pathologists in the differential diagnosis of ovarian tumours, including at frozen section, where consideration should also be given to obtaining fresh tissue for flow cytometry.

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GLANDULAR ODONTOGENIC CYST WITH HARD PALATE PERFORATION – A CASE AND REVIEW OF LITERATURE

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Glandular odontogenic cyst (GOC) is a rare developmental cyst of odontogenic origin involving the jaw. GOCs can display locally aggressive behaviour and recurrence after excision, requiring close follow-up.

We report an 82-year-old Asian male who presented with an incidental maxillary cyst, discovered during computed tomography (CT) scan of the brain for a mechanical fall. The CT scan and plain X-ray films demonstrated a unilocular expansile cystic lesion involving left side of the maxillary sinus.

Enucleation was performed, with the intraoperative findings of a lesion containing a resorbed tooth with perforated hard palate.

On gross examination, the specimen measured 2.5×1.3×1.0 cm and consisted of a cystic cavity surrounded by a fibrous wall. Histological examination demonstrated thick cyst wall lined by ciliated epithelium with areas of cellular tufting, stratification, and eosinophilic cells with apocrine snouting and hobnailing. Occasional mucous cells and duct like structures were seen. Focal subtle thickening of epithelium was also present. No high grade atypia or overt invasive features were identified. Fluorescence *in situ* hybridisation to detect MAML2 gene rearrangement was negative.

The overall clinical presentation as well as morphology of the cyst were most consistent with a diagnosis of glandular odontogenic cyst.

A RARE PAEDIATRIC RENAL TUMOUR, CLEAR CELL SARCOMA OF KIDNEY

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Clear cell sarcoma of kidney is a rare paediatric malignant renal neoplasm which affects children in the 2nd and 3rd year of life. It has a propensity to metastasize to bones, lungs and brain and has a tendency to recur after treatment. The renal biopsy showed classic pattern of clear cell sarcoma of kidney confirmed with immunohistochemical markers and the subsequent post neoadjuvant nephrectomy showed predominantly myxoid pattern possibly due to treatment effects. Since the tumour mimics other paediatric malignant neoplasms with small round blue cell morphology, immunohistochemical markers play a prime role in differentiating them for effective treatment with doxorubicin. Due to aggressive nature and poor prognostic features of clear cell sarcoma of the kidney, it is

important to diagnose this tumour and exclude the common neoplasms occurring at this age group prior to neoadjuvant treatment.

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SOLID TUMOURS WITH NTRK FUSION: CORRELATION ACROSS PAN-TRK IHC AND MOLECULAR ASSAYS

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Background: Solid tumours with NTRK fusions are rare tumours. However, their excellent response to NTRK inhibitors necessitate that these tumours are accurately diagnosed so that patients can benefit from targeted therapy.

Methods: We searched our archives for NTRK fusion positive tumours to study their clinico-pathological features and assess the performance of pan-TRK immunohistochemical (IHC)(EPR17341, Ventana) staining, RNA based next generation sequencing (NGS) assays (OncoPrint Comprehensive Assay v3. Fusion and ArcherDx FusionPlex) and a real-time PCR assay (AmoyDx) in diagnosing these tumours. NTRK1 FISH was also performed on 5 cases.

Results: 11 cases were found with TPM3-NTRK1, LMNA-NTRK1, SQSTM1-NTRK3, EML4-NTRK3, ETV6-NTRK3 fusion and 1 case with uncharacterised NTRK1-partner (cases include 1 lung poorly differentiated carcinoma, 1 thyroid anaplastic carcinoma, 1 breast secretory carcinoma, 1 parotid secretory carcinoma, 2 colon poorly differentiated/adenocarcinoma and 6 spindle cell sarcomas). Pan-TRK IHC on 11 cases showed 100% sensitivity for NTRK1 fusions (5/5) and 66.7% sensitivity for NTRK3 fusions (4/6). Both RNA based NGS assays showed 100% sensitivity, the real-time PCR had 90% sensitivity (9/10) and NTRK1 FISH had 40% sensitivity (2/5).

Conclusion: Pan-TRK IHC may play a role in screening for NTRK fusions. RNA NGS assays appear to be superior to real-time PCR and FISH.

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