

RESEARCH PAPER

Pathological studies of pituitary gland in buffaloes

S.B. SALUNKE, G.B. KULKARNI AND G.R. GANGANE

Accepted : November, 2008

ABSTRACT

The study was conducted on the gross and microscopic alteration in the pituitary gland of buffaloes. For investigation, total 300 pituitary of slaughtered buffaloes were collected randomly from MKR Frozen Food Export Pvt. Ltd., Nanded. The gross lesions observed in the pituitary glands were cysts, fibroproliferative lesions and hypertrophy. Most commonest gross lesion observed during study was cysts. 74 out of 300 examined glands were with having varying sized cysts and 13 glands showed presence of fibroproliferative lesions and hypertrophy in 4 glands. Histologically alterations noted in the pituitary glands were cysts (39.3 %), degenerative changes (4.3%), fatty change in pars distalis (0.7%), demyelination in pars nervosa (0.7%), necrosis (1.0%), vascular changes (7.0%), fibroproliferation in pars distalis and pars intermedia (5.0%), inflammatory cell infiltration in pars distalis (2.3%), inflammatory infiltration in pars nervosa (2.0%), acidophilic hyperplasia (7.0%), basophilic hyperplasia (5.0%) and hyperplasia in pars intermedia (1.0%). On histochemical studies, PAS (periodic acid and schiff) positive material was noted in cysts of pituitary glands of buffaloes.

See end of the article for authors' affiliations

Correspondence to :

S.B. SALUNKE

Department of Veterinary
Pathology, College of Veterinary
and Animal Science,
PARBHANI (M.S.) INDIA

Key words : Pituitary, Buffalo, Pathology, Cysts, Hyperplasia, Gland.

Pituitary is the one of the most important endocrine glands in the body, which controls the activities of most of the other glands and is called 'the conductor of endocrine orchestra'. Anterior pituitary does not act directly on tissue cell in most cases. It acts by inhibiting action of the target organ on the anterior pituitary by hormones or by the 'releasing factor' in the hypothalamus and produces corresponding hormones. This is called as a 'feed back mechanism or servomechanism'. The overall physiologic effect of pituitary hormone is to increase metabolism of protein, carbohydrates and fats and growth of the body by increasing cell permeability to amino acids. It acts as antagonistic to insulin and also controls the reproduction, parturition, lactation and homeostasis of the body. Thus, any change in the function of pituitary gland brings about series of changes in the structure and chemical composition at their cellular level. Therefore, impairment of pituitary leads to numerous problems. The proper functioning of pituitary is considered as vital for proper growth, production, reproduction and other important processes of the body. Therefore, the present study was undertaken to study the incidence of spontaneous lesions, to note gross and microscopic changes and to record histochemical changes in the pituitary gland of buffaloes.

Sciences, Parbhani during 2003-04. The pituitary glands of buffaloes aging 5 to 11 years were collected from MKR Frozen Food Export Pvt. Ltd., Nanded. During the period of observation, a total of 2200 buffalo caresses were examined. From these, 300 pituitaries were collected randomly on gross observation. These glands were brought to the laboratory and examined grossly. The collected glands were incised and gross lesions, if any were recorded. Further, the tissue pieces from these glands were fixed in 10% neutral buffered formaline (pH 7). Tissues fixed in neutral buffered formaline were cut into pieces of small thickness and were processed routinely by paraffin (60°C with Ceresin, Quligens) embedding method and the blocks were prepared. Paraffin sections were cut at 3-5 µm and stained by conventional procedures using haematoxylin and eosin (H and E) stains (Culling, 1974). For histochemical studies, tissues were fixed in 10% neutral buffered formaline. The tissue pieces were processed routinely by paraffin (60°C with Ceresin, Quligens) embedding method and paraffin embedded sections of 3-5 µm thickness were obtained. Wherever necessary special staining method PAS (periodic acid and schiff) for demonstration of neutral polysaccharides were carried out (Singh and Sulochana, 1997).

MATERIALS AND METHODS

The present study was carried out at Department of Veterinary Pathology, College of Veterinary and Animal

RESULTS AND DISCUSSION

Gross pathology:

Outs of 300 pituitary gland examined, 75 glands were