

***Cysticercus tenuicollis* VESICLE IN GOAT PREGNANT UTERUS AND FETAL BODY: REPORT OF A CASE**

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Key words: *C. tenuicollis*, chorion-allantoic membrane, pregnant goat.

ABSTRACT

Canine tapeworm *Taenia hydatigena* larval stage is also called *Cysticercus tenuicollis* (*C. tenuicollis*). This cystic stage was reported in domestic and wild ruminants worldwide. It is one of the common parasites of small ruminants in Iraq. The omenta, the mesenteries, and liver are the usual locations of *C. tenuicollis*. This article tends to describe a case report of the uncommon locations of the *T. hydatigena* cysticerci in pregnant goat. In this case, large (7 cm length X 5 cm width) *C. tenuicollis* cyst was found on the body surface of the 4 months pregnant uterus of local goat as well as inside the fetal allantoic cavity (chorion-allantoic membrane). The cyst-like channels with a mass of fibrin and erythrocytes were the most characteristic histopathological lesion THAT observed on the uterine wall. However, slight degeneration changes seen on the fetus and the *C. tenuicollis* vesicle located adjacent to the placentomes. In conclusion, this study approved the deviant situation of *C. tenuicollis* cyst on fetus membranes and over the pregnant uterus surface. These locations explain the probability of larval migrations into the fetal body during pregnancy.

INTRODUCTION

Cysticercus tenuicollis is also called *Cysticercosis*. The tapeworm infection has caused by embryonic stage of *Taenia hydatigena*, the canine alimentary cestode and other untamed canids (1). Withal, omentum, mesentery, peritoneum are the usual locations of the mature *Cysticercus tenuicollis*, while the pleura and pericardium are, the less frequent. These tapeworm larvae are migrating

commonly in the parenchyma of the liver and causing hepatitis in the young animals (2). The most infected cases are chronic and asymptomatic which not commonly recognized until slaughter (3). However, sheep are rarely affected by the acute infection form and the internal organs cysticercosis in lambs are rare (4, 5). Very low mortality reported but the individual death of infected lambs occurred in various countries of Asia content (6, 7).

In Iraq, the incidence of *Cysticercosis (Tenuicollosis)* reported in sheep at Duhok abattoir (north of Iraq) (8). Besides, the number of infection was 31 (0.7%) out of 4716 examined sheep. However, the cysts were absence in both goats and cattle. Mesentery was the common site of the cysts with a percentage (29%) followed by the uterus (16%) with few cases in other visceral organs. Ghaffar, (2011) (8) also recorded the first findings associated with uncommon locations of the cysts in the diaphragm, ovary and urinary bladder in Duhok region. Moreover, the study reported that the only sheep play an insensible role in the dissemination of the infection. In another previous study, on the genital system anomaly, Smithet *al.*, (1999) (9) found the presence of *C. tenuicollis* on the body of the uterus and the large ligament of the ewes. Review of the literature revealed a paucity information regarding *C. tenuicollis* cyst deviant situation in the goat. Features of attached *C. tenuicollis* cyst on surface on the pregnant uterine body of a goat and the fetal body is described for the first time in Iraq in this study.

CASE REPORT

In Al Muthanna abattoir and during the routine examination of four slaughtered a pregnant goat, attached *C. tenuicollis* cyst found on the surface of the body of the uterus. Later on, this pregnant uterus collected from the abattoir and examined. The *C. tenuicollis* cyst also found on the allantoic cavity, neighboring to the amniotic membrane. The owner of this goat was a butcher who bought it from local livestock in Al Muthanna governorate, where the animals were grazed on the field pastures. The goats and dogs supplied with anti-parasitic drug according to the request of the owner. The uterus and fetal membranes samples were

collected from affected area. The samples were preserved in (10%) neutral buffered formalin. The tissue samples were processed routinely and 3-5- μ m thick sections were done and stained with routine haematoxylin and eosin staining. The other closer gross examination of the animal revealed numerous small cysticerci cyst (ranged between 2-4 cm in diameter) in the peritoneum. The uterus was enlarged and distended and its horn consistent with a four months fetus. A 7 X 5 cm *C. tenuicollis* vesicle was attached to the surface of the uterine body. After dissection of the uterine wall, the fetal and fetal membranes reached. A parasitic cyst was seen inside the fetus allantoic (Figure. 1 & 2). The cystic structure revealed a colorless fluid surrounded with a tiny membrane. Moreover, the anterior end of a tapeworm that bearing suckers and hooks for attachment, indignant vertically. The cyst back features enabled its identification as *C. tenuicollis*. No signs of union was seen between the cover of *C. tenuicollis* cysts and fetus sheath, which located in parallel to amnions. The examination of uterine wall lesions by microscopic revealed cyst-like channels with a mass of fibrin and erythrocytes. The Uterine cells mostly degenerated areas. Microscopic lesions of inflammation were not visible inside the fetus, and the *C. tenuicollis* vesicle located adjacent to the placentomes with slight degeneration of the epithelia and the uterine wall.



