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Techniques and outcomes of salvage robot-assisted radical prostatectomy

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Introduction & Objectives: Salvage radical prostatectomy (RP) distinguishes itself from RP in primary setting because of tough tissues and surgical planes. Consequently, this procedure can be regarded as challenging and often has unfavourable outcomes. Robot-assisted radical prostatectomy (RALP) offers the advantage of superior vision, superior dexterity and better tissue handling. However, the outcomes of the latter technique are still under reported. Moreover, surgical technique is depended on primary treatment modality and should be altered accordingly. The objective of this educational video is to provide an overview of surgical techniques according primary treatment and to report the functional and oncological outcomes of salvage RALP.

Materials & Methods: From 2012 to 2018, 106 consecutive patients underwent salvage RALP after focal or whole gland primary treatment and were retrospectively assessed. Only patients with minimum follow-up of 3 months were included. Surgery was performed in a high-volume single robotic centre. Pre-and post-operative histology, PSA, continence and erectile function were assessed. Additionally, a comprehensive overview of surgical tips and tricks for salvage RALP according to primary treatment is provided.

Results: As primary treatment, 59 (56%) patients underwent high intensity focused ultrasound (HIFU), 27 (25%) underwent radiotherapy, 10 (9%) seed brachytherapy, 8 (8%) solitary androgen deprivation therapy (ADT), 1 (1%) cryotherapy and 1 (1%) electroporation or Nanoknife. Median age was 67 years. Median follow-up was 2,1 years. Pre-operative median PSA was 5,6 mg/L. Overal, 5% had T1 disease, 50% had T2 and 45% had T3. Low-, intermediate- and high-risk disease was found in 4, 49 and 47% respectively. In our series, there was an up-gradation of the pathology in 21% and an upstage in disease by 51%. Relatively, up-gradation was mainly seen in salvage RALP after whole gland treatment (Radiotherapy 33%, brachytherapy 25%) or ADT (25%). Up-gradation was less prevalent after focal treatment (15%). At median follow-up, biochemical recurrence was noted in 13% and local or metastatic recurrence in 11%. Positive surgical margin rate < 3 mm and ³3 mm was 25% and 14% respectively. At short term follow-up (<1 year), incontinence rate was 33%. Social continence (1-2 pads) and continence (no pads) was 36 and 31%. At long term (> 2 years) this was 33 and 50% respectively. Continence rates at long term were better after focal treatment (82%) than after whole gland treatment (64%). Erectile dysfunction was present in 95%. 30-day complication rate was 8%. There was one perioperative death noted.

Conclusions: Salvage RAP can be regarded as feasible. Patients should be counseled that functional outcomes are inferior to RALP in primary setting. Adjustment of surgical technique according to primary treatment is key for surgical outcomes.