

# Complications of Radiofrequency Ablation Based Focal Therapies to Hepatic Tumors

## 以射頻電燒為主的局部肝腫瘤治療之併發症

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### Background :

Radiofrequency ablation (RFA) and percutaneous ethanol injection (PEI) to hepatocellular carcinoma (HCC) are both curative treatments in selected patients. The former are indicated in metastatic tumors. Combination use is indicated in reducing heat sink effect, targeting high risk locations or attempting to increase ablation size. Published complications of these focal therapies range from 2.2 to 12%.

### Aim:

To answer the safety of RFA based combination therapy.

### Methods:

We examined the 315 patients and 448 RFA procedures from Sep. 2004 to Oct. 2011 at our hospital. RFA based therapies included RFA alone, HEAT (thermodox) study, RFA immediately after PEI, and PEI to other smaller ones during RFA to the main tumor. 244 patients with pathological proven HCC received 375 RFA procedures. 31 patients with metastatic liver tumors received 59 RFA procedures. Others were 2 cholangiocarcinoma (CC), 2 combined HCC and CC, and 8 reported no malignancy in tumor biopsy before RFA and lost follow-up. We analyzed the major complications after treatment.

### Results :

Fourteen major complications (3.13%) happened only in the HCC patients (3.73%). Five were pyogenic liver abscesses, the others included hemoperitoneum, massive hepatic infarction, hemothorax, portal vein thrombus, neoplastic seeding, gallbladder injury, sepsis, acute pyelonephritis and gastrointestinal perforation. The last one led to sepsis and mortality. Our major complication rate is 3.13% per procedures and within the single use reported ranges (2.2 - 12%).

### Conclusions :

RFA based focal therapies to liver tumors are safe and become popular, but we still need to explain the risks and our major complication rate (3.13%) to the patients and their family before treatment.

Complications of RFA to Hepatic Malignancy

Complication	No.	Rate (%)	Single (%)	Comb. (%)
Delayed abscess	5	1.12	0.5	1.12
Hemoperitoneum	1	0.22	0	0.22
Massive hepatic infarction	1	0.22	0	0.22
Hemothorax	1	0.22	0	0.22
Portal vein thrombus	1	0.22	0	0.22
Neoplastic seeding	1	0.22	0	0.22
Gallbladder injury	1	0.22	0	0.22
Sepsis	1	0.22	0	0.22
Acute pyelonephritis	1	0.22	0	0.22
GI perforation	1	0.22	0	0.22
Other	1	0.22	0	0.22
Total	14	3.13	0	3.13

