of ascites, distant metastases or peritoneal involvement were excluded. Likewise cases with macroscopic serosal or peritoneal involvement detected intraoperatively and those patients undergoing palliative resection and/or bypass surgical procedures were excluded. At laparotomy, 200 ml of normal saline were instilled into the peritoneal cavity and lavage fluid was collected. The procedure was repeated after the resectional surgery just before the abdomen was closed. Both the samples were centrifuged and stained for malignant cells. The detailed histopathological report of the resected specimen was also recorded.
Results: There were 6 cases of well differentiated, 10 cases of moderately differentiated and 6 cases of poorly differentiated adenocarcinoma in our series. 2 out of the 6 cases of poorly differentiated carcinoma showed signet ring appearance which is indicative of a poorer prognosis. There were 3 cases of $T_3N_1M_0$ of which two patients had positive peritoneal cytology in both the preresection and postresection samples. Both patients had signet ring type poorly differentiated adenocarcinoma. None of the other cases had positive peritoneal cytology. None of our patients converted from negative to positive peritoneal cytology after surgical resection.
Conclusions: We conclude that presence of free cancer cells in the peritoneal cavity as measured by peritoneal washing is a measure of poor histology and advanced disease and may be present even without gross peritoneal involvement and/or ascites. We were unable to demonstrate spillage of tumour cells in the peritoneal cavity during resectional surgery and are of the opinion that the fears in this regard may be unfounded.

6077 POSTER

Surgical Resection of Liver Metastases From Colorectal Carcinoma − Survival According to Radical Liver Resection and to Prognostic Factors

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Background: Currently, surgical resection of the liver metastases is considered the most effective therapy for liver metastases from colorectal carcinoma (LMCC) patients, and is potentially the only curative treatment. Several large studies have reported OS rates up to 60% and 5 year DFS of 43%.
Purpose: The aim of the present study was to assess: 1) the survival of all 59 patients, who underwent resection for LMCC from 2003 to 2010, referred to the General Surgery and Liver Transplantation Unit, "Brotzu" Hospital, Cagliari, Italy; 2) moreover, only the 35 patients with a post-operative follow-up of at least 3 years after liver radical (R0) resection were assessed comparing survivors and deceased patients by χ^2 test on the basis of the prognostic factors shown in the Table.
Results: The OS rates of all 59 patients were 92%, 66%, 50%; at 1, 3 and 5 years, respectively; and DFS rates were 87%, 58%, 43%, at 1, 3 and 5 years, respectively with a postoperative mortality of 3%. For the second aim of the study, a statistically significant difference was observed between the two groups (survivors vs deceased): 100% of deceased patients had synchronous metastases vs 61% of survivors ($p = 0.0351$); 100% of deceased patients had metastases <5 cm vs 56% of survivors ($p = 0.02$).

	Patient 3 year follow-up	Survivors (%)	Deceased (%)	p value (χ^2)
Primary tumour location				0.68
Colon	29/35 (83%)	19/23 (82%)	10/12 (83%)	
Rectum	6/35 (17%)	4/23 (18%)	2/12 (17%)	
Dukes' Stage				0.1
B	1/35 (3%)	1/23 (4%)	0/12 (0%)	
C	6/35 (17%)	6/23 (26%)	0/12 (0%)	
D	28/35 (80%)	16/23 (70%)	12/12 (100%)	
Number of metastases				0.9
1	13/35(37%)	9/23 (39%)	4/12 (33.3%)	
2−3	12/35 (34%)	8/23 (35%)	4/12 (33.3%)	
>3	10/35 (29%)	6/23 (26%)	4/12 (33.3%)	
Location of metastases				0.83
Unilobar	21/35 (60%)	14/23 (61%)	7/12 (58%)	
Bilobar	14/35 (40%)	9/23 (39%)	5/12 (42%)	
Time of occurrence of metastases				**0.0351**
Synchronous	26/35 (74%)	14/23 (61%)	12/12 (100%)	
Metachronous	9/35 (26%)	9/23 (39%)	0/12 (0%)	
Size				**0.02**
<5 cm	25/35 (71%)	13/23 (56%)	12/12 (100%)	
⩾5 cm	10/35 (29%)	10/23 (44%)	0/12 (0%)	
Serum CEA levels				0.14
<60 ng/ml	29/35 (83%)	17/23 (74%)	12/12 (100%)	
⩾60 ng/ml	6/35 (17%)	6/23 (26%)	0/12 (0%)	
Extrahepatic metastases				0.89
Yes	4/35 (11%)	2/23 (9%)	2/12 (16%)	
No	31/35 (89%)	21/23 (91%)	10/12 (84%)	

