



Short Case Report

Morphological features of various White Blood Cells of 02 years Castrated non-descriptive Cattle of Odisha, India

Ipsita Dash

State Forensic Science Laboratory, Bhubaneswar, Odisha, India
ipsita.dash990@gmail.com

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Abstract

The present study was designed to investigate different types of WBCs in a 02 years castrated Non-Descriptive (ND) cattle as there is no previous report on morphology of white blood cells of 02 years castrated ND cattle of Odisha, India. Various types of WBCs were observed in this study namely lymphocytes, monocytes, neutrophils, eosinophils and basophil.

Keywords: WBC, Lymphocyte, Monocyte, Neutrophil, Eosinophil, Basophil.

Introduction

The objective of the present study was to study different types of WBCs in one 02 years castrated Non-Descriptive (ND) cattle. For cellular function recently morphology of cells has been indicated as a powerful indicator¹. As there was no previous report on morphological features of WBCs of castrated 02 years Non-Descriptive (ND) cattle of Odisha, an attempt has been taken to undertake this particular study. For easy handling as well as to reduce aggressive and sexual behaviour in some production systems during the finishing phase growing calves are castrated. Due to castration due to change in hormonal status growth rate and body composition in cattle is altered². To quantify morphology of cell it is fundamental to the statistical study of cell populations, and can help unravel mechanisms underlying cell and tissue morphogenesis³. Morphological features of various white blood cells of 05 Months castrated Non-Descriptive Cattle of Odisha was studied earlier⁴.

Materials and Methods

Blood sample was collected from jugular vein of one 02 years castrated Non-Descriptive (ND) cattle and blood smear was prepared on a grease-free microscopic slide, then air dried, fixation was done by methanol and staining was done by Giemsa stain for morphological study under a microscope under 40X objective and photographs of WBCs were taken and morphology were observed.

Results and Discussion

The lymphocytes observed were small (Figure-1a & 1b) and large lymphocytes (Figure-1c) having circular and elliptical in shaped respectively. The monocyte observed was kidney shaped (Figure-1d). Various types of neutrophils were observed in this study, i.e., Four lobed neutrophils (Figure-1e & 1f), multilobed neutrophils (Figure-1: g, h, i, j, k, l, m, n, o, p, q, r & s),

