

REDUCTION OF EARLY TWIN PREGNANCY TO SINGLE PREGNANCY IN THE MARE BY CRUSHING

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Kısıraklarda erken ikiz gebeliğin ezilerek tek gebeliğin sağlanması

Özet: Çalışmanın amacı kısıraklarda erken ikiz gebeliklerin ezilerek tek gebeliğin sağlanmasıdır.

Ovulasyondan 2-4 hafta sonra rektal ultrasonografi ile gebeliği tespit edilen 671 gebe kısırakta 21 (%3.11) ikiz gebelik tespit edilmiştir. Embriyonik keseler 16 kısırakta (%76.1) sol kornuda, 5 kısırakta (%23.8) sağ kornuda yerleşmişti.

15 (%71.4) ikiz gebe kısırakta, embriyonik keselerden bir tanesi elle ezilerek yok edilmesine rağmen, 2 (%9.5) kısırakta uygulamadan sonra her iki embriyo da rezorbe olmuş ve 4 (%19.0) kısırakta ikiz gebelik devam etmiştir. Uygulamadan 5 gün sonra yapılan kontrolde ikiz gebelik devam eden bu kısıraklarda prostaglandin F2 alfa uygulaması ile gebelik sona erdirilmiştir. Aynı üreme mevsiminde normal bir gebelik elde etmek için prostaglandin uygulamasından sonraki ilk östrusta bu kısıraklar tekrar çiftleştirilmiştir. Kısıraklarda ikiz gebeliğin elle ezilerek tek gebeliğin sağlanmasında, 16-21 günlük ikiz gebeliklerde başarı oranı %78.6, 22-28 günlük gebeliklerde ise %42.8 olarak tespit edilmiştir.

Anahtar Kelimeler: İkiz gebelik, kısırak

Summary: The purpose of this study was to reduce of early twin pregnancies to single pregnancies in the mares by crushing.

Out of 671 pregnancies that were diagnosed by rectal ultrasonography 2-4 weeks after ovulation, 21 (3.11%) twins were diagnosed. Vesicles were present in left horn in 16 (76.1%) mares and in right horn in 5 (23.8%) mares.

Although, twin pregnancies were successfully reduced to single pregnancies in 15 mares, both vesicles resorbed in 2 (9.5%) mares and vesicles developed normally even if crushed in 4 (19.0%) mares. Crushed twins rechecked on 5 days after crushing and persistent twin pregnancy terminated by prostaglandin F2 alfa in 4 mares. They re-mated in the first oestrus after prostaglandin injections to achieve normal pregnancy in the same breeding season.

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The success rate for crushing, day 16-22 embryos was %78.9 and % 42.8 for crushing day 22-28 embryos.

Key Words: Twin pregnancy, mare, crushing.

Introduction

Death of embryos resulting from twin pregnancy is a serious problem in Thoroughbreds. Twin pregnancies averaged 3.6% of total pregnancies and twinning rate in early pregnancy (before day 30) lies between 2.6 and 2.8%, 85% ended in abortion during the last third of pregnancy, 5% resulted in the delivery of stillborn twins and only 10% produced 1 or 2 live foals (2, 3, 4). 20% of all pregnancies in mares supposed to start as twin pregnancies resulting from double ovulations (4). Incidence of multiple ovulations is influenced by breed, age and foaling status of the mare. Draft and thoroughbred mares have greatest incidence of multiple ovulations. Older mares (6 to 10 years old) have more multiple ovulations than do younger mares (2-5 years old). Mares with in 80 days following parturition have approximately twice the incidence of multiple ovulations as do other mares (7). The rate of twins in Thoroughbreds is 3-5 fold higher than the other horse breeds. The reasons of this are environmental factors especially extremely high nutrition (4). The difficulty of twin diagnosis during early pregnancy increases when both vesicles are closely adjacent and appear as one vesicle (2, 6). So many techniques were used to reduce twin pregnancy, e.g. prevention of mating in the presence of two follicles or rupture of one, induce abortion or temporarily reducing the ration (1, 2, 3, 4, 5, 7).

