

Swimming Associated Colic-

A series of 21 cases at the Macau Jockey Club

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Introduction

Swimming associated colic (SAC) is typically seen within 2 hours of a swim episode.¹ The only known study of SAC focused on its incidence and a series of surgical cases.² There are anecdotal accounts of various SAC cases, however, to the authors knowledge there is no study focusing on the clinical presentation and treatment of SAC.

The aim of this study was to describe the clinical presentation and treatment regimen of a series of SAC cases. It was hoped that the findings of this study would be useful for the general clinician when presented with a case of colic soon after swimming.

Materials and Methods

Population

21 Thoroughbred racehorses showing signs of colic after swimming, were presented to the Macau Jockey Club Veterinary Hospital from June 2005 to August 2005.

Method

All horses presented were subjected to a full clinical examination by a single veterinarian (the primary author). A subjective pain score (grade 1 to 5) was assigned to each horse (Table 1) and a questionnaire (Table 2), covering signalment and management history, was completed by the veterinarian after consultation with the horse's groom/trainer.

Level of pain (LOP)	Signs Observed
1	Flank watching
2	Flank watching, pawing, slight crouching while walking
3	Sweating, marked crouching, apparent distress
4	Marked crouching, lying down but willing to rise
5	Recumbent, rolling and unwilling to rise

Table 1. Subjective pain score grading

Identificant brand	
Date/Time	
Swim	Yes No
Distance Swam (laps)	Short (85m) Long (110m)
Last time swim (days)	
Previous swim colic episode	Yes No
Submerged head	Yes No
Time of swim	
Trackwork before swim	Yes No
Distance worked (meters)	
Place worked	Trot Canter Gallop
Worked previous day	Yes No
Time between trackwork & swim (min)	
Feed before/after swim	Before After None
Level of pain	1 2 3 4 5
Haematology/Biochemistry	Yes No
Heart rate (beats/min)	
Respiratory rate (breaths/min)	
Mucous membranes (colour) & CRT (sec)	
Gut sounds	Normal ↑ ↓ None
Rectal findings	

Table 2. Questionnaire

Each horse was treated in the order listed below (Table 3) and the response monitored during enforced walking. Resumption of clinical signs necessitated further treatment. This protocol was developed after reviewing clinical records of previous cases of SAC in Macau.

Order	Treatment
1	Flunixin meglumine (500mg) and xylazine (300mg)
2	Detomidine (5mg) and butorphanol (0.05mg)
3	Detomidine (5mg) and butorphanol (0.05mg)
4	Rest and rouse

Table 3. Treatment protocol

Results

It is interesting to note that over a 6 year period there was approximately 210 individual swim episodes each day. There was approximately one case of SAC per 1100 swim episodes, one case every 5.2 days, which was an incidence rate of 0.09%.

The following data was collected from the horses that were presented for Veterinary examination with signs of colic after swimming (Table 4).

Mean Age (yrs)	Mean distance swam (m)	Mean heart rate (beat/min)	Mean resp. rate (br/min)	Mean time to present (mins)	Mean LOP grade given
5.2	144	46	29	73	2.1
(2-9)	(11-220)	(28-60)	(12-84)	(20-156)	(1-5)

Table 4. Mean and range data from the horses presented with SAC

Clinical examination

Additional clinical findings included normal mucous membranes (17 cases) with a capillary refill time of less than 2 seconds (17 cases). Gut sounds were generally decreased (9 cases) or not audible (11 cases) and in only one case were they increased (LOP=2). Rectal examination revealed a distended caecum and/or large bowel (11 cases) or no abnormalities (13 cases). No abnormalities were detected on standard haematology and biochemistry panels in all cases.

Treatment

All cases resolved with medical treatment only and surgery was not required. One case was not treated with any medication and clinical signs resolved with forced walking only. Twenty cases were treated with a single dose of flunixin meglumine (500mg IV) and xylazine (300mg IV). The signs of colic resolved in 13 cases. In 7 cases clinical signs returned and were then treated with detomidine (5mg) and butorphanol (0.05mg) and in only one case a second administration of detomidine (5mg) and butorphanol (0.05mg) was required.

Recurrence

The clinical records of the 21 cases were retrospectively examined and it was found that 7 of the cases had been affected by SAC before the study period. This represents a recurrence rate of 33% in this population.

Discussion

Colic is a broad term used to describe a variety of conditions that cause the horse to exhibit signs of abdominal pain.³ Colic is one of the most challenging and prevalent diseases faced by veterinarians with an annual number of all colic cases in the general population being reported as high as 4 cases per 100 horses (4%).⁴ More specifically, SAC in this population had an incidence of 0.09% (1/1100 swims) which is comparable to 0.07% (1/1365 swims) found in another study conducted in Singapore.²

The incidence rate of SAC is of significant value to warrant attention of the general practitioner, and with a recurrence rate of 33% in this population, the important consideration of welfare should be placed on these horses as to whether the allowance of future swim training should occur.

The aetiology of this condition is unknown, the clinical presenting signs could be similar to other forms of colic such as a large bowel impaction or nephrosplenic entrapment. The rectal findings of gas distended bowel are similar to a caecal tympany in which there is moderate to severe pain, elevated heart rate and respiratory rate, and the rectum is often obstructed by distended bowel.

Medical therapy alone was very successful in treating SAC cases in this case series. Indeed only 2 horses required

surgical intervention in the preceding 10 years in Macau (*pers. com.* M. WainScott). However, previous work showed an incidence of 6 of 123 (4.6%) cases of SAC resulted in exploratory laparotomy.²

This is an important figure to consider as a general practitioner; if the colic is not responding to the protocol outlined, then surgical referral is strongly advised, particularly as it has been shown that survival rate of colic patients rapidly decreases in inverse proportion to the duration of clinical signs.⁴

Study limitations

An important factor to consider here is that there may well have been horses that showed signs of SAC in the LOP 1 category, but may not have been presented to the veterinary hospital. Many trainers may initially attempt hand walking and even use of analgesics available to them at the stable rather than seeking veterinary attention.

Further investigation into SAC, in a more controlled environment, may be warranted to reduce the chance of underrepresentation. Another important consideration is to remember the multi-factorial aetiology behind each colic episode, as well as the subjective assessment of each horse and of the history being retrieved.

It is difficult to make direct comparisons between the results in this study and other data on SAC cases due to the differences in treatment approaches between clinicians, as well as the availability of funds for potential surgical cases. If funds were not available a clinician may treat the colic more aggressively, knowing that medical management is the only option.

Conclusion

Although SAC cases are uncommon, understanding SAC is very important to the racing industry as swimming is an increasingly popular training method used to help improve the cardiovascular fitness of the horse. SAC cases require early aggressive medical intervention, however, some require surgical intervention. As a result SAC costs owners and forces unwanted changes to the training programme. Some horses are repeat offenders, therefore it may be indicated to recommend to stop using swimming as a training method for these horses.

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