An FNA of submandibular gland

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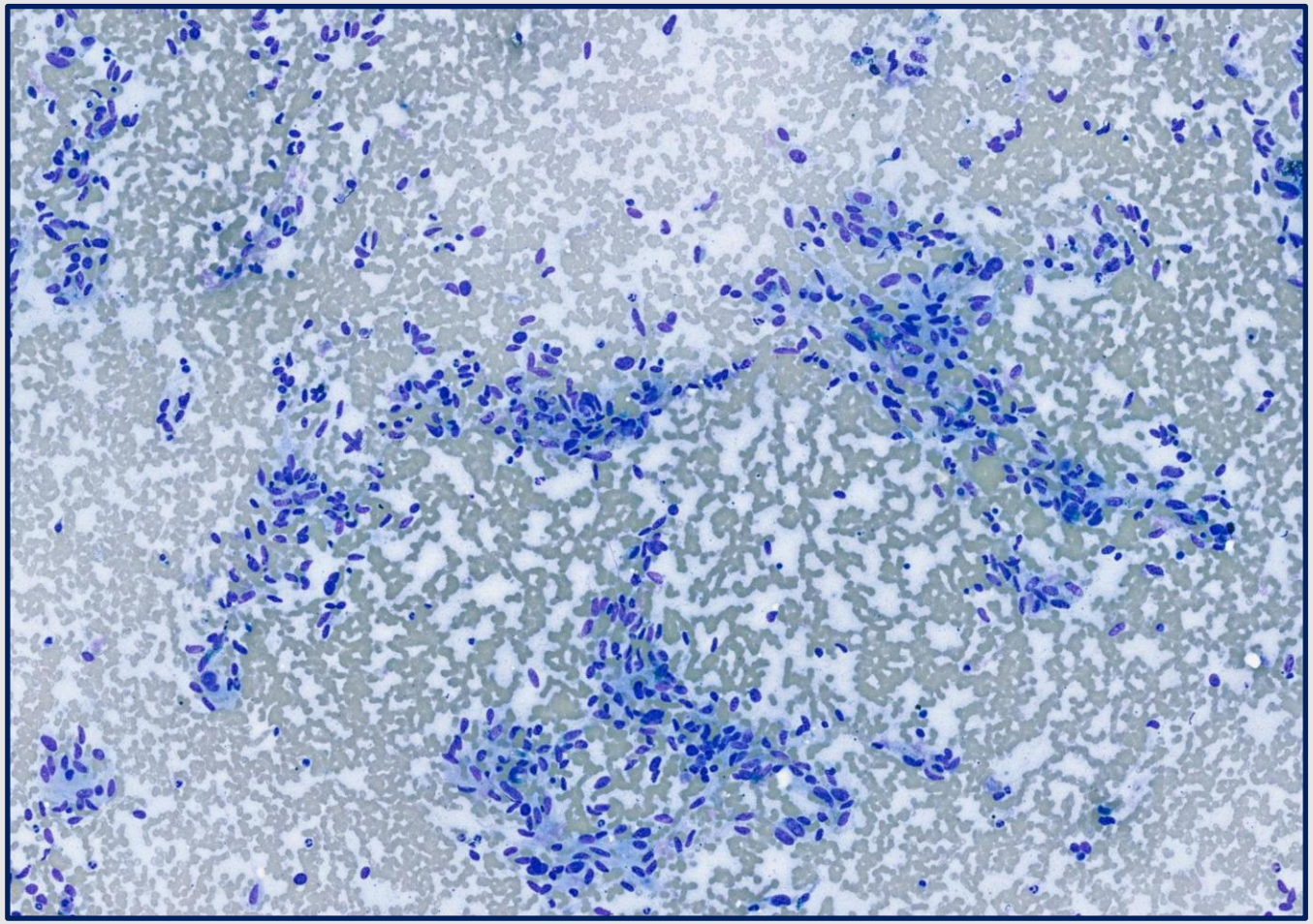
Clinical information

- Male, age 63.
- Right submandibular/level IIb mass
- No previous relevant medical history.
- Ultrasound confirmed 3.1 x 2cm hypoechoic solid mass with increased vascularity ? malignancy
- No pathological lymph nodes elsewhere in the neck

Clinical information

- FNA taken without ROSE
- Two air dried slides prepared by the sonographer from the first needle pass.
- Needle washings and second pass placed into cytospin fluid.
- A cytospin slide and plasma/thrombin clot prepared in the laboratory from the cytospin fixed material.

