

## CASE REPORT

## Morphological Features of Various White Blood Cells of 10 years Castrated Non-Descriptive Cattle of Odisha

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## ABSTRACT

The present study was designed to investigate different types of WBCs in a 10 years castrated Non-Descriptive (ND) cattle as there is no previous report on morphology of white blood cells of 10 years castrated ND cattle of Odisha. Castration has profound effect on the morphology of white blood cells of Non-Descriptive cattle. Morphological features of various white blood cells of 05 Months castrated Non-Descriptive Cattle of Odisha was studied earlier. Blood sample was collected from jugular vein of one 10 years castrated Non-Descriptive by a skilled veterinary expert 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. Various types of WBCs were observed in this study namely small lymphocyte, large lymphocyte, small monocyte, large monocyte, trilobed neutrophil, tetralobed neutrophil, multilobed neutrophils and eosinophils were observed.

## KEYWORDS

• WBC • Lymphocyte • Monocyte • Neutrophil • Eosinophil

## INTRODUCTION

The objective of the present study was to study different types of WBCs in one 10 years castrated Non-Descriptive (ND) cattle. For cellular function recently morphology of cells has been indicated as a powerful indicator.<sup>7</sup> As there was no previous report on morphological

features of WBCs of castrated 10 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 and because

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of castration change in hormonal status growth rate and body composition in cattle is altered.<sup>6</sup> To quantify morphology of cell it is fundamental to the statistical study of cell populations, and can help unravel mechanisms underlying cell and tissue morphogenesis.<sup>8</sup> Morphological features of various white blood cells of 05 Months castrated Non-Descriptive Cattle of Odisha was studied earlier.<sup>5</sup>

### MATERIALS AND METHODS

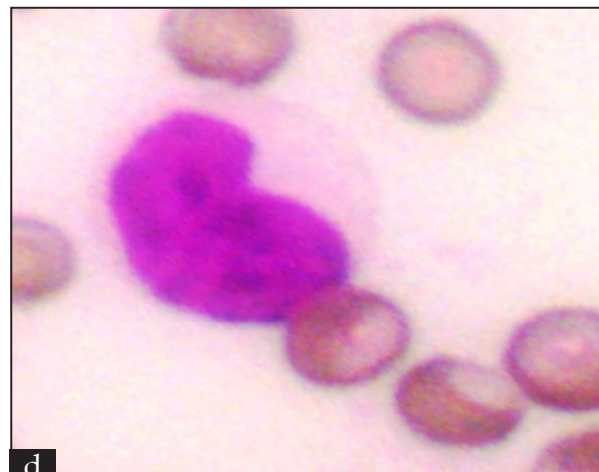
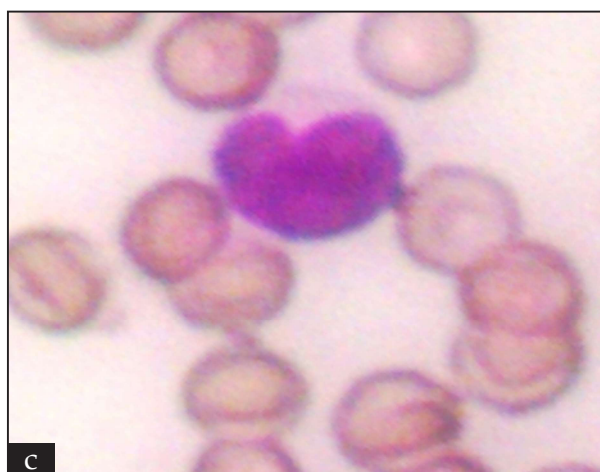
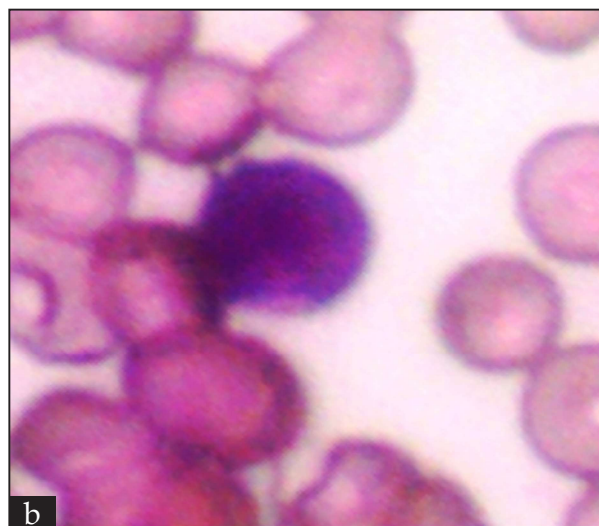
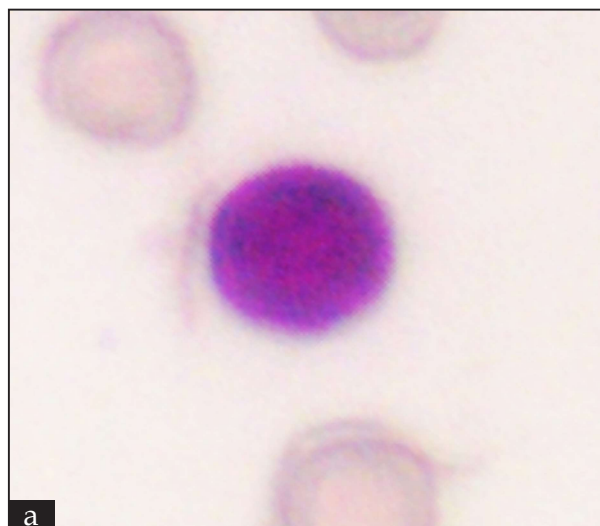
Blood sample was collected from jugular vein of one 10 years castrated Non-Descriptive (ND) cattle and blood smear was prepared on grease-free microscopic slide, then air dried, fixation was done by methanol and staining was done by Giemsa stain for morphological study under a microscope under 40x objective and photographs of WBCs were taken and morphology were observed.

