

# **Combining transarterial chemoembolization with simultaneous thermal ablation for solitary hepatocellular carcinomas in high-risk recurrence areas**

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# Introduction

- We aimed to assess the safety and effectiveness of combining transarterial chemoembolization with percutaneous thermal ablation (using radiofrequency or microwave ablation) in treating solitary hepatocellular carcinoma tumors measuring between 2 to 4.5 cm, located subdiaphragmatically, subcapsularly, or perivascularly.
- This study was not supported by any funding.

# Method

- We retrospectively analyzed eighteen patients (15 males, mean age of  $68.6 \pm 8.64$  [range: 34-75] years) who underwent transarterial chemoembolization combined with concurrent percutaneous radiofrequency ablation (n = 5) or microwave ablation (n = 13) for hepatocellular carcinoma situated in areas with a high risk of recurrence (subdiaphragmatic, subcapsular, or perivascular) between 2012 and 2019.
- We examined tumor size and location, procedural success rate, safety, local efficacy (assessed by imaging at 1-month post-treatment), local tumor response (at 3 months post-treatment), local tumor progression, intrahepatic distant recurrence, overall survival, and complications.

# Results

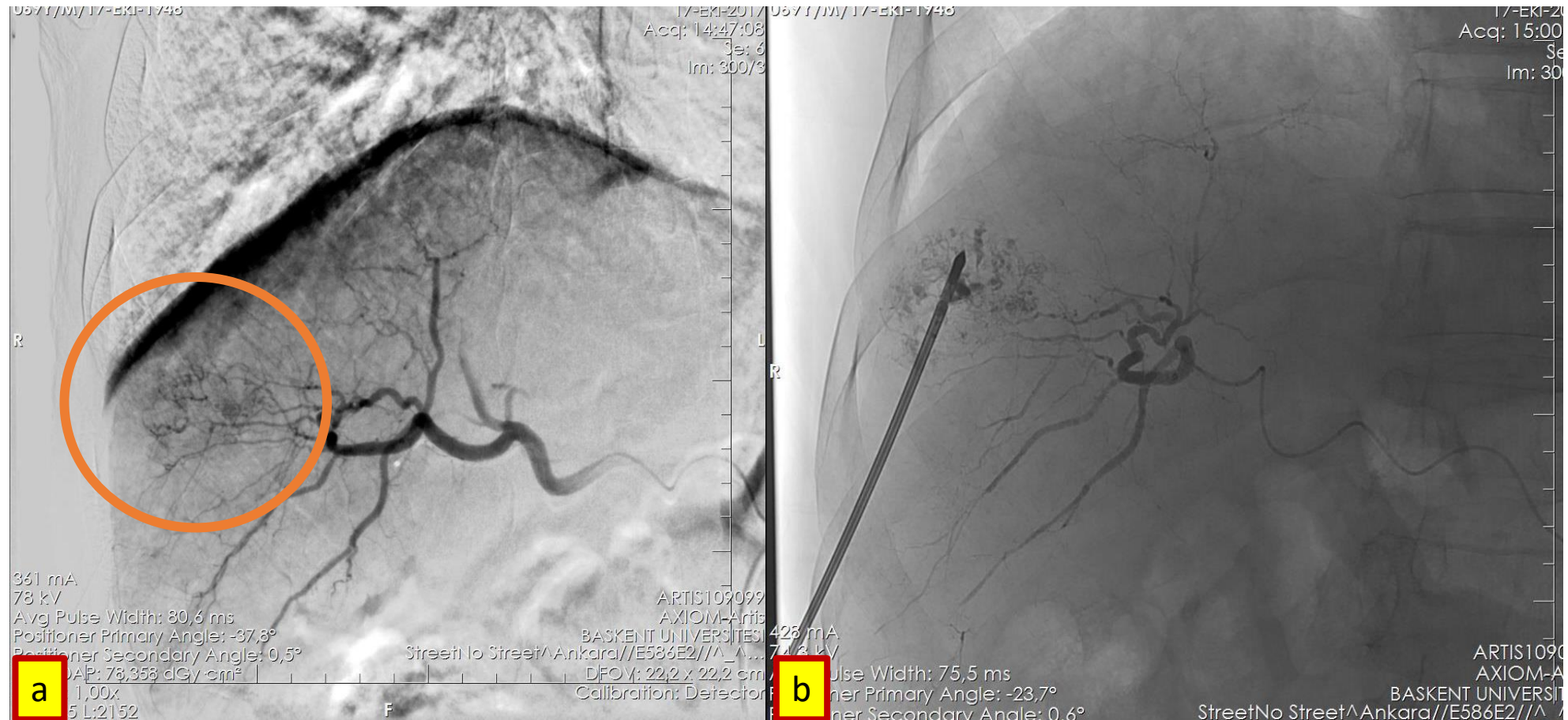
- Tumor sizes ranged from 20 to 45 mm (mean:  $32.5 \pm 8.42$  mm).
- Hepatocellular carcinoma diameters were between 2 to 3 cm in 8 patients and 3.1 to 4.5 cm in 10 patients.
- The technical success rate was 100%, with no life-threatening complications.
- At enhanced imaging after 1 month, complete necrosis was achieved in all cases; at 3 months, a complete response was observed in all patients.
- Over a mean follow-up period of  $24 \pm 11.3$  months, tumor progression occurred in 10 patients (55.5%).
- Three patients (16.6%) exhibited local tumor response, and 4 patients (22.2%) experienced distant recurrences in the untreated liver.
- The mean durations for local tumor progression and intrahepatic distant recurrence were 10 months and 29.5 months, respectively.
- Survival rates were 100% at 1 year, 75% at 3 years, and 49% at 5 years.

# Conclusion

- Combining transarterial chemoembolization with simultaneous percutaneous thermal ablation appears to be a safe, feasible, and effective approach in improving local control rates for solitary hepatocellular carcinoma tumors ranging from 2 to 4.5 cm in high-risk recurrence regions.



70-year-old male with a history of chronic hepatitis C and cirrhosis. Abdominal enhanced CT imaging showing subcapsular lesion at segment 7 localization (biopsy proven hcc).



DSA image during c-TACE showing tumor vascularization (a), Scopy obtained after embolization shows an accumulation of lipiodol in the tumor and microwave needle which is inserted under ultrasound guidance (b)