FNA cytology



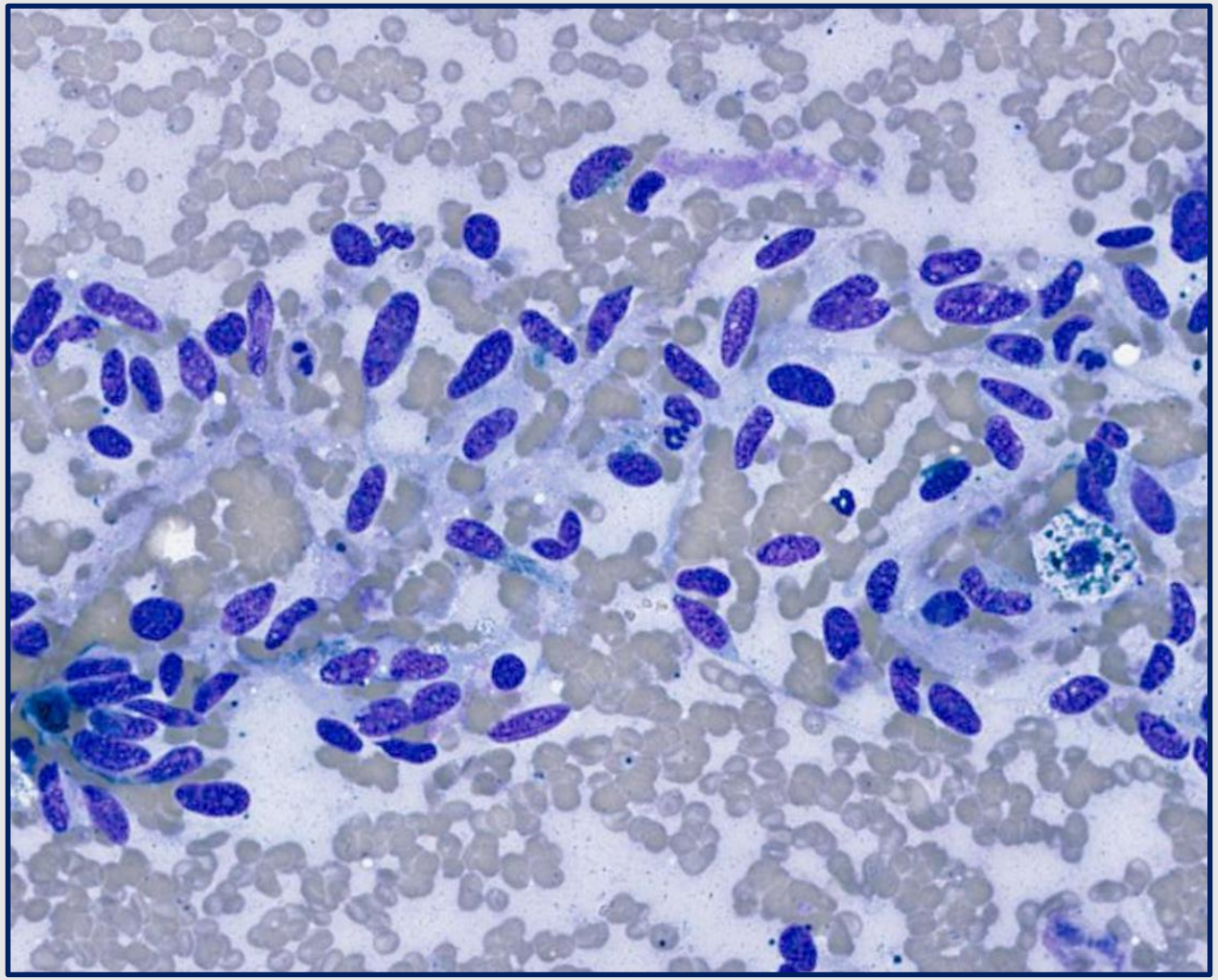
MGG X10 Magnification

Cellular specimen with single cells and clusters. Many cells have a spindle appearance.
Cytological features are atypical with nuclear enlargement and variability.

