The effectiveness of proton beam therapy for liver metastatic recurrence in gastric cancer patients

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1 INTRODUCTION

✓ LIVER METASTASIS FROM GASTRIC CANCER (LMGC)
- LMGC is non-curable. (5-year survival rate of <2%)
- Hepatectomy is associated with significantly lower mortality at 1 year (odds ratio, 0.17 [0.11-0.26]).
- The overall in-hospital mortality rate of hepatectomy was 3.5% (12/340 patients).
- The aim is to evaluate the efficacy and safety of PBT for LMGC.

2 METHODS

✓ RETROSPECTIVE COHORT STUDY

✓ ENROLLMENT
- The inclusion criteria
  - PBT for LMGC from 2010 to 2015.
  - ≤3 LMGC lesions.
  - Operable cases based on imaging findings.

- The exclusion criteria
  - Previously undergone local treatment for LMGC before PBT.
  - Who had extrahepatic tumors.

3 RESULTS

✓ PATIENTS CHARACTERISTICS
- Seven patients (nine lesions).
- The median age: 66 years (52-83).
- The median diameter of target lesion: 24mm (13-68).
- The median duration from gastric surgery to PBT: 16.3 months (11-26.2).

✓ ADVERSE EVENTS
- No grade 3 or more severe adverse events were observed.
- All patients completed PBT without interruption.

4 DISCUSSION

✓ OS - PFS - LC
- The median follow-up period: 41.7 months (20.7 – 66.3 months).
- The 1 and 3-year OS rates: 100%, 68.6%.
- The 1 and 3-year PFS rates: 100%, 38%.
- The 1 and 3-year LC rates: 100%, 86%.

✓ CASE 1

Fig. 4(a), (b), (c), (d)

Fig 4. A 66s male patient with LMGC. (a) Solitary tumor with a 2.4-cm diameter in S7 was detected by EOB-MRI. (b) S7 lesion was irradiated with PBT at a dose of 66Gy(RBE)/10 fractions. (c) EOB-MRI 5 months after PBT. Decreased uptake of Gd-EOB-DTPA was observed in the irradiated field. (d) 18F-FDG PET/CT 60 months after PBT. The arrow indicates the atrophic change without local recurrence.

5 CONCLUSION

✓ PBT is an effective local treatment for LMGC.
- The advantage of PBT is few adverse events.
- Result may be comparable with those of hepatectomy.
- PBT is one of the choices of treatment for LMGC.

6 REFERENCES


Table 1. The summary of clinical result

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