Bone tumors, especially malignant ones such as osteosarcoma and Ewing sarcoma, present a significant clinical challenge due to their complex pathology, varying treatment responses, and unpredictable patient outcomes.However, existing AI models for bone tumor classification are limited in number, often lack comprehensive evaluation, and rarely address the challenge of imbalanced datasets, where minority outcome classes (e.g., NED or AWD) are underrepresented, leading to biased predictions.Timely and accurate classification of these tumors into prognosis-related categories--No Evidence of Disease (NED), Alive With Disease (AWD), and Dead (D)--is critical for determining optimal treatment strategies, monitoring disease progression, and improving patient survival rates.