FNA cytology

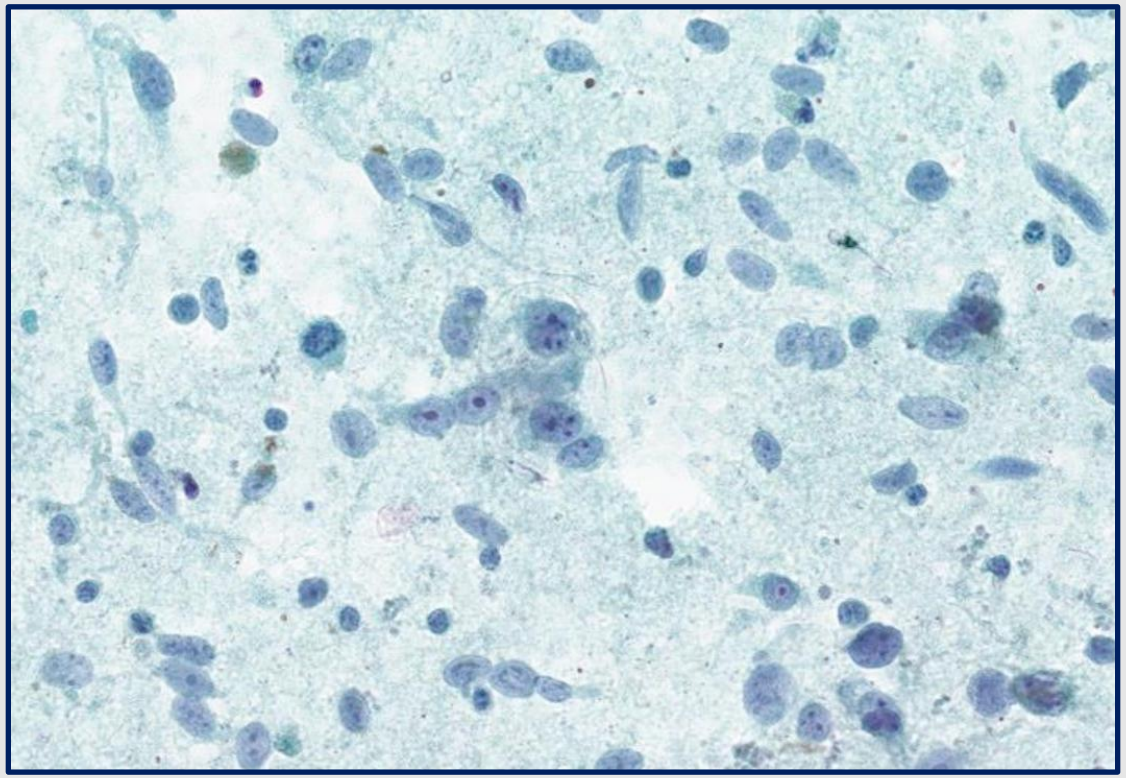
Atypical cells show a spindle morphology with elongated nuclei and pulled out delicate cytoplasm.

There is no background salivary gland or lymph node sampling of note.