Figure. 1. Shows the *C. tenuicollis* vesicle on the surface of the body of the gravid Uterus.

Figure.2. Shows *C. tenuicollis* vesicle is located adjacent to the placentomes.

DISCUSSION

In this case report, the uncommon location of *C. tenuicollis* cyst on wall of uterus body and inside the pregnant uterus revealed that the possibility of blood supply to transfer the parasite oncosphere to the uterus. This result is compatible with the previous observation that mentioned the possibility of the migration of the parasite oncosphere via the tiny capillaries of the cotyledonal area, via the placental wall approaching the allantoic membrane vascular network, and then reaching the allantoic cavity (10, 11, 12). The histopathological changes that observed on the attachment site of the *C. tenuicollis* vesicle revealed a mass of fibrin, erythrocytes and degeneration of the uterine. Previous studies explain the existence of cestode oncospheres and cysticerci that can escape the immunological reaction of the host, by using a passive fleemechanism or via modulation of the immune response that called immunomodulation (13, 14, 15). The viable cysticerci of other cestode wrapped up by mild inflammatory cells that serve to kill the parasite (16, 17). The existence of cysticercus on placenta enables its smooth crossing from host immunemechanisms. Moreover, in the gravidity, an advancement in the osmolality and electrolyte concentrations of the allantoic fluid is also seen

(18) and the contents of the allantoic fluid which are water and solutes may play a role in the growth of this cysticercus. The previous studies revealed the existence of live and degenerative cysts on all parts of genital system of the infected ewes (17, 19). Deviant location of *C. tenuicollis* cyst was documented for the first time in Iraq in pregnant the goat in the present study. Seemingly, *C. tenuicollis* existence was not harming the normal growth of the unborn young that owned this cysticercus cyst. In addition, *C. tenuicollis* cyst existence backward to the wall of placenta might activate the possibility of crossing and reach of oncosphere into mature embryo in gravid ewes. In conclusion, this study approved the aberrant location of *C. tenuicollis* cyst on the fetus membranes and on the surface of the pregnant uterus of the goat. These locations explain the probability of larval migrations and reaching the fetal body during pregnancy.

الخلاصة

يسمى الطور اليرقي للدودة الشريطية المعدرة (الشريطية الهامشية) للكلاب، بالكيسة المذنبة الرقيقة العنق. وعالمياً، تم تسجيل هذا الطور اليرقي الكيسي في المجترات الداجنة والبرية. وقد اعتبرت واحدة من الطفيليات الشائعة بالمتجرات الصغيرة في العراق. ويعتبر الثرب، الكبد والمساريق المواقع الشائعة للكيسة المذنبة الرقيقة العنق. تهدف هذه المقالة إلى وصف حالة تواجد غير عادية للكيسة المذنبة الرقيقة العنق في رحم معزة حامل. وقد تم العثور على الكيسة المذنبة الرقيقة العنق وبحجم يصل إلى (7 سم طول X 5 سم عرض) على سطح جسم رحم المعزة المحلية الحامل لمدة أربعة أشهر تقريباً وكذلك داخل جوف السقائي المشيمائي. أهم الآفات التشريحية المرضية الأكثر وضوحاً في جدار الرحم هي القنوات الشبيهة بالكييس مع كتلة من الفيرين والكريات الدموية الحمراء. ورغم ذلك فقد تم ملاحظة التغيرات التنكسية الطفيفة على الجنين ووجدت الكيسة المذنبة الرقيقة العنق بصورة متاخمة للمشام. في الخلاصة، اثبتت هذه الدراسة الموقع الشاذ للكيسة المذنبة الرقيقة العنق داخل الأغشية الجنينية وعلى سطح الرحم الحامل. هذا التواجد يثبت احتمالية هجرة الطور اليرقي في داخل هيكل الجنين أثناء الحمل.

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