Caesarean section in dogs

Accession Number
20153154008

Author
Patil, A. S.; Ramesh Rathod; Nagaraja, B. N.

Title
Retrospective studies on occurrence of dystocia and its management in domestic animals.

Source

Publisher
Intas Pharmaceuticals Ltd

Location of Publisher
Ahmedabad

Country of Publication
India

Abstract
The study was undertaken to record occurrence of dystocia in animals and relieve dystocia by conservative treatment (medicinal and or manual/forced extraction), fetotomy or cesarean section and record the outcome. A total of 253 clinical cases of dystocia in cattle (n=88), buffaloes (n=74), goat (n=38), sheep (n=17) and dog (n=36) were screened. Fetal causes of dystocia were common in cows (n=53, 20.95%), whereas maternal causes of dystocia were common (n=39, 15.42%) in buffaloes. Uterine torsion was the most common maternal cause of dystocia both in cattle (n=11) and buffaloes (n=23). Fetal oversize was the commonest fetal cause of dystocia both in cattle (n=16) and buffaloes (n=12). The biggest maternal cause of dystocia was uterine inertia in sheep (n=3) and dogs (n=8). Most cases were resolved by medicinal treatment and forced extraction (n=165), followed by cesarean section (n=67) and fetotomy (n=21). Among a total of 441 neonates, 277 were males and 164 were females. A large proportion of cattle and buffaloes had dead fetuses with resultant fetal emphysema when presented (n=115). Following adoption of different treatment methods 238 (53.97%) neonates were delivered live. High rates of complications were associated with fetotomy followed by forced extraction. High success rate was observed in cesarean sections as they were performed in time.

Publication Type
Journal article.

The effect of different anesthesia methods on caesarean section of pregnant dog. [Chinese]

Accession Number
20153145404

Author
Yang ShuHua; Tan Hao; Yu LiHui; Li Lin; Zhang Yi; Yang Na; He JianBin

Title
The effect of different anesthesia methods on caesarean section of pregnant dog. [Chinese]

Source

Publisher
Editorial Board Chinese Journal of Veterinary Science

Location of Publisher
Changchun
Country of Publication
China

Abstract
The caesarean stress effects and living conditions of different anesthesia methods were investigated in pregnant dogs. 846 mixture general anesthesia, epidural anesthesia and combined anesthesia by 846 and procaine were used in caesarean dogs. Blood samples were taken at pre-anesthesia (T1) immediately after opening abdomen (T2), 30 min post the operation (T3), at the end of operation (T4), 24 h (T5) and 48 h (T6) after the operation, respectively. The average level of plasma cortisol and blood sugar were measured by radioimmunoassay and colorimetric assay, respectively. The results showed that the concentrations of plasma Cortisol at T2-6 time in 846 anesthesia group and epidural anesthesia group were significantly higher than that of control group and combined anesthesia group (P<0.05). Compared with control group, there was significant higher at T3 time in the combined anesthesia group (P<0.05); (2) The concentrations of blood sugar at T2-6 time in 846 anesthesia group and epidural anesthesia group was significantly higher than that control group and combined anesthesia group (P<0.05). Compared with control group, there was significant increase in the combined anesthesia group at T3-4 time (P<0.05); The weight and living conditions of puppies in combined anesthesia group were similar to the control group, effects in the 846 anesthesia is poor, the worst effect was the epidural anesthesia group. It is concluded that the combined anesthesia group can effectively relieved stress response in caesarean section of dogs.

Publication Type
Journal article.
Publisher
John Wiley & Sons
Location of Publisher
Chichester
Country of Publication
UK
Abstract
This book is comprised of 18 chapters covering information on the anaesthetic management of dogs and cats with existing disease conditions. It serves as a reference for handling anaesthesia in patients with common presenting diseases in order to avoid and manage complications resulting from concurrent disease. The chapters present an in-depth, practical information on the special considerations before, during and after sedation and anaesthesia of a patient with a given disease (cardiovascular, respiratory, neurologic, hepatobiliary, gastrointestinal, renal, endocrine, nutritional, ophthalmic, oral and maxillofacial, haematologic, skin and musculoskeletal, infectious, neoplastic and perioperative fluid, electrolyte and acid-base disorders). Anaesthetic management for caesarean section and pregnancy, neonatal, paediatric and geriatric concerns and disorders related to trauma is also discussed.
Publication Type
Book.

<6>
Accession Number
20153052896
Author
Canatan, H. E.; Ergn, I.; Polat, I. M.; Yazlk, M. O.
Title
Unusual cases of vaginal prolapse concurrent with cystocele in two dogs.
Source
Publisher
Ecole Nationale Veterinaire de Toulouse
Location of Publisher
Toulouse
Country of Publication
France
Abstract
A 2-year-old non pregnant Anatolian shepherd (case 1) and 3-year-old, pregnant pit bull terrier (case 2) each presented with a history of dysuria and a mass prolapsed from the vulva. Vaginal prolapse and retroflexion of the urinary bladder were diagnosed in both cases according to clinical and diagnostic examinations. Foetal stress was detected on ultrasonography and caesarean section was performed in case 2. The urinary bladder was replaced in the normal anatomic position and cystopexy was performed via a midline laparotomy in each dog, and an ovariohysterectomy (OHE) was performed to prevent recurrence of vaginal prolapse. Surgical amputation of the prolapsed vagina was performed after the cystopexy and OHE. This case report demonstrates the possibility of severe vaginal prolapse concurrent with cystocele in bitches.
Publication Type
Journal article.

<7>
Accession Number
20143405398
Author
Heimendahl, A. von
Title
Emergency caesarean section in the canine patient.
Source
Publisher
British Small Animal Veterinary Association
Location of Publisher
Qedgeley
Country of Publication
UK
Publication Type
Journal article.

<8>
Accession Number
20143315011
Author
Title
Multicentre, randomised clinical trial evaluating the efficacy and safety of alfaxalone administered to bitches for induction of anaesthesia prior to caesarean section.
Source
Australian Veterinary Journal; 2014. 92(9):333-338. 17 ref.
Publisher
Wiley-Blackwell
Location of Publisher
Melbourne
Country of Publication
Australia
Abstract
Objective: To determine the clinical safety and efficacy of alfaxalone in bitches undergoing caesarean section (CS) and their puppies when it is administered for induction of anaesthesia followed by maintenance with isoflurane and oxygen and in conjunction with perioperative pharmaceuticals. Design: A multicentre, randomised, positive-controlled clinical study. Methods: A total of 74 bitches were enrolled in the study with 48/74 (65%) and 26/74 (35%) receiving alfaxalone and propofol, respectively, for induction of anaesthesia. Bitches were examined prior to induction and monitored during induction, surgery and recovery. Assessments were made for quality of induction, maintenance and recovery from anaesthesia. Assessments were made on pup viability for suction, dorsal flexion, withdrawal and anogenital reflexes. Results: Of the 48 bitches receiving alfaxalone, 47 (98%) and 39 (81%) scored a top score of excellent for induction and anaesthesia effectiveness, respectively. For the same parameters with propofol in 26 bitches, 23 (88%) and 17 (65%) scored excellent. Average scores for recovery were not different between the two treatment groups with alfaxalone 46/48 (96%) and 25/26 (96%) of propofol induced bitches scoring a good or excellent rating. Bitches tolerated a number of concurrent medications throughout the peri-operative period. No bitch fatalities were observed in this study. There were no statistically significant differences between treatment groups for the puppy variables. Live puppies born by CS to bitches having been administered alfaxalone or propofol had similar survival rates 24h after birth (i.e. 205/213 (96%) and 124/131 (95%), respectively). Conclusion: This study confirms the safety and efficacy of alfaxalone for the purpose of anaesthetic induction for CS in the bitch. In addition, alfaxalone had a negligible effect on the neonate with >95% of puppies alive 24h after the bitch had recovered from anaesthesia with alfaxalone induction.
This work presents a case of a pregnant female dog, of English bulldog breed, three years old, which was brought to Belgrade Faculty of Veterinary Medicine because of inability for normal parturition. Cesarean section is an urgent intervention both in human and in veterinary medicine. Anesthesia of a pregnant dog should be carried out very carefully, because of all the physiological changes that appear during pregnancy, as well as the impact of anesthetics on embryos themselves. Anesthetics, analgesics and sedatives pass through blood brain barrier, but also their transport goes through placenta to embryo, so for that reason it is not possible to anesthetize only mother and to avoid anesthesia effects on the embryo. Therefore, anesthetics with short time of action which metabolize quickly and have minimal negative effect on embryos are recommended. When choosing the right analgesics and anesthetics, there should be known that female dogs in which it is necessary to do Cesarean section belong to the group of high risk patients. Pregnant female dogs are exposed to hypoventilation, hypoxia, hypercapnia, intense heart work, vomiting and regurgitation as well. Reversible anesthetics are recommended to provide shorter duration time of anesthesia, and in accordance, inhalation anesthetics doses are minimal. Application of alpha 2-agonist in premedication, propofol in induction, as well as maintaining general inhalation anesthesia with sevofluran, along with local analgesia, proved to be the ideal combination in this case of cesarean section.

Neonatal viability evaluation by Apgar score in puppies delivered by cesarean section in two brachycephalic breeds (English and French bulldog).

This study tried to define neonatal viability after cesarean section in brachycephalic breeds and the efficacy of an adapted Apgar test to assess newborn survival. Data from 44 cesarean sections and 302 puppies were included. Before surgery (59-61 days after ovulation), an ultrasound evaluation defined the fetal biparietal diameter (BPD). Immediately after the uterine delivery, the pups were evaluated to detect birth defects and then, a modified Apgar score (range: 0-10) was used to define neonatal health at 5 min (Apgar 1) and 60 min (Apgar 2) after neonatal delivery; puppies were classified into three categories: critical neonates (score: 0-3), moderate viability neonates (score: 4-6) and normal viability neonates (score: 7-10). Mean (+or-SEM) value of BPD was 30.8+or-0.1 mm and 28.9+or-0.1 mm in English and French Bull-Dog fetus, respectively. The incidence of spontaneous neonatal mortality (4.98%, 14/281) and birth defects (6.95%) were not influenced by the sex; however, congenital anomalies and neonatal mortality were higher (p<0.01) in those litters with a greater number of neonates. In Apgar 1, the percentage of critical neonates, moderate viability neonates and normal viability neonates were 20.5%, 46.3% and 33.1% respectively; sixty minutes after birth, the critical neonates only represented 10.3% of the total puppies. Almost all neonates (238/239) showing moderate or normal viability at Apgar 1, survived for the first 24 h after birth. The results of the study showed a direct relationship (p<0.01) between the Apgar score and neonatal viability. Therefore, the routine performance of the Apgar score would appear to be essential in the assessment of the status of brachycephalic breed puppies.
troubles at parturition. At surgery, amniotic and allantoic fluids were collected and assayed for IGF-I and NEFA. IGF-I and NEFA amounts in both amniotic and allantoic fluids of different breed size bitches (small: <=10 kg; medium: 11-25 kg; large: 26-40 kg) were detected, as well as the effect of gender on IGF-I levels. On a total of 73 amniotic and 76 allantoic samples collected by normal, viable, and mature newborns, the mean IGF-I concentration was significantly higher in amniotic than in allantoic fluid in all three groups, but the amniotic IGF-I levels were significantly lower in small and medium size bitches when compared with large ones. No significant differences were found in allantoic IGF-I concentrations among size groups. A significant effect of the puppy gender on IGF-I content in both fetal fluids was not reported. Regarding NEFA, in all the three groups, the mean NEFA concentration did not significantly differ between amnion and allantois, but in both fetal fluids, higher NEFA levels were detected in samples belonging to small breeds when compared with medium and large. These data strongly indicated that, also in the dog, a relation between fetal fluids IGF-I and NEFA concentrations and breed size exists. Further research is needed to elucidate the possible role of IGF-I and NEFA in the pathologic conditions related to canine fetal growth.