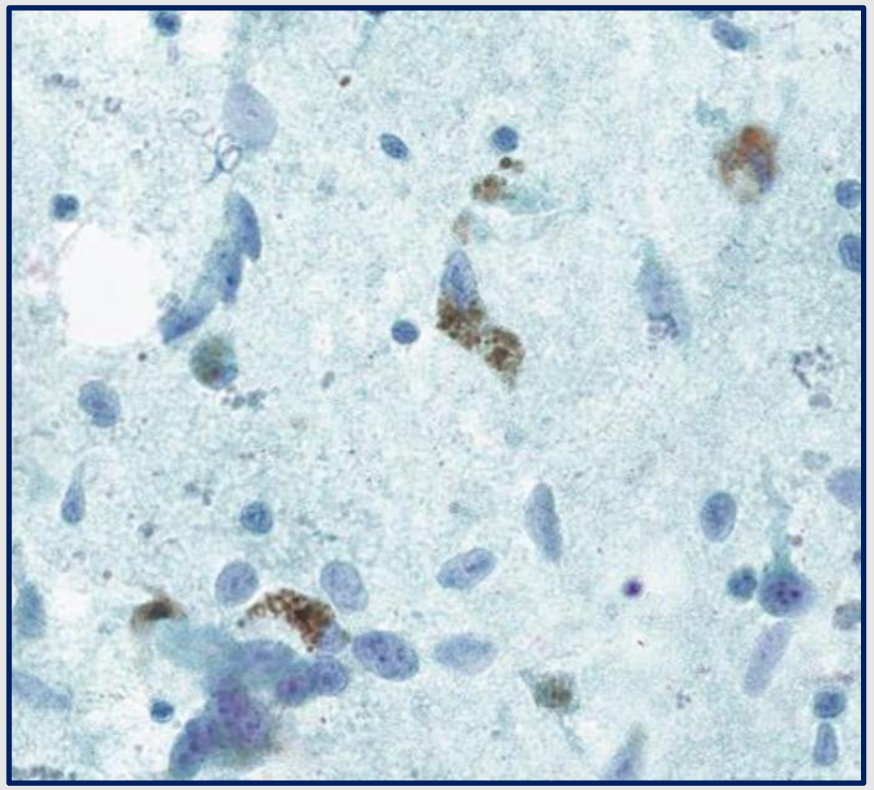
MGG X40 Magnification

FNA cytology



Pap X40 Magnification

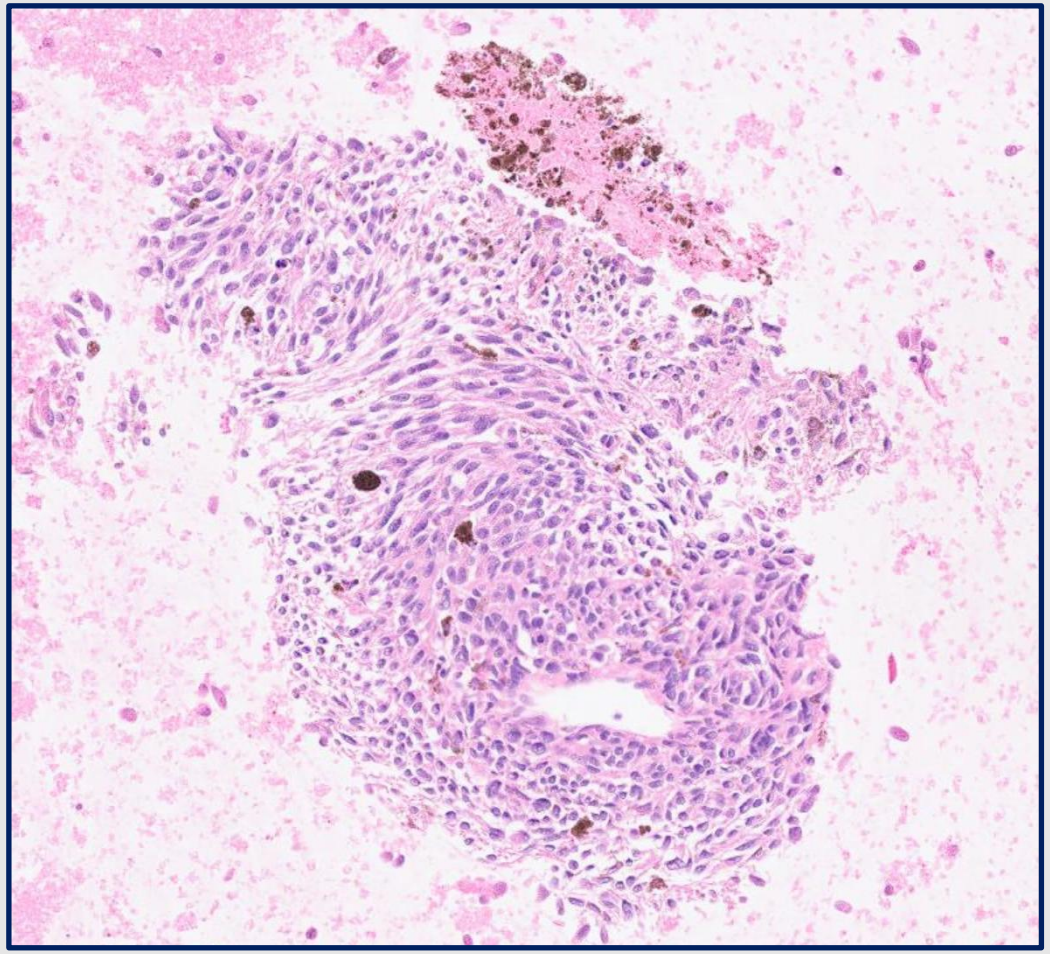
Some pigment is seen within the cytoplasm

