Our Experience of Preoperative Prediction of Uterine Sarcoma Using Magnetic Resonance Imaging (MRI) and its Issue


[Objectives] For preoperative prediction of Uterine sarcoma, we previously presented the finding that a tumor with high tumor-to-subcutaneous fat signal intensity ratio on MRI T2 weighted imaging (TFSIR) (over 0.515) and low ADC (under 1.280) is highly suspected of sarcoma (Fig 1-3). In last meeting, we introduced the new preoperative prediction method using these 2 parameters i.e. the tumor with both positive parameters is highly suspected as sarcoma (Table 1), and our experience of its clinical use. The purpose of this time is to make this preoperative evaluation method of uterine tumor more reliable through the additional cases.

[Methods] The materials are 70 uterine tumors which performed MRI preoperatively and confirmed the pathological diagnosis in our hospital in 2017 and 2018. Both TFSIR and ADC had calculated for all tumors. The tumors with both positive parameters are predicted as sarcoma, and other tumors are predicted benign tumor. After operation, the preoperative predictions had matched to pathological results. The sensitivity, specificity, positive predictive rate and negative predictive rate of this preoperative prediction method had calculated.

[Results] Among 70 uterine tumors, 3 tumors were predicted as sarcoma and two of those tumors were indeed sarcoma. Thus one false positive case resulted. The other 67 tumors predicted as benign tumor were indeed benign (Table 2). The sensitivity of this method is 100%, the specificity is 99%, the positive predictive rate is 67% and negative predictive rate is 100%.

[Conclusion] Preoperative prediction of uterine sarcoma is possible using both TFSIR and ADC on MRI, whereas we have to be careful for false positive case.