

## ARTERIAL SUPPLY OF THE PERINEUM OF BLACK BENGAL DOE

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### ABSTRACT

The present study was conducted to make topographic descriptions and illustrations of the arterial supply of the perineum of 12 Black Bengal does during the period from July to December 2004 in the Department of Anatomy and Histology, Faculty of Veterinary Science, Bangladesh Agricultural University, Mymensingh. The animals were anaesthetized with pentobarbital sodium @ 20 mg / kg body weight IM and bled to death by giving incision on the right common carotid artery. Whole vascular system was flushed with 0.85% physiological saline solution and then 10% formalin was injected through the same route for well preservation. After preservation, the animals were injected with latex coloured with red carmine again through the right common carotid artery. Then the animals were dissected to study the arterial supply of the perineum of Black Bengal doe. The study revealed that the perineum was supplied by the urogenital and internal pudendal arteries. The urogenital artery was originated from the internal iliac artery near the ischiatic spine and after a short course to the lateral surface of the vagina it was divided into cranial and caudal branches. The cranial branch after supplying branch of the urethra, urinary bladder and ureter anastomosed with the uterine artery. The caudal branch coursed along the dorsolateral surface of the vagina and gave branches of the rectum, anus, vagina, vestibule, vestibular gland, vulva and a branch to the mammary gland. The internal pudendal artery was the termination of the internal iliac artery which after giving muscular branches to the levator ani, and coccygeus muscles coursed lateral to these muscles and gave vestibular branches and finally continued on the ventral aspect of clitoris.

**Key words:** Black Bengal doe, perineum, arteries

### INTRODUCTION

Black Bengal goat is the only recognized breed among the domestic species available throughout Bangladesh. The goats are known to be famous for their adaptability, prolificacy, delicacy of meat and superior skin quality. They have tremendous demand all over the world due to production of extra ordinary quality meat and skin (Islam *et al.*, 1991; Singh *et al.*, 1991a; Singh *et al.*, 1991b).

There are different body regions in Black Bengal doe. Perineum is such a clinically important region as it provides base of the tail, anus, external genitalia and caudal attachment of udder. Several common surgical and obstetrical problems such as vaginal and uterine prolapse, atresia ani et recti, perineal laceration, rupture of vulva, sinus and fistula affect this region. Though there have some research reports on perineum in cow (Habel, 1966), ewe (Bassett, 1965), mare (Habel, 1953) and bull and ram (Larson and Kitchell, 1958), no comprehensive study has yet been undertaken in Black Bengal doe of Bangladesh. Therefore, the present study has been carried out to study the topographic descriptions and illustrations of the arteries of the perineum of Black Bengal doe.

### MATERIALS AND METHODS

The study was conducted on 12 Black Bengal does (*Capra hircus*) at the Department of Anatomy and Histology, Faculty of Veterinary Science, Bangladesh Agricultural University, Mymensingh during the period from July to December 2004. The does were purchased from a local market near Bangladesh Agricultural University, Mymensingh. All the does were adult and apparently healthy and devoid of any external abnormalities. The does were anaesthetized with pentobarbital sodium @ 20 mg / kg body weight IM. All the does were bled to death by giving incision on the right common carotid artery. Whole the vascular system was flushed with 0.85% physiological saline solution and injected with 10% formalin for well preservation following the same route. After fixation, latex coloured with red carmine was injected again through the same route to study the arterial supply of the perineum of Black Bengal doe. Careful dissection was made with the help of scalpel, scissors and forceps. Magnifying glass was used for tracing the finer branches of the artery. Photographs and drawings were made during the course of dissection.

## RESULTS AND DISCUSSION

The present study revealed that the perineum was supplied by the internal iliac arteries (right and left). The first branch of the internal iliac artery was the common trunk of the uterine and umbilical arteries (Fig. 1a). This observation was similar with the report of Habel (1966) in cow. After giving off the iliolumbar and cranial gluteal arteries, it coursed along the medial side of the sacrotuberal ligament. Near the ischiatic spine, the urogenital artery was originated and after a short course to the lateral surface of the vagina the urogenital artery divided into cranial and caudal branches. The cranial branch after supplying branches to the urethra, urinary bladder and ureter, anastomosed with the uterine artery (Fig. 2b). This observation is in agreement with the report of Magilton and Getty (1969). The caudal branch coursed along the dorsolateral surface of the vagina, giving branches to the vagina and rectum. It passed medial to the dorsal end of the major vestibular gland and gave off a branch to the gland (Fig. 2a). A small branch ran dorsally on the deep surface of the retractor clitoridis and the caudal branch crossed the medial surface of the muscle. After giving branch to the vestibule, it ended by dividing into the caudal rectal and dorsal perineal arteries (Fig. 2a). This observation is similar to the report of Habel (1966). The caudal rectal artery supplied the dorsal part of the sphincter ani externus and the terminal part of the rectum. The dorsal perineal artery supplied the ventral part of sphincter ani externus, labia, vulva, the skin in the perineal region and the branch to the mammary gland. This observation corresponds to the report of Habel (1966) in cow.