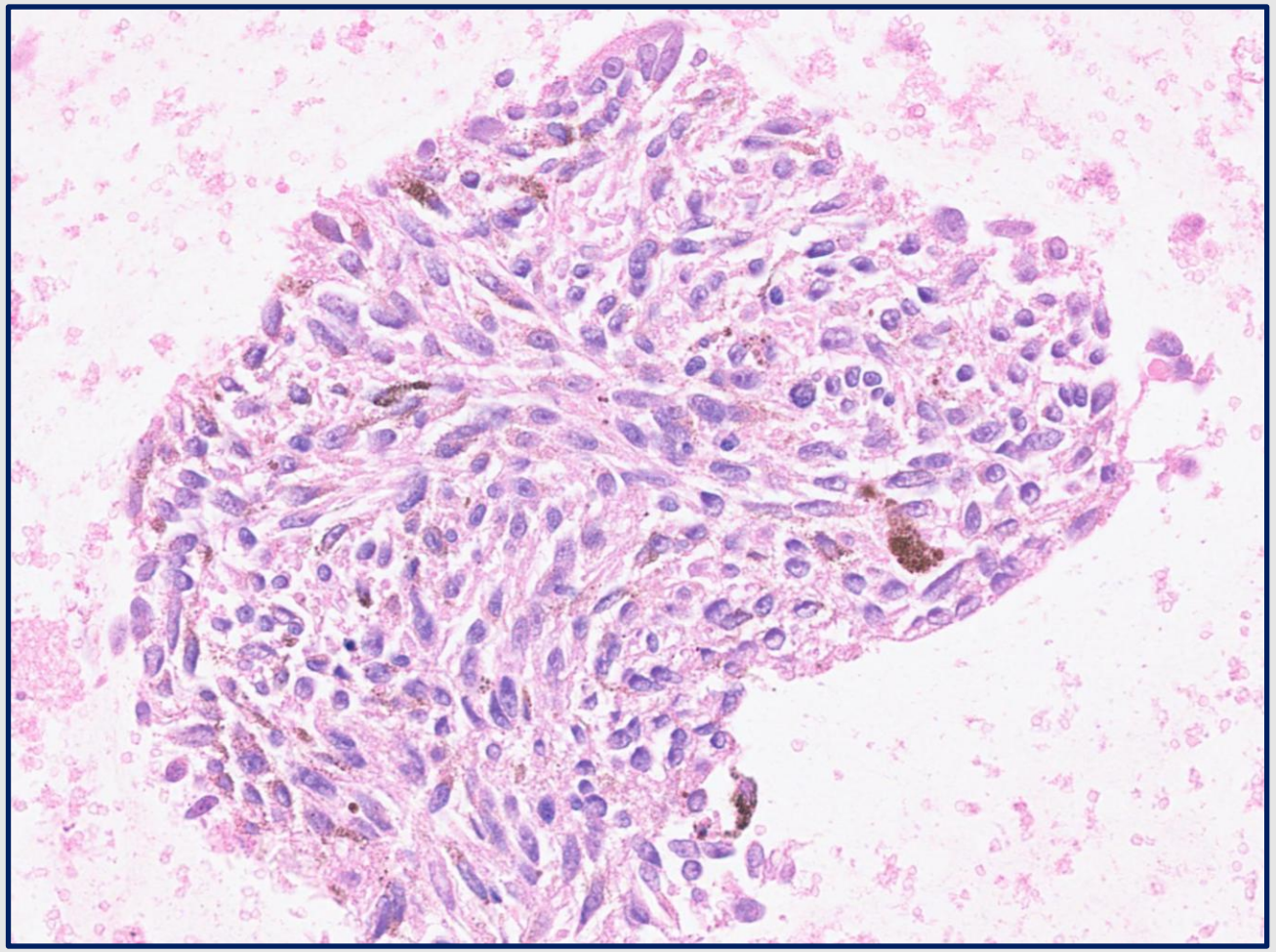


Pap X40 Magnification

A significant degree of atypia with nuclear enlargement and prominent nucleoli

FNA cell block

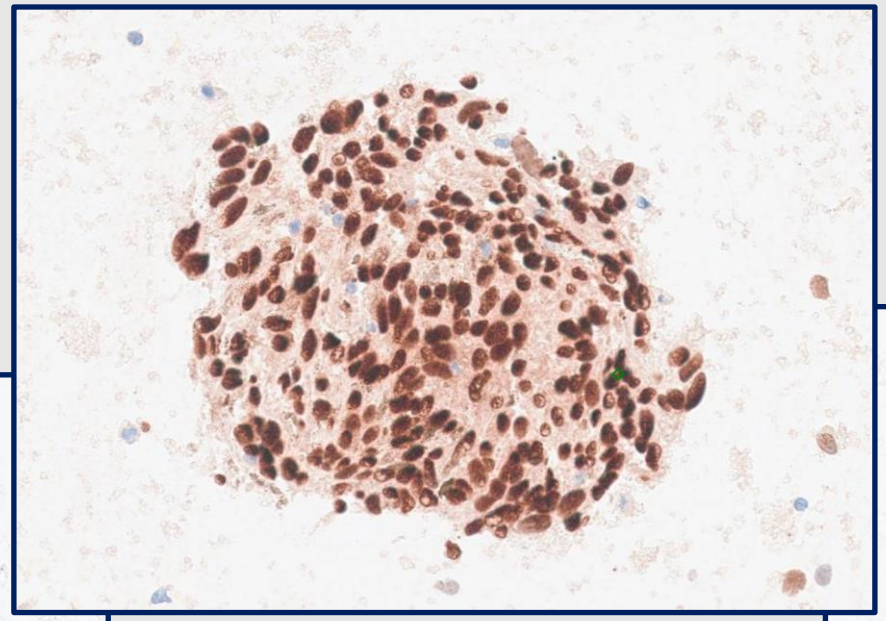


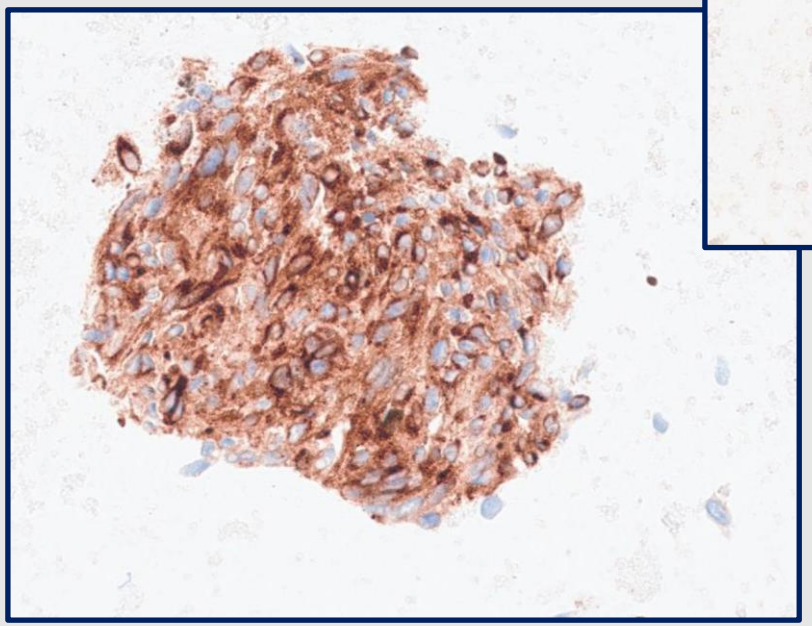


