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# Auer-rod like inclusions associated to azurophilic granules in plasma cells neoplasm

## *Inclusions Auer-rod-like associées à des granules azurophiles dans un néoplasme plasmocytaire*

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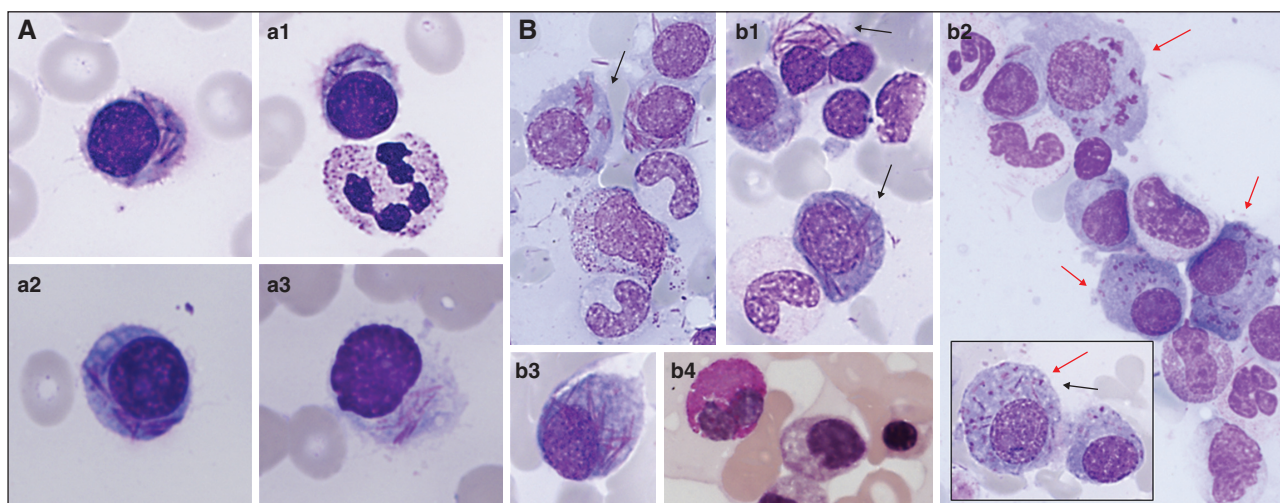
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A 89-year-old woman presented acute renal failure (creatinine: 570  $\mu$ M, clairance: 10 mL/min) associated to severe anemia (80 g/L),  $\beta$ -2 microglobulin: 21.26 mg/L, hyperprotidemia (88 g/L). Neither hypercalcemia, pain

or fever were observed. Serum immunoelectrophoresis revealed a monoclonal (M) protein, immunoglobulin (Ig) A with kappa ( $\kappa$ ) light chain restriction (36,72 g/L). On peripheral blood smear rouleaux formation was observed



**Figure 1.** Peripheral blood (A, a1, a2, a3, magnification  $\times 100$ , May-Grünwald Giemsa (MGG) staining) and bone marrow (B, b1,b2,b3, magnification  $\times 60$ , MGG staining): plasma cell (PC) presented abundant and slightly basophilic cytoplasm with many Auer rod like inclusions mimic those observed in acute promyelocytic leukemia : elongated, thin and azurophilic inclusions , either dispersed within cytoplasm or grouped in bundles. In some PC, inclusions corresponded to small azurophilic granules and sometimes both associated (b2, black and red arrow, respectively). Negative Myeloperoxidase staining in PC contrasting to positive neutrophil allows to validate the method (b4).

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as well as 5% of atypical plasma cells (PC) with many intracytoplasmic Auer rod-like inclusions mimicking those observed in acute promyelocytic leukemia ( $\times 100$ , MGG staining, panel A). Bone marrow smear revealed infiltration by 30% of atypical PC some of them with Auer rod-like inclusions while others with azurophilic granules ( $\times 60$ , panel B, black and red arrows, respectively). Myeloperoxidase staining was negative (b4) (*figure 1*). Flow cytometry confirmed the infiltration by neoplastic PC (monotypic  $\kappa$  light chain–restricted CD138+/CD38+, CD19-, CD56+ PC).

This case of PC myeloma case is unusual in having both types of inclusions in bone marrow specimen (Auer rod-like inclusions and azurophilic granules). Intracytoplasmic Ig

deposition is frequently associated with PC neoplasms but generally takes on a globular form (Russell bodies, Dutcher bodies) [1]. Crystalline Ig inclusions such as Auer-rod-like inclusions are a rare finding seen in 1% of myeloma, mainly correlated to k-chain myelomas (IgA or IgG), and actually with unknown prognostic significance.

**Conflict of interest:** None of the authors has any conflict of interest to disclose

## Reference

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