The success rate for crushing day 29 embryos is believed to be less than the success rate for crushing day 19 to 21 embryos (7). As the conceptus develops from day 21 greater pressure is required to rupture it and after day 25, repeated attempts may be required (1). Crushing is efficient in about 50% of cases in less than 30 day gestation (2). Manual crushing of one blastocyst in bicornuate twin pregnancies between days 24 and 45 has shown that the uncrushed blastocyst can either survive and develop normally to full term or may be rejected and resorbed like its crushed twin, depending mainly on the stage of pregnancy. Crushing, which causes rupture of fetal membranes, results in a rapid fall in the survival rate of the uncrushed blastocyst when performed after day 31. In some mares rupture is not possible after day 35 even if extreme pressure is used (5).

The aim of this study is to reduce twin pregnancy to single pregnancy by crushing of one blastocyst.

Material and Method

Out of total 671 pregnancies that were diagnosed by rectal ultrasonography (B-mode Real time, 5 MHz probe) after 2-4 weeks of mating, 21 twin pregnancies established the material of this study. In order to ones of those twins, in close ones of them was pushed away with aid of the probe and then this embryonic vesicle was crushed by manually pressing between the probe and pelvic bone. The roughness in appearance of the vesicle indicates that the embryonic vesicle was crushed. The twin pregnancy was

re-checked after 3-5 days by ultrasonography . At the end of 5 days, if the twins persisted, pregnancy was ended by prostaglandin (Dalmazin, 0.075 mg D-Cloprostenol). The mares were mated again at the first oestrus following these administration.

Results

Twin pregnancies were diagnosed in 21 (3.11%) mares out of total 671 pregnancies after 2-4 weeks of mating by ultrasonography in 1996-97 breeding seasons. The locations of these twins were determined and 16 (76.1%) of these twins were located in the left horn and 5 twins (23.8%) were located in the right horn and corpus uteri. One of each twin could be crushed in 15 pregnancies (71.4%). In 4 mares (19.0%) twin pregnancies were persisted and these pregnancies were terminated by prostaglandin injections. These mares re-mated in the first oestrus after prostaglandin injections to achieve normal pregnancies. In 2 mares (9.5%) both embryos were resorbed. These two pregnancies were observed to on the 16th days in pregnancies and their vesicles were too close to each other.

The reduction of twin pregnancies to single pregnancies in the mare can be successful 78.9% at 16-22 days pregnancies and 42.8% at 22-28 days pregnancies.

Discussion

Prevention of twin pregnancies or reduction of twin pregnancies to single pregnancies helps to avoid the disadvantages of twin pregnancies. Most of the twin pregnancies result abortion in late pregnancy (3, 4, 6). Twin pregnancies cause dystocia and even the mare can be lost. By the reduction of twin pregnancies to single pregnancies abortions and dystocia could be avoided also waste of the breeding season of mares will be prevented. In 15 of the 21 mares, twin pregnancies were successfully reduced to single pregnancies by crushing.

By prostaglandin injection, the false crushed, pregnancies will be terminated and the mare can be re-mated during the same breeding period. Persistent 4 twin pregnancies were terminated by prostaglandin F_2 alfa in this study.

Although, reduction of twin pregnancies to single pregnancies are easier in early stages, 16-20 days pregnancies, it becomes harder with the progression of pregnancy after 24 days pregnancies (1, 5, 7). The success rate for reduction of twin pregnancy to single pregnancy by crushing was 78.9% at 16-22 days and 42.8% at 22-28 days pregnancies.

At very early stages, before 16 days pregnancies, particularly if the embryonic vesicles are very close, it is possible for both of them to be reabsorbed after crushing. Both vesicles resorbed in 2 mares after crushing. These vesicles were too close to each other. Successful twin management by crushing usually requires manual experience and repeated examinations.

Kaynaklar

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