



## **Gross Anatomical Study on the Pelvic girdle of Domestic Duck (*Anas platyrhynchos domesticus*)**

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### **ABSTRACT**

In present study, one pelvic girdle was utilized. Pelvic girdle was composed of two hip bones. Each hip bone consisted of ilium, ischium and pubis. Ilium was elongated bone and attached with the synsacrum. Ilium was divided into pre acetabular and post acetabular part. Pre acetabular part was dorsally concave and contained cranial and caudal iliac crest. Internal surface of ilium contained renal fossa. Ilium and ischium form acetabulum. Acetabulum had articular area and perforation. Caudodorsal aspect of the acetabulum antitrochanter was situated. Obturator foramen was found caudal to the acetabulum. The size of the obturator foramen was smaller than the acetabulum. Caudal to the antitrochanter an elongated oval ilioischial foramen was found. Ischium was plate like bone and it contained one pair of caudal process. Pubis was thin rod like bone and there was no symphysis between the pubic bone. Cranially pubis contained pectinal process and caudally it was curved. Between the dorsal border of pubis and ventral border of ischium incisura puboischial was observed.

**Keywords:** Gross, Anatomy, Pelvic, Girdle, Domestic, Duck

Now a days poultry industry is the fastest growing industry in India. The major contribution towards the poultry meat is accomplished by broiler birds and for layer birds like Rhode Island red, White leg horn etc. These are the high yielding variety of birds. Duck is also one of the most important species in poultry industry and intensifying farming. Duck may further contribute to growth of the poultry. Assam possesses the population with about 8.4 million (Basic Animal Husbandry Statistics, 2014). As such Assam is one of the major duck rearing state in India. Assam, one of the states in the North East and it possess second position in the Indian population (Islam *et al.* 2007). Pelvic girdle is large size bone which supports and walking of the duck. Since there is very scanty literature on the detailed anatomy of pelvic girdle of domestic duck of Assam. Hence,

the present investigation was undertaken to establish gross anatomical norms on the pelvic girdle of domestic ducks of Assam

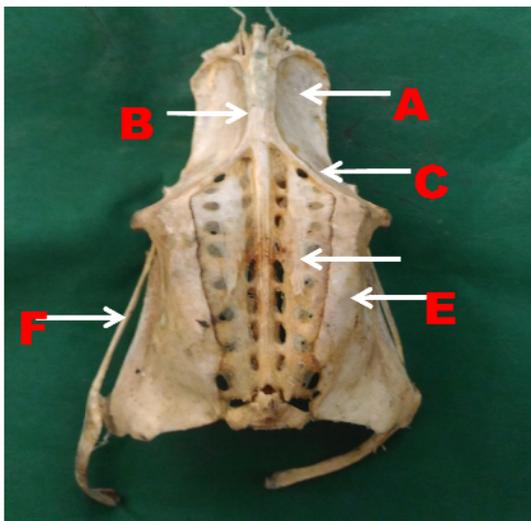
### **MATERIALS AND METHODS**

The present study was conducted on the pelvic girdle of a domestic duck (*Anas platyrhynchos domesticus*) of Assam. After slaughter, the skeleton of the duck was processed as per the method of Young (1980). Then the pelvic girdle was removed and gross anatomical studies were made on it.

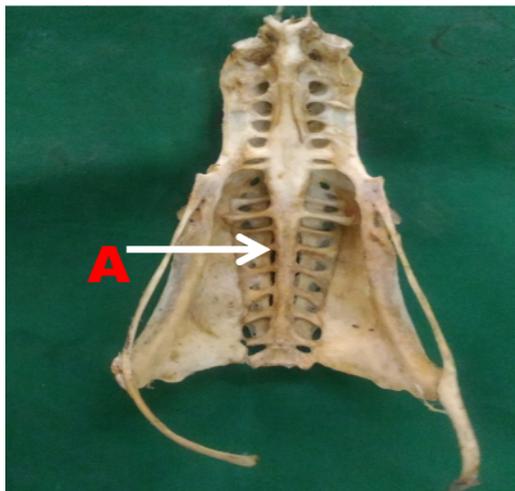
### **RESULTS AND DISCUSSION**

In current study, one pelvic girdle of domestic duck was utilized. Pelvic girdle was composed of two hip bones. Each hip bone consisted of

ileum, ischium and pubis. The pelvic girdle of domestic duck of Assam forms the solid connection between the pelvis and vertebral column. Ilium was elongated bone and attached with the synsacrum. Similar finding was reported by Raghavan and Kachroo (1964) in fowl. Ilium was divided into pre acetabular and post acetabular part (Fig. 1).