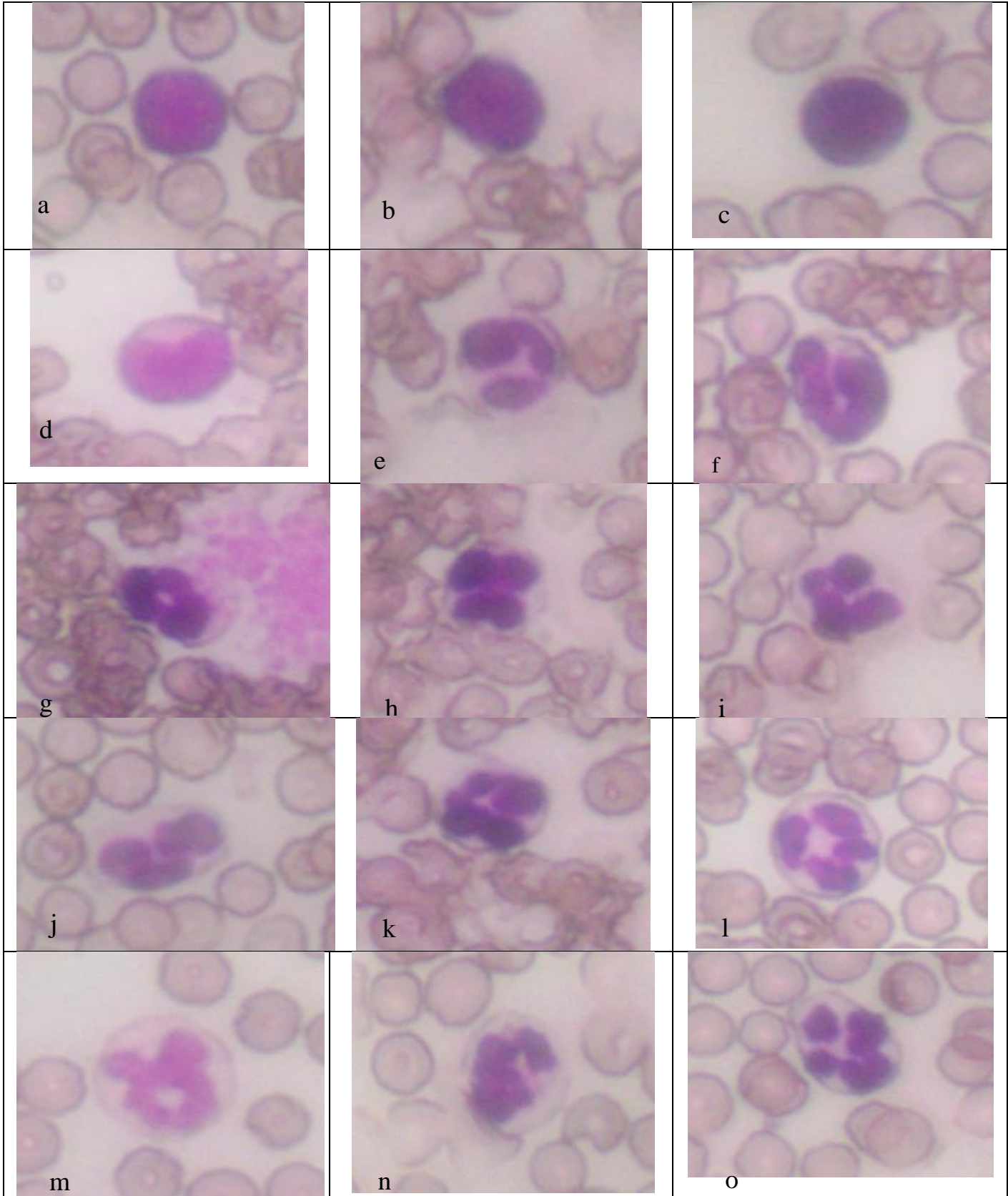
eosinophils (Figure-1: t, u, v, w, x, y, z, aa, ab, ac, ad, ae, af, ag, ah, ai, aj, ak, al, am, an, ao, ap, aq, ar, as, at, au & av), basophil (Figure-1aw). The Influence of age⁵⁻⁷, sex^{5,7} and breed^{6,8} was studied by various researchers on the morphometry of RBCs. Previously microscopic analyses on characterization of peripheral blood cells of western pond turtle *Actinemys marmorata*⁹ and morphological and morphometrical analyses analyses blood cells of emus (*Dromaius novaehollandiae*) in captive condition¹⁰ were observed. Previously Comparative morphometrical analyses analyses of normal erythrocytes of two air-breathing fishes *Channa punctatus* and *Anabas testudineus* were studied¹¹.

