460. Feasibility and safety of the robotic system applied in pancreatic surgery
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Background: To describe our initial experience in the surgical treatment of pancreatic disease using the robotic system and determine its safety.

Material and methods: This is a descriptive study of a series of cases collected prospectively including all patients undergoing pancreatic disease using the Da Vinci robotic system in a period of 3 years. In most cases an hybrid approach was used. Demographic, intraoperative and histological data were collected, as well as morbidity and mortality and hospital stay.

Results: 13 patients (7 women and 6 men) were treated with a mean age of 53 years (22–71 years). The surgeries performed were: 7 distal pancreatectomies (DP) all with splenic preservation, but one case the Warshaw technique (ligation of the splenic vessels) was performed ; 3 cephalic pancreaticoduodenectomies (DPc) and 3 Total pancreatectomies (TP) (2 spleenectomies). The histological results were: 5 adenocarcinoma, 3 cystadenoma (1 borderline), 1 metastatic renal clear cell carcinoma, 1 papillary tumor, 1 insulinoma and 1 schwannoma. The malignant tumors were staged: in three cases T3N1, one case T3N1 and one case pT1N0. Mean lymph nodes studied were 13 (9–16). The average docking time was 12 minutes. Three patients were converted to open surgery (2 DP and 1 TP). The mean blood loss was 180.7 cc. (25–600 cc) requiring red blood cell transfusion in 2 cases (TP and DPc). The mean operating time was 300 minutes in PD, 380 minutes in TP and 420 minutes in DPc. Morbidity and mortality were: 1 pancreatic fistula grade A, 1 sepsis due to central venous catheter, 1 transient ischemic attack and 1 death due to an acute myocardial infarction. The average stay was 4 days in the PD group and 9 days in DPC and TP.

Conclusions: Robotic-assisted pancreatic surgery is feasible and safe providing comparable results to conventional surgery, but with the advantages of the minimally invasive approach. Future efforts should be aimed at evaluating the long-term oncological results with the application of robotic systems when it comes to treat pancreatic cancer. No conflict of interest.

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461. Robotic assisted versus laparoscopic resection for rectal cancer: Short-term outcomes from early experience from consecutive patients I. Kim1, S. Ahn1, J. Jeong1, S. Kong1, H. Kwon1, S. Ahn1, W. Kim1
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Purpose: Robotic surgery has been advocated for the radical excision of rectal cancer. The aim of this study is to compare short-term outcomes and surgical quality of robot-assisted and laparoscopic total mesorectal excision (TME) in patients with rectal cancer.

Methods: A retrospective review was conducted of consecutive patients who underwent TME by robot-assisted procedures (RAP) during a 3 year period from July 2010 to Oct 2013. All operations were performed by 1 surgeon experienced in advanced laparoscopy at a tertiary institution. Once robotic surgery was introduced, all cases were performed robotically. Short-term outcome included intraoperative results and postoperative measures including macroscopic quality of the specimens, complications, length of stay, and re-operative rate. Statistical comparison was performed using Fisher’s exact test and t test.

Results: The patient characteristics were not significantly different between the two groups except higher male patient and preop chemoradiation in RAP group. Mean operation time was 260±43 min for LAP and 321.5±516 min for RAP group (P=0.002). No difference was noted in blood loss, transfusion rate, intraoperative complications, or conversion rate. In RAP, there was no open conversion but one case was converted to laparoscopy in patient with preop chemoradiation. The median number of lymph nodes was similar in both groups (18 vs.17 nodes, p = 0.09). There was no difference in distal or radial margin positivity between groups (p = 1.00). Median length of stay was shorter in Group LAP compared to Group RAP (16 vs. 111.5 days, p = 0.03). The 90 day major complication rate was similar in both groups (25 vs. 25.8%, P = 1.00). The overall complication rates were similar (RAP, 12.9% vs. LAP, 12.5%; P = 0.7).

Conclusion: Early experience with robotic rectal cancer excision demonstrated longer operative time but was ontologically safe and effective for patients with rectal cancer. The TME specimen quality of the RAP group was acceptable. Larger randomized studies are needed to confirm these findings and explain which aspects of robotic surgery may contribute to lower anastomotic complications.

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462. Robotic splenic flexure mobilization is not difficult anymore: ‘Inferior penetration method’
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Background: During minimally invasive surgery for rectal cancer, splenic flexure mobilization is difficult procedure to perform. Therefore, during robotic surgery, there are many debates about whether splenic flexure mobilization is performed by robotic or laparoscopic surgery. We introduce ‘inferior penetration method’ which can easily perform splenic flexure mobilization.

Material and methods: From December 2010 to April 2014, 43 patients (26 males and 17 females) who had rectal cancer underwent robotic splenic flexure mobilization (23 low anterior resections; 20 ultra-low anterior resections). Robotic low or ultra-low anterior resection consists of three phases. Phase I is the left lateral setup including initial exposure, primary vascular control of the inferior mesenteric artery and vein, and medial to lateral mobilization of sigmoid and descending colon. The procedure is performed in a 4-arm set-up with arms 1, 2, and 3 docked. Phase II is the splenic flexure set-up. Splenic mobilization is performed in a 3-arm set-up after de-docking of the arm 2 to decrease external collisions of the robotic arms. If there are no external collisions, the arm 2 is used for retraction. Phase III is the pelvic set-up. The procedure is performed in a 4-arm set-up again with arms 2 and 3 re-docked in the lower and upper left ports. ‘Inferior penetration method’ is the procedure, during phase II, that medial to lateral mobilization is performed as far laterally as possible: division of pancreaticomesocolic ligament and line of Toldt, splenocolic and phrenocolic ligament. Therefore, window of inferior portion of splenic flexure colon is created.