Publication Type
Journal article.
Canine pregnancy and parturition.

### Abstract

Canine pregnancy and parturition is a period of significant physiological and behavioral changes in female dogs. The process begins with ovulation, followed by the formation of the corpus luteum, which secretes progesterone to maintain pregnancy. As pregnancy progresses, the uterine glands become more developed, and the placenta forms. During parturition, labor begins with uterine contractions that expel the fetus. Both the mother and the puppies undergo significant physiological changes. Nutritional and environmental factors can influence the outcome of pregnancy and parturition. Proper care and management are crucial to ensure the health and well-being of the pregnant bitch and her puppies.

### Source


### Publisher

British Small Animal Veterinary Association

### Location of Publisher

Quedgeley

### Country of Publication

UK

### Publication Type

Conference paper.

---

Iatrogenic (ovario-hysterectomy) hydro-nephrosis and hydro-ureter in a female boxer dog: case report.

### Abstract

A case of iatrogenic hydroureter and hydronephrosis after spay surgery in a 2 year old female boxer dog is described. One month after caesarian section and ovario-hysterectomy, an abdominal mass was found during amniocentesis. Abdominal ultrasonography revealed hydronephrosis and hydroureter with normal urine and blood test values. Exploratory laparotomy showed a ligature on the left ureter near the uterine stump and the affected kidney was drained. Nephrectomy had to be performed due to the large loss of renal parenchyma. Five months after surgery the dog appeared healthy. The findings suggest that due caution should be taken before routine elective spay surgery. A timely diagnosis of iatrogenic ureter ligature avoids kidney damage.

### Source


### Publisher

Online Journal of Veterinary Research

### Location of Publisher

Toowoomba

### Country of Publication

Australia

### Publication Type

Journal article.
Accession Number
20143138624
Author
Waller, S. B.; Teles, A. J.; Gomes, A. dos R.; Cleff, M. B.; Mello, J. R. B. de
Title
Side effects of anesthesia in neonates of dogs and cats born caesarian. [Portuguese]
Source
Publisher
Universidade Federal Rural do Semi-Arido (UFERSA)
Location of Publisher
Mossoro
Country of Publication
Brazil
Abstract
In veterinary medicine, anesthetic protocols for cesarean should be carefully evaluated in order to avoid health issues for mothers and newborns. Inhalational anesthetic protocols using sevoflurane and isoflurane, and epidural anesthesia with lidocaine or bupivacaine are primarily recommended for cesarean sections in dogs and cats by causing minimal depressive effects while doesn't commits the viability and fetal survival. On the other hand, dissociative protocols using thiopental, xylazine, mepivacaine and prilocaine are less recommended for causing major depressive effects. Thus, this study aimed to address a comparative literature review of different anesthetic effects on canines and felines fetuses born from cesarean.
Publication Type
Journal article.

Accession Number
20133393278
Author
Doebeli, A.; Michel, E.; Bettschart, R.; Hartnack, S.; Reichler, I. M.
Title
Apgar score after induction of anesthesia for canine cesarean section with alfaxalone versus propofol.
Source
Theriogenology; 2013. 80(8):850-854. 28 ref.
Publisher
Elsevier
Location of Publisher
New York
Country of Publication
USA
Abstract
The effects of alfaxalone and propofol on neonatal vitality were studied in 22 bitches and 81 puppies after their use as anesthetic induction agents for emergency cesarean section. After assessment that surgery was indicated, bitches were randomly allocated to receive alfaxalone 1 to 2 mg/kg body weight or propofol 2 to 6 mg/kg body weight for anesthetic induction. Both drugs were administered intravenously to effect to allow endotracheal intubation, and anesthesia was maintained with isoflurane in oxygen. Neonatal vitality was assessed using a modified Apgar score that took into account heart rate, respiratory effort, reflex irritability, motility, and mucous membrane color (maximum score=10); scores were assigned at 5, 15, and 60 minutes.
after delivery. Neither the number of puppies delivered nor the proportion of surviving puppies up to 3 months after delivery differed between groups. Anesthetic induction drug and time of scoring were associated with the Apgar score, but delivery time was not. Apgar scores in the alfaxalone group were greater than those in the propofol group at 5, 15, and 60 minutes after delivery; the overall estimated score difference between the groups was 3.3 (confidence interval 95%: 1.6-4.9; P<0.001). In conclusion, both alfaxalone and propofol can be safely used for induction of anesthesia in bitches undergoing emergency cesarean section. Although puppy survival was similar after the use of these drugs, alfaxalone was associated with better neonatal vitality during the first 60 minutes after delivery.

Publication Type
Journal article.

<17>
Accession Number
20133368687
Author
Max, A.; Jurka, P.
Title
Effectiveness of obstetric procedures in miniature dogs.
Source
Publisher
National Veterinary Research Institute
Location of Publisher
Pulawy
Country of Publication
Poland
Abstract
The aim of the study was to evaluate the course of labour, incidence, and causes of dystocia and effectiveness of obstetric aid for minimising the neonatal loss in bitches that belong to miniature breeds. Fifty parturitions proceeded under obstetric supervision from the first to last puppy born. Most of the bitches (n=34) belonged to the Chihuahua breed. Others included Yorkshire terrier (n=14), Shih Tzu (n=1), and Miniature Schnauzer (n=1). Obstetric procedures consisted of conservative aid in the form of medication, manual manipulations and combination of both, or caesarean section. The litter size was 3.58 on average. Dystocia occurred in 68% of cases, mostly caused by foetomaternal disproportion. The condition took place less frequently in multiparas than in primiparas. A caesarean section was performed in 20 cases (40%), while remaining 30 bitches delivered puppies through genital tract using manual assistance, oxytocin injections or both procedures simultaneously. The shortening of expulsive stage using conservative aid or timely performed caesarean section resulted in low stillbirth rate (5.59%). The kind of obstetric aid used in the study was related to the specificity of miniature dogs enabling successful conservative treatment. However, conservative obstetric procedures require skills, clinical experience, and are time-consuming. These may be the reasons for a frequent overuse of caesarean section. It was concluded that both surgical and conservative treatment methods, if chosen appropriately, are effective at the same level.

Publication Type
Journal article.

<18>
Accession Number
20133283827
Author
Baltzer, W.
Title
Cesarean section.
Source
Small animal soft tissue surgery; 2013. :635-644. many ref.
Publisher
John Wiley & Sons
Location of Publisher
Chichester
Country of Publication
UK
Publication Type
Book chapter.

<19>
Accession Number
20133192456
Author
Campoy, L.
Title
Caesarean section. [Dutch]
Source
Dier en Arts; 2013. 28(5):166-167.
Publisher
Uitgeverij Libre B.V.
Location of Publisher
Leeuwarden
Country of Publication
Netherlands
Abstract
A case report is presented of a pregnant 7.5-year-old Chinook bitch requiring a caesarean section. Three pups were born after the 25 minutes-long operation.
Publication Type
Journal article.

<20>
Accession Number
20133267860
Author
Zeltzman, P.
Title
The 3 surgical options for C-sections.
Source
Veterinary Practice News; 2013. 25(8):32.
Publisher
BowTie News
Location of Publisher
Assessment of uterine involution in bitches using B-mode and Doppler ultrasonography.

The aim of this study was to measure the uterine diameter by B-mode and Doppler velocimetry patterns of uterine arteries in postpartum female dogs after normal delivery or cesarean section (c-section). Ten female dogs were assessed on weeks 0, 1, 2, 3 and 4 postpartum. Only at week 0, bitches submitted to c-section presented higher body diameters and uterine horns when compared to normal delivery. It was observed a reduction in uterine diameters over the weeks in both groups. In general, bitches submitted to c-section presented lower uterine perfusion. Each group presented distinct Doppler velocimetric characteristics. It was concluded that the B-mode ultrasound and Doppler are important tools for assessing puerperal uterine with distinct characteristics influenced by the type of delivery.

Intra-parturient uterine torsion in a boerboel bitch. (A case report).

The aim of this study was to measure the uterine diameter by B-mode and Doppler velocimetry patterns of uterine arteries in postpartum female dogs after normal delivery or cesarean section (c-section). Ten female dogs were assessed on weeks 0, 1, 2, 3 and 4 postpartum. Only at week 0, bitches submitted to c-section presented higher body diameters and uterine horns when compared to normal delivery. It was observed a reduction in uterine diameters over the weeks in both groups. In general, bitches submitted to c-section presented lower uterine perfusion. Each group presented distinct Doppler velocimetric characteristics. It was concluded that the B-mode ultrasound and Doppler are important tools for assessing puerperal uterine with distinct characteristics influenced by the type of delivery.
Slovakia
Abstract
This paper reports a case of intra-parturient uterine torsion (270 degrees) in a 2 year old boerboel bitch (44 kg) that has had two successful whelpings previously. The bitch had whelped two puppies 48 hours prior to presentation, but could not whelp more puppies despite obvious abdominal enlargement, vulva discharges and discomfort. The bitch's physiological parameters were slightly high, presumably due to labor stress, while physical and sonographic examinations revealed a gravid uterus with severely distressed fetuses. Following caesarian section, the right uterine horn was empty and involuting while the left horn was markedly enlarged, congested/discolored, and had twisted counterclockwise by 270 degrees at the base. The torsion was corrected, and 4 dead fetuses were evacuated from the horn. The bitch's recovery was uneventful. The rarity of the condition and the associated aetio-pathogenesis form the objective of this report.

