Histological tumour grade (Core and Non-core)

This element only applies to sarcomas of the heart, pericardium, and great vessels. This element captures information shown to be prognostically important in sarcomas at other body sites.¹ Evidence that these have the same importance in sarcomas of the heart, pericardium, and great vessels is lacking.^{2,3}

There is no formal grading system for cardiac tumours. However, the French Federation of Cancer Centers Sarcoma Group (FNCLCC) system for the grading of sarcomas⁴ can be used as a guide. The FNCLCC system includes an assessment of mitotic activity, necrosis, nuclear grade and cellularity (refer to Table 2).

Necrosis

The extent of necrosis is estimated as a percentage of total tumour.

Mitotic count

Mitotic count is a non-core element. If recorded it should be expressed as '#/mm²' due to the fact that differing field diameters of high power (x40) objectives dramatically vary the size of a single high power field (HPF).

Table 2: Histologic grading for soft tissue sarcoma.⁵

Tumour differentiation	Mitotic count	Tumour necrosis
Sarcoma closely resembling normal adult mesenchymal tissue (e.g., low grade leiomyosarcoma) (1 point)	0-9 mitoses per 2mm ² (1 point)	No necrosis (0 points)
Sarcomas for which histologic typing is certain (e.g., myxoid/round cell liposarcoma) (2 points)	10-19 mitoses per 2mm ² (2 points)	< 50% tumour necrosis (1 point)
Undifferentiated sarcomas, sarcomas of doubtful type, synovial sarcomas, osteosarcoma (3 points)	≥20 mitoses per 2mm² (3 points)	≥50% tumour necrosis (2 points)

2mm² = 10 high power fields (HPF) if the field diameter is 0.55mm (each pathologist should ensure calibration of their own microscope).

The scores for these variables are added to calculate the following values:

- Grade 1 Total score of 2 or 3
- Grade 2 Total score of 4 or 5
- Grade 3 Total score of 6 or higher.

References

- 1 International Collaboration on Cancer Reporting (2021). *Soft Tissue Sarcoma Histopathology Reporting Guide - Resection Specimens, 1st edition.* Available from: http://www.iccrcancer.org/datasets/published-datasets/soft-tissue-bone/soft-tissue-sarcoma-resectionspecimens (Accessed 10th November 2021).
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