Results: Nineteen patients (44.2%) received preoperative chemoradiotherapy. Patients were classified into two groups: A (16 patients underwent ‘inferior penetration method’) and B (27 patients did not undergo ‘inferior penetration method’). There were no significant differences in clinicopathologic variables between two groups including age, preoperative CEA level, docking time, free proximal and distal margins, tumor size, intraoperative blood loss, number of harvested and positive lymph nodes, time to flatus and diet. There were significant differences in BMI (25.3 vs 24.4 kg/m², p < 0.05) and length of stay (8.3 vs 7.7 days, p < 0.05) for group A vs group B patients. There were no significant differences of
463. Robotic-assisted extralevator abdominoperineal resection in prone jackknife position
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**Background:** The extralevator abdominoperineal resection (ELAPR) is a new surgical technique for patients with low advanced rectal cancer. This technique requires an extra excision of the levator muscles to avoid the surgical waist caused by the conventional abdominoperineal resection, with the patient’s position changed to a prone jackknife position. This new technique is remarkable not only by its radicality but also by the possibility of simultaneous perineal reconstruction, with encouraging oncological results. It is well known that laparoscopic surgery (LS) has revolutionized rectal surgery. However, there are several technical drawbacks to LS, including limited range of motion of instruments and an inadequate visual field associated with unstable camera view and assistant’s traction, which are not under the surgeon’s control. Technical advantages of the robotic system could overcome the limitations of LS for low rectal cancer.

**Conclusions:** Splenic flexure mobilization by minimally invasive surgery is difficult procedure. However, robotic ‘inferior penetration method’ by a three-dimensional view and long and wristed instruments is a safe and useful procedure that may facilitate splenic flexure mobilization.

**No conflict of interest.**

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464. SLNB with Tc-99m at clinic for surgical oncology NCRC of Serbia in year 2013
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**Background:** Technetium-99m (Tc-99m) is a well-known nuclear isomer which is used in great number of medical diagnostic procedures and represents the most used radioisotope in human medicine. We use it to mark and trace radioactivity in human body by GAMMA probe. Because of its short half-life it allows us to collect precise data while patient’s body irradiation is minimal. Tc-99m is user friendly only in diagnostics, not for therapeutic use. We applied Tc-99m colloid injection (Nanocolloid) for dynamic lymphoscintigraphy as well as handheld probe for sentinel lymph node (SLN) detection. Once being detected by GAMMA probe, ‘hot’ SLN is removed and sent to frozen section analysis. Aim is to present our experience in usage of Tc-99m (Nanocolloid) for localization of ‘hot’ SLNs.

**Materials & method:** During year 2013, Tc-99m (Nanocolloid) was applied in 46 patients — 35 female and 11 male. Localizations were: breast 25 pts. (76%), axillae 11 pts. (33.3%) and neck 2 pts. (4.3%). Written consent and multidisciplinary team decision is mandatory, as well as supervision by nuclear medicine specialist. Hour before operation surgeon injects 0.2 – 0.5 ml of radiocolloid into dermis or epidermis of adequate localization. Usage of protection equipment and containers is mandatory.

**Results:** Breast pathology — 25 pts. with average readings of GAMMA probe of 4500 units. After tissue removal and frozen section, repeated readings were zero with clear surgical margins. Twenty findings were negative and five were positive: 2 DCIS, 2 CLI and one IDC. SLNs were negative in 22 pts. while two pts. had positive SLNs and one was diagnosed with micrometastases in SLNs. Axillary pathology — 11 pts. Average readings were 2900 units. ‘Hot’ SLNs were sent to frozen section-7 detected SLNs were negative and 4 were positive (melanoma). After positive reports, we performed axillary dissection. Groin pathology — 8 pts. Average readings were 300 units. Eight SLNs were removed and sent to frozen section — 5 were negative, 2 positive (one for melanoma and one for genital carcinoma) and 1 sent to standard pathology. Also, after positive report we performed groin dissection. Head and neck pathology — two patients with two negative SLN findings.

**Conclusions:** Usage of Tc-99m (Nanocolloid) is medically justified because removing positive SLNs helps us to achieve both oncological and aesthetic goal. Combined treatment with methylene blue dye in so called ‘double mapping’ technique, results with extraordinary high level of sensitivity.

**No conflict of interest.**

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465. The role of single-photon emission computed tomography in sentinel lymph node biopsy, denying taking too many lymph nodes a lot
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**Background:** Sentinel lymph node biopsy (SLNB) is a standard treatment in women with clinically node-negative breast cancer. SLNB may reduce some adverse events such as lymphedema, but the ideal number of sentinel lymph nodes (SLN) is uncertain. Even though SLNB is performed, some patients still suffer from lymphedema. This implies that we may need to resect more lymph nodes than that are typically suggested. Some studies have claimed that single-photon emission computed tomography (SPECT) may be able to three-dimensionally detect SLNs. The present study was undertaken to investigate the role of SPECT in optimizing lymphadenectomy in SLNB.

**Material and methods:** Between January 2012 and March 2014, 630 adult women patients underwent breast cancer surgeries performed by the...