Intentional superfecundation through surgical insemination with cooled, shipped semen in the bitch
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A review of the scientific literature failed to produce any reports on the deliberate creation of a multi-sire litter of pups. Previous studies illustrate superfecundation occurring naturally in a colony of feral cats1 as well as in unplanned matings of dogs.2 Historically, breeding a bitch to two sires in succession or mixing the semen prior to artificial insemination usually produces a litter sired by just one of the males. The goal for this case was to intentionally produce a dual-sired litter with approximately equal proportions of each sire.

The bitch was inseminated with two sires via surgical insemination using cooled, shipped semen 5 days after the luteinizing hormone (LH) surge. Ultrasonography confirmed at least five ovulation sites per ovary at the time of insemination. Semen of Dog A (1.2 mL; 240 million; 65% progressively motile) and Dog B (1.2 mL; 300 million; 80% progressively motile) was deposited in the left and right horns, respectively. Prior to semen deposition and for five minutes after, each uterine horn was occluded at the base using digital pressure so the semen of each donor remained trapped in the horn into which it was deposited.

The bitch became pregnant and her five live pups (2 and 3 from the left and right horns, respectively) were delivered by elective cesarean section 64 days after the LH surge. DNA testing determined one pup was from Dog A and four were from Dog B. The pup sired by Dog A was located in the tip of the left uterine horn where Dog A’s semen was deposited. The pups located in the right uterine horn and at the base of the left uterine horn, nearest the bifurcation, were sired by Dog B.

Explanations for the observed outcome and suggestions for an improved fertilization rate and puppy distribution will be presented.

References