



7 Myths in Canine Reproduction

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Who am I?

- Graduated 1984 Utrecht
- Mixed Practice Eersel 1986
- Orthopedics/Surgery Medical Imaging
Reproduction
- Companion Animal Clinic Eersel 1995: dogs
- Cryolab BV 1997
- Clinic Association 2009





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The 7 Myths:

- 1 Natural breeding gives better results then AI
- 2 A tie is necessary for optimal results ('the longer the better')
- 3 Surgical insemination is better then Trans Cervical Insemination
- 4 The majority of bitches have normal cycles (breeding at D11 & D13)
- 5 The breeding time is right now at this moment!
- 6 A Progesterone test is the best indicator for correct timing
- 7 The most important cause for female infertility is infection



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#1 Natural breeding gives better results then AI

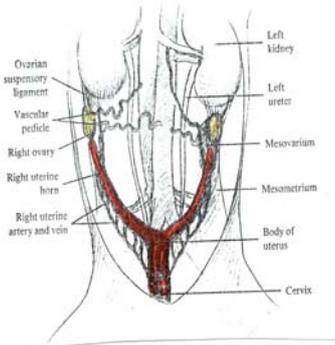
- 1 Natural breeding in the literature: average of 70-80% succes
- 2 Dependent on research
- 3 Litter size is related to breed but can vary






#1 Natural breeding gives better results then AI

- 1 Male dog ejaculates in the anterior part of the vagina
- 2 Average 2 times in same heat

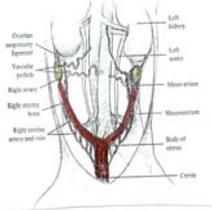
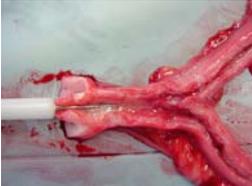






4 methods of AI:

- 1 In the vagina with flexible or rigid catheter, Foley catheter, Minitube
- 2 Intra Uterine with Norwegian Catheter
- 3 Trans Cervical by endoscope (TCI)
- 4 In the uterus by surgery





TCI Fresh/Chilled/Frozen 2013/2014 KVG Eersel/Cryolab

- 1 Frozen semen TCI: 80% pregnancy rate
- 2 Fresh – direct TCI: 76.6 % pregnancy rate
- 3 Chilled TCI: too little to be statistically valuable

After collection in general: High concentration gives better motility

Average **Total Motility** drop by freezing is 30%

Average **VCL** drop by freezing is 42%

Average **Concentration** drop by freezing is 64%






Remarks

- 1 All females were in the fertility program (scoping, progesterone, culture, some ultrasound)
- 2 Many different breeds, most were above 10 kg
- 3 Majority of the dogs used for frozen TCI had proven fertility (75%)



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#2 A tie is necessary for optimal results

- 1 3 fraction ejaculation
- 2 Sperms are motile but indiscriminate in their direction
- 3 There is in general an abundance of sperms in one ejaculation
- 4 Vagina contracts, uterus is motile, surface of the uterus helps: one way towards the tube, time



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Semen 2nd fraction






Conclusions

1. Dogs can get pregnant without a tie as long as the second fraction reaches the vagina
2. AI proves: there is no tie needed
3. A tie is functional but not necessary: mechanical effect: closure and in-flush by building up pressure during 3rd fraction ejaculation and a contraction stimulating effect

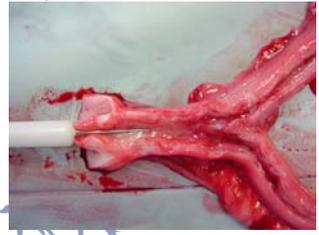





#3 Surgical Insemination is better then TCI

Surgical Insemination:

- 1 Male deposits semen in vagina, cervix is an obstacle
- 2 Old School: long time the only possibility to pass the cervix
- 3 **Advantage:** easy to do by any regular vet with general surgery
- 4 **Disadvantages:** Anaesthesia, Surgical trauma and risk, Only once during optimal period, Unethical, Forbidden by law in some European Countries



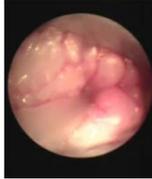




#3 Surgical Insemination is better than TCI

Trans Cervical Insemination:

- 1 Since 15 years
- 2 **Advantages:** easy to do and quick procedure when experienced, well tolerated by bitch, no trauma, *repeatable* in same heat (especially with frozen semen)
- 3 **Disadvantages:** Costs (instruments, tower, disposable catheters), steep learning curve, incidentally can be very difficult







