SC41 Clinically signicant prostate cancer diagnosis by micro-ultrasound guided prostate biopsies: A real-life single center experience

P. P. Avolio, F. Persico, M. Lazzeri, R. Hurle, A. Saita, N. Frego, D. Maffei, M. Paciotti, P. Diana, A. Uleri, R. Contieri, N. M. Buffi, P. Casale, G. F. Guazzoni, G. Lughezzani (Milano)

Introduction: While mpMRI has progressively gained an important role in the prostate cancer (PCa) diagnostic pathway, its widespread use in clinical practice is still limited by cost-effectiveness considerations. Micro-ultrasound (micro-US) is a new imaging modality with high resolution down to 70 um. This study reports on our clinical experience after introducing micro-US into our prostate biopsy clinic.
Materials and methods: Data on 709 consecutive patients imaged with the ExactVu micro-US system between October 2017 and July 2019 were prospectively collected. All patients were scheduled for prostate biopsy due to clinical suspicion of PCa. The PRI-MUS protocol was used to locate targets on micro-US. Lesions with a PRI-MUS score ≥3 were targeted. Patients were also subjected to systematic prostate biopsies. The presence of overall PCa and of clinically signicant PCa (defined as a Gleason score ≥7; csPCa) was determined and the diagnostic performance of micro-US was assessed. Logistic regression models (LRMs) were fitted to test the predictors of csPCa.
Results: Median age was 66 (SD 7.8) yrs, median total PSA was 7 (IQR 5–9.5) ng/mL and median prostate volume was 50 (IQR 35–70) mL. Overall, 301 (42.4%) patients were in the repeat biopsy setting, with 119 (16.7%) patients on active surveillance. Micro-US detected prostate lesions with a PRI-MUS score of 3, 4 and 5 in respectively 89 (12.5%), 281 (39.6%) and 120 (16.9%) patients, while in 219 (30.9%) individuals micro-US did not identify any target. Overall PCa and csPCa detection rates were 51.9% (368/709) and 36.1% (256/709). Micro-US provided high sensitivity, with 93.8% csPCa patients having at least one PRI-MUS score ≥3 lesion. Similarly, NPV was 85.2 patients with no micro-US targets receiving a benign or GS = 6 PCa diagnosis (after systematic and MRI-target biopsy). Conversely, PPV and specificity were lower (41.3% and 23.0%), likely due to over-targeting. At multivariable LRMs, after adjusting for several confounders, patients with a PRI-MUS 4 or 5 lesion had respectively a 2.85 and 8.35 higher risk of harboring csPCa compared to those with a micro-US PRIMUS <3 pattern ($p < 0.01$). Besides increasing PRI-MUS score, age (OR 1.056; $p < 0.001$), initial biopsy setting (OR 2.45; $p < 0.001$) and increasing prostate volume (OR: 1.006; $p < 0.001$) achieved the independent predictor status.
Conclusions: Micro-US is a promising new imaging modality showing high sensitivity to detect csPCa. In addition, the system appears to be capable of reliably excluding the presence of csPCa in the great majority of patients. Multi-institutional efforts are still needed to further support the adoption of this tool in the diagnostic pathway of patients with suspected PCa.

SC42 Laparoscopic radical prostatectomy using a real-time lymphangiography with transperineal injection of indocyanine green: Results from a prospective study

F. Claps, M. Ramirez-Backhaus, M. C. Mir Maresma, A. Gomez-Ferrer, J. M. Mascaros, A. Collado-Serra, J. Marenco, J. Dominguez-Escrig, J. Casanova, A. Calatrava, C. Trombetta, J. Rubio-Briones (Valencia)

Introduction: Current standard imaging procedures have limited ability to predict lymph node (LN) involvement in clinically localized prostate cancer (PCa) and extended pelvic lymph node dissection (ePLND) during radical prostatectomy (RP) remains the most accurate staging procedure. However, meticulous ePLND is time- consuming and associated with an increased risk of morbidity. In order to improve these aspects, sentinel LN mapping with different guided techniques has been proposed over the years. The primary aim of this study is to evaluate the effectiveness of indocyanine green (ICG)-guided ePLND to assess regional LN status in patients who underwent RP. Secondary objective is to evaluate the potential role of a selective ICG lymph node dissection (LND) in patients with ≤2 LN metastasis which according to the literature are those who may more benefit from ePLND.
Materials and methods: Data about 226 consecutive patients underwent laparoscopic RP with ICG-guided ePLND at our Department were prospectively evaluated. A solution of 25 mg ICG in 5 ml sterile water was transperineally injected. PLND started with the ICG stained nodes followed by extended template. Primary outcome measures were sensitivity (S), negative predictive value (NPV) and likelihood ratio of a negative test (LRn) of ICG-guided procedure. To our knowledge this study shows data about the largest cohort of patients underwent ICG-guided ePLND.
Results: Overall, median age of patients was 64.8 years with a median PSA of 6.6 ng/ml. Extracapsular disease occurred in 50.9% of patients, Gleason score ≥8 was reported in 11.9% cases and positive surgical margins rate was 24.3%. Median number of nodes retrieved was 22 (IQR 16–27) and median number of ICG stained per patient nodes was 6 (IQR 4–9). Overall 4939 nodes were removed and 1599 (32.4%) were fluorescent in vivo. Node- positive disease was found in 58 (25.7%), of which 53 (91.4%) had some of the metastatic LNs stained by ICG while 5 (8.6%) were false negative. Therefore 97.8% of the sample was properly classified by ICG-guided ePNLD (S: 91.4%, NPV: 97.1% and LRn: 8.6%). Considering 209 (92.5%) patients with 0, 1 or 2 metastatic LNs, 39 (18.7%) had a node-positive disease of which 34 (87.2%) had metastatic ICG stained LNs. Again, 97.6% were properly classified by ICG approach (S: 87.2%, NPV: 97.1% and LRn: 12.8%). These 39 node-positive patients had a total of 48 metastatic LNs and all except 9 (18.8%) were fluorescent in vivo (S: 81.2%).
Conclusions: ICG guidance correctly stage 97% of cases. Furthermore, its high NPV will allow to avoid ePLND as soon as an accurate intraoperative analysis is available. Among those patients in whom the LND may have a potentially curative role, ICG alone would have lost only 9 metastatic LNs. This suggest that maybe there is a place for selective LND in patients with limited LN metastatic burden.

SC43 Bioptic prostatic inflammation correlates with false positive rates of multiparametric magnetic resonance imaging in detecting clinically significant prostate cancer

U. G. Falagario, G. Silecchia, P. Milillo, A. Francavilla, S. M. Bruno, M. Recchia, M. Auciello, O. Selvaggio, F. Sanguedolce, L. Macarini, G. Carrieri, L. Cormio (Foggia)

Introduction: In spite of its high sensitivity and negative predictive value in detecting clinically significant prostate cancer (csPCa) at first or repeat prostate biopsy (PB), mp-MRI suffers the problem of low specificity with up to 44% of patients resulting false positive at PB. The aim of this study was to determine the impact of bioptic prostatic inflammation (PI) of the false positive rate of mp-MRI in detecting csPCa.
Materials and methods: our prospectively maintained Prostate Biopsy database was queried to identify patients who underwent mp-MRI before PB at our institution. A dedicated uropathologist prospectively assessed bioptic PI using the validated Irani Scores. PCa detection rates of PI-RADS 1–2, 3, and 4–5 lesions were compared in patients with different levels of intraprostatic inflammation grade (Irani G score) and aggressiveness (Irani A Score).