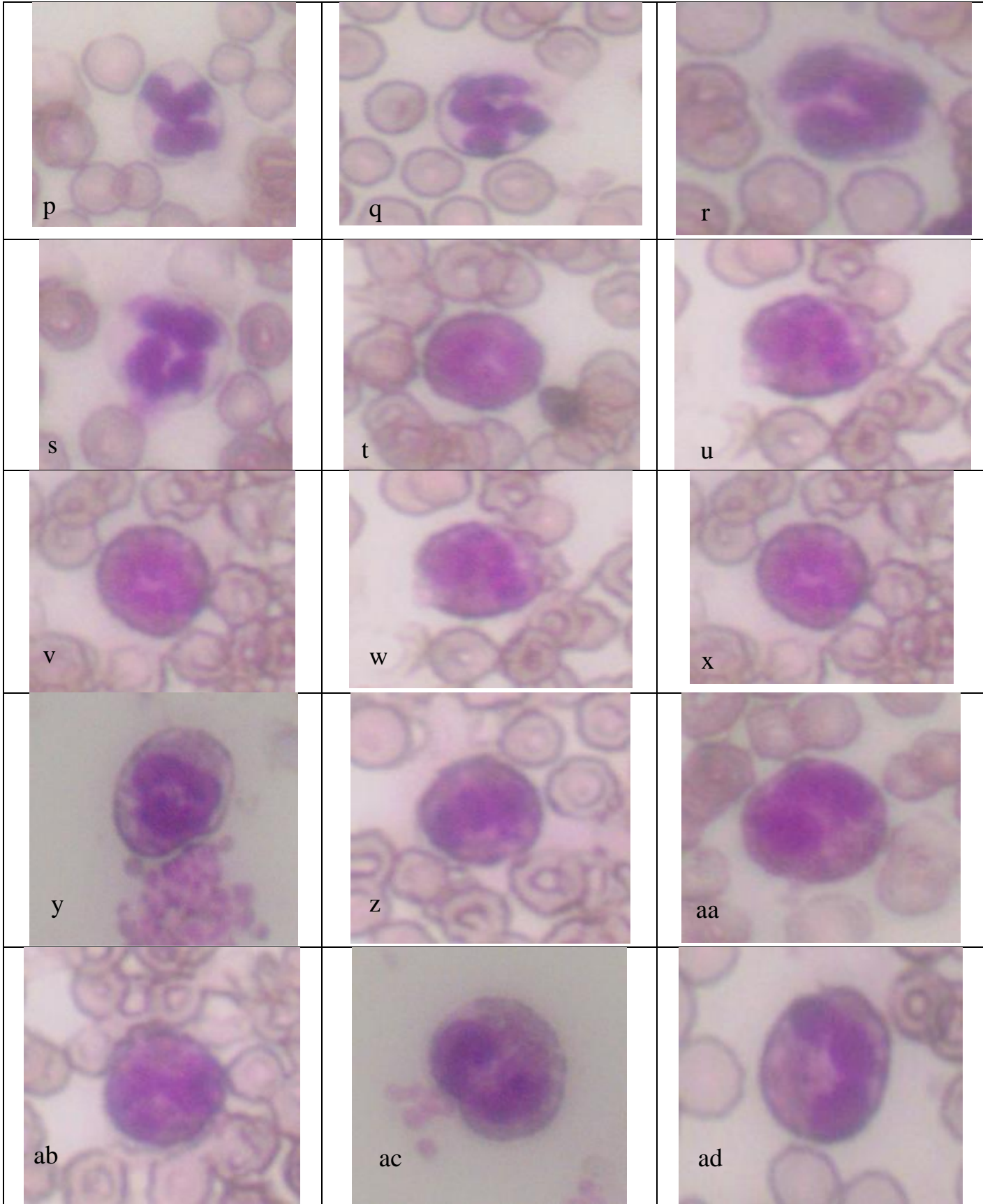
Conclusion

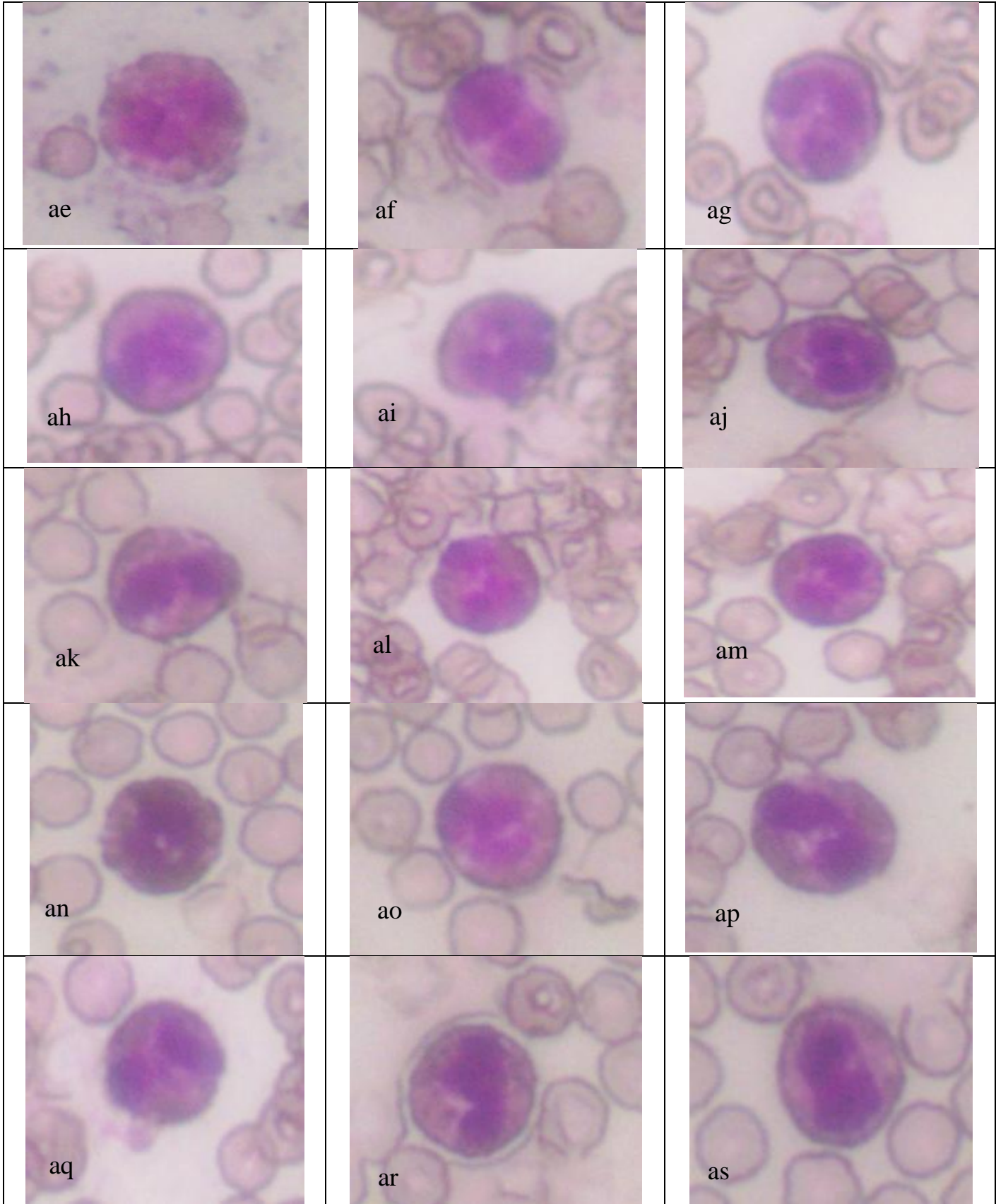
Castration has a profound effect on the morphology of white blood cells of non-descriptive cattle, and this study can provide a baseline reference to which further studies may be compared. By this study, morphology of white blood cells in non-descriptive cattle can be well understood and analyzed.

