correlated with TS location 13.8% vs 24.8% and 1.7% versus 5.8% in case of non-TS and TS ($p < 0.05$). 21/25 of patients with severe DES were in TS or temporal location. No patient had enucleation for DES. On MVA, diameter (hazard ratio HR:1.103, CI95:1.042-1.169, p 0.001), tumor volume (HR:0.0696, CI95:0.486-0.996, p=0.048, % of ciliary body in the 90% isodose line (HR:1.014, CI95:1.003-1.026, p=0.015), gel compensator (HR:0.717, CI95:0.535-0.960, p=0.025) and TS location (HR:2.581, CI95:1.695-3.929, p<0.001) were significantly associated with the occurrence of DES.

Conclusion: Although the incidence of DES and severe DES was increased in TS melanomas and this correlated with the dose to the lacrimal gland, their characteristics were less favorable (larger, superior involvement of ciliary body and limbus). Occurrence of severe DES in TS but also temporal locations suggests that involvement of the ciliary arteries may also be responsible for severe DES. The correlation of TS with ciliary involvement suggests that limbus cells may participate in the occurrence of DES. The role of palpebral and corneal irradiation will be further investigated. Since DES is manageable, TS location should not be considered a contraindication for protontherapy.

OC-0246

Visual outcomes of parapapillary uveal melanomas following proton beam therapy

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Purpose or Objective: In parapapillary melanoma patients, radiation-induced optic complications are frequent and visual acuity is often compromised. We investigated dose effect relationships for the optic nerve with respect to visual acuity after protontherapy.

Material and Methods: of 5205 patients treated between 1991 and 2014, those treated between 1994 and 2013 (using CT-based planning) to 52 Gy in four fractions, minimal 6 month follow-up and documented initial and last visual acuity, were included. Deterioration of ≥ 0.3 logMAR between initial and last visual acuity was reported.

Results: 865 consecutive patients were included. Median follow-up was 69 months, mean age 61.7 years, tumor abutted the papilla in 64.9% and tumor to fovea distance was ≤ 3 mm in 74.2% of patients. Five-year relapse-free survival rate was 92.7%. Initially, 72.6% of patients had 20/200 visual acuity, 47.2% had ≥ 20/200 at last follow-up. A wedge filter was used in 47.8% of the patients, with a positive impact on vision and no impact on relapse. Glaucoma, radiation-induced optic neuropathy, maculopathy were reported in 17.9%. 47.5%, and 33.6%, respectively. Patients irradiated to ≥ 80% of their papilla had better visual acuity when limiting the 50% (30 Gy) and 20% (12 Gy) isodoses to ≤ 2 mm and 6 mm of optic nerve length, respectively.

Conclusion: A personalized protontherapy plan can be used efficiently with good oncologic and functional results in parapapillary melanoma patients.

OC-0247

Carbon ion radiotherapy for adenoid cystic carcinomas invading the skull base

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Purpose or Objective: To estimate the toxicity and efficacy of carbon ion radiotherapy for adenoid cystic carcinomas (ACC) invading the skull base.

Material and Methods: Between April 1997 and August 2013, a total of 193 patients with ACC of the head-and-neck were treated with carbon ion radiotherapy. All of these patients had neither regional lymph node nor distant metastasis before carbon ion radiotherapy. The prescribed tumor doses were 57.6 or 64.0 Gy (RBE) in 16 fractions over four weeks. Of the 193 patients, 78 patients with ACC invading the skull base were analyzed. There were 37 males and 41 females. The median age was 52 years (range, 23-75 years). The most common primary site was the parenasal sinus (46%), followed by the nasopharynx (13%), the nasal cavity (10%) and the hard palate (10%). The extent of surgery was biopsy alone in 52 patients (67%), partial resection in 5 patients (6%). Twenty of 78 patients (27%) had recurrence tumors after surgery. Median follow-up time was 52 months (range, 10-177.7 months). Patients were divided into two groups according to intracranial involvement; Group A was made up of 32 patients whose tumors invading the cranial fossa, Group B consisted of 46 patients whose tumors invading the intracranial region or cerebra. Acute and late morbidities were evaluated by the RTOG, the RTOG/ EORTC and the CTCAE (version 4.0).

Results: The 5-year local control and overall survival rates of all patients were 65 % and 60 %, respectively. Median survival time was 74.4 months. In total 45 patients died, the major cause of death was distant metastases (67%). The 5-year local control rates were 71% for Group A and 56% for Group B. The 5-year overall survival rates were 74% for Group A and 49% for Group B. In univariate analysis using log-rank test, there were no significant differences in local control and overall survival rates between the two groups. There was no evidence of any unexpected severe acute (grade ≥4) and late (grade ≥3) reactions to the skin, the mucosa and other critical organs. In regard to brain toxicity, 5 of 32 patients (16%) in Group A and 9 of 42 patients (21%) in Group B developed grade 2 late reactions, which necessitated steroid administration temporarily. Four patients in Group B who had marginal recurrence received re-irradiation. Therefore, it was difficult to evaluate brain toxicity for these patients.

Conclusion: Our results showed acceptable brain toxicities and excellent therapeutic effectiveness for unresectable adenoid cystic carcinomas invading the skull base.

OC-0248

Proton Beam Therapy in childhood – First 2-years of practice results from the WPE

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Purpose or Objective: Proton beam therapy (PT) has experienced increasing interest over time especially in pediatric malignancies as PT offers a chance to reduce post-treatment late effects. The West German Proton Therapy Center Essen (WPE) started treatments for pediatric tumors in June 2013. Since September 2013 all children under the age of 18 years were enrolled in the standardized prospective