

## Poster ME-7

### Differentiation between Recurrent Rectal Cancer and Post-Operative Fibrosis by Proton MR Spectroscopy: Correlation with Pathologic Results

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**목적 :** To know the differences of proton MR spectroscopic features between recurrent rectal cancer and fibrosis in post-operative period, and to evaluate the possibility to discriminate recurrent rectal cancer from post-operative fibrosis by analysis of proton MR spectra

**대상 및 방법 :** We evaluated the proton MR spectra from 25 soft tissue masses in perirectal area that developed in post-operative period after resection of rectal cancer. Our series included 11 cases of recurrent rectal cancer and 14 of fibrotic mass. Sixteen men and nine women were included in our series. All cases of recurrent rectal cancer and post-operative fibrosis were confirmed by biopsy. Proton MR spectroscopy (1H-MRS) was performed at 1.5T GE Signa Horizon (GE Medical System, Milwaukee, USA) system using localized proton STEAM sequence and body coil in all cases with subjects were located in supine position. Parameters using in MRS were: TR = over 3000 ms, TE = 30 ms, number of scans = 128, voxel size = 3.4 (1.5x1.5x1.5) cm<sup>3</sup>, and one NEX. We evaluated the spectra with an attention to the differences of pattern of the curves between recurrent rectal cancer and post-operative fibrosis. The ratio of peak area of all peaks at 1.6-4.1ppm to lipid (0.9-1.6ppm) [P (1.6-4.1ppm)/P (0.9-1.6ppm)] was calculated in recurrent rectal cancer and post-operative fibrosis groups, and compared the results between these groups. We also evaluated the sensitivity and specificity for discriminating recurrent rectal cancer from post-operative fibrosis by analysis of 1H-MRS.

**결과 :** Proton MR spectra of post-operative fibrosis showed significantly diminished amount of lipids compared with that of recurrent rectal cancer. The ratio of P (1.6-4.1ppm)/P (0.9-1.6ppm) in post-operative fibrosis was much higher than that of recurrent rectal cancer with statistical significance ( $p < .05$ ) due to decreased peak area of lipids. Mean standard deviations of P (1.6-4.1ppm)/P (0.9-1.6ppm) in post-operative fibrosis and recurrent rectal cancer group were 2.71 1.48 and 0.29 0.11, respectively. With a cut-off value of 0.6 for discriminating recurrent rectal cancer from post-operative fibrosis, both the sensitivity and specificity were 100% (11/11, and 14/14).

**결론 :** Recurrent rectal cancer and post-operative fibrosis can be distinguished from each other by analysis of proton MR spectroscopic features, and 1H-MRS can be a new method for differential diagnosis between recurrent rectal cancer and post-operative fibrosis.