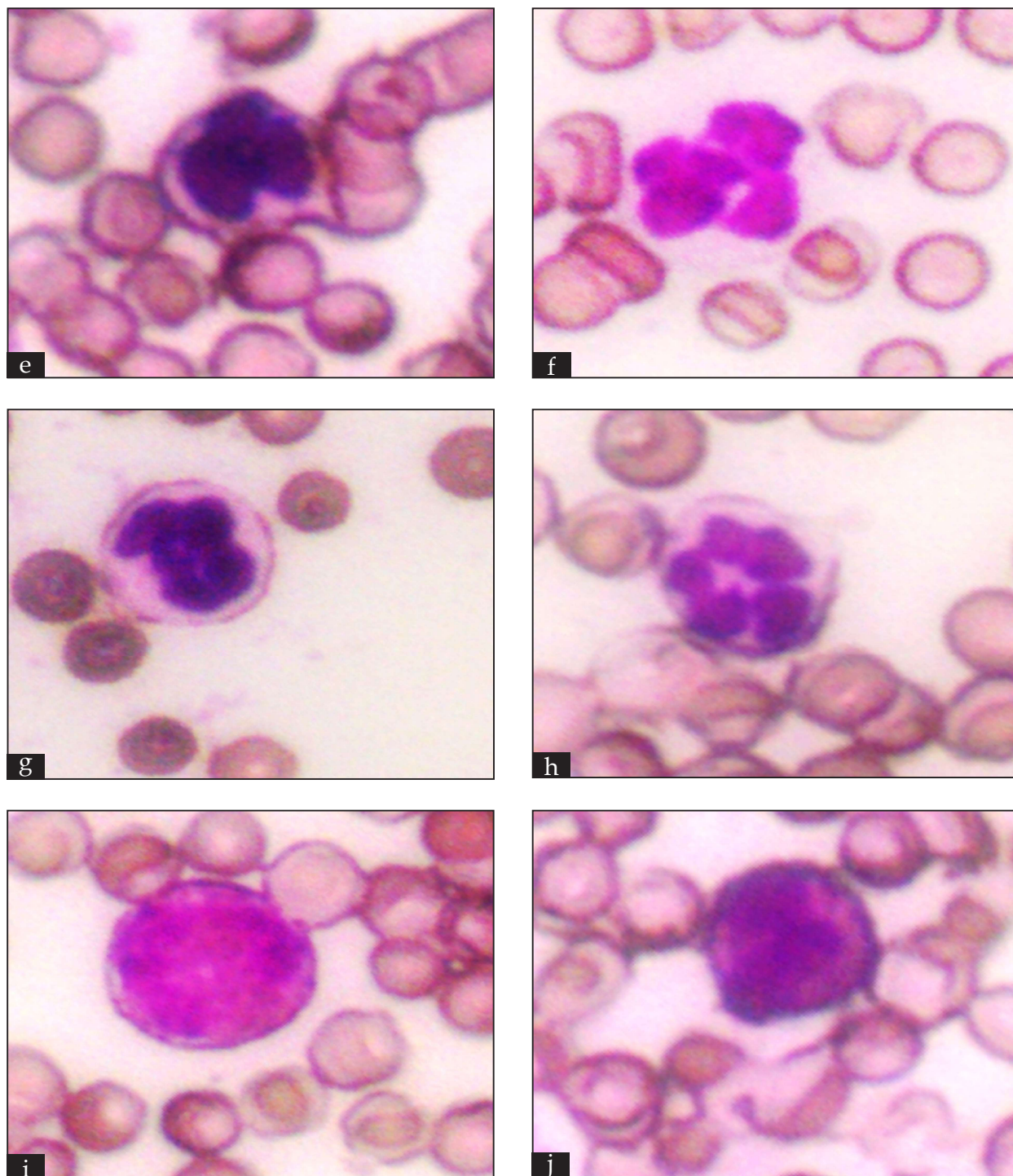
### RESULTS AND DISCUSSION

Various types of lymphocytes were observed Figure a: large lymphocyte, Figure b: Small lymphocyte, Figure c: Small monocyte, Figure d: Large monocyte, Figure e: trilobed neutrophil, Figure f: Tetralobed neutrophil, Figure g,h: multilobed neutrophils, Figure ij: eosinophils were observed in this study. The Influence of age<sup>1,3,4</sup>, sex<sup>1,4</sup> and breed<sup>2,3</sup> was studied by various researchers on the morphometry of RBCs.

### 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.





**Figure a:** Large lymphocyte, **b:** Small lymphocyte, **c, d:** Monocytes, **e:** Trilobed neutrophil, **f:** Tetralobed neutrophil, **g, h:** Multilobed neutrophils, **i, j:** Eosinophils

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