Publication Type
Journal article.

<23>
Accession Number
20133121534
Author
Title
Lactato concentration in bitch and canine neonates born through cesarean section. [Portuguese]
Source
Arquivo Brasileiro de Medicina Veterinaria e Zootecnia; 2012. 64(6):1442-1448. 22 ref.
Publisher
FEPMVZ - Editora
Location of Publisher
Belo Horizonte
Country of Publication
Brazil
Abstract
This work evaluated the concentration of lactate and blood glucose in seven bitches in labor subject to caesarean section and in their newborns. The lactate concentration was measured using a portable analyzer and enzymatic colorimetric method. In neonates, the birth weight was evaluated. The maternal and neonatal lactate values were statistically different, being higher in newborns. At birth, the bitches and the newborns had normal glucose status, and no correlation was observed between blood glucose in either. The lactate concentration obtained by the portable analyzer (3.5+or-0.6 mmol/L) was higher than that obtained with the enzymatic colorimetric method (1.6+or-0.6 mmol/L). There was significant correlation between the neonate weight and lactate concentration and in puppies with lighter weight there was a higher concentration of lactate.
Publication Type
Journal article.

<24>
Accession Number
20133038552
Author
Posival, A.; Althoff, G.; Goericke-Pesch, S.; Wehrend, A.
Title
Perinatal mortality of puppies after caesarean section caused by intrauterine infection. [German]

Source

Publisher
Schattauer GmbH

Location of Publisher
Stuttgart

Country of Publication
Germany

Abstract
Perinatal mortality in dogs and cats is relatively high. Whereas the death of puppies within the first 3 weeks of life is commonly assumed to be due to infectious causes, peracute death of neonates immediately after parturition or caesarean section results in a high potential for conflict between owner and veterinarian. In this respect, the owner often postulates a wrong anaesthetic regime or a too prolonged duration of surgery. This case report, however, clearly shows that also in the case of immediate perinatal death, infectious causes - e.g. due to intrauterine infection - have to be taken into consideration and that pathological, virological and bacteriological post-mortem examinations of puppies is an important procedure to identify the reason for perinatal death.

Publication Type
Journal article.

Accession Number
20123277676

Author
Mogensen, S. S.

Title
Caesarean section in dogs. [Danish]

Source
Danska Veterinaertidsskrift; 2012. 95(2):20-23. 3 ref.

Publisher
Danske Dyrlægeforening

Location of Publisher
Vanlose

Country of Publication
Denmark

Abstract
The aspects covered are risk assessment (of the bitch and the puppies); the importance of full communication with owners; meticulous preparation for surgery; careful attention to anaesthesia; and postoperative provision of emergency drugs to owners, with full instructions. Propofol is the anaesthesia of choice for induction; details are presented on its use, and a table gives a full anaesthesia protocol.

Publication Type
Journal article.

Accession Number
20123387364
Caesarean section is a common emergency procedure. Anaesthesia for all parturitants should be based on safety to the mother and foetus. The choice of an anaesthetic protocol must be based upon knowledge of the physiologic alterations induced by pregnancy and labour, the pharmacology of the drugs administered in the perinatal period and their direct and indirect effects on the foetus. Caesarean section can be accomplished either by regional or general anaesthesia. General anaesthesia provides optimum operating conditions with a relaxed, immobile patient. Tracheal intubation ensures control of the maternal airway, preventing aspiration of vomitus. Spinal anaesthesia has the advantage of technique simplicity and minimal exposure of the foetus to drugs. Reversible anaesthetics are preferred in the anaesthetic protocol. The duration of anaesthesia and doses of inhalant anaesthetics should be minimised. In conclusion, opioids and benzodiazepines in premedication, propofol in induction and isoflurane maintenance are an ideal combination for caesarean section.
significantly between groups. However, increased mortality was found in the subgroup of bitches premedicated with opioids before induction with ImmobilonReg..
Accession Number
20123241561
Author
Karadjole, T.; Kovacevic, T.; Macesic, N.; Bacic, G.; Karadjole, M.; Getz, I.; Folnozic, I.; Babic, N. P.; Samardzija, M.
Title
Caesarean section in bitches - most often causes. [Croatian]
Source
Veterinarska Stanica; 2012. 43(3):275-277. 11 ref.
Publisher
Hrvatski Veterinarski Institut, Centar za Peradarstvo
Location of Publisher
Zagreb
Country of Publication
Croatia
Abstract
Partus gravis or dystocia is common in bitches and depends on the breed, litter size and duration of delivery. Delivery is often carried out by caesarean section, which can be conservative or radical. Indications for caesarean sections may be caused by bitches or the foetus. The most common indication for caesarean section is uterus atonia (78%). Other indications include: torsion and rupture of the pregnant uterus, vaginal stricture, preterm birth and prolongation of birth. A total of 42 bitches, patients of the Clinic of Obstetrics and Reproduction at the Faculty of Veterinary Medicine of the University of Zagreb, were selected for this study. The mortality rate after caesarean section was 4.76%.
Publication Type
Journal article.

<31>
Accession Number
20123079135
Author
Sondergaard, M.; Poulsen, H. H.; Eriksen, T.
Title
Reviews of the anaesthesia protocols in caesarean sections in dogs. [Danish]
Source
Dansk Veterinaertidsskrift; 2012. 95(3):20-25. 57 ref.
Publisher
Danske Dyrlaegeforening
Location of Publisher
Vanlose
Country of Publication
Denmark
Publication Type
Journal article.

<32>
Accession Number
20123168897
Author
Max, A.
Title
Cesarean section in small animals - an overused procedure? [Polish]
Source
Zycie Weterynaryjne; 2012. 87(5):401-402. 15 ref.
Publisher
Krajowa Izba Lekarsko Weterynaryjna
Location of Publisher
Warszawa
Country of Publication
Poland
Abstract
The purpose of this paper was to discuss the surgical approach to delivery in small animals. Difficult parturition to the point of needing human intervention is called dystocia. It can be due to some conditions inherent to the dam or to the fetal factors or to the combination of maternal and fetal factors. Complete and detailed physical examination should be performed prior to delivery to diagnose obstetric problems and to choose an adequate intervention. The risk of dystocia is enhanced by many factors that can be recognized by estimating mothers' condition, previous parturitions, the number and size of fetuses, especially in some breeds and more. The delivery of fetus(es) can be performed either by cesarean section or by conservative treatment. The choice is not always simple and straight-forward. This article provides throughout discussion on the use of surgery in delivery in small animals in the context of opinion of this method of intervention overuse.
Publication Type
Journal article.

<33>
Accession Number
20123130881
Author
Kushnir, Y.; Epstein, A.
Title
Anesthesia for the pregnant cat and dog.
Source
Publisher
Israel Veterinary Medical Association
Location of Publisher
Raanana
Country of Publication
Israel
Abstract
This review discusses the physiological changes during pregnancy, anaesthetic approach to pregnant and caesarean section patients and newborn resuscitation in dogs and cats.
Publication Type
Journal article.

<34>
Accession Number
The aim of this study was to evaluate the practicality, efficacy and safety in neonatal puppies of a nasal aspirator commonly used in human neonates in comparison with a syringe mount attached to a one-ml syringe in removing mucus from the upper respiratory tract following caesarean section. 171 puppies were included in the study. The syringe mount was used in 78 puppies and was found to be practical in 62 animals (79.5%). The method was efficient in 50 puppies (80.7%) for removing fluid or mucus. However, bleeding was observed from the nostrils in 4 neonates (6.5%). The nasal aspirator was used in 93 puppies and was found to be practical and efficient in removing fluid in all animals (100%). Moreover, no side effects such as bleeding at the nostrils were observed after use of the aspirator. It was concluded that the use of nasal aspirator was the method of choice for removing fluid and mucus from the upper respiratory tract during the resuscitation of puppies born by caesarean section as it could be applied and was safe in canine neonates of all sizes.
Extraction, reposition, fetotomy (embryotomy), and even cesarean section have been part of human and animal obstetrics since ancient times. Destructive operations like craniotomy and embryotomy are the oldest type of obstetrical operations. Subcutaneous fetotomy was developed at the end of the eighteenth century. It remained the preferred method in farm animals and horses until the beginning of the twentieth century. Then tubular fetotomy was invented and subcutaneous fetotomy was replaced by percutaneous fetotomy.

Fetotomy was easy to learn and the results were excellent, but the fetus was thereby sacrificed. Hence after the introduction of antibiotics, percutaneous fetotomy in cows was replaced by cesarean section. Percutaneous fetotomy is still preferred in horses, because foal fetuses die quickly and a partial fetotomy using only 1 or 2 cuts is usually sufficient to resolve the problem. Having little economic importance, obstetrics in companion animals received no attention until the end of the nineteenth century, but in small animals cesarean section is the best solution for serious obstetrical problems.

Various disorders, some of which are life-threatening, can develop in bitches during the puerperium. In this article, a detailed review of the literature on puerperal pathological conditions, along with excerpts from the authors' clinical experience and photographs, is presented. Initially, a brief account of the physiological processes during the puerperium is described. The hormonal changes, changes in the genital system and behavioural changes taking place as the genital system progressively returns to the non-pregnant state, are described. Subsequently, the various disorders, which are categorised as systemic diseases, diseases of the mammary glands and diseases of the uterus, are reviewed. Systemic disorders that are manifested during
the puerperium, are puerperal hypocalcaemia and abnormal maternal behaviour. If hypocalcaemia occurs, it is usually after whelping, as the calcium requirements of the bitch are increased due to milk production. The disorder is due to the increased calcium requirements coupled with either a decreased intake of calcium (primary) or an inability to absorb it from the intestine or mobilize it from the bones (secondary). Abnormal maternal behaviour can be the result of factors causing nervousness, pain or disturbance of the bitch. Factors, such as genetic predisposition, caesarian section, young age or even the puppies themselves, may also trigger this condition. The puerperal mammary diseases are mastitis, agalactia and galactostasis. Mastitis is a disease of bacterial aetiology (Escherichia coli, Staphylococcus spp. and Streptococcus spp.) occurring as either an acute or subacute-chronic form. Agalactia is the inability to produce milk and can be either primary or secondary; it is defined as full agalactia or hypogalactia. Galactostasis refers to impaired passage and expression of milk from the teats, resulting in increased accumulation into the mammary glands. The pathological conditions of the uterus include post-partum metritis, uterine prolapse, retention of foetal membranes, foetal retention, subinvolution of the placental sites and uterine haemorrhage. Post-partum metritis is caused by bacteria (mainly E. coli) invading the uterus during, or immediately after, whelping and occurs with systemic and genital signs. Uterine prolapse (full or partial) is usually the consequence of vigorous foetal manipulations or intense tenesmus in the bitch. Foetal retention is a consequence of dystocia or of misuse of long-acting progestagens. Subinvolution of the placental sites is the consequence of the erosion of the uterine wall by trophoblast-like cells; often, this erosion involves the entire mucosa and may even invade the myometrium. Puerperal haemorrhage occurs more frequently in bitches with pre-existing disorders of blood coagulation factors. All the above pathological conditions may cause serious problems to the affected bitches. For successful treatment, early and correct diagnosis is important. For each condition, the clinical signs and the paraclinical findings are described and the procedure for accurate diagnosis is discussed. Finally, the recommended conservative or surgical treatment for each condition is reviewed. It should be noted that in every case, appropriate measures for the welfare of puppies also needs to be taken. Measures for a frequent and efficient post-partum monitoring of bitches and puppies are proposed, in order to prevent development of the various pathological situations.

