with this activity is 80 to 90 per cent (Hunt and Gerring 1985); the pretreatment value was 33 per cent and phenoxybenzamine reduced this to 14 per cent (Fig 1). Small intestinal motility was increased in the jejunum and ileum before drug infusion (Fig 1). Large intestinal activity was increased also; the normal pattern of the left dorsal colonic mechanogram is alternating periods of activity with quiescence. The percentage of time occupied by the former was much greater than normal (Fig 1). Phenoxybenzamine decreased the hypermotility of the small and large intestine to levels of activity approximating to normal. Diarrhoea in this case was associated with reduced stomach activity but hyperactivity of the intestine. The action of phenoxybenzamine was to depress gastrointestinal electromechanical activity throughout the gut. This depressive action on the stomach had been found in rats where gastric emptying was slowed (Giri and Rice 1970).

These results suggest that intestinal hypermotility, in this case at least, was antagonised by \(a_1\) adrenergic blockade caused by phenoxybenzamine. Sympathetic blockade is generally assumed to produce greater activity but \(a_1\) adrenoceptor blockade may give an increase of unbound local noradrenaline which could exert a presynaptic or \(a_2\) effect and thus alter excitatory neurotransmitter release. An alternative explanation is that the horse is susceptible to the atropine-like effect of phenoxybenzamine even at the relatively low doses used.

Although the outcome of this case was disappointing and the aetiology remains obscure, phenoxybenzamine was shown to reduce intestinal hypermotility and may be worthy of further study.

Acknowledgements

The authors wish to thank Mr T. Penstone-Smith for excellent technical assistance, Mr D. Gunn for preparation of Fig 1, Miss B. Robertson for typing the manuscript and Smith Kline Animal Health for the phenoxybenzamine used. This study was supported by the Wellcome Foundation and the Horserace Betting Levy Board.

References


BOOK REVIEW

Veterinary Dentistry Edited by Colin E. Harvey. Published by W. B. Saunders Co. Price £55.00

This elegantly produced book is the first of its kind to cover specialised dentistry and oral surgery in a wide range of domestic and exotic species. It is excellently illustrated (including 24 colour photographs) and arranged mostly in multi-authored chapters covering the embryology, anatomy physiology and histology of teeth as well as oral conditions and various diagnostic techniques. Included in the 20 chapters are sections on oral medicine, periodontal and dental diseases as well as diseases of the jaws, oropharynx and salivary glands.

Two-thirds of the book are devoted to the dog and cat but Gordon Baker provides three chapters on the horse. The equine content of the book is in keeping with the generally high standard of text and illustration but as only 31 pages are devoted to this species it is likely that only those equine practitioners with a significant interest in small animals will consider purchasing the book. There are also sections covering ruminants, pigs, laboratory animals and captive wild animals and birds.

The editor and senior author Colin Harvey is an internationally recognised expert on oral surgery in small animals and has produced here a comprehensive work on dentistry which will certainly become the definitive text on the subject. Recent advances have been made in veterinary dentistry particularly in the use of conservative and sophisticated restorative techniques in small animals which have been adapted from human dentistry. These are described in detail and will make the book essential reading for any surgeon contemplating such procedures. The book will also make extremely valuable reading for veterinary students. The cost and its rather specialist nature will probably preclude its purchase by most students although it should be available in university libraries.

T. R. C. Greet

Erratum


The final sentence of the fourth paragraph of this article should read 'Because the electrical conductivity of the tissues is small, the magnetic fields generated by this device are very small (approximately 10 nT).’ and not as printed.