UNIVERSITI PUTRA MALAYSIA

DIFFERENT JOINT SURGICAL PROCEDURES AMONG THOROUGHBRED HORSES AT PERAK TURF CLUB (PRTC) IN ASSOCIATION TO THE RACE PERFORMANCE FROM YEAR 2008 TO 2015

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It is hereby certified that we have read this project paper entitled, ‘Different Joint Surgical Procedures among Thoroughbred Horses at Perak Turf Club (PrTC) in Association to the Race Performance from Year 2008 to 2015’ by Hikma Hashiqin binti Abdul Halim. In our opinion, it is satisfactory in terms of scope, quality and presentation as partial fulfillment of the requirement for the course VPD 4999 - Project.

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DEDICATION

Specially dedicated to my late father,

beloved mother, siblings and my

significant other.

With lots of love.

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ABSTRACT

DIFFERENT JOINT SURGICAL PROCEDURES AMONG THOROUGHBRED HORSES AT PERAK TURF CLUB (PRTC) IN ASSOCIATION TO THE RACE PERFORMANCE FROM YEAR 2008 TO 2015

by

Hikma Hashiqin binti Abdul Halim

2016

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Co-Supervisors: Dr. Alistair Murdoch, Dr. Reza Sashi Singam and

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Locomotion problems and joint injuries are the main cause of early retirement in athletic horses. A retrospective study on cases of equine joint surgeries at Perak Turf Club (PRTC) from year 2008 to 2015 was carried out to define the occurrence and frequency rates in relation to the prognosis. Relationships between duration to first start and number of races after surgery, and frequency of lifespan races with its contributing factors were determined. Records were acquired from equine surgery log book in Veterinary Hospital PRTC and races performances were attained from the Malayan Racing Association (MRA) website. Twenty-five percent (218 joint surgeries out of 849 surgery cases) were identified within the 8-years period. Highest

occurrence of joint surgeries was arthroscopic surgery; 83 % (181/218 cases) with the utmost rate was at the right carpal joint (34 %). Carpal joint arthroscopic surgery contributed 81 % of the cases while fetlock joint was only 18 %. From 218 horses, 135 horses had at least one start after the surgery with the median number of days to the start was 180 days. Eighty-eight horses were identified to have successfully raced with median; 6 races and 3 horses recorded more than 30 races after the surgery. The life span average race was 15 years; 54 horses (25 %) had 16 races. There was a relationship between age group with different joint locations. As a conclusion, horses that underwent arthroscopic surgery have a good prognosis and it has the ability to restore racing capability of the horse with high number of races post-operative. The prognosis is contributed by age and lesion at different joint locations. Arthroscopic surgery is suggested to be the best treatment for joints.

Keywords: arthroscopic; arthrotomy; racing performance; prognosis

ABSTRAK

PROSEDUR PEMBEDAHAN SENDI YANG BERBEZA PADA KUDA THOROUGHBRED DI KELAB LUMBA KUDA PERAK BERHUBUNGKAIT DENGAN PRESTASI PERLUMBAAN DARI TAHUN 2008 HINGGA 2015

Oleh

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Sistem lokomotor dan kecederaan sendi adalah punca utama persaraan awal ekuin dalam sukan perlumbaan kuda. Tiada kajian pembedahan sendi dalam kalangan ekuin yang telah dilakukan di Malaysia untuk mengaitkan keberkesanannya melalui prognosis yang mana prestasi perlumbaan digunakan sebagai indikasi. Satu kajian retrospektif mengenai kes-kes pembedahan sendi kuda yang telah dilaksanakan di PRTC dari tahun 2008 sehingga 2015 telah dijalankan. Kajian ini bagi menentukan kadar frekuensi dan kejadian berhubung dengan prognosis. Hubungan antara tempoh untuk perlumbaan pertama dan

