

The effect of chicken, pigeon, and turkey demineralized bone matrix (DBM) implanted in ulnar defects fixed with the intramedullary-external skeletal fixator (IM-ESF) tie-in in pigeons (*Columba livia*): histological evaluations

ABSTRACT

This study was conducted to evaluate the efficacy of chicken, pigeon and turkey demineralized bone matrix (DBM) powder in stimulating the healing process in 1-cm ulna defects in pigeons. A total of 9, 11 and 9 pigeon ulnas with 1-cm defect were treated with chicken, pigeon and turkey DBM, respectively. Avian DBM prepared from chicken, pigeon and turkey sources induced bone formation via endochondral and intramembranous processes, as in mammalian studies. No significant differences were observed in the percentage of new bone, percentage of cartilage, surface-forming osteoblast area, or osteoclast count between gaps treated with chicken, pigeon, and turkey DBM. However, a significantly ($p<0.05$) higher percentage of inflammatory area was observed in gaps treated with chicken DBM than in gaps treated with pigeon DBM.