

# Umbilical hernias among sheep in Dohuk

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## Abstract

Twenty four cases of sheep with umbilical abdominal hernias were registered which brought to Akra Veterinary Hospital and to the Teaching Clinic in College of Veterinary Medicine, Dohuk University, Iraq within six years duration approximately. This study reveals that there was great influence of sex and age of animal on the percentage of umbilical hernia in which females 17(70.83%) were more affected than males 7(29.17%). Lambs less than 6 months old 19(79.17%) were more influenced than lambs more than 6 months old and adults 5(20.83%). The percentage of the congenital cases 16(66.67%) preceded the acquired causes 8(33.33%) and the majority of these hernias were reducible 21(87.5%) while the remainder were irreducible 3(12.5%).

## Introduction

Hernia is defined as the protrusion of an organ or part of an organ or a tissue through a defect in the lining of the cavity within which it is normally enclosed [1]. The hernia is regarded as consisting three portions: a hernial sac formed by skin, subcutaneous tissue, and invaginated peritoneum; hernial contents which usually comprises a loop of bowel or omentum or both or rarely other viscera; a hernial ring or orifice, an opening in the abdominal wall which may be natural or acquired through which hernial contents protrude [2,3]. Umbilical hernias are those that occur through the open umbilical ring which should have closed before birth. They may be congenital or develop shortly after birth and are often considered to be inherited [4,5] or may be acquired due to infection of the umbilical cord which lead to imperfect

closure of the umbilical opening or due to exertion of the abdominal muscles during playing or gamboling or due to external trauma which may cause infection and abscess formation which frequently weaken the tissues of the abdominal wall so that hernia develop [6,7,8,9] or due to paroxysm of coughing and dyspnea [10].

\*The aim of the present study is to show the occurrence of umbilical hernias among sheep in Dohuk because till this time studies at Dohuk area have not been done.

\*This study also investigates the cases related to sex and age factor and the reducibility of hernial contents.

\*In addition to that this study concentrated on interrupted overlapping horizontal mattress suture technique for treatment of these hernias.

## Materials and Methods

During the period of six years approximately (1/december/2002– 20/ June/ 2007), twenty four animals with umbilical hernias were submitted to Akra Veterinary Hospital and the Teaching Clinic in College of Veterinary Medicine, Dohuk University, Iraq. A swelling at the umbilical region was the only sign revealed by inspection of the animals (Fig.1). On palpation of these swellings, hernial rings were discovered. In some cases an abscess noticed

accompanying the hernia as indication for omphalitis. The age and sex of animals, the onset of hernia, and clinical condition of hernial contents (reducible or irreducible) were recorded. If abscess present, it was treated routinely and herniorrhaphy elected till healing of abscess take place. The hernia and the zone about it were prepared for aseptic operation. Umbilical herniorrhaphy was achieved under local infiltration anesthesia using (2%) lidocaine and sedation

by xylazine 2% at a dose of 0.2mg/kg B. W. I.M.A skin incision was created immediately on the hernial sac and the skin was bluntly dissected behind the margins of the hernia, and the sac was opened gently. The hernial contents were gently reversed into the abdominal cavity after eliminating all the adhesions between the contents and sac or ring if present. The invaginated peritoneum was removed (Fig.2) and interrupted overlapping horizontal mattress suture was employed to lock the hernial ring (Fig.3). The subcutaneous tissue was closed by simple continuous technique. Zero or No.1

The occurrence of umbilical hernias among sheep in Dohuk from 2002-2007 are showing in table (1). Table(2) shows the cases of hernias according to the sex of animals. The number & percentage of cases between females and males shows that they were 17(70.83%), 7(29.17%) respectively. Regarding to age, the occurrence of hernias (Table 3), in lambs less than 6 months old were 19(79.17%). While in lambs more than 6 months and adults were 5(20.83%). The occurrence of these hernias according to the time of observation Table(4) shows that 16(66.67%) hernias occurred since or shortly after birth, while 8(33.33%) of them were observed by the owner recently. The occurrence of these hernias according to the reducibility of hernial contents Table(5) shows that 21(87.5%) of these hernias were

