn was



Fig. 1. Lateral radiograph of the dog depicting three fetuses in the uterus.

evacuated by giving a separate incision. Keeping in view cyanotic and necrotic changes in the uterus, it was decided to go for ovario-hysterectomy of the dog so that toxemia does not develop (Fig. 2A-2D).

Post-operatively, the animal was treated with amoxicillin/sulbactam (Amoxirum forte®) @15mg/kg b.wt IM twice daily, metronidazole (Metrogyl®) @20mg/kg b.wt IV once daily, ranitidine (Rantac®) @0.5 mg/kg b.wt SC once daily, ondansetron (Emset®) @ 0.5 mg/kg b.wt IM once daily along with analgesic meloxicam (Melonex®) @ 0.5 mg/kg b.wt SC once daily for five days. The animal started normal intake of feed and water after two days and recovered uneventfully. The skin sutures were removed after the 14th day of the surgery.

Discussion

Dystocia is a clinical emergency in female dogs with primary uterine inertia as the major contributing cause. Usually, the incidence of dystocia in dogs is around 5.00% (Bergström *et al.* 2006) whereas; it may reach up to 100% in some breeds like Boxer, and English Bulldog (Wydooghe *et al.* 2013, Hollinshead and Hanlon 2017). Although, uterine torsion (unilateral as well as bilateral) has been observed along with uterine rupture as a cause of dystocia in pregnant dogs (Jayanthi *et al.* 2018, Mohammed *et al.* 2019, Kodie *et al.* 2020), as well as in the non-pregnant (Cordella *et al.* 2021) and association with pyometra (Jagnow *et al.* 2021).

The clinical symptoms associated with uterine intussusception in post-partum dogs were abdominal discomfort along with the prolapse of vaginal mucosa (Angrimani *et al.* 2020) while, in this case as there was the presence of fetuses in the uterus so, no vaginal mucosa was prolapsed. The abdominal discomfort was reported in the current case as evidenced by the hyperactive movement of the animal. A history of high temperature (40°C) in the present case along with hyperpnoea and tachycardia were in agreement with the reports of uterine torsion in the pregnant (Raut *et al.* 2008, Kodie *et al.* 2020) and non-pregnant female dogs (Cordella *et al.* 2021) while, vital parameters were normal in the previous reports of uterine intussusception in the post-partum dog (Angrimani *et al.* 2020).

It has been observed that routine diagnostic tools like radiography and ultrasonography fail to diagnose uterine torsion (Raut *et al.* 2008) as well as uterine intussusceptions (Pinto *et al.* 2015, Angrimani *et al.* 2020) and only exploratory laparotomy can reveal both the conditions (Angrimani *et al.* 2020, Mohammed *et al.* 2019) as in the present case. All previous reports related to uterine torsion had a presumptive tentative diagnosis

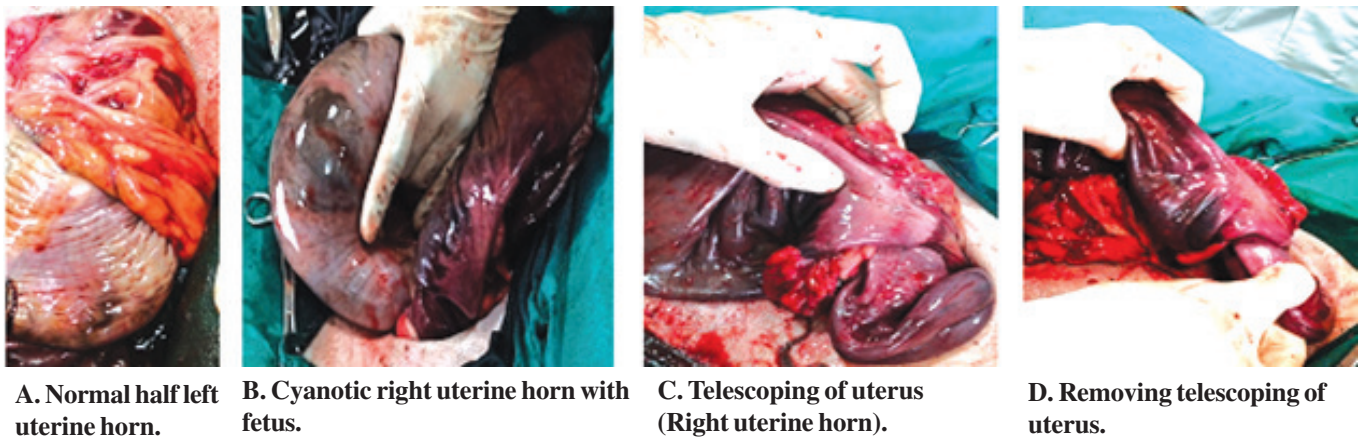


Fig. 2 (A-D). Surgical management of uterine intussusception in a German shepherd dog.

for primary uterine inertia as in the current finding and opted for induction of whelping using oxytocin, calcium, and fluid therapy (Mohammed *et al.* 2019).

It has been observed that uterine contractions associated with induction therapy resulted in uterine rupture due to occlusion of opening as twisting of the uterus was there in torsion cases (Raut *et al.* 2008, Jayanthi *et al.* 2018) but, even after induction therapy, there was no uterine rupture in the present case which could be due to non-responsive uterus to oxytocin and calcium therapy. The hemato-biochemical profile in the female dog was within the reference range (Kaneko and Cornelius, 1997) except for mild leukocytosis with a neutrophilic left shift which was concurrent with the previous reports related to uterine intussusceptions (Angrimani *et al.* 2020) as well as uterine torsion (Kodie *et al.* 2020).