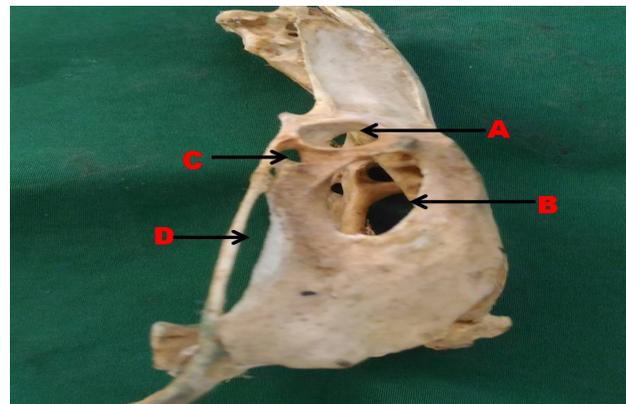


**Fig. 1:** Photograph showing the pre acetabular part (A), cranial iliac crest (B), Caudal iliac crest (C), Synsacrum (D), Ischium (E) and Pubis (F) of domestic duck (*Anas platyrhynchos domesticus*) of Assam

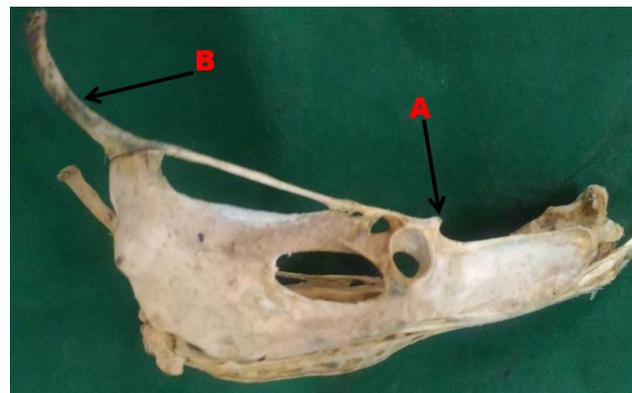


**Fig. 2:** Photograph showing the fossa renalis of pelvic girdle of domestic duck (*Anas platyrhynchos domesticus*) of Assam

These finding was in agreement with the finding of Nickel *et al.* (1977) and Venkatesan *et al.* (2008) in Emu. Pre acetabular part was dorsally concave and contained cranial and caudal iliac crest. The ventral surface of ileum contained fossa renalis (Fig. 2). Similar observation was reported by Sathyamoorthy *et al.* (2012) in Spot-Billed Pelicans.



**Fig. 3:** Photograph showing the acetabulum (A), obturator foramen (C), ilioischiatric foramen (B) and incisura puboischiadica (D) of pelvic girdle of domestic duck (*Anas platyrhynchos domesticus*) of Assam



**Fig. 4:** Photograph showing the pectinal process and curved pubis bone of domestic duck (*Anas platyrhynchos domesticus*) of Assam

The acetabulum was formed by Ilium and ischium. Acetabulum had articular area and perforation. These finding was corroborated with the finding of Getty (1975) in chicken. Caudodorsal aspect of the acetabulum



antitrochanter was located. These finding was in accordance with the finding of Nickel *et al.* (1977) in Fowl. Obturator foramen was found caudal to the acetabulum (Fig. 3).

The size of the obturator foramen was smaller than the acetabulum. Caudal to the antitrochanter an elongated oval ilioischiatic foramen was found. The size of ilioischiatic foramen is much larger than the obturator foramen. Similar finding was reported by King and McLelland (1975) in Fowl. Ischium was plate like bone and it contained one pair of caudal process. Pubis was thin rod like bone and there was no symphysis between the pubic bone. These finding was corroborated with the finding of Nickel *et al.* (1977) in fowl. Cranially pubis contained pectinal process and caudally it was curved (Fig. 4). These finding was in agreement with the finding of Venkatesan *et al.* (2008) in Emu. Between the dorsal border of pubis and ventral border of ischium incisura puboischiadica was observed. Similar observation was reported by Nickel *et al.* (1977) in goose.

#### **SUMMARY AND CONCLUSION**

The pelvic girdle of domestic duck of Assam was composed of two hip bones. Each hip bone composed of ilium, ischium and pubis. Ilium was elongated bone and attached with the synsacrum. The acetabulum was formed by Ilium and ischium. Obturator foramen was found caudal to the acetabulum. Ischium was plate like bone and it contained one pair of caudal process. Pubis was thin rod like bone and there was no symphysis between the pubic bone. These studies will be helpful to poultry scientist for effective production and disease control regime.

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