Neuroblastoma like schwannoma: a diagnostic challenge

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DESCRIPTION

A 21-year-old man presented with a subcutaneous swelling in the right forearm for 5 years, which was excised and subjected for histopathological examination. Grossly, it was an encapsulated globular tissue measuring 1.5×0.8×0.7 cm, with a greyish-white firm cut surface. Microscopically, it was composed of spindle-shaped cells having elongated nuclei with pointed ends, arranged in Antoni A and Antoni B patterns (figure 1). The central portion showed many large rosette like structures, composed of small round cells radially arranged around a central fibrocollagenous core (figure 2). These small cells were monomorphic, round to slightly elongated, with hyperchromatic nuclei and scant amount of cytoplasm, resembling lymphocytes. Masson's trichrome stain highlighted the central collagenous network (figure 3). Immunohistochemiscal results showed that these cells were strongly positive for S-100 with both cytoplasmic and nuclear staining (figure 4) and were negative for neuron-specific enolase, smooth muscle actin and CD99. The overall features were of a schwannoma with neuroblastoma-like rosettes. No additional therapy was required and there was no recurrence on follow-up.

Schwannomas are benign tumours of peripheral nerve sheath origin. Though the fairly common variants like an ancient and cellular schwannoma do not pose a diagnostic challenge in the well-experienced eyes, variants like epithelioid schwannomas and schwannomas with neuroblastoma-like rosettes can be confused with other tumours.[1] In particular, schwannoma composed of small

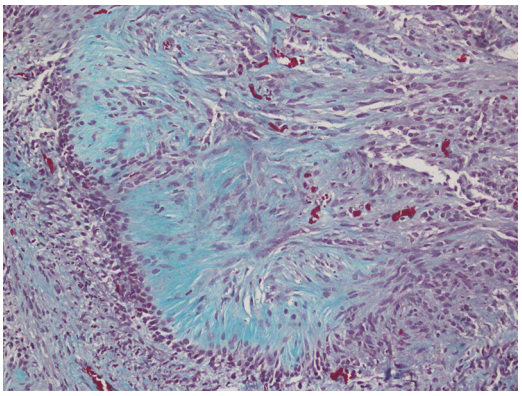

Figure 3 Central fibrocollagenous core highlighted better on Masson's trichrome staining (×100).

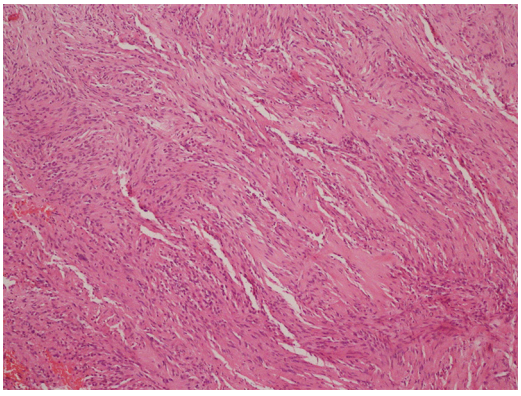

Figure 1 Photomicrograph showing spindle-shaped cells arranged in a hypercellular (Antoni A) and hypocellular (Antoni B) pattern (H&E, ×100).

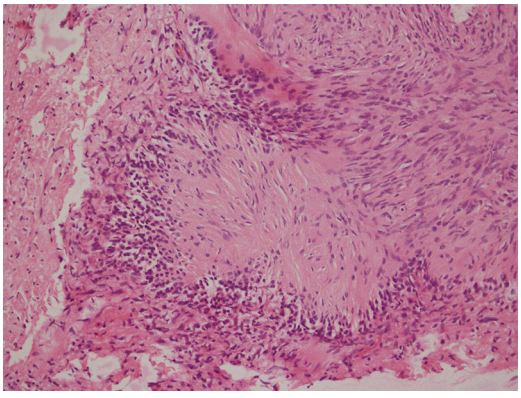

Figure 2 Giant rosettes are seen with a central fibrocollagenous core and surrounded by radially arranged small blue round cells (H&E, ×100).

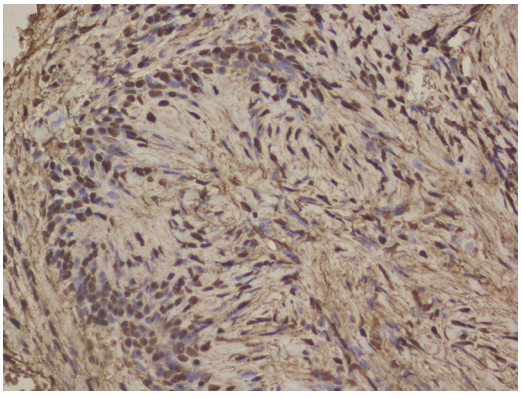

Figure 4 The tumour cells show positivity for S-100 with strong nuclear staining (immunoperoxidase (IP), ×200).

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hyperchromatic cells with a high nuclear–cyotplasmic ratio can be confused with other small blue round cell tumour like neuroblastoma, extra-osseous Ewing's sarcoma or primitive neuroectodermal tumour as well as low-grade fibromyxoid sarcoma.[2]

Learning points

- Differentiation between neuroblastoma and neuroblastoma-like schwannoma can be done based on histomorphological clues and immunohistochemistry.
- Distinction between these entities is important and it is necessary to keep this entity in the list of differential diagnosis of small blue round cell tumours, as a schwannoma with neuroblastoma-like rosettes is a benign entity and does not require any additional treatment if complete removal has been achieved, while the other differential diagnosis requires adjuvant chemotherapy or radiotherapy.

Contributors PS and DC: writing of manuscript; obtaining clinical information and follow up. AD: idea and final approval of the manuscript. PS, DC and AD: involved in reporting of the case.

Competing interests None declared.

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