BACKGROUND/INTRODUCTION

Leydig Cell Tumours (LCT) of the testis are rare with an incidence of about 1-3% of testicular neoplasms. They are almost invariably unilateral. Testicular LCTs can arise at any age, 20% occur in the first decade of life, 55% from 10 to 50 years and 25% beyond that age. The etiology is largely unknown. There are rare cases associated with Klinefelter’s syndrome and also germline FH mutations. The majority of these tumours are benign, especially in children. There is a higher rate of malignancy in adults (5%), with malignant LCTs accounting for 0.2% of testicular cancers (2015). Metastatic spread is predominantly to adjacent lymph nodes, and less commonly to lungs and liver (1, 2).

We present a case of metastatic Leydig cell tumour to the chest wall, diagnosed on fine needle aspiration (FNA) cytology and discuss the cytomorphology, work-up and resulting clinical outcome for this rare clinical presentation.

CASE REPORT

A 62 year old man, non-smoker, with a previous orchidectomy in 2012, presented to clinic with ongoing left chest wall pain. A large hard 15 cm mass was seen on his left side, not fixed to the skin. A CT scan identified an 11 cm mass invading the left 9th rib with intra and extra thoracic extension and multiple pulmonary metastases. No abdominal lymphadenopathy or other masses were seen. A free hand FNA of this mass was performed, with on-site evaluation. Air dried and alcohol fixed slides, as well as cell block material were prepared.

RESULTS

Cytology: The slides were abundantly cellular with thick, cohesive clusters of malignant cells. Single malignant cells were dispersed in the background. The tumour cells generally had ample granular cytoplasm, but some had vacuolated cytoplasm.

Cytomorphological features included: Large clusters of moderately sized cells, round or polygonal in shape, with abundant, granular, eosinophilic cytoplasm and well defined cell margins. No Reinke crystals were identified. Nuclei were round to oval, usually central, but with marked size variation. The chromatin was finely distributed and single nucleoli were noted. Occasional mitotic figures were noted. (Figures 1, 2, 3 and 4). The cytology findings raised differential diagnoses such as renal cell carcinoma, hepatocellular carcinoma, adrenal cortical tumours and melanoma.

Cell block: The cell block (Figure 5) showed cells with similar features with viable tumour cells arranged in clusters of loosely cohesive cell groups, with granular cytoplasm, and nuclei of moderate size and shape variation. By immunohistochemistry, the tumour cells were positive for Inhibin (Figure 6) and Melan A. CK AK1/AE3 , SALL4, Calretinin, PAX8, CD10 and S100. The findings were consistent with metastatic Leydig cell tumour.

PATIENT FOLLOW-UP:

Our case was presented at the Genito–Urinary Oncology MDM. The original testicular tumour was a pT1 Stage 1 malignant Leydig Cell Tumour. Most patients with malignant LCTs develop recurrence within 2 years and the majority die within 5 years. This man’s presentation with a soft tissue metastasis at 6 years is highly unusual. The treatment of metastatic LCT has been generally unsatisfactory (2). The patient underwent palliative radiation to the chest wall which has resulted in good control of symptoms and reduction in size of the mass. The pulmonary metastases are unchanged. The patient remains alive and well 8 months after diagnosis.

References:
2. WHO Classification of Tumours of the Urinary System and Male Genital Organs, 4th ed, WHO Press, 2016