

RFA immediately after PEI for treating HCC might increase the risk of delayed pyogenic liver abscess

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Background :

Radiofrequency ablation (RFA) and percutaneous ethanol injection (PEI) are both curative treatments in selected hepatocellular carcinoma (HCC) patients. Combination use is indicated in reducing heat sink effect, targeting high risk locations or attempting to increase ablation size. Published risk factors of post-RFA abscess include previous bile duct surgery and immune depressed patients.

Methods :

We examined the 448 RFA procedures from Sep. 2004 to Oct. 2011 at our hospital. 244 patients with pathological proven HCC received 375 RFA procedures. RFA based therapy included RFA alone, HEAT (thermodox) study, RFA immediately after PEI, and PEI to other smaller ones during RFA to the main tumor. We analyzed the risk factors of pyogenic abscess after treatment.

Results :

Five patients suffered from pyogenic liver abscesses over the ablated area. These procedures included one in 92 RFA alone and 4 in 219 RFA immediately after PEI group with an interval from 8 to 833 days (mean 217). No abscess presented in the other two groups. No prophylactic antibiotic was used to the five procedures. Two patients had no risk factor, one had gallstones, one had DM and the last one had DM, hepatic resection and hemodialysis history. RFA immediately after PEI has a higher risk of delayed pyogenic liver abscess compared to the other three groups, with an odds ratio of 2.85 ($p = 0.407$).

Conclusions :

RFA immediately after PEI for treating HCC might increase the risk of delayed pyogenic liver abscess. Prophylactic antibiotic might be considered for high risk patients and the patients need close post-procedure follow-up.

Case	Age/Gender	Hepatitis	Risk factor	Tumor size/location	Target numbers (Tx)	Ablation date	Prophylactic antibiotic	Abscess date	Period (days)	Culture	Outcome
1	52 M	C	DM, ESRD on HD	2.8 cm, S8 2.8 cm, S7	2 (P+R)	2006/6/27	none	2006/10/27	122	2006/11/14 PEI 2007/12/19 Biopsy	2006/11/14 PEI 2007/12/19 Biopsy
2	56 M	C & asc	Nil	2.8 cm, S6	1 (R only)	2008/7/17	none	2008/7/25	8	2008/7/18-25 B/C (-) 2008/7/29 pus/c Klebsiella pneumoniae	2008/4/3 TACE 2010/4/13 Died
3	81 M	C	Nil	2.1 cm, S8	1 (P+R)	2009/2/10	none	2009/8/4	114	2009/8/4 E.coli(ESBL), Citrobacter koseri	2009/8/1 2 nd RFA 2012/2/10 No recurrence
4	77 M	B	Gallstones; subtotal gastrectomy Post-TACE & 8 th TACE abscess 2008/10/15 (Streptococcus anginosus) 2009/2/26 (Klebsiella pneumoniae)	2.5 cm, S7	7 (P+R)	2009/7/7	none	2009/7/15	8	2009/7/15 Klebsiella pneumoniae, 2009/8/10 E.coli(ESBL), 2009/8/24 Pseudomonas aeruginosa	2009/9/28 Post-9 th TACE plus 1c: E.coli(ESBL) 2010/9/25 & 2011/9/25 10 th & 11 th TACE 2012/2/10 No recurrence
5	63 M	B	DM	2.1 cm, S8 1.1 cm, S8 1.4 cm, S8 1.2 cm, S5	1 (P+R) 1 (P+R) 1 (P+R) 1 (R only)	2008/8/19 2008/9/16 2009/5/5 2009/1/13	none	2011/8/19	1095 1074 833 654	2011/8/19, 2011/9/25, 2011/11/1, 2011/12/6 Klebsiella pneumoniae to S8 abscess (Stable ablated S5 lesion without abscess)	2012/1/30 Recurrent abscess On treatment, no portal vein thrombus

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