This study revealed that umbilical hernias are common in sheep and occur frequently at Dohuk area in contrast with [6,8] when states that umbilical hernias are uncommon in sheep and goats. The majority of umbilical hernias occur due to the inherited causes which contribute in the appearance of these hernias since or shortly after birth [10]. This agrees with the finding of this study. The results of this study also shows that the more influenced ages was less than 6 months 19(79.17%) and this could be referred to the prominence of the inherited

chronic catgut was used as a suture material for closing the hernial rings and subcutaneous tissues, surplus skin flaps was cut off and the skin incision was closed with the interrupted horizontal mattress using silk No.1(Fig.5). Intramuscular injection of penicillin & streptomycin (10000 I.U./kg B.W) and 10mg/kg B. W. respectively were administered to the animals on the day of surgery and then for three consecutive days with daily dressing of skin wounds. The skin sutures were removed at the 8<sup>th</sup> post operative day.

## Results

reducible, while 3(12.5%) of them were irreducible. The hernial contents were composed of intestine and / or omentum. In these hernias, no adhesion was found between the contents and the sac, except in few cases. Perfect closure was gained using overlapping horizontal mattress suture regardless to size & thickness of hernial ring whether it was small or large and whether it was thin or thick respectively (Fig.4). The results of examination of animals illustrated that there is complete healing of hernial ring occurs at the 12<sup>th</sup> postoperative day. This had been confirmed through palpating the ring by fingers as demonstrated that there was no opening in the site of operation or dropping of tissues at the site of hernia and there was consistence of tissue at operation site.

## Discussion

causes which lead to the occurrence of umbilical hernia since or shortly after birth [11, 12, 13]. In this study, minority of cases occurred due to omphalitis which may indicate that omphalitis represents a low proportion among the causes of umbilical hernia and this may not agree with [14, 15] when they mentioned that omphalitis represents a high proportion among the causes of umbilical hernia. The females are more affected by umbilical hernia than males in this study and this is related to that most breeders take care of females and sell or

fatten and slaughter the males early. This result may agree with the research done on animals other than sheep [17]. This matches the findings of this study where the females 17(70.83%) formed the superior rate for affliction with umbilical hernia. The outcome of this study also demonstrate that reducible hernias 21(87.5%) represented the highest percentage in comparison with irreducible ones 3(12.5%), and this high proportion in reducible ones could be attributed to the delay in treatment of these cases because the animal appears healthy which misled the owner and not ask for surgical intervention quickly [16]. On the other hand, irreducible hernias had the less proportion owing to that this condition have an obvious effect on the general appearance of animal, therefore, the breeders prefers slaughtering or selling the animal and avoid dangers and costs of the surgical operation. Overlapping horizontal mattress suture pattern is recommended for closure of large hernial rings because it provides

additional strength at the suture line by overlapping the edges of the ring over each other and avoid postoperative complications like tearing of suture line due to pressure of full abdomen [18]. This explain the good results which obtained in the present study by using this suture pattern. Overlapping horizontal mattress was used successfully in closing thin edged and large hernial rings of umbilical hernias in calves because the healing of these hernias was taking a short period of time because this suture technique makes the muscles of hernial ring edges close over each other which prepare a large area for healing process [19]. For that reason, this suture technique preferred and used for herniorrhaphy in this study not only for thin edged and large hernial rings but also for thick and small ones and the results was good. So it can be concluded that this suture technique can be used successfully for closure of all shapes of hernial ring in umbilical hernias in sheep.

Table (1): the occurrence of umbilical hernia among sheep in Dohuk from 2002-2007.

Year	No. of cases	Percentage
2002	3	12.5 %
2003	3	12.5 %
2004	4	16.67 %
2005	5	20.83 %
2006	5	20.83 %
2007	4	16.67 %

Table (2) : the occurrence of umbilical hernias among sheep according to the sex of animal.