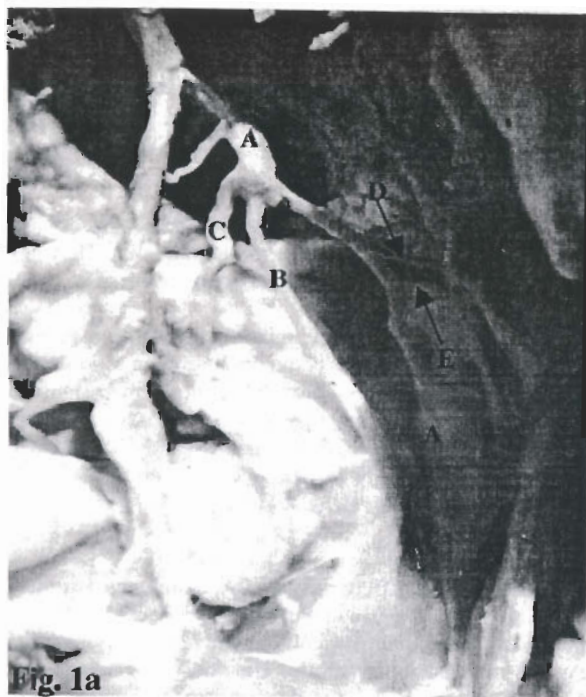


Fig. 1 (a-b). Dissection showing the arterial supply of the perineum of Black Bengal doe

- 1a. A: Internal iliac artery, B: Umbilical artery, C: Uterine artery, D: Iliolumbar artery and E: Cranial gluteal artery.  
 1b. A: Urogenital artery, B: Internal pudendal artery, C: Caudal gluteal artery, D: Cranial branch of urogenital artery, E: Caudal branch of urogenital artery and I: Internal iliac artery.

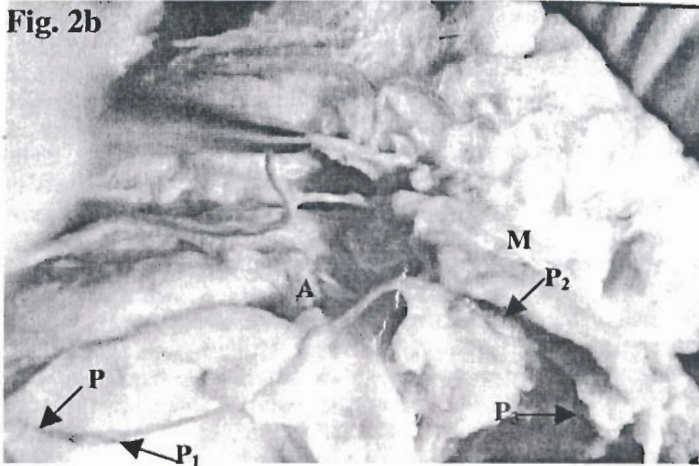
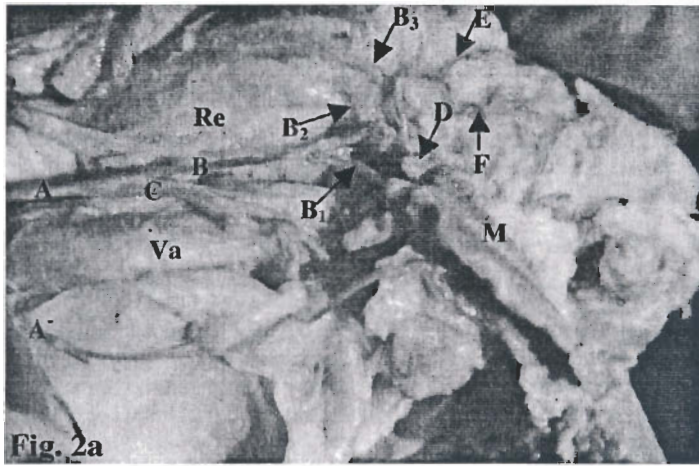


Fig. 2 (a-b). Arterial supply of the perineum of Black Bengal doe

- 2a. A: Urogenital artery. A': Internal pudendal artery, B: Caudal branch of urogenital artery, C: Cranial branch of urogenital artery, D: Branch to the major vestibular gland, E: Caudal rectal artery, F: Dorsal perineal artery M: Major vestibular gland, B<sub>1</sub>: Branch to the vestibule, B<sub>2</sub>: Branch to the rectum, B<sub>3</sub>: Branch on the deep surface of retractor clitoridis, Re: Rectum and Va: Vagina.
- 2b. A: Branch for anastomosis with the uterine artery P: Internal pudendal artery, P<sub>1</sub>: Muscular branches to the M. levator ani and M. coccygeus, P<sub>2</sub>: Vestibular branches, P<sub>3</sub>: Deep artery of clitoris and M: Major vestibular gland.

The internal pudendal artery was the termination of internal iliac artery after giving the caudal gluteal artery (Fig. 1b). The internal pudendal artery gave muscular branches to the levator ani and coccygeus muscles and then coursed caudally on the lateral surface of these muscles. After a short course, it gave vestibular branches and continued on the ventral aspect of the crus clitoridis giving the deep artery of the clitoris to the crus and ended as the dorsal artery of the clitoris (Fig. 2b). This observation is similar with the report of Habel (1966) in cow but differed from Magilton and Getty (1969) who reported as it ended as the ventral perineal artery in goat.

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