



PP-074

CT guided cryoablation for locally recurrent or metastatic bone and soft tissue tumor

M. Susa¹, K. Kikuta¹, K. Nishimoto¹, K. Horiuchi¹, S. Nakatsuka², Y. Toyama¹, H. Morioka¹

¹ Department of Orthopaedic Surgery, School of Medicine, Keio University, Tokyo, Japan

² Department of Diagnostic Radiology, School of Medicine, Keio University, Tokyo, Japan

Background: Historically, local control of recurrent or metastatic bone and soft tissue tumor has been limited to radiotherapy when surgical resection is not feasible. Recently, cryoablation has been reported with satisfactory results in the treatment of lung and liver carcinomas. In this study, we analyzed the clinical outcome of CT guided cryoablation for malignant bone and soft tissue tumors to elucidate the problems surrounding this procedure.

Materials and Methods: Since 2011, 7 CT guided cryoablations in 6 patients were performed for locally recurrent or metastatic bone and soft tissue tumors (5 male and 1 female). The average age was 74.8 years (range 61-86) and the median follow up period was 16.1 months (range 7-34). Histological diagnosis included dedifferentiated liposarcoma (n=2), renal cell carcinoma (n=2), chordoma (n=1), myxofibrosarcoma (n=1), and thyroid carcinoma (n=1). The average size of the tumors were 39.7mm (range 22-52 mm) and were localized in ilium (n=3), retroperitoneum (n=2), sacrum (n=1), and thigh (n=1). Operative methods, clinical outcomes, complications, and oncological outcomes were analyzed.

Result: There were 4 recurrent tumors and 3 metastatic tumors, and all cases were contraindicated for either chemotherapy or radiotherapy. 2 and 3 cycles of cryoablation were performed for bone and soft tissue tumors, respectively. Average length of the procedure was 117.4 minutes (range 81-187) and average number of probes utilized was 2.1. Complications included 1 case of urinary retention in a patient with sacral chordoma who underwent previous carbon ion radiotherapy and 1 minor wound complication. Oncological outcomes were 4 NED and 3 AWD.

Conclusion: Reports regarding CT guided cryoablation for musculoskeletal tumors are rare and clinical outcomes have not been extensively studied. There are several limitations to this procedure: the lesion should have adequate distance from skin, neurovascular structures and other viscera, and should not be localized in the weight-bearing bone. Nevertheless, CT guided cryoablation had analgesic efficacy and there have been no local recurrence post procedure during the follow up. Although further accumulation of data using this technique is necessary, cryoablation is a promising option in medically inoperable musculoskeletal tumors.