Publication Type
Journal article.

<38>
Accession Number
20113170253
Author
Sarotti, D.; Rabozzi, R.; Corletto, F.
Title
Efficacy and side effects of intraoperative analgesia with intrathecal bupivacaine and levobupivacaine: a retrospective study in 82 dogs.
Source
Publisher
Wiley-Blackwell
Location of Publisher
Oxford
Country of Publication
UK
Abstract
Objective: To evaluate spinal (intrathecal) anaesthesia (SA) in addition to general anaesthesia in dogs, and report the incidence of side effects and cardiovascular response (CR) to surgery. Study design: Retrospective clinical study. Animals: One hundred and fifteen dogs undergoing general anaesthesia for surgery caudal to the diaphragm between 2005 and 2008. Methods: Records of anaesthetized dogs that had received SA with bupivacaine or levobupivacaine 0.5%, together with morphine or fentanyl were reviewed. Success rate of SA, complication rate and incidence of CR were recorded and examined in relation to the
dose of local anaesthetic administered and the type of surgery. Univariate and Cusum analysis were performed to identify independent predictors of response to surgical stimulation and characterize the learning curve for the technique, respectively. Results: Eighty-two dogs received successful SA. The Cusum plot suggested that a failure rate of 10% is achieved when the procedure is performed more than 66 times. Median local anaesthetic dose related to weight was 0.40 mg kg⁻¹ (0.3-0.5), and to spinal cord length 0.1 mg cm⁻¹ (0.07-0.12). Morphine was added to the local anaesthetic in 56 and fentanyl in 22 dogs. CR post-stimulus occurred in 29 cases: 11 of 22 ovariohysterectomies, 14 of 33 hindlimb-surgeries, 2 of 10 caudal-abdominal-surgeries and 2 of 17 Caesarean sections. Anaesthetic dose related to weight was not a predictor of CR. Bradycardia occurred in seven, hypotension in 24, urinary retention in four and hypersalivation in 6 of 82 dogs. Conclusions: SA was practicable to apply, but in this study did not totally block CR. Side effects were minimal, with an incidence similar to that in humans. Clinical relevance: SA can be used in clinical cases with few side effects although monitoring of and ensuing treatment of hypotension is required. Comparative prospective studies are required to establish efficacy and a reliable dose.

Journal article.

Accession Number 20113165888
Author Reichler, I. M.
Title Dystocia, caesarean section and resuscitation of neonates.
Publisher World Small Animal Veterinary Association
Location of Publisher Geneva
Country of Publication Switzerland
Publication Type Conference paper.

Accession Number 20113161479
Author Sinclair, M.
Title Resuscitation of puppies and kittens after C-section delivery.
Publisher The North American Veterinary Conference
Location of Publisher
Anasarca as the indication for cesarean section in dogs. [Polish]

Abstract
The aim of this paper was to present a special indication for cesarean section in dogs. Congenital anasarca (fetal dropsy, water puppy syndrome) is a malformation resulting in generalized cutaneous and subcutaneous edema in puppies. The condition is associated with accumulation of serous fluid in body cavities (hydrops universalis) and tissues. It can occur in only single puppy or in the entire litter. The etiology of this malformation is multifactorial and not well defined. The inherited and congenital abnormalities which increase fetal size lead to dystocia and need human intervention. Authors present cases of anasarca in dogs that underwent surgical procedure in the clinic. All affected puppies were delivered by cesarean section. Both sexes and different breeds were involved: Yorkshire terrier, Cocker Spaniel, English Bulldog, French Bulldog, Cane Corso, Dogo Canario and Bullmastiff. In all but one case delivered animals were already dead. It was assumed that under particular conditions is it possible to save the water puppies and keep them alive, so the immediate, early decision of euthanasia should be avoided.

Traumatic breach of the broad ligament subsequent to caesarean in a bitch. [French]

Abstract
The aim of this paper was to present a special indication for cesarean section in dogs. Congenital anasarca (fetal dropsy, water puppy syndrome) is a malformation resulting in generalized cutaneous and subcutaneous edema in puppies. The condition is associated with accumulation of serous fluid in body cavities (hydrops universalis) and tissues. It can occur in only single puppy or in the entire litter. The etiology of this malformation is multifactorial and not well defined. The inherited and congenital abnormalities which increase fetal size lead to dystocia and need human intervention. Authors present cases of anasarca in dogs that underwent surgical procedure in the clinic. All affected puppies were delivered by cesarean section. Both sexes and different breeds were involved: Yorkshire terrier, Cocker Spaniel, English Bulldog, French Bulldog, Cane Corso, Dogo Canario and Bullmastiff. In all but one case delivered animals were already dead. It was assumed that under particular conditions is it possible to save the water puppies and keep them alive, so the immediate, early decision of euthanasia should be avoided.
Maisons-Alfort  
Country of Publication  
France  
Abstract  
Certain precautions should be taken during a caesarean including rapid extraction of puppies in order to limit their intake of anaesthetic substances, and verification of the integrity of the uterine sutures. Tearing or a lesion affecting the broad ligament is a complication that may occur. Rarely mentioned in surgical textbooks, it is often dismissed by surgeons and certainly under diagnosed. This clinical case report concerning a young Beagle bitch emphasises the importance of ensuring the integrity of the broad ligament during a caesarean procedure, in order to avoid serious consequences.  
Publication Type  
Journal article.
Journal article.

<b>Accession Number</b> 20103353969
<b>Author</b> Rodrigues, V.; Toniollo, G. H.; Lopes, P. R.; Cardilli, D. J.; Oliveira, J. A.
<b>Title</b> Serum levels of cortisol in bitches (Canis familiaris - Linnaeus, 1758) submitted to caesarian section. [Portuguese]
<b>Source</b> Ciencia Animal Brasileira; 2009. 10(4):1186-1190. 12 ref.
<b>Publisher</b> Universidade Federal de Goias, Escola de Veterinaria
<b>Location of Publisher</b> Goiania
<b>Country of Publication</b> Brazil
<b>Abstract</b> Bitches submitted to caesarian section, for being in a physiological different situation, can present alterations to adapt to this new stress condition. Into possible alterations are cortisol levels during per partum period. So, the objectives of this study was to quantify seric cortisol of bitches submitted to caesarian section in partum and postpartum period (in the day of the partum or surgery, 24, 48 hours and 10 days later). The reserved serum was used to realization of cortisol measure by radioimmunoassay (on already described periods). The statistics analyzes were made by t test and Tukey. The cortisol levels presented difference (p<0.05) in the dog of caesarian section (6.83 micro g/dL) but this didn't differ (p>0.05) on subsequent days (1.82 micro g/dL, 24 hours later; 1.38 micro g/dL, 48 hour later; 1.48 micro g/dL, 10 days later). The middle values of control group were 3.43, 2.01, 3.59 and 1.72 micro g/dL, in partum day, 24 hours later, 48 hours later and 10 days later. The stress because partum dystocic induced to liberation of cortisol, normalizing in subsequent days, but don't have variation after cesarian (surgical stress don't induced bigger liberation of cortisol) or partum natural, composed compatible with the one found in the literature.
<b>Publication Type</b> Journal article.

<b>Accession Number</b> 20103317690
<b>Author</b> Orfanou, D. C.; Ververidis, H. N.; Boscos, C. M.; Fthenakis, G. C.
<b>Title</b> Post-partum pathological conditions in the bitch: part I.
<b>Publisher</b> Federation of European Companion Animal Veterinary Associations (FECAVA)
<b>Location of Publisher</b> Paris
<b>Country of Publication</b>
Various disorders, some of which are life-threatening, can develop in bitches during the puerperium. In this article, a detailed review of the literature on puerperal pathological conditions, along with excerpts from the authors’ clinical experience and photographs, is presented. Initially, a brief account of the physiological processes during the puerperium is presented. The hormonal changes, the changes in the genital system and the behavioural changes taking place as the genital system progressively returns to the non-pregnant state, are described. Subsequently, the various disorders, which are categorised as systemic diseases, diseases of the mammary glands and diseases of the uterus, are reviewed. Systemic disorders that are manifested during the puerperium, are the puerperal hypocalcaemia and the abnormal maternal behaviour. If hypocalcaemia occurs, it is usually after whelping, as calcium requirements of the bitch are increased due to milk production. The disorder is due to the increased calcium requirements coupled with either a decreased intake of calcium (primary) or an inability to absorb it from the intestine or mobilise it from the bones (secondary). Abnormal maternal behaviour can be the result of factors causing nervousness, pain or disturbance of the bitch. Factors, such as genetic predisposition, caesarian section, young age or even the puppies themselves, may also trigger this condition. The puerperal mammary diseases are mastitis, agalactia and galactostasis. Mastitis is a disease of bacterial aetiology (Escherichia coli, Staphylococcus spp. and Streptococcus spp.) occurring as either an acute or subacute chronic form. Agalactia is the inability for milk production and can be either primary or secondary; it is defined as full agalactia or hypogalactia. Galactostasis refers to impaired passage and expression of milk from the teats, resulting in increased accumulation into the mammary glands. The pathological conditions of the uterus include post-partum metritis, uterine prolapse, retention of foetal membranes, foetal retention, subinvolution of the placental sites and uterine haemorrhage. Post-partum metritis is caused by bacteria (mainly E. coli) invading the uterus during or immediately after whelping and occurs with systemic and genital signs. Uterine prolapse (full or partial) is usually the consequence of vigorous foetal manipulations or intense tenesmus of the bitch. Foetal retention is the consequence of dystocia or of misuse of long-acting progestagens. Subinvolution of the placental sites is the consequence of the erosion of the uterine wall by trophoblast-like cells; often, this erosion involves the entire mucosa and may even invade the myometrium. Puerperal haemorrhage occurs more frequently in bitches with pre-existing disorders of blood coagulation factors. All the above pathological conditions may cause serious problems to the affected bitches. For successful treatment, early and correct diagnosis is important. For each condition, the clinical signs and the paraclinical findings are described and the procedure for accurate diagnosis is discussed. Finally, the recommended conservative or surgical treatment for each condition is reviewed. It should be noted that in every case, appropriate measures for the welfare of puppies also needs to be taken. Measures for a frequent and efficient post-partum monitoring of bitches and puppies are proposed, in order to prevent development of the various pathological situations.

