

Reproductive Disorders in Snakes



Nicola Di Girolamo, DMV, MSc(EBHC), PhD, DECZM(Herpetology),
Paolo Selleri, DMV, PhD, DECZM(Herpetology & Small Mammals)*

KEYWORDS

• Ophidians • Surgery • Reptiles • Squamate • Dystocia

KEY POINTS

- Snake species are oviparous and viviparous; knowledge of biology and physiology of each species is fundamental to properly treat a snake with reproductive disorders.
- Several factors, including body condition, temperature, humidity, light cycle, and presence of conspecifics, need to be considered when approaching a snake with reproductive disorders.
- Ultrasonographic visualization of ovaries, testes, or hemipenes may assist correct snake sex identification in certain instances.
- Diagnostic imaging is fundamental during dystocia to identify obstructive and nonobstructive cases.
- In cases of egg dystocia, the goal of surgery is usually to preserve reproductive function. In such cases the eggs may be removed from the oviducts via salpingotomy.



Video content accompanies this article at <http://www.vetexotic.theclinics.com>.

INTRODUCTION

Reproduction of snakes is a complex aspect of herpetologic medicine. To breed snakes, several factors need to be considered. The clinician needs to be aware of such factors to assist amateur and professional breeders. Because of the complexity of reproduction, several disorders may present before, during, or after this process. Most of infertility problems can be resolved by knowing appropriate reproductive management techniques. Disorders during gestation or egg deposition are extremely common (**Fig. 1**) and may result in death of the snake and loss of the eggs/fetuses (**Fig. 2**). Disorders following mating or oviposition (eg, prolapses, infections) are less common but may preclude future ability to reproduce the snake.

The authors have nothing to disclose.

Clinica per Animali Esotici, Centro Veterinario Specialistico, Via Sandro Giovannini 53, Rome 00137, Italy

* Corresponding author.

E-mail address: paosell@gmail.com

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Fig. 1. Clinical presentation of a corn snake (*Panterophis guttatus*) with retention of an egg in the cloaca. (Courtesy of Paolo Selleri, DMV and Nicola Di Girolamo, DMV, Rome, Italy.)

REPRODUCTIVE PHYSIOLOGY

Snake species are classified as oviparous (egg layers) and viviparous. Some viviparous snakes (placental viviparous) have a placenta (eg, boa constrictors, green anacondas), whereas other viviparous snakes (eg, most vipers) do not have placental connection and develop eggs that hatch before parturition (previously defined as ovoviviparous). One blind snake species (*Ramphotyphlops braminus*) is obligate parthenogenetic (ie, offspring are produced by females without the genetic contribution of a male),¹ and facultative parthenogenesis has been rarely observed in other snakes.² Male snakes achieve internal fertilization by inserting one of the two hemipenes, the copulatory organs, into the female's cloaca (**Fig. 3**). The sperm is delivered through ductus deferens from the testes located in the coelomic cavity to the hemipenes. At the end of mating, the pair separate. Depending on the species, females may store the semen for multiple reproductive seasons.



Fig. 2. Postmortem examination of a western hognose snake (*Heterodon nasicus*) deceased during gestation. (Courtesy of Francesco De Filippo, DMV Naples, Italy.)

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