

Double spleen in Baladi goat in Beni-Suef governorate –Egypt: case report

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Abstract

The report of the occurrence of accessory spleen in domestic animals is rare in the literatures. We report a case of an accessory spleen in Baladi goat. Accessory spleen was present near the cranial groove of the rumen on the ventral ruminal sac. It was supplied by accessory splenic artery which originated from the splenic artery after giving off the epiploic branch.

Keywords: Accessory spleen; Accessory splenic artery; Baladi goat

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الطحال المزدوج في الماعز البلدي في مدينة بني سويف – مصر: تقرير حالة

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الخلاصة

وجود الطحال الاضافى في الحيوانات المستأنسة نادر الحدوث. لقد تم إيجاد حالة بها طحال اضافى في الماعز البلدي. هذا الطحال الاضافى وجد قريبا من الأخدود الامامى للكرش على الكيس الكرشى البطنى وتم تغذيته بالشريان الطحالي الاضافى الذي نشأ من الشريان الطحالي بعد إعطاء الأخير الفرع الثرى.

Introduction

The spleen is the largest lymphoid organ in the body and it is situated in the left hypogastric region. Congenital anomalies of the spleen are generally occur infrequently in animals, and include splenomata, duplications, absence of the spleen (alienia), multiple small spleens, displacements (ectopia), and the presence of one or more accessory spleens (1). Accessory spleens are regarded as the most common of the splenic anomalies in domestic animals (2). There are many reports on the incidence of the accessory spleen in pigs (3), rabbits (1,4), mice (5), Chinese hamster (6) and in human (7).

Case details

During the dissection of 30 ethically approval healthy Baladi goats of different ages and both sexes which were

collected from the faculty farm and from several farms at Beni-Suef Governorate to detect the arterial supply of the gastrointestinal at Anatomy and Embryology Department, Faculty of Veterinary Medicine, Beni Suef University, Egypt. Goats were used immediately after slaughtering. Thorough washing was done with normal saline solution via the thoracic part of the aorta. Then gum milk latex colored red with carmine was injected via the thoracic aorta just prior to its passage through the hiatus aorticus of the diaphragm. A longitudinal incision was made in the midventral line of the abdominal wall starting from the xiphoid cartilage of the sternum till the anus. There was a case with an anatomical variation was observed. There was an accessory spleen which situated on the ventral ruminal sac near the cranial groove of the rumen. It was somewhat smaller than the main spleen (Table 1) and was supplied by accessory splenic artery

which arose from the splenic artery after giving off the epiploic branch (Fig. 1). While the rest of the cases were normal having a single spleen which was layed between the dorsal ruminal sac and abdominal wall and was supplied by the splenic artery which arose from the celiac artery (Fig. 2).

Table 1: A table showing the measurements of normal and accessory spleens of Baladi goat

Measurements	Normal spleen	Accessory spleen
Length (cm)	9.65±0.15	8.7
Width (cm)	7.5±0.85	7
Thickness (cm)	2.4±0.29	1.9

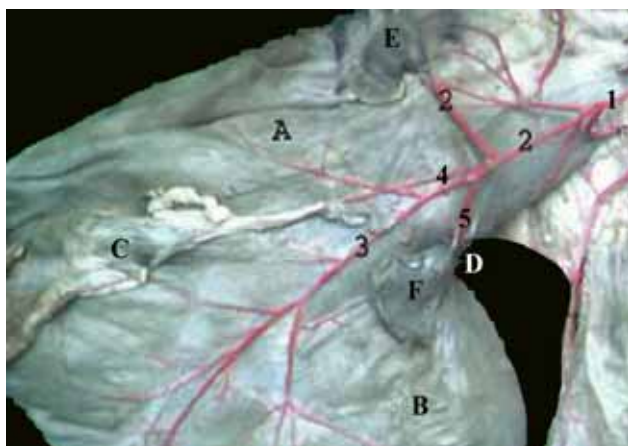


Figure 1: A photograph showing accessory spleen and accessory splenic artery of Baladi goat (Left side except the rumen turned to show its right side). 1: Celiac artery, 2: Splenic artery, 3: Right ruminal artery, 4: Epiploic branch, 5; Accessory splenic artery, A: Dorsal ruminal sac, B: Ventral ruminal sac, C: Greater omentum, D: Cranial ruminal groove, E: Spleen, F: Accessory spleen.

Discussion

The report mentioned that the accessory spleen was located near the cranial ruminal groove on the ventral ruminal sac. While, Fox *et al.* (1) in rabbit mentioned that accessory spleens are present adjacent to the splenic hilus, the gastrosplenic ligament and the tail of the pancreas. However, Isegawa *et al.* (8) in golden hamsters and Yoon *et al.* (6) in Chinese hamsters stated that the accessory spleens are embedded in the adipose tissues near the tail of the pancreas. While, the accessory spleen is located cranial, adjacent and caudal to the spleen in the chicken (9). However, Jubb *et al.* (10) in domestic animals stated that more accessory spleens are present on the omentum with a few on the peritoneum.

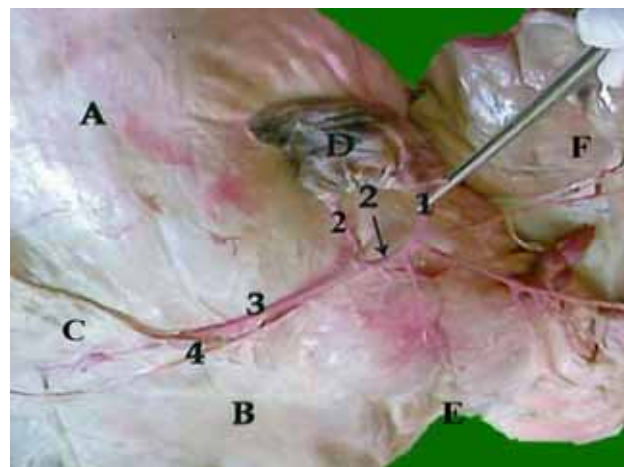


Figure 2: A photograph showing the spleen and splenic artery of Baladi goat (Left side except the rumen turned to show its right side). 1: Celiac artery, 2: Splenic artery, 3: Right ruminal artery 4: Epiploic branch., A: Dorsal ruminal sac, B: Ventral ruminal sac, C: Cranial ruminal groove, D: Spleen.

Settle (11) in human mentioned that the accessory spleen is an anomaly which is due to development abnormalities in the embryo. Moreover, Harris *et al.* (12) mentioned that the ectopic splenic tissue could be divided into two categories; splenosis due to autoplantation of splenic tissue, usually after splenectomy and accessory spleen which was described as a congenital duplication of splenic tissue in an ectopic location.

In the present report, the accessory spleen in one case Baladi goat. The same result was detected in some cases in Chinese hamsters (6), golden hamsters (8), rabbits (1) in New Hampshires pigs (3) and in humans (7).

The present study and Yoon *et al.* (6) in Chinese hamsters stated that the accessory spleen was morphological similar to the spleen. While, Jubb *et al.* (10) in domestic animals reported that the accessory spleens appear grossly like hemal lymph nodes.

The current study showed that an accessory splenic artery arose from the splenic artery after giving off the epiploic branch to supply the accessory spleen. While Padmalatha *et al.* (13) in human reported that the accessory splenic artery arises from the left gastroepiploic artery.

Conclusion

Knowledge of an accessory spleen and variations of splenic artery is of extreme clinical importance for surgeons and radiologists.

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