Publication Type
Journal article.

Accession Number
20103181840

Author
Lopate, C.

Title
Dystocia management in the bitch: medical vs. surgical intervention.

Source

Publisher
The North American Veterinary Conference

Location of Publisher
Gainesville
Country of Publication
USA
Publication Type
Conference paper.

Hormonal concentrations in bitches with primary uterine inertia.

Nor normal labor is accompanied by sequential changes in blood concentrations of prostaglandin F2 alpha (measured as 15-ketodihydro-PGF2 alpha =PGFM), progesterone, estradiol, oxytocin, vasopressin, and of elevated cortisol levels. The aim of this study was to investigate hormone concentrations in dogs diagnosed with primary uterine inertia before and during treatment by cesarian section. The hypothesis was the dogs would have abnormally low plasma concentrations in one or several of the hormones involved in parturition. The study comprised seven bitches with total primary uterine inertia (dystocia group) treated with cesarian section and six healthy bitches (control group) subjected to planned cesarean section. Blood samples were taken before anesthesia, before surgery started, on delivery of the first puppy and on delivery of the last puppy. The progesterone:PGFM ratio in plasma was higher in the dystocia group than in the control group, but the serum estradiol concentration did not differ between groups. The plasma concentrations of oxytocin and vasopressin increased in both groups when the first puppies were delivered, but both hormones were more elevated in the control group than in the dystocia group on delivery of the last puppies. The plasma cortisol concentration increased to the same level in both groups. In conclusion, the ratio between progesterone and PGFM was higher and the oxytocin and vasopressin concentrations lower in the dystocia dogs than in the control dogs. The findings indicate that these hormones are involved in the pathophysiology of total primary uterine inertia in bitches.

Influence of the order of birth on blood gasometry parameters in the fetal neonatal transitional period of dogs born by elective caesarean parturition.

Influence of the order of birth on blood gasometry parameters in the fetal neonatal transitional period of dogs born by elective caesarean parturition.
The umbilical artery and jugular venous blood gases of the first five neonatal puppies born from nine healthy bitches by elective caesarean section, were analyzed to determine whether the order of birth had any influence over the evaluated parameters. Anesthesia was induced with propofol (6.0 mg kg\(^{-1}\), IV) followed by epidural injection of 2% lidocaine chloride (5.0 mg kg\(^{-1}\)). Additional boluses of propofol (2.0 mg kg\(^{-1}\)) were administered as needed. A blood sample (0.3 mL) was taken from the umbilical artery before the puppy took its first breath. Venous blood samples were obtained from the jugular vein of all neonates, 30 and 90 minutes after birth, for further blood gas analysis. There was no significant difference in pH (p=0.73), PvCO\(_2\) (p=0.96), PvO\(_2\) (p=0.55) and HCO\(_3\) (p=0.99) between the averaged values of all five birth positions at moment 0' or when considering the combination of all moments evaluated (0', 30' and 90'): pH (p=0.83), PvCO\(_2\) (p=0.96), PvO\(_2\) (p=0.43) and HCO\(_3\) (p=0.98). For puppies born by elective caesarean with this anesthetic protocol, the puppy's birth order did not influence blood gases.
Proportion of litters of purebred dogs born by caesarean section.
Source
Publisher
Blackwell Publishing Ltd
Location of Publisher
Oxford
Country of Publication
UK
Abstract
Objectives: To describe the frequency of caesarean sections in a large sample of pedigree dogs in the UK.
METHODS: Data on the numbers of litters born in the previous 10 years were available from a cross-sectional study of dogs belonging to breed club members (2004 Kennel Club/BSAVA Scientific Committee Purebred Dog Health Survey). In this survey 151 breeds were represented with data for households that had reported on at least 10 litters (range 10-14,15): this represented 13,141 bitches which had whelped 22,005 litters. The frequency of caesarean sections was estimated as the percentage of litters that were reported to be born by caesarean section (caesarean rates) and are reported by breed. The dogs were categorised into brachycephalic, mesocephalic and dolicocephalic breeds. Results: The 10 breeds with the highest caesarean rates were the Boston terrier, bulldog, French bulldog, mastiff, Scottish terrier, miniature bull terrier, German wirehaired pointer, Clumber spaniel, Pekingese and Dandie Dinmont terrier. In the Boston terrier, bulldog and French bulldog, the rate was >80%. Clinical Significance: These data provide evidence for the need to monitor caesarean rates in certain breeds of dog.
Publication Type
Journal article.
Title
Caesarean section. An important decision. [Polish]
Source
Weterynaria w Praktyce; 2008. 5(2):62...66. 4 ref.
Publisher
Elamed Wydawnictwo
Location of Publisher
Katowice
Country of Publication
Poland
Abstract
Practicing veterinarian often faces the decision making moment when examining the pregnant or delivering female. Caesarian section is often performed in vet facilities and following the rapid and continuous progress in anesthesiology, becomes safer both for the dam and the puppies. The article presents some cases, when the decision of performing C-section should be made.
Publication Type
Journal article.

<53>
Accession Number
20093245685
Author
Veronesi, M. C.; Panzani, S.; Faustini, M.; Rota, A.
Title
An Apgar scoring system for routine assessment of newborn puppy viability and short-term survival prognosis.
Source
Theriogenology; 2009. 72(3):401-407. 26 ref.
Publisher
Elsevier
Location of Publisher
New York
Country of Publication
USA
Abstract
The Apgar scoring system is an easy and reliable method for evaluating both human and animal neonates. However, its use is not widespread in veterinary medicine. The current study assessed a modified Apgar scoring system for routine evaluation of newborn puppies. Heart rate, respiratory effort, reflex irritability, motility, and mucus color have been evaluated in the score. Specifically, we used 5 min after birth Apgar score to assess newborn viability and short-term survival prognosis, as well as related characteristics, in 193 puppies from 42 litters, 65 born by spontaneous delivery, 66 by assisted delivery, and 62 by cesarean section. The percentage of puppies that were dead 2 h after birth was higher in the 4 to 6 Apgar score group versus that in the 7 to 10 score group (P<0.01) and in the 0 to 3 score group versus that in the 7 to 10 score group (P<0.0001). Delivery method did not affect survival. There was a marked reduction in the number of puppies searching for the mammary gland in the 0 to 3 and 4 to 6 Apgar score groups compared with that in the 7 to 10 score group (P<0.0001); there was a difference between the 0 to 3 and the 4 to 6 score groups as well (P<0.05). Suckling/swallowing reflexes were present in fewer puppies in the 0 to 3 and 4 to 6 score groups compared with that in the 7 to 10 group (P<0.0001), with no significant differences between the 0 to 3 and the 4 to 6 score groups.
Publication Type
Journal article.
Accession Number 20093221410
Author
Levy, X.; Fontaine, E.; Segalini, V.; Fontbonne, A.
Title
Elective caesarean operation in the bitch using aglepristone before the pre-partum decline in peripheral progesterone concentration.
Source
Reproduction in Domestic Animals; 2009. 44(s2):182-184. 23 ref.
Publisher
Blackwell Publishing
Location of Publisher
Berlin
Country of Publication
Germany
Abstract
The aim of this study was to investigate caesarean operation (CO) undertaken before the pre-partum decrease of progesterone but following administration of a progesterone receptor antagonist and to evaluate the innocuity of this procedure for the dam and pups. Thirty seven bitches of 15 different breeds, received an injection of 15 mg/kg aglepristone 59 or 60 days after the estimated day of ovulation, determined by progesterone quantitative assays, and caesarean section (CS) was performed between 20 and 24 h after administration. Progesterone remained above 6 nmol/l at the time of CS (mean=15.75, SD=3.84). No post-operative clinical complications were reported in any of the bitches. All bitches were able to nurse and feed their puppies in the first 24 h following surgery. No pups showed any signs of prematurity and 5 out of 188 pups (2.6) died in the first 2 weeks after delivery. This small study demonstrates that a CS may be safely and successfully performed an average of 2 days before the expected date of parturition following the administration of aglepristone, without any harmful consequence for the dam and her neonates.
Publication Type
Journal article

Accession Number 20093221405
Author
Title
Neonatal clinical evaluation, blood gas and radiographic assessment after normal birth, vaginal dystocia or caesarean section in dogs.
Source
Reproduction in Domestic Animals; 2009. 44(s2):160-163. 10 ref.
Publisher
Blackwell Publishing
Location of Publisher
Berlin
Country of Publication
Germany
Abstract

This study aimed to standardize signs and diagnostic criteria of respiratory function in newborn puppies delivered normally or after dystocia and caesarean operation. A total of 48 neonates were allocated into groups: eutocia (n=20), dystocia (n=8), caesarean (c)-section (n=20). Neonatal health was assessed using the Apgar score and body temperature was determined at 0, 5 and 60 min after delivery. Venous blood gases (pO2 and SO2) was measured immediately and 60 min after delivery, and a thoracic radiograph was made between 0 and 5 min of life. The c-section group had significantly lower Apgar scores at birth and 5 min. Hypothermia was present at 5 min in the eutocia and c-section groups, and at 60 min in all groups. The dystocia group had an irregular respiratory pattern in 78% of puppies at birth, 27.7% at 5 min and 21% at 60 min compared with 87.5%, 62.5% and 12.5% of the pups in the dystocia group where there was irregular respiratory rhythm, moderate to intense respiratory sounds with agonic episodes. The c-section group had respiratory alterations in 70%, 45% and 16% of puppies at 0, 5 and 60 min, respectively. Radiographic abnormalities were present in 17% of the pups in the eutocia group, 25% of the pups in the dystocia group and 30% of the pups in the c-section group, respectively. The c-section group had significantly lower SO2 values at 60 min than at birth. All puppies had hypoxaemia, but a significant decrease was observed in the c-section group. Newborn puppies had tissue hypoxia and irregular respiratory pattern at birth. Caesarean-section puppies had lower vitality; however, all developed satisfactory Apgar scores at 5 min of life, regardless of the obstetric condition.

Publication Type
Journal article

Conference paper.

<56>

Accession Number
20093188751

Author

Title
Effect of endogenous progesterone and oestradiol-17 beta on the incidence of gastro-oesophageal reflux and on the barrier pressure during general anaesthesia in the female dog.