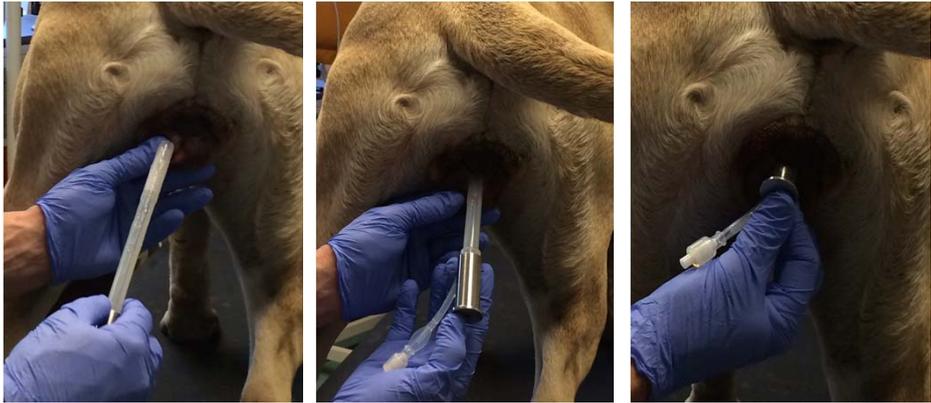
TCI basic equipment




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Procedure: bringing the shunt in the vagina



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'Closure' of the
vagina by
inflating the
balloon tip of the
shunt



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Putting the
guided wire
flexibel catheter
into the
endoscope



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Introduction of the endoscope with catheter
through the shunt



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Sliding the catheter through the cervix into the uterus



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Slowly injecting the semen



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Stimulating Uterine Contractions



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#4 Majority of bitches have regular and normal cycles

- 1 Purebred dogs: Ovulation between D5 and D25
- 2 Tendency to late cycle ovulation
- 3 Following cycles can have different ovulation timing
- 4 Regular: every 4 months till once every 1 ½ year?
- 5 Split heat, irregular cycling, starting too late

Conclusion: At present time there (almost) isn't a normal bitch





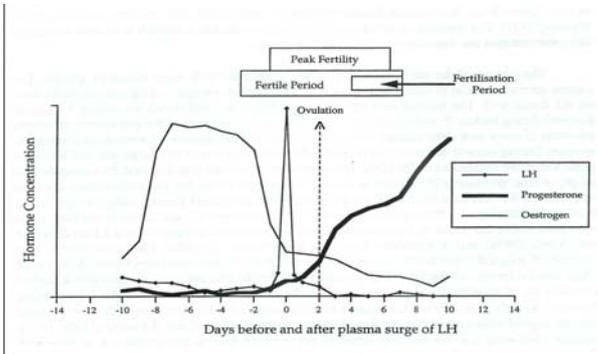

#5 The breeding time is right now at this moment!

- 1 Ovulation: 40 hrs from 1st till last
- 2 Maturation of the ova (eggs) : 24-48 hrs
- 3 Lifespan of ova: minimum 3 days
- 4 Maturation of the sperms in female tract : 24 hrs
- 5 Lifespan of sperm cell in UG tract: 3-5 days






The breeding time is right now at this moment!

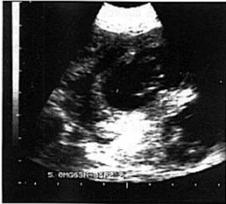






Some important points in canine reproduction (female)

- Peak LH: Day 0
- Ovulation: Day 2
- Conception: Day 4-8
- Implant : Day 14-16
- US: Day 19 etc
- Palpation: Day 29
- Radiology: Day 49



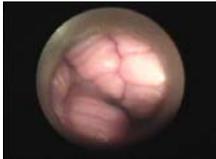






#6 A progesterone test is the best indicator for correct timing

- 1 Male and female 'indicative' behavior
- 2 Vaginal Cell Swab, Vaginoscopy
- 3 LH and Progesterone testing
- 4 Ultra sound evaluation of the Ovaries






#6 A Progesterone test is the best indicator for correct timing

- 1 Twice Daily US of ovaries
- 2 Twice Daily LH bloodtesting

Versus:

- 1 Every two days progesterone testing
- 2 Colour testing, Elisa, RIA, Immulite
- 3 Ng/ml and mMol/l 1:3







#7 The most important cause for female infertility is infection

- 1 Infections: viral, bacterial, mycoplasmatic, fungal
- 2 We test for bacteria: <10% monoculture <2% serious problem
- 3 Primary/secondary? (hyperplasia, anatomic abnormalities:
- 4 CEH: Cystic Endometrium Hyperplasia:




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Cystic Endometrium Hyperplasia: disorder of the wall of the uterus

- 1 Cystic glands enlargement and thickening of the interior wall of the uterus impeding embryonic attachment and development

- 1 Influenced by female hormones (LH/FSH)
- 2 Was difficult to diagnose in vivo
- 3 Ultrasound, biopsy (TCI,surgical), flush via TCI, post OVH
- 4 Important cause for infertility especially for multicycle bitches
- 5 Ddx: Luteal insufficiency (chicken/egg)



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Causes female infertility in practice:

- 1 Incorrect timing
- 2 CEH and other Uterine or Ovarian dysfunction
- 3 Luteal Insufficiency : inability to support the pregnancy
- 4 Infections





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- The complete PP presentation will be published on www.dierenkliniekeersel.nl and www.cryolab.nl and can be sent to you on request after the congress: please mail to info@cryolab.nl

