Association of Veterinary Anaesthetists (AVA) RECOMMENDED REQUIREMENTS WHEN PERFORMING GENERAL ANAESTHESIA OF DOGS, CATS AND HORSES

Veterinary anaesthetic-related mortality reduction protocol: five recommended requirements to perform safer anaesthesia

Anaesthetic risk in veterinary medicine is very difficult to evaluate because of a lack of studies. However, in the UK, a recent survey[1,2,3] reported the following mortality rate associated with anaesthesia:

	Dog	Cat
ASA physical status category* 1-2 (healthy)	0.05%	0.11%
ASA physical status category* 3-5 (diseased)	1.33%	1.40%

*: American Society of Anesthesiologists (ASA) Physical Status Classification System (http://www.asahq.org/clinical/physicalstatus.htm)

This suggests anaesthesia-related mortality in dogs may have halved since the publication of a previous study[4] in 1990. Over the same period, the mortality in human anaesthesia fell 25-fold from 1/10000 to 1/250000, despite the fact that during this period the definition of an operable patient has considerably expanded[5].

In horses, the largest study[6] performed on anaesthesia-related mortality indicated the following rates:

Total	1.9%
Without colic cases	0.9%
Of colic cases	8.0%

It is possible that improvements in veterinary anaesthetic technic may reduce these disturbing figures. With the aim of preventing problems, whilst taking into account the economic considerations in veterinary medicine, the following requirements were proposed[7] :

Every veterinarian/veterinary surgeon who performs general anaesthesia must be able to :

1 ensure the animal's airway is patent
2 administer oxygen
3 perform manually intermittent positive pressure ventilation (IPPV) (e.g. using an Ambu bag, an anaesthetic breathing system or in horses, a demand valve)
4 administer straightforward IV drugs and fluids, a venous access should be secured – ideally with an IV catheter
5 perform basic Cardio-Pulmonary Resuscitation (CPR)

In fulfilling these 5 requirements, the veterinarian must be competent in the use of specific equipment and learn the techniques of intubation, intravenous catheterisation, oxygenation and manual ventilation, all of which are relatively simple.

The requirements must be systematically applied to every patient undergoing general anaesthesia even if no routine intubation, oxygenation or ventilation is considered. In practice this means that before inducing general anaesthesia, the veterinarian must make a checklist and answer positively to the following questions:

-Do I have everything required to ensure tracheal intubation?
-Do I have enough oxygen and is the equipment ready to deliver it?
-Can I immediately perform manual IPPV?
-Can I administer straightforward IV drugs and/or fluids, i.e. is the IV catheter in place and functional? If not, is everything ready to gain IV access after induction ?
-Is a CPR procedure in place and are the emergency drugs available?

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