CONTRACEPTION IN A BLACKBUCK (*ANTILOPE CERVICAPRA*) USING MELENGESTEROL ACETATE

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The reasons for contraception in a zoo setting are numerous of which some have been listed below (Gerlofsma *et al.*, 1994): a) short age of enclosure space; b) prevention of inbreeding or represented lines; c) prevention of passing on undesirable genetic traits; d) to increase generation length; e) to prevent mating between too young or too old animals; f) poor maternal care shown by the dam; g) as a result of veterinary indication/ intervention.

Case history: A Blackbuck doe (*Antilope cervicapra*), acquired from the forest authorities in 1999 and kept at the Rajiv Gandhi Zoological Park, Katraj, Pune showed signs of dystokia on 23 November 2001. Efforts to induce parturition using Epidosin (Valethamate 8mg) and Pitocin (Oxytocin 10IU) intramuscularly failed, hence the animal was anaesthetized on 24 November 2001, using a combination of Xylazine @1mg kg^{-1} and Ketamine @1mg kg^{-1} in a 1:1 proportion. The dead foetus was removed by caesarean section and it was observed that the foetus had an abnormally large head and its hind limbs were kinked at the fetlock joints. With daily administration of broad-spectrum antibiotics and dressing of surgical wound, the animal had an uneventful recovery from the surgery and the stitches were removed after 15 days.

In the past, the animal had bred thrice and once before had given birth to a still-born female fawn. To avoid possible complications in the next pregnancy (due to the surgery) and to prevent births of malformed foetuses, decision was taken to stop the animal from breeding in the future.

Problems, in our case, with using a more traditional method of contraception like separation were: a) lack of space, b) stress of keeping a social animal separate from its herd members and c) slip ups by the keepers leading to breeding with the male bucks. Surgery was also ruled out due to risks associated with it and general anaesthesia, hence it was decided to use an implant of Melengesterol Acetate (MGA).

MGA is a synthetic progestin, which prevents ovulation. Contraceptive implants are medical grade silicon rods impregnated with the appropriate contraceptive and are surgically placed subcutaneous or intramuscularly to provide a slow release of the drug for two years or more. Body fluids diffuse into and through the pores of the silicon implant and the hormone dissolves and enters the blood stream.

The American Association of Zoos (AZA) recommends use of MGA implants in ungulates (1997 AZA CAG Recommendations) and their safety assessment trials to formulate lowest and safe doses for various species are ongoing. MGA implants are the most widely used contraceptive in north American zoos as it has proven remarkably effective, safe and reversible after many years of treatment.

The implant was obtained through the AZA (free of cost) after consenting to the ongoing clinical trial of MGA. The implant was sterilized using ethylene dioxide (as recommended) at the N.M. Wadia Institute of Cardiology, Pune. After degassing it for two weeks, the implant was surgically inserted into the scapular muscles of the doe on 25 January 2003. The same combination of Xylazine and Ketamine was used for sedation of the animal. After two weeks the stitches were removed and the animal was left in the moated enclosure with the rest of the herd.

Advantage and disadvantages: The major advantage of this method is that it provides long-term contraception without daily monitoring or application. However, immobilization and surgery are necessary for implantation and removal. Problems that can occur are (a) migration or loss of implant resulting in failure to find implant on attempted removal and (b) infection at the site of implant.

Also prolonged use of progestins in ungulates may result in accumulation of endometrial secretions (mucometra or hydrometra) and lead to secondary endometrial atrophy (Munson, 1993). In felids, several cases of pyometra, mammary and ovarian cancers have been reported from MGA contracepted individuals; hence, prolonged use of progestins in felids is now discouraged (Munson e*t al.*, 1995).

Authors' note: As most Indian zoos face problems with overpopulated deer and antelope enclosures, MGA implants can be tried as a method of contraception for those prolific species. The implant can be obtained from Dr. E.D. Plotka, 11713 West Lane, Marshfield, WI 54449-9523, USA. Email: plotkae@usa.net; Fax: 001-715-384-9910. The authors are indebted to The Director, N.M. Wadia Institute of Cardiology, Pune for allowing them to sterilize the implant at their facility.

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