- Grommé M, Russcher H, Braakman E, *et al.* Multicenter study to evaluate a new enumeration method for hematopoietic stem cell collection management. *Transfusion* 2017; 57: 1949–55.

AN UNUSUAL CASE OF HEPARIN-INDUCED THROMBOCYTOPENIA IN A PATIENT INFECTED WITH SARS-COV-2 VIRUS

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Prophylactic heparin has been used in patients infected with SARS-CoV-2 to prevent macro-thrombosis during hospital admission. We present a case of a patient admitted to the intensive care unit with severe COVID-19 syndrome who developed severe thrombocytopenia. Differential diagnoses included vaccine-induced thrombotic thrombocytopenia syndrome, immune mediated thrombocytopenia, critical illness related platelet consumption and heparin-induced thrombocytopenia (HIT). Investigations initially revealed a positive HIT screen by DiaMed ID-PaGIA assay, enzyme-linked immunosorbent assay, and in-house functional assay. However her atypical presentation of severe thrombocytopenia might have been attributed to peripheral consumption from severe COVID-19 illness. Other immunoassays (lateral flow immunoassay and chemiluminescence assay) returned negative results, which raised a suspicion on the original diagnosis of HIT. This case illustrates the complexity of diagnosis and management of HIT in the context of severe COVID-19.

BLURRED LINES – TWO CASES OF ACUTE MYELOID LEUKAEMIA WITH HISTIOCYTIC DIFFERENTIATION

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The unique morphological, immunophenotypic and functional features of histiocytes can be recapitulated in acute myeloid leukaemia (AML), particularly in monocytic/monoblastic subtypes.^{1–3} The spectrum of histiocytic differentiation in AML ranges from subtle morphological features to a relatively distinct syndrome with t(8;16) and erythrophagocytosis. Herein, we present two cases of AML with histiocytic differentiation.^{1,2}

The first case is a 61-year-old female presenting with constitutional symptoms, anaemia and thrombocytopenia. Bone marrow aspirate showed 53% blasts with prominent cytoplasmic vacuolation and erythrophagocytosis. Blasts were positive for monocytic markers (HLADR/CD4/CD14/Lysozyme/CD64) and mature macrophage antigens (CD68/CD163) but negative for dendritic/Langerhans cell antigens (CD1a/S100/langerin). Cytogenetics showed t(8;16) and next generation sequencing identified mutations in SRSF2, ASXL1 and TET2.

The second case is a 72-year-old male presenting with progressive monocytosis, anaemia and thrombocytopenia shortly after completing chemotherapy for chronic lymphocytic leukaemia (CLL). Bone marrow aspirate showed 24% blast equivalents with morphological features of histiocytic differentiation. Immunophenotyping showed a phenotype of mature monocytes with aberrant CD56 expression. There was no expression of macrophage, dendritic and Langerhans cell antigens.

These two cases demonstrate the spectrum of histiocytic differentiation that can occur in AML and highlight the importance of combining morphological, immunophenotypic and genetic features to distinguish this rare leukaemia from other histiocytic disorders.

References

- Ru YX, Dong SX, Zhao SX, *et al.* Histiocytic differentiation in acute monocytic leukemia. *Ultrastruct Pathol* 2016; 40: 18–23.
- Haferlach T, Kohlmann A, Klein HU, *et al.* AML with translocation t(8;16)(p11;p13) demonstrates unique cytomorphological, cytogenetic, molecular and prognostic features. *Leukemia* 2009; 23: 934–43.
- Diab A, Zickl L, Abdel-Wahab O, *et al.* Acute myeloid leukemia with translocation t(8;16) presents with features which mimic acute promyelocytic leukemia and is associated with poor prognosis. *Leuk Res* 2013; 37: 32–6.

A CHAMELEON IN THE MARROW – ONE GERM CELL TUMOUR, TWO LEUKAEMIAS

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Mediastinal germ cell tumours (MGCTs) are rare malignancies found in the paediatric age group. Unlike the majority of germ cell tumours, non-seminomatous primary MGCTs tend to have a poor prognosis, and multiple additional malignancies have been reported in these patients. Approximately 6% will develop haematological malignancies, unrelated to prior treatment, which are associated with an extremely poor prognosis.¹ These leukaemias seem to have a shared clonal origin with the MGCT, possibly explaining their apparent resistance to standard leukaemia treatments.^{2,3}

Here we discuss the case of a 15-year-old boy who presented 5 months after completing treatment for poor risk malignant MGCT, with two distinct lineage leukaemias bearing the same genetic signature as the initial tumour. While leukaemia in MGCTs generally remains one lineage, there are case reports of patients presenting with distinct malignancies.² Hypotheses include the totipotent nature of MGCT cells allowing them to differentiate into haematopoietic cells, or a single progenitor with the ability to differentiate into multiple tumour types.²

Whilst leukaemia in MGCT is rare, clinicians should be aware of its possibility, and further work is needed to establish effective treatment strategies.

INCIDENCE OF AL AMYLOIDOSIS IN DIAGNOSTIC BONE MARROW BIOPSIES AND ASSOCIATION WITH CONCURRENT SYSTEMIC AMYLOIDOSIS IN PATIENTS WITH NEWLY DIAGNOSED MULTIPLE MYELOMA: A SERIES OF 231 CASES

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Aim(s): To determine the incidence of bone marrow (BM) amyloidosis in patients with newly diagnosed multiple myeloma