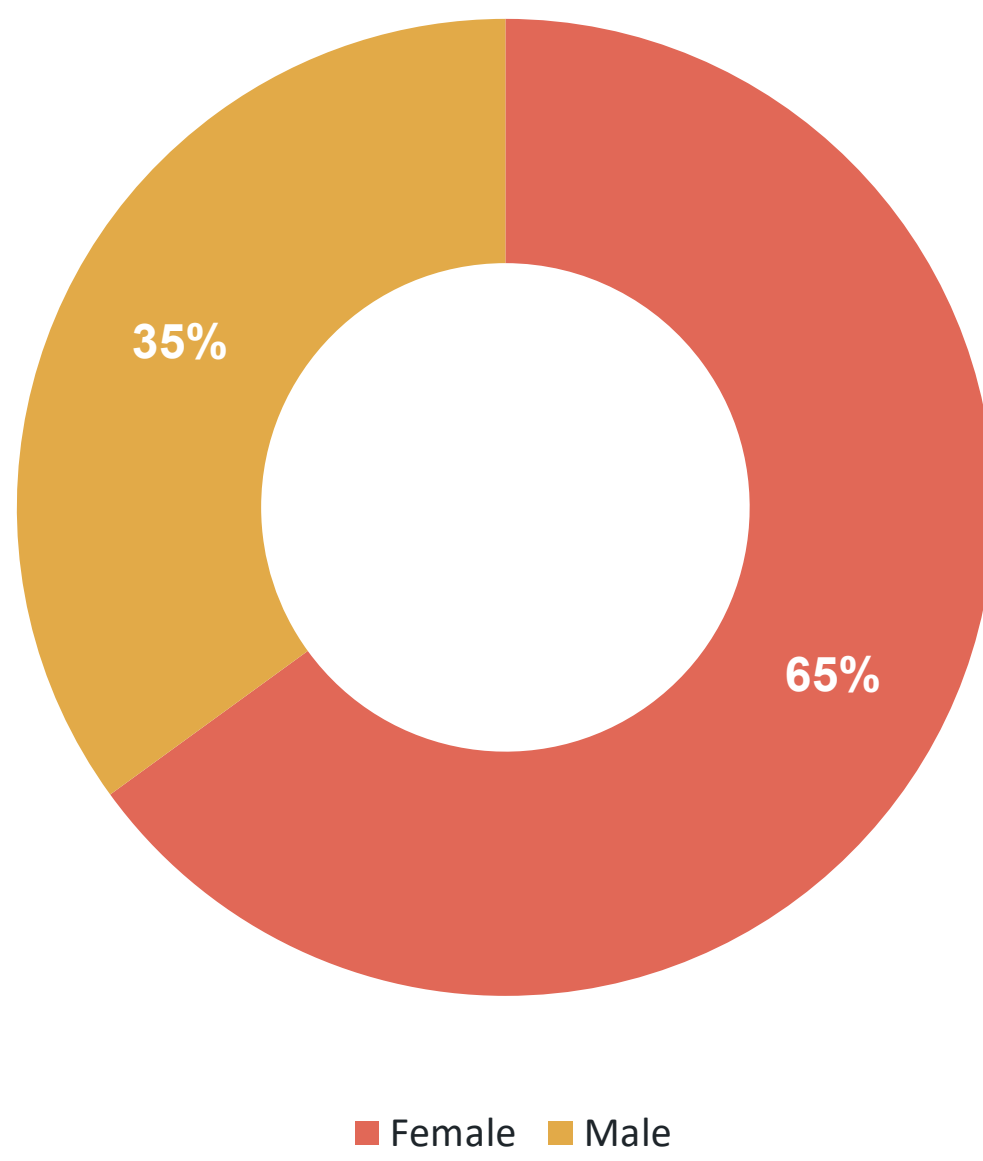


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| 20                                                                                                                                                                                                                                                                                                                                                                                                                                           | PATIENTS | 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | FEMALE | 13                                                                                                                                                                                                                                                                                                                                                                                                            | AGE <65 | 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ALIVE |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| INTRODUCTION                                                                                                                                                                                                                                                                                                                                                                                                                                 |          | METHODS                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        | RESULTS                                                                                                                                                                                                                                                                                                                                                                                                       |         | CLINICAL INTERPRETATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <p>Mast cell sarcoma (MCS) is an exceptionally rare and aggressive neoplasm characterized by cytologically malignant mast cells forming a solitary, destructive mass. Most published data are limited to isolated case reports, leaving its clinicopathologic features poorly defined.</p> <p>This study analyzed MCS cases from the Surveillance, Epidemiology, and End Results (SEER) program to better characterize this rare entity.</p> |          | <p><b>Study design</b><br/>Retrospective registry analysis</p> <p><b>Data source</b><br/>SEER 17 registries</p> <p><b>Study period</b><br/>2000–2022</p> <p><b>Population</b><br/>Adults ≥18 years</p> <p><b>Diagnosis</b><br/>Mast cell sarcoma; ICD-O-3 9740/3</p> <p><b>Variables</b><br/>Age, sex, race, primary site</p> <p><b>Survival</b><br/>Kaplan–Meier + log-rank</p> <p><b>Software</b><br/>GraphPad Prism</p> <p><b>Significance</b><br/>P &lt;0.05</p> |        | <p><b>Sex distribution</b></p>  <p>Only 20 registry-identified adult patients met the study definition.</p> <p><b>Demographic pattern</b></p> <p>MCS predominantly affected females and younger adults in this cohort — 65% female, 35% male.</p> <p><b>Age</b></p> <p>13 patients &lt;65 years • 7 patients ≥65 years</p> |         | <p><b>Anatomic pattern</b><br/>Bone marrow was the most common primary site, followed by vertebral column, skin NOS, and trunk soft tissue.</p> <ul style="list-style-type: none"><li>● <b>Bone marrow</b> — Most common</li><li>● Vertebral column</li><li>● Skin, NOS</li><li>● Soft tissues of trunk</li></ul> <p><b>Race</b></p> <p>75% White • 15% Black • 10% Asian / Pacific Islander</p> <p><b>Outcome — status at last follow-up</b></p> <p>13 alive (65%) • 7 died. Despite aggressive disease, 65% of patients were alive at last follow-up.</p> |       | <p>MCS is an exceedingly rare and aggressive malignancy that is likely under-recognized due to diagnostic challenges.</p> <p>It is potentially under-recognized or misclassified; clinical heterogeneity is a recurring theme in reported cases.</p> <p><b>CONCLUSION</b></p> <p>In this SEER-based study of 20 patients, MCS predominantly affected younger individuals and females, with bone marrow being the most common primary site.</p> <p>Despite its aggressive nature, some patients survived long-term, reflecting clinical heterogeneity.</p> <p>Improved diagnostic recognition and molecular profiling are essential, as actionable mutations may allow targeted therapy with agents such as imatinib.</p> |  |

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| KEY TAKE-HOME FINDINGS                |                                 |                                               |                             |
| 01<br>Extremely rare                  | 02<br>Demographic signal        | 03<br>Disease distribution                    | 04<br>Heterogeneous outcome |
| 20 patients identified over 2000–2022 | 65% female; 65% younger than 65 | Bone marrow was the most common reported site | 65% alive at last follow-up |

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| ACKNOWLEDGMENTS & DISCLOSURES                                                                                                                                                                                                                                                                                     | KEYWORDS                                                   |
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