open approach. There are potential benefits regarding blood loss and length of stay in hospital. Long-term oncological outcomes are not yet available to conclude equivalence to an open approach and there are some concerns regarding the patterns of recurrence after robot-assisted retroperitoneal lymph node dissection.

GCT-53 Clinical Outcomes of Minimally Invasive Retroperitoneal Lymph Node Dissection and Single Dose Carboplatin for Clinical Stage 2a Seminoma

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Background: Standard management of Stage-2-seminoma (SEM) is 3 cycles of cisplatin-based multiagent chemotherapy or paraaortic/pelvic radiotherapy. Both treatments have potential short- and long-term toxicity. We report the use of minimally invasive (robotic or laparoscopic) retroperitoneal lymph node dissection (MI-RPLND) and adjuvant carboplatin.
Methods: From 01/2013 to 5/2019, patients with Stage-2a-SEM were considered for MI-RPLND. Adjuvant carboplatin (AUC7) x1 cycle was administered after confirmation of nodal involvement. Post-operative outcomes including length of stay, Clavien-Dindo 1 complications and pathological staging were recorded. CT was performed at 3 months to verify nodal clearance and patients monitored with standard surveillance.
Results: 36 modified unilateral templates were performed. These comprised 33 with pure seminoma and 3 with mixed germ-cell-tumours containing >90% seminoma with minor teratoma component. Median and mean post-operative stay was 1 and 1.5 days. One patient required conversion to open surgery and two experienced Clavien-Dindo 1 complications. All pts had preserved ejaculation. Mean number of nodes removed per patient 14.3(range 5–31) with average 1.75 nodes involved (range 0–5). 32 of 33 SEM patients had pathologically confirmed Stage-2a-SEM with one exception. After median follow-up of 46 months (mean 32), only 1/36 patients relapsed, at 18 mo and outside the template dissection. Overall, 5/36 (2/33 patients with seminoma) were subsequently exposed to 1–3 cycles of BEP. MIRPLND with single-dose carboplatin is a potential option for Stage-2a-SEM. This approach avoids radiotherapy and BEP in >90% of seminoma patients. In this series, a subset of patients (~10%) were over-staged using standard CT imaging.

GCT-54 A cost comparison of open versus robotic retroperitoneal lymph node dissection for germ cell tumours

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Background: Minimally-invasive approaches to retroperitoneal lymph node dissection (RPLND) offer less morbidity compared to open approaches in patients with germ cell tumours (GCT). Heretofore, the financial implications of such approaches have not been reported. We sought to compare the overall and subcomponent costs, reimbursement, and quality metrics among patients undergoing open (O-RPLND) versus robotic (R-RPLND) for GCT.
Methods: Patients with GCT who underwent RPLND at our institution between 2015 and 2018 were retrospectively compiled and stratified according to surgical approach (open versus robotic). Outcomes included total and subcomponent costs for the operative admission, operative time, and hospital length-of-stay (LOS). Outcomes were compared by open versus robotic surgical approach, and parallel subanalysis was conducted among patients who were chemotherapy-naïve. Outcomes were assessed by independent-sample Mann-Whitney U and chi-squared testing ($\alpha = 0.05$).
Results: 61 patients were included for analysis (44 open, 17 robotic). R-RPLND were more often performed in the primary setting. Operative time and LOS were significantly shorter for R-RPLND than O-RPLND. After exclusion of post-chemotherapy patients, total costs were comparable between the two groups, with OR costs counterbalanced by decreased hospital stay in the R-RPLND group. R-RPLND improves both operative time and LOS without increasing the total cost of the operative admission compared to O-RPLND in patients with GCT. R-RPLND is a financially sound alternative to open surgery in appropriate surgical candidates with GCT.

Radiology, Radiogenomics and Surgery

GCT-55 Radiogenomics and potential application to germ cell tumours

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Background: Cancer is caused by genetic (DNA) and epigenetic alterations and frequently arises as a clonal growth from a founder cell. The subclonal heterogeneity provides the basis for inter-metastatic heterogeneity which is of utmost clinical importance. New tumour sampling techniques and circulating tumour DNA methods may allow for more comprehensive evaluation of clonal composition. As both primary tumours and metastatic lesions are spatially/temporally heterogeneous, they would require multiple biopsies to extract and analyze individual small portions of tumour tissue, and still not allow complete characterization of the tumour genomic landscape.
Methods: Imaging has great potential to allow a comprehensive evaluation of the entire tumour burden in (ovarian) cancer as it is noninvasive and serially performed during treatment/follow-up.
Results: Imaging contrasts with genomics or proteomics, which are still challenging to implement into routine clinical practice. While initial retrospective studies linking phenotype with genotype in ovarian cancer have shown high prognostic power, they do not provide any spatial information, as quantitative imaging features are generated and averaged over the entire tumour, which assumes that tumours are heterogeneous but well mixed. This approach ignores spatial heterogeneity readily apparent on imaging. Indeed, recent genomics work has highlighted the presence of intratumoral variation in gene mutations and expression. However, little effort has been put into integrating imaging, histopathology and genomics. There is therefore a clear need for well designed prospective studies focused on meaningful integration of phenotype and genotype, rather than genomics in isolation, both for ovarian tumours and more broadly across cancer types.