Complete ovario-hysterectomy was performed in the current case keeping in view the necropsied cyanotic uterus as in the previous reports of uterine torsion (Raut *et al.* 2008, Jayanthi *et al.* 2018, Mohammed *et al.* 2019) and intussusceptions (Pinto *et al.* 2015, Angrimani *et al.* 2020). Uterine intussusception has already been reported in the non-gravid post-partum female dogs (Pinto *et al.* 2015, Angrimani *et al.* 2020) but not in the gravid females as a cause of dystocia.

The possible cause of uterine intussusception, in this case, could be attributed to the presence of an unequal number of fetuses in both uterine horns (Two in right and one in the left horn), hyperactive movement of the animal leading to telescoping as reported by Arunmozhi *et al.* (2014) in uterine torsion. The other predisposing factors that could lead to uterine intussusception could be similar to that of uterine torsion in the gravid uterus in dogs which are premature uterine contraction in late pregnancy, fetal

physical activities, partial abortion, hereditary weakness or variations in length and mobility of the proper ovarian and uterine ligaments, lack of fetal fluids and instability of uterine horns along with violent uterine contractions (Kodie *et al.* 2020, Cordella *et al.* 2021, Jagnow *et al.* 2021).

Thus, this clinical case report depicts a rare and first finding of uterine intussusception in a gravid primiparous female German shepherd dog causing an interruption in the expulsion of fetuses and leading to dystocia.

REFERENCES

- Allman DA, Pastori MP (2013) Duodenogastric intussusception with concurrent gastric foreign body in a dog: a case report and literature review. *J Am Anim Hosp Assoc* 49(1): 64-69.
- Angrimani DDSR, Silva MF, Ilkiu AM, Rossi ES, Rodrigues IM *et al.* (2020) Uterine intussusception in immediate postpartum in bitches: case report. *Braz J Vet Res Anim Sci* 57(1): e158398-e158398.
- Arunmozhi N, Sathiamoorthy T, Sridevi P, Joseph C (2014) Surgical management of uterine torsion in a bitch. *Indian Vet J* 92: 61-63.
- Bergström A, Nodtvedt ANE, Lagerstedt AS, Egenvall A (2006) Incidence and breed predilection for dystocia and risk factors for cesarean section in a Swedish population of insured dogs. *Vet Surg* 35(8): 786-791.
- Cordella A, Mezzalana G, Negro L, Bertolini G (2021) Unilateral uterine torsion in two non gravid bitches: Imaging and histological features. *Vet Rec Case Rep* 9(1): e20.
- Hollinshead FK, Hanlon DW (2017) Factors affecting the reproductive performance of bitches: A prospective cohort

First report on uterine intussusception as a cause of dystocia in German shepherd dog

study involving 1203 inseminations with fresh and frozen semen. *Theriogenology* 101: 62-72.

Jagnow, SRB, dos Reis Ritter C, Mayer SCH, Tissiani P, Rolim JF *et al.* (2021) Uterine torsion associated with open pyometra in a bitch. *Acta Sci Vet* 49: 1-5.

Jayanthi NR, Saahithya LJ, HarishRao GVS (2018) Unilateral uterine torsion and rupture in a Labrador – a pathomorphological report. *Int J Curr Microbiol Appl Sci* 7(7): 1063-1068.

Kaneko JJ, Cornelius CE (1997) *Clinical Biochemistry of Domestic Animals*. 5th edn. Academic Press. 117-138.

Kodie DO, Oguntoye CO, Oyetayo NS, Eyarefe OD (2020) Unilateral uterine torsion with a near-complete rip of the affected right horn in a parturient German shepherd bitch. *Sokoto J Vet Sci* 18(2): 108-113.

Mohammed SA, Kannan K, Narayanasamy A, Palanisamy S, Purushothaman S (2019) Management of dystocia due to unilateral uterine torsion in a Labrador bitch: a surgical approach. *Turkish J Vet Anim Sci* 43(2): 296-298.

Pinto Filho STL, Carus DS, Dalmolin F, Anjos BL, Segatto T *et al.* (2015) Uterine intussusception in a Yorkshire terrier bitch. *Arq Bras Med Vet Zootec* 67(1): 37-40.

Raut BM, Raghuvanshi DS, Upadhye SV, Gahlod BM, Gawande AP *et al.* (2008) Uterine torsion in a bitch. *Vet World* 1(7): 212.

Rohwedder T, Hellmuth VC (2021) Gastroesophageal intussusception with complete herniation of the spleen in a 12 months old dog with idiopathic megaesophagus. *Vet Rec Case Rep* 9: e15: 1-5.

Wamaitha MN, Mogoia EM, Mande JD (2019) Evaluation of anesthesia produced by ketofol in acepromazine-or medetomidine-sedated dogs. *J Adv Vet Anim Res* 6(2): 215.

Wydooghe E, Berghmans E, Rijsselaere T, Van Soom A (2013) International breeder inquiry into the reproduction of the English bulldog. *Vlaams Diergeneeskd Tijdschr* 82(1): 38-43.

Cite this article as: Bisla A, Gulia N, Honparkhe M, Kumar A (2022) First report on uterine intussusception as a cause of dystocia in German shepherd dog. *Explor Anim Med Res* 12(2): 277-280. DOI: 10.52635/eamr/12.2.277-280.