



LETTER TO THE EDITOR

**The animal welfare aspects of surgical artificial insemination in the canine**

Dear Editor

As a group of veterinarians with a particular interest, and postgraduate specialist qualifications, in veterinary reproduction (theriogenology), we are writing to our colleagues in the profession to consider the ethics and welfare of surgical artificial insemination in the canine.

Surgical insemination (surgical AI) of canines has been used for many years. It involves general anaesthesia of the animal, laparotomy, exteriorisation of the uterus, and trans uterine wall introduction of, typically frozen-thawed spermatozoa into the uterine lumen, replacing the uterus into the abdomen, and closure of the laparotomy site. Using the appropriate technologies and expertise for the correct timing of insemination, and handling of the semen, surgical AI was the accepted way of impregnating canines with frozen thawed semen.

Transcervical artificial insemination (TCI) was reported from Scandinavia in 1989 and 1991<sup>1</sup> (Linde-Forsberg et al.) – via catheterisation – and New Zealand in 1993<sup>2</sup> (Wilson) – via endoscopy; cited by Romagnoli et al.<sup>3</sup> In 2012, the TCI procedure was reported by Lopate,<sup>4</sup> and it has subsequently become a relatively common procedure in veterinary clinical canine breeding practice. Australian (Mason et al.)<sup>5</sup> and New Zealand (Hollinshead et al.)<sup>6</sup> reports have illustrated that the fertility of TCI is the same as, or better than, surgical AI in the canine, especially when using frozen-thawed semen. In the study by Hollinshead et al.,<sup>6</sup> only seven of 1103 intrauterine inseminations were not possible via TCI. When performed by trained operators, TCI is usually completed within 10 min, without the risks associated with anaesthesia and surgery, and is typically performed with no need for sedation.

Surgical AI has recently been prohibited in the United Kingdom by UK animal welfare legislation. (See sections 27.2 and 27.30: <https://www.rcvs.org.uk/setting-standards/advice-and-guidance/code-of-professional-conduct-for-veterinary-nurses/supporting-guidance/miscellaneous/>).

As veterinarians, it is important that we maintain our social licence within the community to protect the deservedly attained privilege to be the guardians of animal health and welfare. To “ensure the welfare of animals committed to our care”, veterinarians in the profession undertake and “solemnly swear to practise veterinary science ethically and conscientiously for the benefit of animal welfare, animal and human health, and the community”.

It is our considered opinion that welfare considerations dictate only per vaginum artificial insemination (preferably by TCI) in the canine.

Yours

Allan Gunn, Jasmin Hyatt, Annett Annandale, Henry Annandale, Babiche Heil, Carolynne Joone, Mary Ontiveros, Agustin Ruiz, Natali Krekeler, Peter Tazawa, Michael McGowan.

**Conflict of interest and sources of funding**

The authors declare no conflicts of interest or sources of funding for the work presented here.

**A Gunn<sup>a,b</sup>, J Hyatt<sup>c</sup>, A Annandale<sup>d</sup>, H Annandale<sup>e</sup>, B Heil<sup>f</sup>, C Joone<sup>g</sup>, M Ontiveros<sup>f</sup>, A Ruiz<sup>h</sup>, N Krekeler<sup>i</sup>, P Tazawa<sup>j</sup> and M McGowan<sup>k</sup>**

<sup>a</sup>School of Animal and Veterinary Sciences, Charles Sturt University, Wagga Wagga, New South Wales, 2678, Australia

<sup>b</sup>The Graham Centre for Agricultural Innovation (CSU and DPI), Wagga Wagga, New South Wales, 2678, Australia

<sup>c</sup>Veterinary Reproduction Consultancy, Orange, New South Wales, Australia

<sup>d</sup>Perth, Western Australia, Australia

<sup>e</sup>Veterinary Medicine, Murdoch University, Perth, Western Australia, Australia

<sup>f</sup>Matamata Veterinary Services, Matamata, New Zealand

<sup>g</sup>College of Public Health, Medical and Veterinary Sciences, James Cook University, Townsville, Queensland, Australia

<sup>h</sup>Newcastle Equine Centre, Newcastle, New South Wales, Australia

<sup>i</sup>Veterinary Faculty, University of Melbourne, Melbourne, Victoria, Australia

<sup>j</sup>Equibreed Oz, Warnervale, New South Wales, Australia

<sup>k</sup>School of Veterinary Science, University of Queensland, Brisbane, Queensland, Australia

doi: 10.1111/avj.13061

References

1. Linde-Forsberg C, Forsberg M Fertility in dogs in relation to semen quality and the time and site of insemination with fresh and frozen semen. *J Reprod Fertil* 1989;39:299–310.
2. Wilson MS Non-surgical intrauterine artificial insemination in bitches using frozen semen. *J Reprod Fertil* 1993;47:307–311.
3. Romagnoli S, Lopate C Transcervical artificial insemination in dogs and cats: review of the technique and practical aspects. *Reprod Domest Animals* 2014;49(54):56–63.
4. Lopate C Transcervical endoscopic procedures in the bitch. *Clin Theriogenol* 2012;4(3):213–224.
5. Mason SJ, Rous NR Comparison of endoscopic-assisted transcervical and laparotomy insemination with frozen-thawed dog semen: a retrospective clinical study. *Theriogenology* 2014;82(6):844–850.
6. Hollinshead FK, Hanlon DW Factors affecting the reproductive performance of bitches: a prospective cohort study involving 1203 inseminations with fresh and frozen semen. *Theriogenology* 2017;101:62–72.

(Accepted for publication 13 February 2021)