Figures & Legends for main text.

Figure 1. H & E section of poorly differentiated histiocytic sarcoma

Poorly differentiated histiocytic sarcoma. Neoplastic cells are pleomorphic admixed with large numbers of lymphocytes (H&E).

Figure 2. H & E section of spindle cell variant

Histiocytic sarcoma, spindle cell subtype. Neoplastic cells are spindle to round with moderate amount of cytoplasm. Mitotic figures are present (H&E).

Figure 3. Gross appearance of histiocytic sarcoma within the biceps musculature
Figure 4. Gross appearance of histiocytic sarcoma affecting the spleen

Figure 5. H & E section of histiocytic subtype
Histiocytic sarcoma, histiocytic subtype with large round neoplastic histocytic cells with some multinucleated giant cells and scattered lymphocytes (H&E).

Figure 6. H & E section of histiocytic-spindle-pleomorphic subtype

Histiocytic sarcoma, histiocytic-spindle-pleomorphic subtype with few fibroblastic-like cells admixed with neoplastic histolytic cells, with a pale eosinophilic cytoplasm (H&E).

Figure 7. Immunostaining showing positive CD18
Histiocytic sarcoma with large numbers of cells with cytoplasmic immunopositivity for CD18.

**Figure 8.** Immunostaining showing positive CD11d

Histiocytic sarcoma with strong diffuse cytoplasmic immunostaining for CD11d.

**Figure 9.** Gross appearance of metastatic nodules of histiocytic sarcoma in the liver of an affected dog.

**Figure 10**
Pedigree of one family courtesy of Dr David Sargan. Squares are males, circles are females. Red denotes histologically confirmed histiocytic sarcoma, yellow denotes cancer of unknown type. In the higher generations there may have been cases with tumours that we were not aware of.

Figure 11

The Oncology Team at QVSH
From the left: Beth Robison (Radiation Technologist), Drs Jane Dobson and Sarah Mason (Diplomates ECVIM-CA [Oncology]), Antonio Giuliano (Senior Training Scholar in Medical Oncology), Alice Bugg (Oncology Nurse)