OR3.9

Transcatheter Arterial Chemoembolization on Relapsed Metastatic Spinal Cord Compression after Radiotherapy

Makino Wataru, Heianna Joichi, Ishikawa Kazuki, Iraha Yuko, Nakamata Akihiro, Murayama Sadayuki

Department of Radiology, University of the Ryukyus Hospital, Okinawa, Japan.
E-mail: wataru517@gmail.com

Objectives: The purpose of this study was to evaluate the effects of transcatheter arterial chemoembolization (TACE) on relapsed metastatic spinal cord compression (MSCC) after radiotherapy. **Methods:** From September 2014 to November 2018, 19 patients with 22 MSCC underwent TACE. We targeted the lesions with analgesic-resistant pain and neurologic deficit. The anticancer agents used were epirubicin, doxorubicin, and cisplatin, based on the primary lesion. In all cases, we performed TACE using Embosphere® (300–500 mm) after intra-arterial infusion chemotherapy. We repeated TACE as needed. Blood flow was altered with microcoils, if necessary. The following endpoints were evaluated for all lesions: pain relief, improvement of neurologic deficit, and objective tumor response. We defined complete symptom relief (CSR) as an achievement of pain relief and improvement of neurologic deficit, partial symptom relief (PSR) as an achievement of pain relief or improvement of the neurologic deficit but not both, and no symptom relief (NSR) as persistent pain and neurologic deficit. We defined the clinical response rate as (CSR + PSR)/(CSR + PSR + NSR). Objective response was estimated as follows: We defined complete response (CR) as a >50% decrease in tumor size, partial response (PR) as a < 50% decrease in tumor size, and stable response (SR) as no change in tumor size at follow-up. We defined the objective response rate as (CR + PR)/(CR + PR + SR). **Results:** We performed TACE for 45 sessions for 22 lesions. The treatment sites were as follows: 12 thoracic spines, eight lumbar spines, and two cervical spines. The outcomes with TACE were a clinical response rate of 86% (CSR: 10, PSR: 1, and NSR: 3) and an objective response rate of 68% (CR: 3, PR: 12, and SR: 7). We observed no severe adverse events. **Conclusion:** We recommend TACE for better pain relief and improvement of neurologic deficits from relapsed MSCC after radiotherapy.

OR3.10

Efficacy of an Augmented Reality Navigation System (SIRIO) for Percutaneous Computed Tomographic-Guided Pulmonary Ground-Glass Opacity Biopsies

Faiella Eliodoro, Pacella Giuseppina, Altomare Carlo, Andresciani Flavio, Zobel Beomonte Bruno, Grasso Rosario Francesco

Department of Diagnostic and Interventional Radiology, University of Rome "Campus Bio-Medico," Rome, Italy.
E-mail: e.faiella@unicampus.it

Objectives: To evaluate the efficacy of an augmented reality infrared navigation system (SIRIO) performance on computed tomographic (CT)-guided percutaneous lung ground-glass opacity biopsy. Complications rate and histological sample quality were evaluated, in relation to lesion size and location. **Methods:** A total of 40 patients over 18 years with lung ground-glass opacity suspected of malignancy were included. Patients with an affected coagulative profile or performance status were excluded. Maximum lesion diameter (LD), distance between lesion and pleural surface (DPS), distance traveled by the needle (DTP), procedure timing (PT), and validity of histological sample were evaluated. Complications rate in relation to the maximum diameter of the lesion and the distance traveled by the needle were analyzed. **Results:** Histopathological diagnosis was obtained in 92.5%, and the incidence of adenocarcinoma was reported as 75%. Mean LD was 16.0 mm, mean DPS was 13.5 mm, mean DTP was 71.0 mm, and mean PT was 15 ± 5 min. The thoracic radiation dose was 40.2 ± 49.1 mGy $\times$ cm. We reported only one case of major complication: a massive pneumothorax that required placement of a drainage. No statistically significant correlations were found either between the maximum LD and the complications rate or between the distance traveled by the needle and the same complications ($P > 0.05$). **Conclusion:** The SIRIO navigation system has demonstrated high safety, technical reliability, and effectiveness for percutaneous CT-guided pulmonary ground-glass opacity biopsies with a low incidence of complications and a reduction of the radiation dose administered to patients.

OR3.11

Predictors of Outcomes of Percutaneous Cryoablation for Renal Cell Carcinoma

Khalid Mahmoud, Sherif Moawad, Anas Souid, Husameddin M. El Khudari, Zagum Bhatti[1], Mihir Patel[1], Richard Tapnio[1], Daniel Fung[1], Rodrick Zivavanjanja[1], Andrew Gunn[1], Ahmed Kamel Abdel Aal[1]

University of Alabama at Birmingham, Birmingham, Alabama, [1]The University of Texas Health Science at Houston, Houston, Texas, United States.
E-mail: ahmed.k.abdelaal@uth.tmc.edu

Objectives: To evaluate the clinical and technical factors affecting the outcomes of percutaneous cryoablation (PCA) of renal cell carcinoma (RCC). **Methods:** The medical records of the patients who underwent PCA for RCC between 2004 and 2018 were retrospectively reviewed, and 128 patients were included. Patient demographics, tumor characteristics, technical success defined as absence of residual tumor within 3 months of procedure, and complications were reported. Recurrence-free, cancer-specific, and overall survival rates were analyzed. A univariate analysis was performed to identify any potential predictors of the outcomes. **Results:** Mean age of the patients was 65 (standard deviation = 11.5) years. Chronic kidney disease at the baseline was seen in 38.3% of patients. The median tumor size was 3.0 (range: 1.2–8.7) cm with 73 (57%) posterior tumor location. The study included T1a (69.5%) and T1b (28.9%) tumors. The median number of probes used was 2 (range: 1–7), and 81 (63.3%) tumors were biopsied. Technical success rate was 90.6%. Minor complications were seen in 26.6% and major in 6.3% of the patients. On univariate analysis, tumor biopsy ($P = 0.019$), endophytic/mixed location ($P = 0.026$), nearness to collecting system ($P = 0.012$), and renal sinus involvement ($P = 0.003$) were associated with