Source
Veterinary Anaesthesia and Analgesia; 2009. 36(4):308-318. many ref.

Publisher
Blackwell Publishing

Location of Publisher
Oxford

Country of Publication
UK

Abstract
Objective: To investigate the potential effect of increased blood progesterone (P4) and oestradiol-17 beta (E2) concentrations on the barrier pressure (BrP) and the incidence of gastro-oesophageal reflux (GOR) in female dogs under general anaesthesia. Study design: Prospective, blinded experimental trial. Animals: Seven female, adult, healthy dogs weighing 14-21 kg and aged 1-7 years. Methods: Each of the animals was studied under the influence of high blood E2 and basal P4 (study O), basal E2 and high P4 (study P) and basal E2 and P4 (study C) concentrations. Animals were premedicated with acepromazine and anaesthesia was induced with thiorpental and maintained with halothane. Lower oesophageal pH was monitored continuously for 1 hour after induction. GOR was defined as oesophageal pH >7.5 or <4. Manometry of the posterior oesophageal sphincter (POS) was then performed using the slow pull-through technique. Results: Acid GOR was detected in only one animal of study O. The three studies did not differ significantly in GOR. Mean BrP was 11.2 (study O), 9.1 (study P) and 11.6 mmHg (study C). No significant differences were detected with respect to mean BrP, intra-gastric pressure and POS pressure. Conclusions: It is unlikely that...
the increased concentrations of E2 or P4 during the normal ovarian cycle influence the functional efficiency of the POS as a major barrier to GOR in healthy, female dogs under general anaesthesia. Clinical relevance: The fact that female dogs undergoing obstetrical surgery represented a substantial sub-group of the animals which developed postoperative benign oesophageal stricture, should probably not be attributed to the effects of increased concentrations of female sex steroid hormones.
<59>
Accession Number
20083290532
Author
Lopate, C.
Title
Dystocia management in the bitch: medical versus surgical intervention.
Source
Publisher
The North American Veterinary Conference
Location of Publisher
Gainesville
Country of Publication
USA
Abstract
The clinical signs, causes, treatment of dystocia using oxytocin or caesarean section in bitches and medical management of bitches and puppies after whelping or surgery are presented.
Publication Type
Book chapter
Conference paper.

<60>
Accession Number
20083213851
Author
Levy, X.; Desbois, C.
Title
How to programme and manage a caesarean in dogs and cats. [French]
Source
Publisher
NEVA Europarc
Location of Publisher
Crateil
Country of Publication
France
Publication Type
Journal article.

<61>
Accession Number
20083274406
The aim of this study was to examine the differences, between seasons of the year, in the distribution of matings and whelpings, litter size, pup deaths, and sex ratio in domestic dogs. Furthermore, we wanted to examine the effects of age and parity of the bitch at the time of whelping on litter size, as well as the effect of litter size on gestational length. A final aim was to investigate the fertility and frequency of whelping problems in a private kennel of Drever dogs. Data from the Swedish Kennel Club (SKK) registry for the Drever breed during 1995-2006, comprising a total of 2717 litters, were analysed together with more detailed data from a private, professional kennel of Drevers, with a total of 285 matings and 224 whelpings, during the same time period. The most matings took place during winter, and the fewest during summer; consequently, most whelpings occurred during the winter and spring seasons. Of the 285 mated bitches, 78.6% whelped, 6.25% experienced dystocia, and 5.36% underwent caesarean section. The pup death rate was 7.6%. The largest litters were born during spring. Litter size was negatively correlated with duration of pregnancy (r=-0.18). Each pup more than average caused a shortening of the gestation by 0.25 days, and each pup less a corresponding lengthening. Bitches giving birth to their first litter after 4 years of age produced a smaller litter than younger bitches. Litter size decreased after 5 years in all bitches. The number of born pups at the private kennel increased from the first to the third parity, then decreased. The number of registered pups increased from the first to the second parity in the SKK data and from the second to the third parity in the data from the private kennel, then decreased. Mating a bitch only once resulted in a smaller litter size. None of the studied factors had any effect on the sex ratio of the pups. There were significant differences between males in whelping rate among the mated bitches, but no difference in mean litter size, which indicates a female problem rather than a male one. Available data suggest that the domestic dog is still under considerable seasonal influence, although modified by ambient and management factors.
USA
Abstract
Since the duration of pregnancy in the bitch is relatively short, it is critical that fetuses are fully mature prior to delivery for them to survive. For breeders to be able to prepare for normal whelpings and align medical care in case of emergency, an estimated due date is necessary. In cases where ovulation timing is lacking and there is a singleton fetus or oversize fetuses, it is necessary to ascertain gestational age prior to setting the date of caesarean section. In high-risk pregnancies, where there is poor or no ovulation timing, determination of fetal maturation and gestational age will assist in determining if pregnancy has progressed long enough to allow delivery of viable puppies. In cases where bitches are receiving supplemental progesterone for pregnancy maintenance medications must be discontinued at an appropriate time to permit delivery of viable puppies. It also allows for estimation of the likelihood of fetal survival if the pregnancy is terminated due to failing bitch health, with subsequent surgical delivery of the fetuses. Use of breeding dates alone does not provide due dates with adequate accuracy. In cases where there has been inadequate or no breeding management or ovulation timing, estimation of due date can be performed at the time of pregnancy diagnosis, or closer to term. Radiography can be used to confirm pregnancy and facilitate determination of gestational age, beginning 45 d after the LH surge. Ultrasonography can be used from 19 to 21 d after the LH surge to term to confirm pregnancy and predict gestational age, and from 25 or 26 d to term to assess fetal viability and fetal stress.
Publication Type
Journal article
Conference paper.
Accession Number
20083230042
Author
MacDonald, S.
Title
Caesarean sections Part Two - Postoperative management.
Source
Publisher
Veterinary Business Development Ltd
Location of Publisher
Peterborough
Country of Publication
UK
Abstract
This article describes the monitoring and postoperative care of bitches and queens and their litters after caesarean section.
Publication Type
Journal article.

Accession Number
20083219047
Author
Michel, E.; Reichler, I. M.
Title
Cesarean section in the dog and cat. [German]
Source
Publisher
Verlag M. & H. Schaper
Location of Publisher
Alfeld (Leine)
Country of Publication
Germany
Abstract
Most bitches and queens presented with dystocia end up having a cesarean section. Even if expulsion of the fetuses is in principle possible via the birth canal, conservative obstetric treatment not always succeeds in delivering all the fetuses. Surgical intervention is mandatory if relative or absolute fetal oversize, uterine torsion or rupture, or obstruction of the birth canal is present. A cesarean section is also the treatment of choice if maternal well-being is compromised, as it usually is the most efficient treatment with the lowest risk, especially if more than one fetus remains to be delivered. In order to keep the anesthesia time as short as possible, the preparations for cesarean section and care of the neonates are made prior to anesthetic induction. One should choose an anesthetic protocol that meets the special needs of the dam and fetuses, and with which one is familiar. Whether an ovariohysterectomy is performed at the time of the cesarean section depends on the findings during surgery and on the owner's request.
Publication Type
Journal article.
Nine pregnant bitches were submitted to elective caesarean sections using propofol and epidural anaesthesia with lidocaine chloride. While in the caesarean section the following were monitored: systolic arterial pressure (SAP), diastolic arterial pressure (DAP), heart rate (HR), respiratory rate (RR), oxymetry (SatO2). Blood samples were also collected and analysed for pH, PvCO2, PvO2eHCO3 before propofol administration (AM1), after propofol administration (AM2), after peridural anaesthesia with lidocaine hydrochloride (AM3), after removal of the first puppy (AM4), and after removal of the fifth puppy (AM5). Results showed significant variation in PvO2 from AM1 to AM5. Significant variations were also observed for SAP and DAP, while for HR and RR significant differences were observed only during AM2 and AM3 as it decreases after this period. With regards to oxymetry, it decreased in AM2 and AM3 then gradually increased in AM4 to AM5.

### Accession Number
20083198722

### Author
Crissiuma, A. L.; Labarthe, N. V.; Juppa Junior, C. J.; Almeida, F. M. de; Gershony, L. C.

### Title
Evaluation of the physiological and hemogasometric parameters of pregnant bitches submitted to intravenous anesthesia throughout a monitored elective caesarean section. [Portuguese]

### Source
Medvep (Revista Científica de Medicina Veterinaria. Pequenos Animais e Animais de Estimação); 2008. 6(17):44-51. 42 ref.

### Publisher
Bio Editora Ltda.

### Location of Publisher
Curitiba

### Country of Publication
Brazil

### Abstract
Nine pregnant bitches were submitted to elective caesarean sections using propofol and epidural anaesthesia with lidocaine chloride. While in the caesarean section the following were monitored: systolic arterial pressure (SAP), diastolic arterial pressure (DAP), heart rate (HR), respiratory rate (RR), oxymetry (SatO2). Blood samples were also collected and analysed for pH, PvCO2, PvO2eHCO3 before propofol administration (AM1), after propofol administration (AM2), after peridural anaesthesia with lidocaine hydrochloride (AM3), after removal of the first puppy (AM4), and after removal of the fifth puppy (AM5). Results showed significant variation in PvO2 from AM1 to AM5. Significant variations were also observed for SAP and DAP, while for HR and RR significant differences were observed only during AM2 and AM3 as it decreases after this period. With regards to oxymetry, it decreased in AM2 and AM3 then gradually increased in AM4 to AM5.

### Publication Type
Journal Article.

---

### Accession Number
20083198622

### Author
Jennings, K.; Lea-Atkin, C.

### Title
Caesarean sections Part One - Being prepared for an emergency.

### Source

### Publisher
Veterinary Business Development Ltd

### Location of Publisher
Peterborough

### Country of Publication
UK

### Publication Type
Journal Article.
Accession Number
20083157238
Author
Onclin, K. J.; Verstegen, J. P., III
Title
Cesarean section in the dog.
Source
NAVC Clinician's Brief; 2008. 6(5):72...78. 3 ref.
Publisher
Educational Concepts LLC
Location of Publisher
Tulsa
Country of Publication
USA
Abstract
This article describes the procedures and techniques involved during caesarean section in dogs.
Publication Type
Journal Article.

