

metastasis concurrently), peritoneal seeding in 4 and distant metastasis (mostly liver) in 12 patients. The median survival duration is 17 months.
Conclusion: This adjuvant regimen was well tolerated and can be easily administered after surgery for locally advanced pancreatic cancer.

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POSTER

Therapeutic strategy for superficial cancer of the esophagus

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Purpose: To clarify the optimal treatment strategy for superficial esophageal cancer, mucosal and submucosal cancer, based on the results of surgical treatment.

Patients and methods: Between 1984 and 2003, 136 patients (121 males and 15 females, mean age 62 years) with a superficial esophageal cancer underwent radical esophagectomy. We reviewed the clinicopathologic results and postoperative survival of these patients.

Results: The depth of tumors resected were mucosal layer in 33 patients and submucosal layer in 103 patients. Patients with Tis (n=5) or Ipm cancer (n=8) had no positive node, however, 2 out of 20 patients with mm cancer had lymph node involvement (N1). Forty (38.9%) out of 103 submucosal cancer (T1b) patients had nodal involvement (N1), and 8 had nodal metastases away from regional lymph node (M1-lym). 5- and 10-year overall survival rate for patients with mucosal cancer were 87% and 52%, and 60% and 50% with submucosal cancer. Operative mortality and hospital mortality rate were 1.4% and 2.2%. Only one out of 33 mucosal cancer patients died of recurrent disease (3%), and 19 died of recurrent disease in submucosal cancer patients (18%). Other malignancies were associated in 52 patients (38%). Half of patients died of other malignancies after 5-year survival. 5- and 10-year cause-specific survival rate with mucosal cancer were 93% and 89%, and 80%, 78% with submucosal cancer. While there was no difference in survival between N0 and N1, there was a significant difference in survival of patients with or without other malignancies ($p < 0.05$).

Conclusions: Most of mucosal cancer could be cured by the local surgical treatment, such as endoscopic mucosal resection (EMR) and laser therapy. Radical esophagectomy should be considered for patients with mm cancer who predicted with nodal involvement. Radical esophagectomy with lymph node dissection is necessary for patients with submucosal cancer. Control of other malignancies is important to improve the survival of patients with superficial esophageal cancer.

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POSTER

High-dose-rate brachytherapy for cancer of the biliary tract

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Background: Although cancer of the bile duct is rare, the prognosis for this tumor type is poor. Surgery is the only curative treatment, however most patients present with a contraindication for radical surgery. Our aim is to evaluate combined treatment with high-dose-rate brachytherapy (HDR-BT) and conventional fractionated external beam radiotherapy (ERT) for unresectable, locally advanced biliary tract cancer. We also assessed the feasibility of treatment with HDR-BT alone for aged patients.

Material and methods: Between 1986 and 2004, 54 consecutive patients with unresectable, locally advanced biliary tract cancer were treated with HDR-BT (29 men, 25 women; median age 72 years, range 50 to 88). The median HDR-BT dose was 30 Gy prescribed to a point 1 cm from the midline. Thirteen patients received HDR-BT alone (median age 84 years) and 41 received HDR-BT and ERT (median dose 40Gy). ⁶⁰Co was the source for HDR-BT until 1998 and then ¹⁹²Ir was used.

Results: The overall survival rate at 1, 2 and 5 years was 41.5%, 27.9% and 11.6% respectively. Survival was no significantly different between the patients treated with ERT and HDR-BT and those treated with HDR-BT alone. Acute gastrointestinal symptoms during radiotherapy were acceptable with 2 cases of biliary fistula and 2 of liver abscess as late complications.

Conclusions: Combined radiotherapy which ERT (40 Gy) and HDR-BT (30 Gy) is feasible and complications are within acceptable limits. HDR-BT alone provided reasonable local control and improved quality of life for aged patients since they could be treated as outpatients.

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POSTER

Role of radiotherapy in treatment of portal vein thrombosis from hepatocellular carcinoma

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Background: To analysis the role of radiotherapy in treatment of portal vein thrombosis (PVT) from hepatocellular carcinoma (HCC).

Methods: PVT from HCC were treated with 3 dimensional conformal radiotherapy (3D-CRT) and evaluated with CT scan after radiotherapy. The radiation dose ranged from 40 Gy/16 fractions to 60 Gy/30 fractions, which was determined according to the volume of normal liver in 20 Gy isodose distribution and bowel in 50 Gy equivalent dose. Response was determined by measuring the extent of PVT on CT scan at 0, 1 and 3 months after completion of radiotherapy. Median follow-up period for response evaluation was 4 months.

Results: Forty six patients were enrolled and 39 of them who received at least 70% of the planned dose and checked follow-up CT scan were eligible for this analysis. Size of GTV ranged from 3.9 to 17.7 cm, and the median was 9.6 cm. Complete or marked improvement of PVT was observed in 18 patients (45%), and 17 patients (43%) showed no further progression. There was no dose-response relationship among dose groups of 45 Gy/15 fractions, 48 Gy/12 fractions, 50 Gy/20 fractions, and 60 Gy in 30 fractions for the reduction of PVT. However, higher dose group (50 Gy or higher) showed a trend of lower rate of PVT progression (20% vs. 7%) and smaller tumors (longest diameter of GTV less than 8 cm) showed a tendency of higher response rate than large tumors (64% vs. 41%, $p = 0.12$). Transarterial chemoembolization (TACE) was possible after radiotherapy in 19 patients (57%).

Conclusion: Radiotherapy with dose of 45 Gy in 3 Gy fractions (or a TDF value ≥ 90) was effective for palliation of PVT in patients with moderate size of HCC. But higher dose to focal PVT should be investigated for higher response rate.

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POSTER

The impact of conformal therapy in the treatment of anal cancer

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Introduction: Conformal therapy has been introduced in an attempt to alleviate the acute toxicities related to radiation and concurrent chemotherapy. This study reports the long-term outcomes on local control and survival results from this treatment and compares with those from conventional techniques.

Materials and Methods: From 1997–2003, 57 consecutive patients were treated with conformal therapy (6-field arrangement) to deliver 54 Gy in 30 fractions without interruption and concurrently 2 cycles of chemotherapy during weeks 1 and 6 of radiation using 5-Fluorouracil (5-Fu, 1000 mg/m²/day, 96 hour continuous infusion) and Mitomycin C (MMC, 10 mg/m², bolus on day 1) while from 1990–2002, 60 patients were treated conventionally using antero-posterior fields followed by a 3 field arrangement, to deliver 52–59.4 Gy in 25–33 fractions in split course therapy with 2 cycles of concurrent chemotherapy using CI of 5-Fu and either MMC or Cisplatin (75 mg/m²) as a bolus on day 1.

Table 1: Tumour characteristics and acute toxicity data for the two techniques

Tumour characteristics and patient acute toxicity data	Conformal Therapy	Conventional Therapy
T2	50%	60%
T3	32%	28%
T4	18%	12%
N0	60%	70%
N+	40%	30%
Acute toxicity rate ≥ 3		
GI	5%	11%
bone marrow	12%	16%
skin	18.5%	43.3%

Results: Patients treated with conformal therapy and conventional therapy respectively had actual 5-year local recurrence free rates of 90.7% and 66.1% ($p < 0.02$), 5-year disease free survival rates of 74% and 48% ($p = 0.0095$) and overall survival rates of 74% and 55% ($p < 0.005$). In the multivariate analysis, the nodal status is the most significant factor