

Thoracic malformations in Bengal cats

Results from a questionnaire to breeders

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Aim

To investigate the presence and characteristics of thoracic malformations in Bengal kittens.

Conclusions

Thoracic malformations were described in 6% of born kittens. Of affected kittens, 36% died before 4 weeks of age. Malformations were most common in male kittens.



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Introduction

Thoracic malformations in kittens is a well-known problem to Swedish cat breeders, and there are scientific reports on malformations in both the Burmese [1] and the Bengal [2] breed. In humans, pectus excavatum (PE) is the most common thoracic malformation [3]. PE may be symmetrical or asymmetrical, and present as a funnel or flat chest [3]. A variety of thoracic malformations has been described also in cats. In the United Kingdom, 3-4% of born Burmese kittens are reported to have thoracic malformations [1].

Material and methods

In 2017 an electronic questionnaire was sent by e-mail to Swedish Bengal cat breeders. Questions referred to breeding activities and litter characteristics for the period 2014-2016. The response rate was 75% (50 breeders).



Fig 1. 44% of breeders (red) had experienced litters with thoracic malformations (TM). Kittens with TM made up 6% (light grey) of total number of kittens (N=566).

	Litter size (mean ± SD)	Stillborn (%)	Tm kittens (%)
Litters with TM	4.2±2.3	19	38
Litters without TM	4.1±1.8	13	0
All litters	4.1±1.9	13	6

Table 1. Litter size and percentage of stillborn kittens and kittens with thoracic malformations (TM) in 138 litters

Results

From 28 breeders (56%) no thoracic malformations was reported, and 22 breeders (44%) reported malformations in 1-3 litters (Fig 1). Overall, kittens with thoracic malformations were present in 12% of litters.

Detailed information was given for 138 litters, describing that 6% of born kittens were diagnosed by the breeders as having thoracic malformations (Fig 1). Kittens with malformations were more often male (18 of the 25 affected kittens for which sex was reported). Mean litter size was 4.1 kittens, with a mean of 13% stillborn kittens (Table 1).

Various treatments were tried by the breeders, including supplemental feeding, massage, and paper tube corsets. Information on outcome was reported for 28 kittens, of these 64% survived. All kittens that didn't survive (36%) died before 4 weeks of age.

References

- [1] Sturgess CP, Waters L, Gruffydd-Jones TJ, Nott HM, Earle KE. Investigation of the association between whole blood and tissue taurine levels and the development of thoracic deformities in neonatal Burmese kittens. *Vet Rec.* 1997;141:566-70.
 [2] Charlesworth TM, Sturgess CP. Increased incidence of thoracic wall deformities in related Bengal kittens. *J Feline Med Surg.* 2012;14:365-8.
 [3] Fokin AA, Steuerwald NM, Ahrens WA, Allen KE. Anatomical, histologic, and genetic characteristics of congenital chest wall deformities. *Seminars in thoracic and cardiovascular surgery.* 2009;21:44-57.

Photo of Bengal cat: Irina_kukuts, Pixabay

Acknowledgement

The study was supported by a grant from the Agria and SKK Research Fund, from a donation from the Bengal cat club in Sweden and from private donations from Bengal cat breeders. The study was performed in collaboration with the Bengal cat club in Sweden.

