

The probable imaging diagnosis

Case 383

4. Sigmoid colon cancer, bilateral ovarian carcinoma

【Progress】

The patient is scheduled to the hospital where gastro-surgeon and gynecologist serve together for resection of both sigmoid colon cancer and bilateral ovarian tumors.

【Discussion】

In this case, sigmoid colon cancer was evident on abdomen CT. The problem is bilateral tumors with homogeneous soft tissue density in the small pelvic lumen. Bilateral tumors with homogeneous soft tissue density were connected to uterus, not contradictory with bilateral myoma. Abdomen MRI depicted the bilateral masses as low signal intensity on T1WI and T2WI that were also not contradictory with either myoma uteri, ovary fibroma(or ovary thecoma) or ovary metastases (Krukenberg tumor) from digestive organ tumors (sigmoid colon cancer in this case). Conventional CT and MRI seemed not to be useful for their differentiation.

However, ADC values might be useful for their differentiations. In this case ADC values of sigmoid colon cancer were 0.717-0.788 (Fig.4). Meanwhile, ADC values of right ovary were 0.585, those of left ovary were 0.419-0.641.

In general, ADC values of 0.12 or greater are reported to be benign tumor. ADC values of myoma uteri 1.472 ± 0.285 and those of benign ovary tumors including ovary fibroma or thecoma are reported are 1.24: cut off values are 0.95 (1, 2). Our measurements of ADC values and the reported ADC values indicate the bilateral ovary tumors of this case are significantly lower than those of myoma uteri and ovarian fibroma.

Further, ADC values of sigmoid colon cancer were 0.717-0.788. They are lower than those of ovary tumors: If ovary tumors arose from metastases rather than ovary cancer, their ADC values would be more closing to those of sigmoid colon cancer. However, the ADC values of bilateral ovary were remarkably lower. It indicates that bilateral ovary tumors are other than Krukenberg tumor (ovary metastases from digestive organ cancer such as gastric cancer or colon cancer, ADC values of Krukenberg tumor are reported to be 0.9 to 1.1) (3, 4). The ADC values of primary ovary cancer are reported to be 0.69(3, 4). The ADC values of bilateral ovary tumors are 0.419-0.641, not contractive with those of primary ovary cancer. The ADC values of primary ovary cancer are relatively lower than metastatic ovary cancer.

The common images of myoma uteri, ovarian fibroma or thecoma, metastatic ovary tumor, and ovary carcinoma with compact cellular parenchyma are low signal intensity of both MRI with T1WI and T2WI. Then, it is sometimes difficult to differentiate them on even Gd-enhanced MRI and contrast-enhanced CT. In this station, Diffusion MRI and ADC values might be useful to differentiate among them as described above.

【Summary】

We presented a sixty-four-year-old female with sigmoid colon cancer associated with bilateral tumors corresponded to ovary or uterine. The bilateral pelvic tumors are depicted as low signal intensity on both T1WI and T2WI. The bilateral tumors are depicted as low signal intensity on both of T1WI and fat-suppression T2WI. ADC values of sigmoid colon cancer were 0.717-0.788, while those of ovary tumors are 0.419-0.641, lower than sigmoid colon cancer, indicative of malignant ovary cancer other than Krukenberg tumor or benign tumors of myoma uterine, ovary fibroma or thecoma. It is borne in mind that the pelvic tumors with low signal intensity on both T1WI and T2WI in females are myoma uteri, ovary fibroma/thecoma, Krukenberg tumor and primary ovary cancer. ADC values might be useful to differentiate them because ADC values of myoma uteri, ovary fibroma, Krukenberg tumors and primary ovary cancers are 1.47, 1.24, 0.977 and 0.69, respectively.

【References】

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