bilangan perlumbaan selepas pembedahan, serta kekerapan perlumbaan dalam jangka hayat dengan faktor penyumbang seperti umur dan distribusi lesi pada sendi yang berlainan telah ditentukan. Rekod telah diperolehi daripada buku log pembedahan kuda di Hospital Veterinar PRTC dan prestasi perlumbaan telah dicapai daripada laman web Malayan Racing Association (MRA). Sebanyak 218 pembedahan sendi daripada 849 kes-kes pembedahan sepanjang 8 tahun dengan kejadian sebanyak 24.68 %. Frekuensi tertinggi pembedahan sendi ialah pembedahan artroskopik; 83.0 % (181/218 kes) dengan kadar tertinggi adalah di sendi karpal (34.30%). Pembedahan arthroskopik di sendi karpal menyumbang 81 % daripada kes-kes manakala sendi fetlok hanya 18 %. Daripada 218, 135 kuda mempunyai sekurang-kurangnya satu permulaan selepas pembedahan dengan bilangan median hari untuk permulaannya ialah 180 hari. Terdapat 60.1%. kuda yang berusia empat hingga lima tahun. Lapan puluh lapan kuda yang dikenalpasti telah berjaya berlumba dengan median; 6 perlumbaan dan 3 kuda mencatatkan lebih daripada 30 perlumbaan selepas pembedahan. Purata perlumbaan sepanjang jangka hayat adalah 15; 54 kuda (24.8 %) mempunyai 16 perlumbaan. Terdapat hubungan antara kumpulan umur dengan lokasi sendi yang berbeza. Bagi pembedahan artrotomi, bilangan perlumbaan selepas pembedahan adalah bergantung dengan lokasi sendi. Kesimpulannya, kuda yang mengalami pembedahan artroskopik mempunyai prognosis yang baik dengan jumlah perlumbaan lebih tinggi selepas pembedahan berbanding artrotomi. Prognosis disumbangkan oleh umur dan lesi di lokasi sendi yang berbeza. Pembedahan artroskopik boleh menjadi rawatan yang terbaik untuk sendi.

1.0 INTRODUCTION

Disease of locomotion system and joint injuries are the most important cause of early retirement in athletic horses (Reed, *et al.*, 2010). These will then lead to lameness and become the primary reason of lost training days for racehorses. Most joint injuries involve the carpal, metacarpophalangeal (MCP) and metatarsophalangeal (MTP), which are also known as fetlock joint in focal areas which sustain repetitive impact loads.

Keyhole surgery of joints (arthroscopy) is which procedure in human medicine. The techniques and equipment have rapidly advanced over the last 25 years and arthroscopy has now also become commonly performed in horse practice. Horse joints by their vary size are ideal candidates for the keyhole surgery. It is also preferred by veterinarian because of the significantly reduced incidence of post-operative infection, and reduces the need to bandage the limb following the surgery. Most equine orthopedic surgeons accept that equine arthroscopy has revolutionized joint and tendon sheath surgery in the horse.

Walmsley (1997) states that arthroscopy is much less invasive and allows a more detailed examination of accessible structures of the joint and would therefore serve as a preferred route for internal fixation. Ramzan and Palmer (2010) explained that two common fracture sites in Thoroughbreds racehorses are the third metacarpal/tarsal (MC3/MT3) condylar fractures and sagittal fractures of the

proximal phalanx (P1), which constituted 14.5 % and 10.4 % of all racehorse injuries, respectively in one cohort study done in UK.

When doing surgery in athletic horse, the optimal objective is returning it to athletic soundness. A return to athletic soundness can only occur if the joint is not too seriously damaged by the original injury or by the surgeon. The decision to invade the joint surgically, involve the selection of the surgical technique to be used. Currently, surgical techniques for joint problems have gone through considerable sophistication and the two greatest advances in equine orthopedic surgery are internal fixation of fractures and arthroscopic surgery (McIlwraith & Bramlage, 1996). Familiarity and experience with arthroscopic techniques has made arthroscopic aided fracture repair of articular fractures state of the art. Direct examination of fracture reduction, ability to treat additional articular disease simultaneously during fracture repair and avoiding the morbidity associated with arthrotomy has improved outcomes.

This project was conducted to allow us to have a better understanding on the distribution of specific anatomical locations of horses that are more predispose to any skeletal or joint related problems due to intensive training. Besides, this was done to reduce the communication barrier between the veterinarian and the trainer in order to convince the successfulness of joint surgical procedure as to prevent any early retirement of racing career or humane euthanasia of the horse.

The objectives of this study are:

1. To identify the occurrence of different joint surgical procedures in Perak Turf Club.
2. To identify the racing performance of the affected horse post-operation for each procedures.

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