Accession Number
20083117133
Author
Dobranic, T.; Botic, I.; Samardzija, M.; Grizelj, J.; Prvanovic, N.; Karadjole, T.
Title
Influence of age and breed on frequency of cesarean section in bitches. [Croatian]
Source
Publisher
Veterinaria
Location of Publisher
Zagreb
Country of Publication
Croatia
Abstract
The purpose of the study was to evaluate the influence of age and breed on the frequency of caesarean section in bitches aged 1 to 3 years old (Croatia, date not given). Out of the 112 bitches that have undergone caesarean section, 93.75% survived while 6.25% died during surgery or within 24 hours after surgery. In cases where the bitches died, delivery took 48 hours or more. Caesarean section was performed mostly in small breeds (43.75%). A high percentage of large breed dogs (16.96%) also underwent the procedure. For most of the bitches, this was their first (59.82%) or second (32.14%) delivery. The average duration of pregnancy was 63 to 65 days. A total of 460 puppies were delivered, of which 340 (73.91%) were alive and 120 (26.09%) were dead. The average length of whelping before the surgery was 4 to 48 hours or more. Most of the live puppies (47.82%) were delivered within 8 hours, while most of the dead puppies (13.69%) were delivered within 16 to 24 hours. The study confirmed that caesarean section can provide good results if done promptly and appropriately.
Publication Type
Several major physiologic changes in respiratory, cardiovascular, and gastrointestinal systems occur during pregnancy, exhausting all mechanisms of compensation and show effects on anaesthetic management. Most cardiodepressive anaesthetics are contraindicated and short-acting anaesthetics as well as drugs with specific antagonists are preferred combined with local anaesthesia (e. g. epidural block). Principles of anaesthetic techniques of caesarean section are presented for dogs and cats.

To test the efficacy of aminofil and doxapram on neonates coming from caesarian operated bitches and given anaesthesia combinations of midazolam, propofol, and isoflurane, 64 puppies were used and distributed in eight groups composed of eight animals each. Four of this groups received the drugs
subcutaneously (sC) while the other four groups via sublingual (sL). Two groups (G1sC and G1sL) received only placebo, while (G2sC and G2sL) received aminofiline associated to doxapram. Two more groups (G3sC and G3sL) received doxapram and the last two groups (G4sC and G4sL) received aminofiline plus doxapram. After administration of the medicines, neonates responded best on aminofiline given sublingually.

Publication Type
Journal article.

<72>
Accession Number
20073282575
Author
Gendler, A.; Broumman, J. D.; Graf, K. E.
Title
Canine dystocia: medical and surgical management.
Source
Publisher
Veterinary Learning Systems
Location of Publisher
Yardley
Country of Publication
USA
Abstract
Dystocia is a common emergency in canine patients. The clinician must rapidly identify the stage of labor and determine whether veterinary attention is warranted. Physical examination, vaginal examination, abdominal radiography, abdominal ultrasonography, fetal heart rates, and intrauterine pressures assist the clinician in diagnosing and managing patients with dystocia. Oxytocin administration, intravenous fluids, and calcium gluconate are the mainstays of medical management; however, approximately 62% of dystocia cases require surgical intervention. Anesthetic protocols tailored to the unique physiology of the term bitch and neonate, along with timely intervention, may lower the overall dystocia puppy mortality rate of 22% and dam mortality rate of 1%.
Publication Type
Journal article.

<73>
Accession Number
20073214166
Author
Smith, F. O.
Title
Challenges in small animal parturition - timing elective and emergency cesarian sections.
Source
Theriogenology; 2007. 68(3):348-353. 20 ref.
Publisher
Elsevier
Location of Publisher
New York
Country of Publication
USA

Abstract

Given the societal emphasis placed on the deliberate breeding of purebred animals, the practitioner today is faced with issues relative to successful parturition in these animals. Today, the serious hobby breeder expects to use planned breeding management to result in a high conception and pregnancy rate and survival rates of offspring that may exceed published parameters. These clients may elect to schedule cesarean section to maximize puppy survival and assure that they have access to quality veterinary care. Using a combination of hormone assays, temperature changes in the dam and carefully timed and documented breeding management, a cesarean section can be planned. Emergency cesarean sections will still be required for the bitch that experiences dystocia or a medical condition that warrants intervention. Timed cesarean section results in a favorable medical outcome for the dam and litter and a better financial outcome for the owner.

Publication Type
Journal article
Conference paper.

<74>

Accession Number
20073180539

Author
Ahn SoJeo; Jeoung SeokYoung; Kwon EunJung; Pak SonIl; Kim Doo

Title
Effects of caesarean section on the blood coagulation profiles of dogs. [Korean]

Source

Publisher
Korean Society of Veterinary Clinics

Location of Publisher
Seoul

Country of Publication
Korea Republic

Abstract
Dogs with spontaneous bleeding or bleeding disorder may be discovered when an otherwise healthy dog develops marked bleeding during or after surgery. This study aimed to determine the effect of caesarean section on the coagulation profiles of bitches. Reference values were obtained for comparison from 20 healthy adult dogs. In the normal dogs, buccal mucosa bleeding time (BMBT) was 83.0+or-10.5 sec, platelet count was 24.0+or-3.5x10⁴/ micro l, activated partial thromboplastin time (APTT) was 8.8+or-2.0 sec, fibrinogen concentration was 288.5+or-77.9 mg/dl and fibrin degradation products (D-dimer) concentration was <250.0 ng/ml. Coagulation profiles before and after caesarean section in 13 dogs were within the normal range and no statistical difference in coagulation profiles between normal and caesarean sectioned dogs (p>0.05) was found. The results suggest that labour and caesarean section in healthy dogs do not alter the blood coagulation profiles.

Publication Type
Journal article.

<75>

Accession Number
20073085329
Author
Mason, D. E.
Title
Anaesthesia for cesarean section.
Source
Publisher
Czech Small Animal Veterinary Association
Location of Publisher
Prague
Country of Publication
Czech Republic
Publication Type
Book chapter
Conference paper.

Bergstrom, A.; Nodtvedt, A.; Lagerstedt, A. S.; Egenvall, A.
Title
Incidence and breed predilection for dystocia and risk factors for cesarean section in a Swedish population of insured dogs.
Source
Veterinary Surgery; 2006. 35(8):786-791. 14 ref.
Publisher
Blackwell Publishing
Location of Publisher
Boston
Country of Publication
USA
Abstract
Objectives - To estimate the incidence and breed predilection for canine dystocia using data from insurance claims. The risk factors for cesarean section (CS) were assessed for bitches with dystocia. Study Design - Retrospective, longitudinal study. Sample Population - Insurance claims records (1995-2002) from a Swedish animal insurance database (Agria), including ~200 000 bitches. Methods - The overall incidence rate of dystocia in insured bitches was calculated by dividing the number of reimbursed dystocia claims with the number of dog years at risk. Subsequently, incidence rates were stratified by breed, region, and habitat. The proportion of bitches with a dystocia claim that had CS were calculated, and risk factors for CS were assessed using a logistic regression model. Results - Between 1995 and 2002, 3894 (2%) of 195 931 Swedish bitches included in the study had a reimbursed insurance claim for dystocia. The overall incidence rate of dystocia was 5.7 cases/1000 dog years at risk. Some breeds like the Scottish terrier were at increased risk of dystocia. Among bitches with dystocia, 63.8% were treated by CS. Conclusion - Dystocia in the bitch is more common than reported earlier. The risk of developing dystocia varies by breed, and a high percentage (63.8%) of affected bitches undergo CS. Clinical Relevance - Breeders and veterinarians could use this information to better predict which bitches are likely to experience dystocia and/or CS.
Publication Type
Journal article.
Analyzing blood gasometry at 3 time points of the fetal-neonatal transitional period of dogs born by elective caesarean parturition.

Blood gasometry (pH, PvCO2, PvO2, and HCO3) was performed in 44 puppies of 9 gestating females at term. Venous blood samples were obtained at 3 consecutive time points: moment 0' (sample obtained from one of the umbilical arteries of each fetus); moment 30', and moment 90' (samples obtained from the jugular vein of each newborn). No significant variation was observed in the average venous blood pH of any of the puppies between moments 0' (7.17±0.08) and 30' (7.18±0.10). Notwithstanding, a significant increase of the venous blood pH was observed in moment 90' (7.31±0.06). The PvCO2 and PvO2 varied significantly during the 3 time points assessed: while the average PvCO2 decreased over time (moment 0'=59.59±9.80 mmHg, moment 30'=55.27±14.40 mmHg, and moment 90'=45.75±7.90 mmHg), the average PvO2 increased (moment 0'=17.91±6.40 mmHg, moment 30'=22.23±6.44 mmHg, and moment 90'=25.64±6.19 mmHg). The average HCO3 values only varied between moments 30' (21.70±2.72 mmol/L) and 90' (23.84±2.79 mmol/L). It was concluded that the physiological changes taking place in the first 90 minutes after birth can be reflected by the blood gasometry of the fetal-neonatal period.
Abstract
The haemodynamic and respiratory changes in 12 bitches, six of which underwent normal whelping while six underwent caesarean section with sevoflurane as an anaesthetic maintenance agent, were studied. Caesarean section was performed under general anaesthesia, employing acepromazine maleate, propofol and sevoflurane. During natural birth, as each puppy was being delivered, the bitches were evaluated for rectal temperature, non-invasive arterial blood pressure, respiratory and cardiac rate, capillary reperfusion rate and blood gas values. The same parameters were monitored in bitches that underwent caesarean section. In addition, oesophagus temperature, invasive arterial blood pressure throughout the anaesthetic period and the quality of anaesthetic recovery were determined in these dogs. The bitches that underwent caesarean section showed lower heart rate, arterial pressure, respiratory frequency, capillary reperfusion rate and arterial blood pH compared to bitches that underwent natural whelping. This shows the cardiorespiratory depression induced by the anaesthetic procedure. In spite of the anaesthetic depression, the anaesthetic protocol employed had no effect on the viability and health of the bitches and the puppies, and can be safely recommended for caesarean sections.

Publication Type
Journal article.
Ryan, S. D.; Wagner, A. E.

Title
Cesarean section in dogs: anesthetic management.

Source
Compendium on Continuing Education for the Practicing Veterinarian; 2006. 28(1):44-54. 44 ref.

Publisher
Veterinary Learning Systems

Abstract
Cesarean section is common in small animal veterinary practice. Preoperative assessment should include a complete history, a physical examination, a laboratory database, and diagnostic imaging as dictated by a patients' status. Premedication can decrease maternal stress and anxiety and permits a decrease in the dose of injectable induction drugs and in the minimum alveolar concentration of inhalation anesthetics. Premedication agents that can be reversed (e.g., opioids, benzodiazepines) are preferred. All animals undergoing anesthesia for cesarean section should receive intravenous fluid therapy. Preoxygenation before and during induction significantly decreases the risk of maternal hypoxemia. General anesthesia is preferred over epidural-only anesthesia even though epidural anesthesia has the fewest depressant effects on neonates. Anesthetic protocols that use propofol and isoflurane are associated with decreased maternal and neonatal mortality and increased puppy vigor. Protocols that include alpha 2-agonists, ketamine, or methoxyflurane should be avoided because they have been associated with increased maternal and fetal mortality and decreased neonatal vigor. Monitoring maternal ventilation, arterial oxygenation, blood pressure, and temperature during anesthesia is very important in cesarean section to permit early detection and treatment of adverse changes in these parameters. The importance of tailoring a specific anesthetic protocol to an individual animal is stressed.