Conclusions: Our study shows that if radical (R0) liver resection was achieved, the number of metastases, their location (unilobar vs bilobar), and the occurrence of extrahepatic metastases did not affect 3 year survival. Conversely, the synchronous vs metachronous metastases were a clear adverse prognostic factor.

6078 POSTER

Extended Surgery for Locally Advanced Primary and Recurrent Rectal Cancer − Experience of 30 Pelvic Exenterations

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Background: Currently, about 15−30% of primary rectal cancer patients experiencing with the locally advanced (T4) tumours. On another hand, local recurrence after curative surgery for primary rectal cancer occurs in 4−20% of cases. For locally advanced rectal tumours (primary as well as recurrent), the extended surgery including pelvic exenterations seems to be necessary component of radical treatment.
Materials and Methods: Overall 30 patients with locally advanced rectal tumours were included. 13 pts (5 m, 8 f) were presented with primary locally advanced rectal cancer (Group A), 17 pts (7 m, 10 f) − with recurrent rectal tumours (Group B). The mean age of pts was 52.3 ± 14.4 years (28−78) in the Group A, and 54.8 ± 9.2 years (32−70) in the Group B.
The tumours involving rectum were observed in all 30 patients, bladder and prostate − in all men, vagina − in all women, intestine − in 6 pts, sacral fascia − in 5 pts. Preoperative radiotherapy was performed in 7 pts of Group A and in 4 pts of Group B.
The total pelvic exenteration (TPE) was performed in 14 pts (6 − Group A, 8 − Group B). Posterior pelvic exenteration (PPE) was performed in 16 pts (7 − Group A, 9 − Group B). All 16 recurrent cancer patients underwent the APE of rectum or rectal stump. Sphincter-preserving (supra-levatoric) pelvic exenteration was performed in 5 pts of Group A. The orthotropic neo-bladder after TPE was performed in 4 male pts of Group A and 1 of Group B. Other pts after TPE underwent the Bricker procedure (6 pts) and uretherocutaneostomy (3 pts).
Results: Resections were considered R0 in 23 (76.7%) pts, R1 in 7 (23.3%) pts. Postoperative complications occurred in 16 (53.3%) pts, 4 of them were re-operated. There was one postoperative death, related to the intraperitoneal hemorrhage. Thus, postoperative morbidity was 53.3%, mortality − 3.3%. The follow-up period ranged from 10 to 49 months after surgery (median − 25 months). Among the traced 27 pts, 25 (92.6%) are still alive, 22 (81.5%) of them are free of disease. 3 (11.1%) pts (1 − Group A, 2 − Group B) after R1 resections experienced with re-recurrences. 2 pts dead of metastatic disease in 12 and 18 months after surgery without any evidence of local relapse.
Conclusion: Multivisceral resections, including pelvic exenteration, are an option to cure patients with locally advanced primary and recurrent rectal cancer. CRM+ is a predictor of high risk of re-recurrence, thus, R0 resection must be performed if it could be achieved.

6079 POSTER

Reconstructions of Perineal Defects After Abdominoperineal Resection or Pelvic Exenteration