Sex	No. of cases	Percentage
Male	7	29.17%
Female	17	70.83%

Table (3) : the occurrence of umbilical hernias among sheep according to the age of animal.

Age	No. of cases	Percentage
lambs Less than 6 months	19	79.17 %
Lambs More than 6 months and adults	5	20.83%

Table (4) : the occurrence of umbilical hernias among sheep according to the time of observation.

Time of observation	No. of cases	Percentage
Since or shortly after birth	16	66.67 %
Recently observed	8	33.33 %

Table(5): the occurrence of umbilical hernias among sheep according to the reducibility of hernial contents.

Reducibility	No. of cases	Percentage
Reducible	21	87.5%
Irreducible	3	12.5%



Fig.(1) representing a lamb suffering umbilical hernia

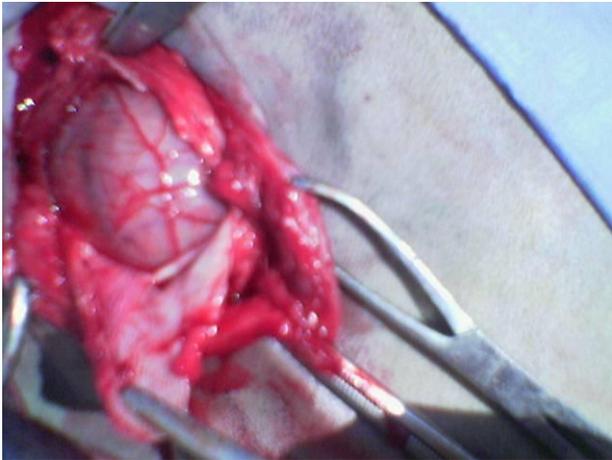


Fig.(2) representing removing the invaginated peritoneum

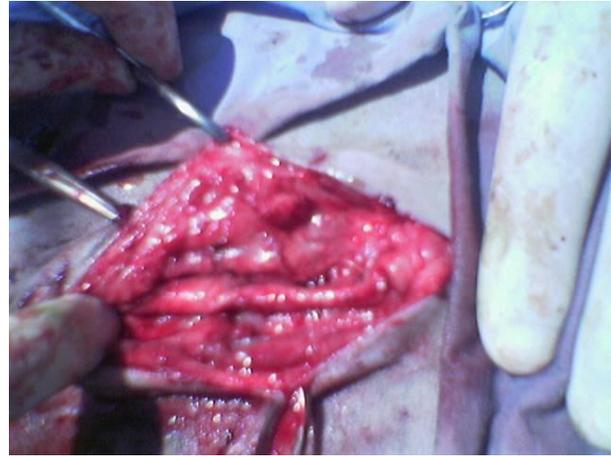


Fig.(3) interrupted overlapping horizontal mattress suture used for closing the hernial ring



(Figure 4) showing the size of hernial ring



Fig.(5) showing the site of hernia after performing the operation

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## الفتوق السرية بين الأغنام في دهوك

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### الخلاصة

تم تسجيل أربعة وعشرين حالة لأغنام مصابة بالفتوق السرية تم جلبها الى المستشفى البيطري في عقرة والعيادة التعليمية لكلية الطب البيطري في جامعة دهوك / العراق خلال فترة ست سنوات تقريبا. كان لجنس الحيوان تأثير كبير على حصول الفتوق السرية حيث كانت الإناث (٧٠.٨٣%) أكثر إصابة من الذكور (٢٩.١٧%). وللعمر تأثير أيضا حيث كانت الحملان التي أعمارها أقل من ستة أشهر (٩٧.١٧%) مصابة بنسبة أكبر من الحملان التي تبلغ أعمارها ستة أشهر وأكثر و الحيوانات البالغة (٢٠.٨٣%). كما أظهرت الدراسة أن نسبة الفتوق الخلفية (٦٦.٦٧%) تتقدم على الفتوق المكتسبة (٣٣.٣٣%) وأن غالبية هذه الفتوق كانت من النوع الرودود (٨٧.٥%) بينما كانت البقية من النوع غير الرودود (١٢.٥%).