Prognostic indicators for outcome in cattle undergoing umbilical surgery at a veterinary teaching hospital

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Introduction

Herniation and/or infection of the umbilical structures are common medical conditions that affect calves during the neonatal period or later in life. Depending on the anatomical structures involved in the presentation of clinical disease, conditions affecting umbilical structures in calves are categorized as uncomplicated umbilical hernias, complicated umbilical hernias including infection of umbilical structures (omphalitis) and/or persistent/patent urachus, and infection/abscessation of umbilical structures (omphalitis) with or without persistent/patent urachus. Surgical correction is the treatment of choice for umbilical herniation and/or infection/abscessation; however, reports of prognostic indicators for survival to discharge and/or readmission of cattle undergoing umbilical surgery are scarce. The purpose of this retrospective study is to evaluate records of cattle undergoing umbilical surgery at a veterinary teaching hospital in order to identify prognostic indicators for survival to discharge and/or readmission.

Methods

A retrospective study was conducted to evaluate medical records from 2009 to 2024 of cattle undergoing umbilical surgery at Auburn University Large Animal Teaching Hospital. Analysis of data from medical records of umbilical surgery of cattle of any age, any sex, and any breed was performed. The association between independent variables and outcome (discharged from the hospital vs. non-discharge; readmission to the hospital after discharge vs. non-readmission) was assessed by Chi Square and Fisher exact tests.

Results

One hundred and thirty two medical records met the inclusion criteria, and 95.4% (126/132) cattle undergoing umbilical surgery survived to discharge whilst 5.6% (6/132) died or were euthanized. Readmission was recorded in 14.3% (18/126) of discharged cattle and 83.4% (15/18) of these survived to a second discharge. 67% (4/6) and 56% (10/18) of non-discharged and readmitted cases, respectively, had an initial diagnosis of omphalitis/abscessation without herniation at initial presentation. Time from admission to surgery > 3 d, hospitalization time > 5 d, duration or surgery > 57 min, use of carboxymethyl cellulose during surgery, and treatment with dexamethasone postoperatively were independently associated with non-survival and/or readmission.

Conclusion

Surgical treatment of umbilical disorders in the population of cattle included in this study carried a good prognosis to hospital discharge. A prompt decision of surgical treatment in cattle affected with omphalitis/abscessation may improve survival to discharge and reduce readmission in some cases.