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Background: Surgery for advanced or recurrent rectal cancer often results in complex defects associated with high complication rates and morbidity for the patients. This study assesses the usefulness of the omentum in the reconstruction of complex perineal defects, following abdominoperineal resection or pelvic exenteration, for anorectal malignancy.
Patients and Methods: Between 2005 and 2010, 43 patients (mean age: 54 years) with anorectal malignancy underwent abdominoperineal resection ($n = 36$) or pelvic exenteration ($n = 7$) and were reconstructed by primary repair alone ($n = 16$), primary repair with omentum ($n = 8$), myocutaneous flap alone ($n = 12$), or myocutaneous flap with omentum ($n = 7$). Patients with and without omental flaps were compared by Student t test. Omental flaps were based on a single pedicle, tunneled in the retrocolic plane lateral to the ligamentum of Treitz, and transposed across the sacrum to the pelvic floor. In total, 15 patients had pelvic floor and perineal reconstruction with the omentum, and 28 patients had reconstruction without the omentum.
Results: Incidence of major pelvic complications (abscess, urinoma, deep vein thrombosis, flap dehiscence, hernia, bowel obstruction, fistula) was

greater in the “no omentum” group (16/28 patients, 57.14%), compared with the “omentum” group (5/15 patients, 33.33%) ($P < 0.01$). No differences were observed regarding age, stage, incidence of radiotherapy, blood loss, length of stay, or mortality.
Conclusion: Use of the omentum as a primary flap, or in combination with a myocutaneous flap, in the reconstruction of complex perineal defects, is associated with a decreased incidence of postoperative complications, strongly supporting the use of the omentum in pelvic floor reconstruction.
This work has been supported by a UICC International Cancer Technology Transfer Fellowship granted in 2010.

6080 POSTER

Strategy for Synchronous and Multiple Liver Metastasis

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Surgical indications for resection of synchronous metastasis from colorectal cancer (CRC) and the optimal timing of hepatectomy are still controversial and widely debated.
Patients: Synchronous and multiple metastatic liver tumours were detected in 57 since May/2005. Our treatment policy has been to perform hepatectomy first, if the resection can be done with no limit on size and number of tumours. However, if curative resection is not, chemotherapy is begun first and timing for the possibility of a radical operation is planned immediately.
Results: (1) In 37 patients whose tumours were located only in the liver, primary tumour resection was performed first in 16 patients, and after tumour-decreasing by chemotherapy, operation was performed in 7 patients. In 20 patients in whom chemotherapy was performed first, after controlling the distant metastasis, hepatectomy was performed in 3 patients, and staged hepatectomy was performed in 10 patients.
(2) Recurrence was detected after hepatectomy in 75.0% of simultaneous resection cases and in 70.0% of staged cases. In the recurrence cases, early detection (within 6 months) after tumour resection occurred in 58.3% of the simultaneous and 14.2% of the staged.
(3) No differences in results of pre- and postoperative liver function tests were found between these groups, and duration of hepatectomy and blood loss were also similar. No deaths occurred, and one incidence of bile leakage was detected in each group.
(4) Median survival time (MST) and 2-year survival rate were significantly better in the hepatic resection cases than in the non-operated cases. There was no significant difference in MST or 2-year survival rate between simultaneous and staged cases.
(5) In 10 staged cases, length of chemotherapy had no effect on pre- or postoperative liver function test results, and survival curves.
(6) Repeat operation was performed for recurrence in 75% of the simultaneous and 14.3% of the staged cases. The average time between first and second operation was 13.1 ± 7.7 months, and 2-year survival was 100%.
Conclusion: Neoadjuvant chemotherapy does not increase the risk of postoperative complications or the surgical difficulties of hepatectomy for colorectal metastases. Treatment strategies for these clinical conditions should include consideration of responsible administration of chemotherapy and surgery.

6081 POSTER

Right Kocher’s Incision − a Feasible and Effective Incision for Right Hemicolectomy