Cellular clot with numerous atypical cell sheets showing pleomorphism and presence of pigment

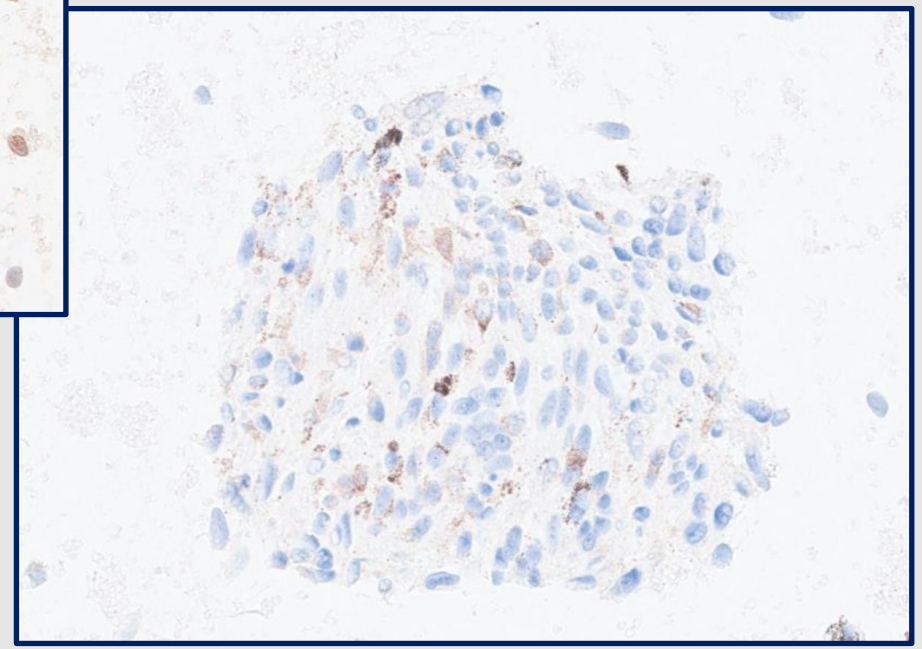
Immunocytochemistry

Strong positive staining with Sox10 (right) and Melan A (below)





