Reproductive Disorders of Marsupials

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KEYWORDS

• Marsupial • Reproductive disorders • Sugar glider • Opossum • Wallaby

KEY POINTS

- Marsupial reproduction differs from that of placental mammals, as the female gives birth to a fetus that develops outside of the uterus.
- Pouch infections are unique to marsupials and may jeopardize the development of the joey.
- Marsupial reproductive tract diseases include infectious and traumatic etiologies and are similar to those of placental mammals.
- Castration and ovario-vaginal-hysterectomy surgeries differ from those of placental mammals because of the marsupial anatomy, especially in the female; inattention to differences can lead to inadvertent ligation of the ureters.

Captive marsupials are occasionally presented to practitioners. Many owners are breeding marsupials such as sugar gliders, wallabies, and short-tailed opossums for the pet trade. Reproductive disorders, such as dystocia, found in placental mammals are not seen in marsupials. A brief discussion of the unique anatomy and physiology of the marsupial is necessary to evaluate reproductive health and disease.

The most commonly presented captive marsupials are the sugar glider (*Petaurus breviceps*), the Brazilian (short-tailed, laboratory, gray) opossum (*Monodelphis domestica*), and macropods including the Tammar or Dama wallaby (*Macropus eugenii*) and, more commonly, the Bennett's wallaby (*Macropus rufogriseus*). In North America, injured or orphaned Virginia opossums (*Didelphis virginiana*) are frequently brought into clinics or rehabilitation centers and occasionally kept as pets. Marsupial infants are called joeys. Sex determination is usually easy, even at a young age (**Fig. 1**).

The authors have nothing to disclose.
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Vet Clin Exot Anim ■ (2016) ■–■
http://dx.doi.org/10.1016/j.cvex.2016.11.011
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Fig. 1. Red arrows show infant Virginia opossum premature scrotal sac (*Left*) and pouch (*Right*).

REPRODUCTIVE ANATOMY AND PHYSIOLOGY

Marsupial reproductive anatomy and physiology is considerably different than that of placental mammals.[1] The gastrointestinal tract, urinary ducts, and genital ducts all open into a cloaca.[1,2]

Female Marsupials

The reproductive tract of the female marsupial is smaller than that of placental mammals. It consists of the ovaries, oviducts, and paired uterus bodies that form the proximal half and the 2 lateral and central (median) vaginal canals that form the distal half (**Fig. 2**). The 3 vaginal canals join and form a urogenital sinus that also contains the urethral opening before entrance into the cloaca. The ureters are contained within the vaginal canals unlike in placental mammals, where they arrive at the bladder from around the lateral aspect of the reproductive tract.

All marsupials except the potoroo (*Potorous* sp.) give birth through the median vaginal canal.[3,4] The reproductive tract of the sugar glider has been described in detail by Smith[5] and is similar to that of all marsupials, with differences primarily in sizes and relative dimensions. The ovaries lie against the medioventral side of the uterus, near the junction of the uterus and oviduct. The oviduct is convoluted with a voluminous

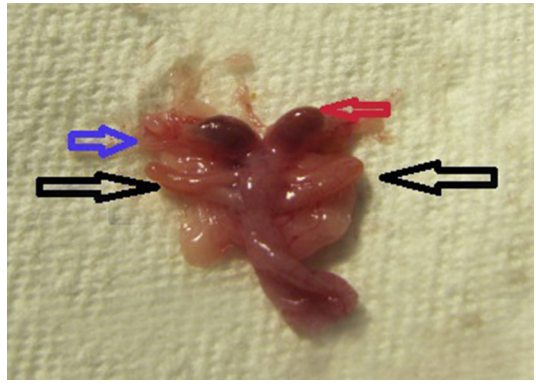

Fig. 2. Female sugar glider tract. Red arrow indicates ovary, the blue arrow indicates uterus body, and the black arrows indicate lateral vaginal canals.

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