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Background: The choice of surgical incision in the abdomen is determined by access to the surgical field. The purpose of this study is to compare the right subcostal (Kocher’s incision) and the midline incision, for patients undergoing right hemicolectomy, by focusing on either short- or long-term results.
Materials and Methods: Between January 1995 and December 2009, hospital records for 213 patients that had undergone a right hemicolectomy for a right- sided colonic carcinoma were retrospectively studied. 113 patients had undergone a right hemicolectomy via a right subcostal (Kocher) incision and 100 via a midline incision. Demographic details, operative data, recovery and oncological parameters were analysed. Wound complications, postoperative complications and the incidence of incisional hernias were also recorded.
Results: Demographic data were similar. The median length of the midline incision was slightly longer than the right subcostal incision (12 cm vs. 10 cm, $p < 0.05$). No significant difference was noted regarding analgesia requirements. The duration of the surgery for the right subcostal incision group was significantly shorter (median time 70 minutes vs 85 minutes, $p < 0.001$), despite the fact that in four patients the right hemicolectomy was combined with segmentectomies of the right hepatic lobe for preoperatively diagnosed metastatic lesions. The Kocher incision group had a significantly shorter hospital stay (median time 5 days vs 8 days). All patients underwent wide tumour excision. According to the histopathological reports, clear resection margins were obtained in all cases (minimum length of resection margins was 5.7 cm distally for the right subcostal incision group and 5.8 cm for the midline incision group), whereas the median number of lymph nodes harvested was 14 for both groups. There was no significant difference in terms of early postoperative complications between the two groups. With regards to late postoperative complications, incisional hernias were recorded in two patients from the Kocher incision group (1.8%), and in six patients from the midline incision group (8%).
Conclusions: The right subcostal incision approach for right- sided colon cancer is technically feasible, safe and overall very well tolerated. It can achieve the same standards of tumour resection and surgical field accessibility as the midline approach, while reducing postoperative recovery.

6082 POSTER

Stroma Production Within the Primary Tumour Correlates With Poor Survival for Stage I–II Colon Cancer Patients

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Background: Recent models on metastatic invasion focus on the tumour-“host” interface, in particular the role of the stromal tissue. There is a strong emphasis that CAF’s (cancer-associated fibroblasts) are important promotors for tumour growth and progression. We anticipate that changes in the proportion of stroma in the primary tumour reflect progression. The intra-tumour stroma percentage has previously been reported by our group as a strong independent prognostic parameter. CRC patients with a high stroma percentage within the primary tumour have a poorer prognosis. Validation of this parameter in an independent series was necessary, and it has therefore been tested in a cohort of patients from the VICTOR trial (Vioxx in colorectal cancer therapy: definition of optimal regime as anticancer intervention involving selective COX-2 inhibitors).
Methods: Tissue samples from 710 patients participating in the VICTOR trial were analyzed for their stroma percentage using conventional microscopy. Each sample was analyzed by two individual observers in a blinded manner. Tissue samples consisted of 5 μm Haematoxylin and Eosin (H&E) stained sections from the most invasive part of the primary tumour. Stroma-high (>50% stroma) and stroma-low (⩽50% stroma) groups were evaluated with respect to survival time.
Results: Overall and disease free survival times (OS and DFS) were lower in the stroma-high population (OS $p < 0.0001$, HR = 1.96; DFS $p < 0.0001$, HR = 2.15). Within the total patient population the five year OS was 69.0% versus 83.4% and DFS 58.6% versus 77.3% for stroma-high versus stroma-low patients. For patients with stage II CRC, OS and DFS were also lower for the stroma-high group (OS $p = 0.034$, H=1.95; DFS $p = 0.005$, HR = 2.04). The 5 year OS for this group was 79.8% versus 89.1% and for DFS 71.1% versus 83.3% for stroma-high versus stroma-low patients. Within the stage III CRC group, 5 year OS of 61.7% versus 76.1% was observed and for DFS 50.2% versus 69.4% (OS $p = 0.019$, HR = 1.61; DFS $p < 0.0001$, HR = 1.86) for stroma-high versus stroma-low patients.
Conclusions: This study validates the intra-tumour stroma ratio as an independent prognostic factor of CRC in an independent patient series. Patients with a high intra-tumour stroma percentage have a poorer prognosis. This parameter could be a valuable addition to current high-risk parameters such as TNM-status and MSI status used in routine pathology reporting.

6083 POSTER

Modified Pseudocontinent Perineal Colostomy − a Special Technique

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Background: Innovative techniques created to restore gastrointestinal perineal continuity after abdominoperineal resection in patients with anorectal cancer include pseudocontinent perineal colostomy, in which the colon is pulled to the perineum and wrapped with a sleeve of stretched colon segment to act as a new sphincter.
Objective: We investigated perineal reconstruction with a modified pseudocontinent perineal colostomy technique.
Design: Prospective cohort study.