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CASTRATION BY CLOSED METHOD IN EQUINE

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ABSTRACT

This study was applied on six donkeys and two horses. The castration was performed by making longitudinal skin incision in area above to the level of the head of the epididymis at the site of the panpniform plexus ,and by blunt dissection the spermatic cord was isolated from other surrounding tissues without opening of tunica vaginalis. At the same time moderate pressure was applied on the scrotum by the other hand to expel the testis from the incision. The spermatic cord crushed and ligated at the site of crushing, and the testis was removed by cutting the spermatic cord below the ligation to ensure that there was no bleeding from the stump of spermatic cord. The site of operation was closured by three rows. The first row included the area of passage of the spermatic cord and the cavity of scrotum , while the second included subcutaneous tissues with simple continuous suture by using catgut materials for both rows. The skin closed with simple interrupted suture by using silk. The results revealed presence of slight swelling at the site of operation , the animals returned to work early and quickly. Healing occurred with minimal complications.

الأخصاء بالطريقة المغلقة في الفصيلة الخيلية

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الخلاصة

أجريت الدراسة على ستة من الحمير واثنان من الخيول . تمت عملية الاخصاء بعمل شق طولي للجلد فوق مستوى رأس البربخ في منطقة الظفائر الوريدية وبواسطة القطع غير الحاد تم فصل الحبل النطفي من الأنسجة المجاورة من دون الدخول الى الغلالة المهبلية وفي نفس الوقت تم الضغط على كيس الصفن بواسطة اليد الأخرى لأجل إخراج الخصية من موقع العملية . تم سحق الحبل النطفي باستخدام قاطع النزف وعمل ربط لموقع السحق ثم أزيلت الخصية وذلك بقطع الحبل النطفي من اسفل الربط وتم التأكد من عدم وجود نزف من مكان قطع الحبل النطفي . خيط موقع العملية بواسطة قصابة الكروميك بصفيين من الخياطة شمل الأول تجويف كيس الصفن و ممر الحبل النطفي وأما الثاني فقد تضمن الأنسجة تحت الجلد بطريقة

الخياطة البسيطة المستمرة ولكلا الصيفين وخيط الجلد باستعمال الخياطة المتقطعة البسيطة بخيط الحرير . بينت نتائج الدراسة حدوث ورم قليل في موقع العملية ورجوع الحيوان الى العمل بوقت مبكر مع سرعة التئام موقع العملية وقلة المضاعفات .

INTRODUCTION

Castration is one of the most common surgical procedures performed in equine practice (1,2,3).The operation performed by open ,closed and half-closed techniques (4).The complications that follow castration are increasingly often regarded as unacceptable by the owners of horses (5).In an attempt to reduce complication rates a castration method develop by double ligations of the testicular blood vessels at its course in the neck of scrotum without removal of the testicle through a small incision via the spermatic cord (5,6).While other author (7) performed castration by open method via incision in the neck of scrotum and removing of the testicles by pulling them out from the incision after ligation of the spermatic cord. Then suturing the site of operation which includes the passage of spermatic cord without suturing the scrotal cavity which is cover by parietal layer of tunica vaginalis, so that the complication associated with this technique include oedema in scrotal cavity which remained about 7-10 days after operation. The object of this study was to perform castration by closed method through the area above to the level of the head of the epididymis with suturing of the site of operation to insure healing by first intention in addition to minimize complications .

MATERIALS AND METHODS

Six donkeys and two horses were referred for routine castration to surgery clinic department of veterinary surgery, college of veterinary medicine, university of Mosul and to our private veterinary surgery clinic between april 2002 and February 2004 .The animals were generally anaesthetized with xylazine 2 % (1 mg/kg b.w) intravenously as a premedication followed 5 minutes later by pentobarbitone sodium 6% at a dose of (10 mg/kg b.w) intravenously. About 4 – 5cm skin incision was made in area above to the level of the head of epididymis at the site of the pampniform plexus under aseptic technique started near to inguinal area and directed to the neck of scrotum (fig. 1) .By blunt dissection ,the incision was extended deeply through the subcutaneous tissue , without opening of the tunica vaginalis to expose the spermatic cord (fig. 2), and to separate the testis from surrounding tissue . Finally the scrotum gentally sequazed by the surgeon hand to exteriorized the testis from the perture (fig. 3).

The spermatic cord was crushed by large artery forceps, and transfixation ligature were placed in the crushed area after removal of forceps. Then the spermatic cord cut down below the ligation (fig. 4), and the area of operation sutured in three rows . The first row include the area of passage of the spermatic cord and the cavity of the scrotum after its pulling to the site of incision (fig. 5) . while the second row include the subcutaneous tissues (fig. 6), using simple continuous mattress suture with chromic catgut No.2 for each. Finally the skin closed by simple interrupted mattress with silk No.2 The same procedure applied on the other testis.