Staining with AE1/3 is negative

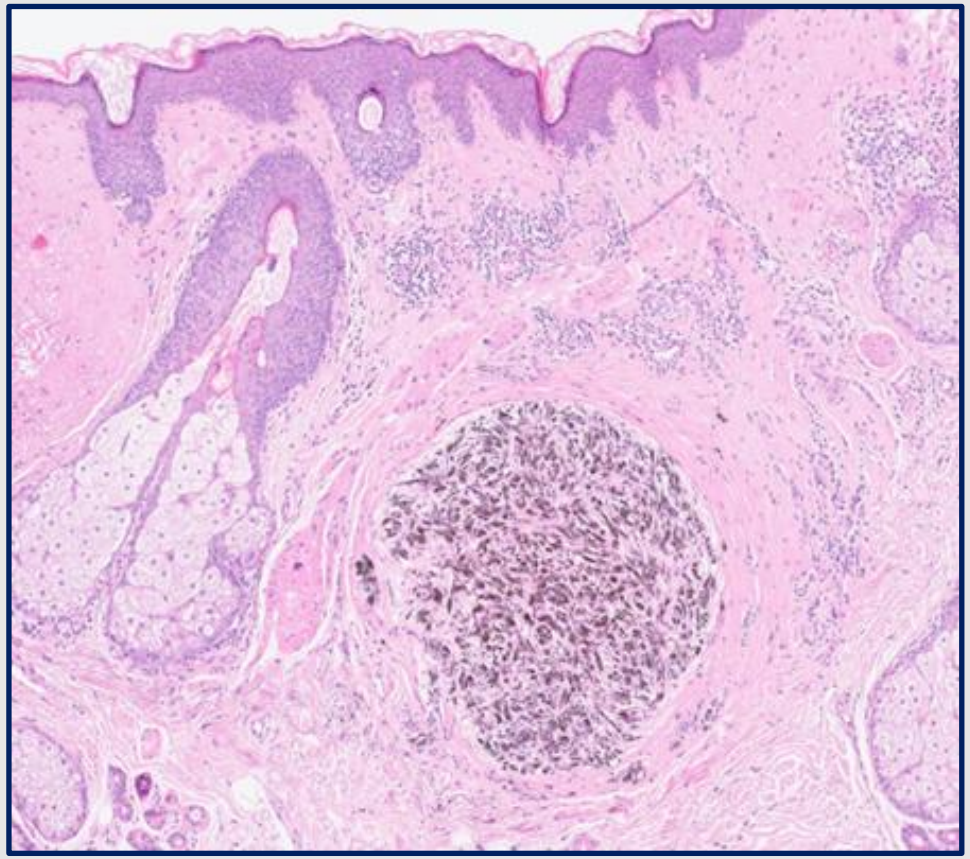


Cytology report

- Singly scattered and clusters of atypical spindle cells associated with scattered pigment
- Spindle cells are strongly positive for Sox10 and MelanA, negative for AE1/3
- The features are of a malignant sample suggestive of a metastatic malignant melanoma.
- The parotid location is unusual but may be of either mucosal or skin origin.
- **BRAF testing has been performed. No mutation is detected in BRAF Codon 600.**

Histology & Clinical Correlation

- On clinical examination - Black dot with 5 x 5mm pink lesion. Previously the black dot was a naevus but it disappeared 3 months ago. Excision of R cheek ?melanoma
- Histology – A small, well circumscribed lesion in the mid dermis composed of pigmented atypical spindled melanocytes of similar morphology to the cells found in the submandibular gland, in keeping with a **malignant melanoma.**



Outcome

- Histological features suggest the skin nodule to be a metastatic deposit rather than a primary lesion however clinical correlation is needed.
- MRI and CT confirm no other metastatic lesions.
- Patient underwent a radical block neck dissection for stage 3 melanoma, BRAF negative. Histology report not yet available.

Discussion

- Spindle cell type morphology can be seen in benign entities such as pleomorphic adenomas, but as part of a varied cell population rather than a monomorphological finding.
- Cytological presentation of melanoma can be varied and include epithelioid, plasmacytoid and spindle cells. Features seen microscopically include poorly cohesive cells, pleomorphic nuclei, prominent nucleoli, bi- and multi nucleation and mitotic figures.
- The presence of melanin pigment is an important diagnostic factor but is only present in a proportion of metastatic melanomas – only 50% in some reports.[3]

Discussion

- Metastases of melanoma are more commonly found in lymph nodes whilst parotid is a rare location.
- Malignant melanoma of salivary gland is invariably from a primary of skin or head/neck mucous membrane origin.[1]
- Intra-parotid lymph nodes may be involved in cases of metastatic melanoma to parotid. These lymph nodes drain a large area of head and neck and are likely involved in lymphatic spread of tumour.
- Due to regression of a primary lesion, it may not always be possible to identify simultaneous primary and metastatic lesions.

