

## 18. STUDIES ON THE DEVELOPMENT OF FOETAL TESTES

W.S.N. JAYASEKERA, V.K. GUNAWARDANA, V.Y. KURUWITA\*  
AND M.A. NAVARATNE

*Department of Veterinary Pre-Clinical Studies and \*Department of  
Veterinary Clinical Studies  
Faculty of Veterinary Medicine & Animal Science,  
University of Peradeniya.*

Although knowledge on embryonic development is important in understanding the pathogenesis of abnormal conditions such as intersexuality, information on prenatal development of gonads in the goat is limited. The present study investigates the histogenesis of foetal testes in goats using abattoir specimens. Foetuses collected from pregnant uteri were dissected free of foetal membranes, and their crown-rump lengths (CRLs) measured. Depending on size, the gonad or the entire foetus was fixed in Bouin's fluid and sections were stained with haematoxylin and eosin. Following microscopic examination eight embryos were selected for study. Of these two were in the pre-differentiation stage (CRL - 3.2 to 3.5 cm) and six were male. One male foetus, 8 cm CRL was in the early differentiation stage of gonadal development. Five foetuses ranging in size from 8.5 to 37 cm CRL were in the late differentiation stage.

The pre-differentiation gonad consisted of aggregates of mesenchymal cells covered by a simple cuboidal epithelium. A few primordial germ cells (PGCs) were present. In the pig, dog and cattle PGCs are reported to appear by day 18, 21 and 26 respectively. The gestational age of the present material was unknown, but according to available reports CRL of 3.5 would be around 39 days. From the limited material examined in the early differentiation stage it appears that the development of tunica albuginea preceded the development of seminiferous cords. The latter showed peripherally located small cells and centrally located large cells. These would correspond to supporting cells and PGCs respectively. It was of interest to note that Leydig cells were evident in the interstitium in the early differentiation stage and these were closely associated with blood vessels. An area in the centre of the gonad devoid of seminiferous cords was considered to be the mediastinum. Testes in late differentiation showed an increase in the thickness of the tunica albuginea, and with increase in CRL the seminiferous cords were developed further. Testes from embryos of CRL 21.5-37 had highly tortuous seminiferous cords with the mediastinal ends luminized.