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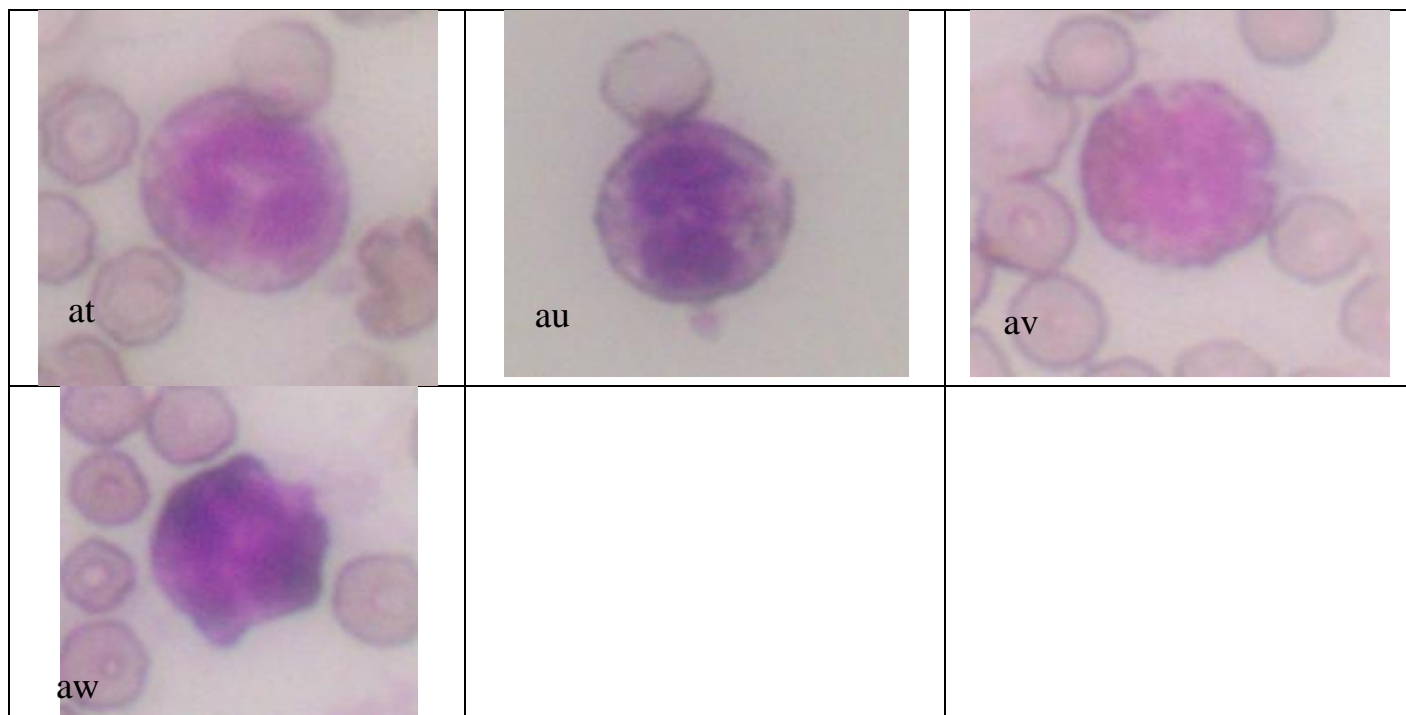


Figure-1: Various types of White Blood Cells (WBC).

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