Systemic antibiotic, penicillin –streptomycin administered at a dose of 10,000 IU/kg BW & 10 mg/kg BW intramuscularly, respectively for three days. The animals remained under observation after operation to follow the postoperative changes that may occur.

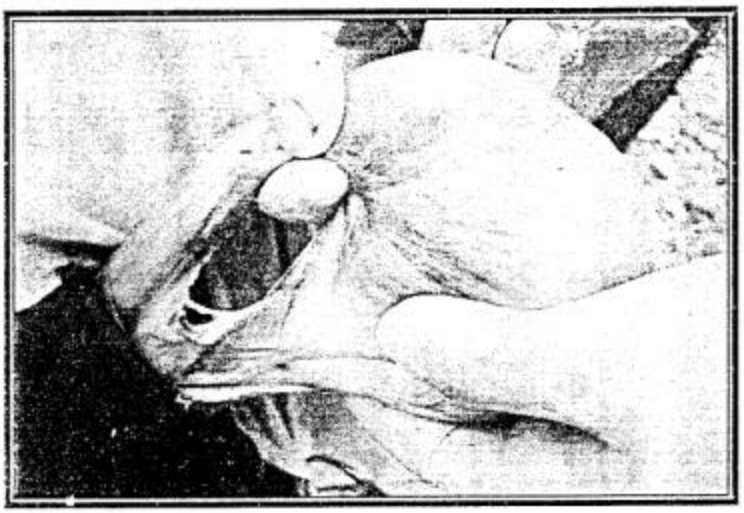

Figure 3 : Shows completeexterorization of the testis from the site of incision .

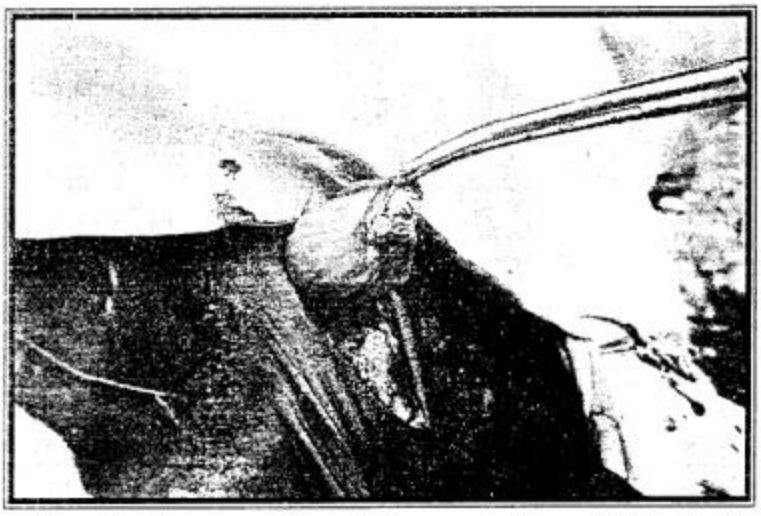

Figure 4 : Shows cutting of the spermatic cord below the ligation.

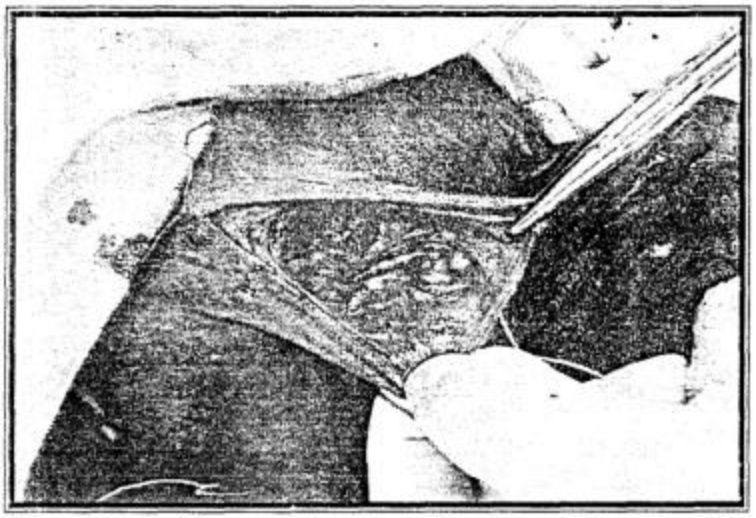

Figure 5 : Shows closure of the scrotal cavity and the area of passage of the spermatic cord by the first row with simple continuos pattern .