Discussion

- The presence of melanocytic cells within the parotid have the potential to give rise to a primary parotid melanoma. However, there is limited evidence of this rare phenomenon and diagnosis relies on exclusion of other primary sites.
- Most patients with parotid gland involvement with metastatic melanoma have a poor prognosis.[2]
- BRAF V600E mutations identify those melanomas sensitive to BRAF inhibitors, such as Vemurafenib and Dabrafenib.
- In cases of ‘wild-type’ BRAF tumours, treatment can include immunotherapy with PD-1 inhibitors such as Nivolumab and Pembrolizumab.

References

1. Ahadt M, Rakhshan A, Mousavi SR, and Saebnoori H. Malignant melanoma of parotid glands from a neglected lesion: A case report. *Clin Case Rep* 2021 9:e04941
2. Prayson RA and Sebek BA. Parotid gland malignant melanomas. *Arch Pathol Lab Med* 2000 124; 1780-1784
3. Lindsey KG, Ingram C, Bergeron J and Yang J. Cytological diagnosis of metastatic malignant melanoma by fine-needle aspiration biopsy. *Seminars in Diagnostic Pathology* 2016 33(4);198-203
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5. Rizzardi PH et.al. Metastatic melanoma of the major salivary glands – a systematic review. *Med Oral Patol Oral Cir Bucal* 2025 30(5);736-744
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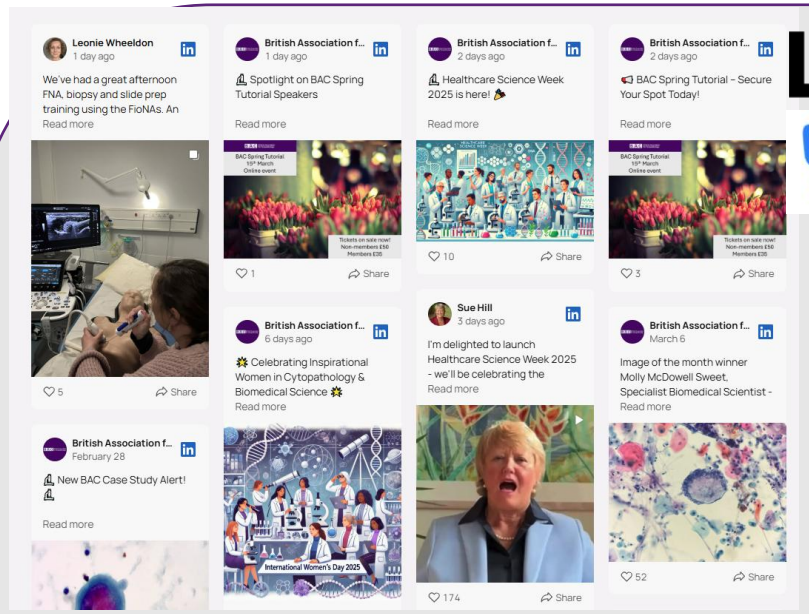

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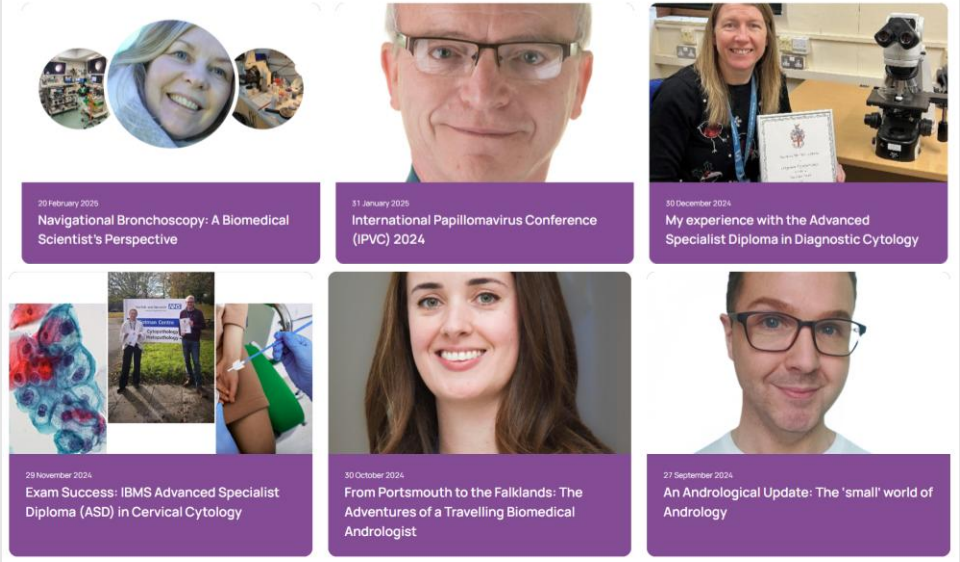

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