

Chromosomal Aberrations in Egyptian Water Buffaloes (*Bubalus bubalis*) Affected with Upward Fixation of Patella

by M. SHOKRY and M. BARAKAT

Summary:

Chromosomal aberrations were studied in 50 female Egyptian buffaloes: 25 normal and 25 affected with upward fixation of patella. The incidence of chromosomal aberrations was found higher in affected buffaloes (Structural 10.08% and Numerical 40.0%) in comparison to normal (Structural 1.4% and Numerical 6.0%).

Introduction

Upward fixation of patella is one of the most common functional disorders of femoro-patellar articulation in buffaloes. Although the existence of the malady and its surgical treatment have long been recognized, the majority of clinicians' interests have been confined to the treatment. Some authors have indicated a hereditary nature of the malady in buffaloes (Tyagi and Krishnamurthy, 1976 and Shabaan, 1977) but comprehensive genetic accounts were lacking. Therefore, the present work was intended as a study of chromosomal aberrations in affected buffaloes in comparison to normal.

Materials and Methods

A total of 50 female Egyptian buffaloes (Beheri) aged between 3 and 8 years were used. Twenty-five buffaloes were affected with upward fixation of patella. The other 25 (control) were normal buffaloes bred on a military dairy farm and having no history of upward fixation of patella

Blood samples for lymphocyte culture were collected from the jugular vein under strict aseptic precautions. The lymphocytes were cultured for 24 hours, incubated at 37.5°C and harvested after 72 hours (El-Nahass, 1975). Mitotic chromosomes from 60 metaphases were counted and examined for any abnormalities.

Results

Studies on chromosomal preparations of normal female buffaloes showed that the diploid number was 50 chromosomes (Fig. 1). Karyotyping showed that five pairs were submetacentric and twenty pairs were acrocentric including the two X chromosomes (Fig.2). The percentages of chromosomal aberrations among the total of 60 examined metaphases (3000 chromosomes) from normal and affected animals are given in Table 1 and Figures 3 and 4.

Discussion

The results of chromosomal analysis of normal Egyptian buffaloes (*Bubalus bubalis*) agree with those of DeHondt and Ghanam (1971) and Cribiu and Obeidah (1978), in Egyptian buffaloes and Fischer and Ulbrich (1968) and Balakrishnan *et al.* (1981) in Asian buffaloes (Murrah buffalo).

In the present study, it was found that the incidence of chromosomal aberrations in buffaloes affected with upward fixation of

Faculty of Veterinary Medicine, Cairo University Giza, Egypt.