In vivo Proton Magnetic Resonance Spectroscopy in Adnexal Lesions

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Purpose: To explore the *in vivo* 1H- MR spectral feature of adnexal lesions and to characterize the spectral patterns of various pathologic entities.

Materials and Methods: Thirty-one patients with surgically and histopathologically confirmed adnexal lesions were examined with 1H- MR spectroscopy. Short echo time STEAM (stimulated echo acquisition method) 1H-MR spectra were obtained and analyzed.

Results: The lipid peak at 1.3 ppm from the methylene group in the fatty acid chains was observed in most malignant tumors and benign mature cystic teratomas. On the contrary, none of the benign ovarian epithelial tumors showed the lipid peak at 1.3 ppm in their 1H- MR spectra. The lipid peak at 5.2 ppm from the CH=CH (*e.g.,* olefine) was obtained in various benign adnexal lesions. The lipid peak at 1.3 ppm to water peak ratios (lipid/water ratios) were different in different disease groups, and characteristically high in some teratomas.

Conclusion: 1H- MRS seems to reflect pathology of adnexal lesions. The intense lipid peak at 1.3 ppm was observed only in malignant ovarian tumors and benign mature cystic teratomas. Thus, 1H- MRS may helpful in differential diagnosis of adnexal lesions.