The Variability in Surgical Margin Reporting for Soft Tissue Sarcoma and Mast Cell Tumors in Dogs

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Introduction
Surgical margins are a standard reported measurement in tumor surgery that has implications for functional outcome, local control, and overall survival. There is no single accepted classification in veterinary medicine, and it is unclear what form or margin reporting predominates in the soft tissue sarcoma (STS) and mast cell tumor (MCT) literature.

Materials & Methods
A systematic search of digital bibliographic databases for studies that describe treatment of cutaneous MCT and STS was performed.
• Electronic literature searches were performed for MCT and STS separately.
• Eligible studies were primary research studies (experimental or observational) that reported oncologic outcome of surgical treatment of cutaneous MCT or STS in dogs.

The relevance screening was a two-stage process.
• Stage 1 involved two reviewers independently reviewing each abstract title to determine if it described primary research assessing the oncologic outcome of surgical treatment of MCT and STS. If the manuscript met this inclusion criteria, it could advance to the next stage of the review.
• Stage 2 involved evaluation of the full manuscript using the same inclusion criteria and was conducted independently by the same reviewers.
• When the two reviewers did not initially agree about a citation, a discussion was raised and consensus was determined.

The data abstracted from the articles that qualified for review included the author, years the study was performed and reported, study population, sample size, number of subjects treated with surgery, for MCT the number of dogs with Patnaik histologic grades 1, 2 and 3 or Kiupel low and high histologic grade, for soft tissue sarcoma the number of dogs with histologic grades 1, 2 and 3, the surgical margins utilized, and the histologic margins reported.

The individual study quality was determined on the basis of multiple criteria including:
1) representativeness of study population
2) selection of study participants
3) data collection methods utilized
4) statistical and analytic methods used
For assessment of the quality of the entire body of evidence, guidelines developed by The Grading of Recommendations Assessment, Development, and Evaluation (GRADE) Working Group were used.

Results
The electronic literature searches yielded 772 MCT studies and 296 STS studies, for a total of 1,068 citations. The results of the relevance screening are outlined in Figure 1. Many manuscripts were excluded due to lack of information regarding surgical and histopathologic margins.

Within the reviewed studies, surgical margins were more commonly reported than histologic margins.
• There was no common classification system for reporting surgical and histologic margins.
• Trichomatous reporting was predominantly used for grading both MCT and STS.

Conclusion
There is a lack of consensus for reporting surgical and histological margins for STS and MCT. Further investigation into determining a common classification system for reporting margins for these tumors is needed.

Aims
• Identify common classification systems for reporting surgical and histologic margins within current literature.
• Determine the trends in the use of classification systems over time.
• Determine if there is a difference in the use of margin classifications for margin reporting between STS and MCT.

Hypotheses
• Trichomatous reporting is used predominantly and measurement of margins are unreported in a high proportion of studies.
• Over time the reporting of margins (both any and measurement) has increased.