Publication Type
Journal article.
cesarean section. Intensive neonatal resuscitation techniques can lead to decreased periparturient neonatal mortality.

Publication Type
Journal article.

<82>
Accession Number
20053222379
Author
Zelinka, M.
Title
Choice of anaesthetics for caesarean section in a bitch. [Czech]
Source
Veterinarstvi; 2005. 55(4):192...196. 8 ref.
Publisher
PNS-UED Praha
Location of Publisher
Praha
Country of Publication
Czech Republic
Abstract
This paper deals with the basic principles of anaesthesia used in caesarean operation in a bitch. The anaesthetics are divided into groups according to their effects including their advantages and disadvantages during caesarean operation. The most convenient anaesthetic combinations used by the authors are discussed.
Publication Type
Journal article.

<83>
Accession Number
20053196928
Author
Polster, K. J.; Munnich, A.; Kell-Oelzner, J.; Grussel, T.; Busch, W.
Title
Analysis of the incidence, aetiology and treatment of dystocia in bitches - a retrospective study. [German]
Source
Tierarztliche Umschau; 2005. 60(11):615-629. 35 ref.
Publisher
Terra-Verlag GmbH
Location of Publisher
Konstanz
Country of Publication
Germany
Abstract
Following a literature review, the results of the treatment of 698 cases of dystocia in bitches were described. During their first health check, 72 bitches exhibited clinical signs associated with parturition, but only 12 died. The interval between the start of delivery and the start of treatment was 9 h. For exceptional cases, it was 13 h. In 401 cases (57.4%), dystocia was caused by maternal effects, whereas in 297 cases,
the dystocia was caused by fetal factors. 59.7% of the treated bitches required caesarean section. This was conducted in cases of damaged uterine wall, neglected delivery, aged bitches and in cases of misalliance, on request of the owner. 686 bitches were treated successfully, and only 1.7% of the animals died. As a result of the treatment, 2.7 puppies per litter were born, of which 0.7 died.

Publication Type
Journal article.

<84>
Accession Number
20053195662
Author
Hutchison, R. V.
Title
Elective C-sections: risks, planning and timing.
Source
Publisher
Eastern States Veterinary Association
Location of Publisher
Gainesville
Country of Publication
USA
Publication Type
Book chapter
Conference paper.

<85>
Accession Number
20043212439
Author
Moon-Massat, P. F.; Erb, H. N.
Title
Perioperative factors associated with puppy vigor after delivery by cesarean section.
Source
Publisher
American Animal Hospital Association
Location of Publisher
Denver
Country of Publication
USA
Abstract
This prospective study examined the perioperative factors associated with puppy vigor in a clinical population of 807 litters containing 3,410 cesarean-derived puppies. Information was obtained from 109 private and institutional practices in the United States and Canada. Puppy vigor was determined by assessing three spontaneous conditions within 2 minutes after delivery: breathing, moving, and vocalizing. The percentages of live-born puppies with these characteristics were 85%, 73%, and 60%, respectively.
After screening tests, logistic-regression models were run on all remaining factors using the litter as the unit of analysis, and odds ratios [OR] were determined. An OR<1.0 means that the odds are decreased for that puppy vigor condition when the factor is present, compared with a litter in which the factor is not present. Conversely, when the OR is >1.0, the odds are increased for that puppy vigor condition when that factor is present. The following factors were associated with the litter having all puppies breathing at birth: using an inhalant anesthetic (0.36 OR) or ketamine (0.43 OR), surgery at one particular private practice (3.52 OR), and surgery at a teaching institute rather than a private practice (0.36 OR). The following factors were associated with the litter having any spontaneously moving puppies at birth: all puppies breathing spontaneously (2.72 OR), any puppy vocalizing spontaneously (117 OR), using inhalant anesthesia (0.26 OR), and using thiopental or thiamylal (0.37 OR). The following factors were associated with the litter having any spontaneously vocalizing puppies at birth: all puppies breathing spontaneously (2.58 OR), any puppy moving spontaneously (152 OR), brachycephalic dam (0.62 OR), the dam was a Labrador retriever (7.23 OR), and using isoflurane (2.51 OR). In conclusion, the anesthetic factors associated with increased puppy vigor included the use of isoflurane and the avoidance of ketamine, thiamylal, and thiopental.

publication type: Journal article.

--

<86>
Accession number
20043194920
Author
Lavor, M. S. L. de; Pompermayer, L. G.; Nishiyama, S. M.; Duarte, T. S.; Filgueiras, R. da R.; Odenthal, M. E.
Title
Fetal and maternal effects of propofol, etomidate, thiopental and epidural anaesthesia in bitches undergoing elective caesarean section. [Portuguese]
Source
Publisher
Centro de Ciencias Rurais, Universidade Federal de Santa Maria
Location of Publisher
Santa Maria
Country of Publication
Brazil
Abstract
Twenty bitches undergoing caesarean section and their 129 puppies were divided into 4 groups according to the anaesthetic protocol. All dogs were premedicated with 0.22 mg/kg body weight midazolam intramuscularly, after which anaesthesia was induced with propofol (Group I, 5 bitches and 39 puppies), etomidate (Group II, 5 bitches and 25 puppies), thiopental (Group III, 5 bitches and 26 puppies) and epidural anaesthesia (Group IV, 5 bitches and 39 puppies). Anaesthesia was maintained with a semi-closed circuit containing an initial halothane concentration of 3V%. Rectal temperature, heart rate, respiration rate, haemoglobin oxygen concentration and mean blood pressure were evaluated in the bitches, while heart rate, breathing effort, muscle movements, mucus colour, reflex irritability and haemoglobin oxygen saturation were measured in the puppies. Results were analysed using a modified Apgar scope. It was shown that all anaesthetic protocols were adequate for the bitches and only resulted in minimum changes in the measured parameters. Epidural anaesthesia maintained by halothane was the best procedure for the puppies compared to the injectable anaesthetic protocols.
Publication type
Journal article.
Twenty-four bitches which had been in labour for less than 12 hours were randomly divided into four groups of six. They all received 0.5 mg/kg of chlorpromazine intravenously as premedication, followed 15 minutes later by either 8 mg/kg of thiopentone intravenously (group 1), 2 mg/kg of ketamine and 0.5 mg/kg of midazolam intravenously (group 2), 5 mg/kg of propofol intravenously (group 3), or 2.5 mg/kg of 2 per cent lidocaine with adrenaline and 0.625 mg/kg of 0.5 per cent bupivacaine with adrenaline epidurally (group 4). Except for group 4, the bitches were intubated and anaesthesia was maintained with enflurane. The puppies’ heart and respiratory rates and their pain, sucking, anogenital, magnum and flexion reflexes were measured as they were removed from the uterus. The puppies’ respiratory rate was higher after epidural anaesthesia. In general the puppies’ neurological reflexes were most depressed after midazolam/ketamine, followed by thiopentone, propofol and epidural anaesthesia.
This paper discusses the reasons for carrying out caesarian section, describes the surgical technique, and briefly considers anaesthesia for the operation.

Publication Type
Journal article.
Concentrations of total proteins, glucose and urea in amniotic and allantoic fluids of dogs collected during caesarean section. [Portuguese]
Source
Publisher
Colegio Brasileiro de Reproducao Animal
Location of Publisher
Belo Horizonte
Country of Publication
Brazil
Publication Type
Journal article
Conference paper.

<94>
Accession Number
20013044032
Author
Pascoe, P. J.; Moon, P. F.
Title
Periparturient and neonatal anesthesia. (Clinical Theriogenology)
Source
Publisher
W.B. Saunders
Location of Publisher
Philadelphia
Country of Publication
USA
Publication Type
Journal article.

<95>
Accession Number
20003008219
Author
Macintire, D. K.
Title
Obstetrical emergencies. (Emergency Medicine.)
Source
Publisher
W.B. Saunders
Location of Publisher
Philadelphia
Country of Publication
USA
Abstract
This article discusses different techniques that can be used in the diagnosis and treatment of obstetrical emergencies. Female reproductive emergencies commonly encountered by small animal practitioners include pyometra, dystocia, caesarean section, mastitis, eclampsia, uterine torsion, and uterine prolapse. A thorough knowledge of normal and abnormal reproductive behaviour will aid the emergency veterinarian in successfully managing such cases. Timely diagnosis and treatment of these emergencies will often give a good outcome.

Publication Type
Journal article.

<96>
Accession Number
20002219148
Author
Moon, P. F.; Erb, H. N.; Ludders, J. W.; Gleed, R. D.; Pascoe, P. J.
Title
Perioperative risk factors for puppies delivered by cesarean section in the United States and Canada.
Source
Abstract
The purpose of this study was to evaluate perioperative risk factors affecting newborn survival after cesarean section. Data from 807 cesarean-derived litters (3908 puppies) was submitted by 109 practices in the USA and Canada. Survival rates immediately, two hours, and seven days after delivery were 92% (n=3127), 87% (n=2951), and 80% (n=2641), respectively, for puppies delivered by cesarean section (n=3410) and were 86% (n=409), 83% (n=366), and 75% (n=283), respectively, for puppies born naturally (n=498). Maternal mortality rate was 1% (n=9). Of 776 surgeries, 453 (58%) were done on an emergency basis. The commonest breed of dog was bulldog (n=138; 17%). The commonest methods of inducing and maintaining anaesthesia were administration of isoflurane for induction and maintenance (n=266; 34%) and administration of propofol for induction followed by administration of isoflurane for maintenance (n=237; 30%). A model of cesarean-derived puppies surviving to birth, between birth and two hours, and between two hours and seven days was designed to relate litter survival to perioperative factors. The following factors increased the likelihood of all puppies being alive: the surgery was not an emergency; the dam was not brachycephalic; there were four puppies or less in the litter; there were no naturally delivered or deformed puppies; all puppies breathed spontaneously at birth; at least one puppy vocalized spontaneously at birth; and neither methoxyflurane nor xylazine was used in the anaesthetic protocol.
Publication Type
Journal article.

<99>
Accession Number
20002211458
Author
Schweizer, C. M.; Meyers-Wallen, V. N.
Title
Medical management of dystocia and indications for cesarean section in the bitch.
Source
Publisher
W.B. Saunders
Location of Publisher