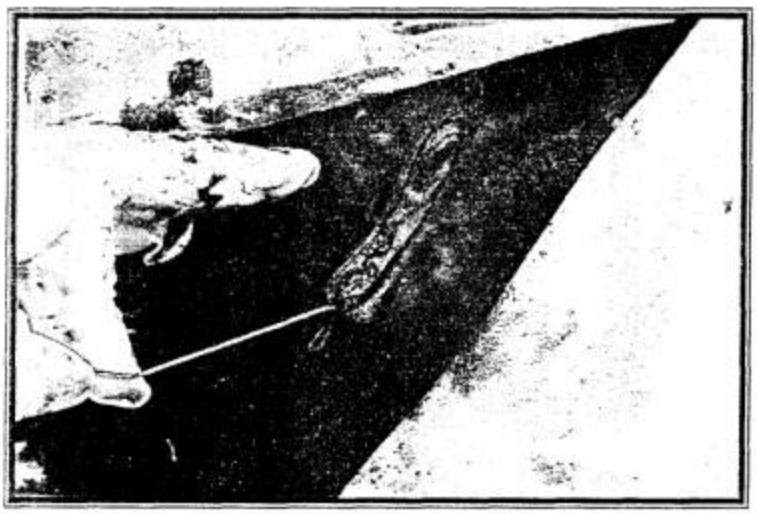

Figure 6 : Shows closure of subcutaneous tissues with the second row, using simple continuos pattern

RESULTS

During the first postoperative day, there was slight effect on movement of animals, but at the second day the animals appeared normal in walking without disturbance in their gait. There was slight swelling at the site of operation and surrounding tissues which had resolved during the next three days after operation. The surgical site appeared clean from discharges. The wound was healed by first intensive within the normal rate time so that the animals returned to work early with minimal postoperative management and early cosmotic outcome. Minimum complications revealed, which includes: slight hemorrhage during operation which controlled after closure of the incision, slight postoperative swelling. Postoperative herination, was not recorded during the monitoring period of the animals. No signs of inflammation of the spermatic cord, hydrocele of the scrotum, and peritonitis on the operated animals.

DISCUSSION

The most common complications associated with equine castration includes postoperative swelling, peritonitis , hydrocele , excessive hemorrhage, herination and funiculitis .The open and closed methods for castration allow for second intention healing of scrotal wounds and associated with many complications (4). While, primary closure of the surgical incision allowed for first intention healing and had minimal complications. This observation agreed with other workers (8 and 9) .

In this study the technique of castration was performed in the area above to the level of the head of epididymis and represented by removal of the testis by closed method that means without opening of tunica vaginalis. In addition to that the closure of the scrotal cavity and spermatic sac, helped to minimize the complications which usually associated with the most methods of castration.

The slight postoperative swelling which resolved within the three days after operation, may be due to slight manipulation of tissue during operation and sutured scrotal cavity to minimize the gap that may be regarded as the main factors to prevent accumulation of fluid in the scrotal cavity. These conditions may permit the animals to early returne to work. The results obtained in this study was in disagreement with other worker (7) who said that, after removal of testicle from the area of the neck of scrotum by open method and suture the site of operation without suturing the scrotal cavity so that the swelling of scrotum and part of prepuce might remain about ten days after operation.

The technique used in this study provided wide exposure for spermatic cord and easily applied ligation at spermatic cord to prevent bleeding. Besides that, closure of the site of operation helped to subside the bleeding from subcutaneous tissue, as compared with other methods of castration.

The peritonitis was the common complication after castration with open methods, which characterized by abdominal pains, pyrexia, diarrhea, weight loss and reluctance to move (1,10 and 11).While (3) said that the extension of infection from the vaginal cavity to the peritoneal cavity is rare because the funicular portion of the vaginal process is collapsed as it courses obliquely throw abdominal wall. In the present observation, we believed that the method of closure which used in this study may be aided to prevent the ascending infection to the abdominal cavity. Also the herination was not recorded in this study during monitor of the animals for the longer time after operation. It should be due to

complete closure of the area. This coincid with other worker (12) who said that the advantage of the closed method that it prevent herniation. While in open methods of castration the herniation of internal organs specially intestine and omentum were recorded (11 13). In our research the method of closure of operation site may be subsided the inflammation of spermatic cord. While other authors (3,10) described that the inflammation of spermatic cord developed as an extension of a scrotal infection or contamination of ligature and emasculature.

In conclusion, the study revealed that this modified closed castration technique allowed the early returne of the animals to their work after operation, and the method of castration accompanied with minimum complications, might be as a result to the obliteration of dead space of scrotal cavity. From the literature review, it become obvious that the study could be considered as a first report for closed method of castration from the site of neck of scrotum, in addition to that the closure of scrotal sac which lead to minimal complications.

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