



# FRAMELESS STEREOTACTIC RADIOSURGERY FOR BRAIN METASTASES USING FACE MASK IMMOBILIZATION

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## PURPOSE

To report our experience of frameless stereotactic radiosurgery (SRS) using face mask immobilization in patients with brain metastases

## METHODS AND MATERIALS

Fifteen patients with brain metastases (range, 1-3), were selected to undergo SRS. Dose of SRS was 1,800 cGy – 2,500 cGy in 3 – 5 fractions. All patients underwent MRI brain prior to treatment. MRI of the brain was then fused to our CT simulation. Gross tumor volume was expanded by 3mm to create the planning tumor volume. All patients were immobilized using aquaplast face mask. Follow-up magnetic resonance imaging (MRI) occurred on average between 1- 2 months post SRS. Patients who had CNS metastases recurrences after SRS were treated with salvage whole brain radiation.

## RESULT

From June 2012 till April 2015, 15 patients were treated. Two (13.3%) developed local recurrences at the treated sites, 4 (26.6%) developed new intracranial distant recurrences, 9 (60%) were recurrence free and 6 patients died. The actuarial survival rates of local recurrence-free were 91% for 12 months and 72% for 24 months. The actuarial survival rates of distant recurrence-free are 56% for 12 months and 42% for 24 months. The actuarial overall survival rates were 70% for 12 months and 55% for 24 months. WBRT was administered on 3 (20%) of the 15 patients.

## CONCLUSION

Our results on the use of frameless SRS are favorable to the literature. This suggests the use of face mask immobilization would not lead to inferior outcomes in patients who require SRS for brain metastasis. This may obviate the need for the more invasive and cumbersome immobilization techniques. This would lead to increased convenience and comfort of the patient while ensuring similar efficacy and outcomes.

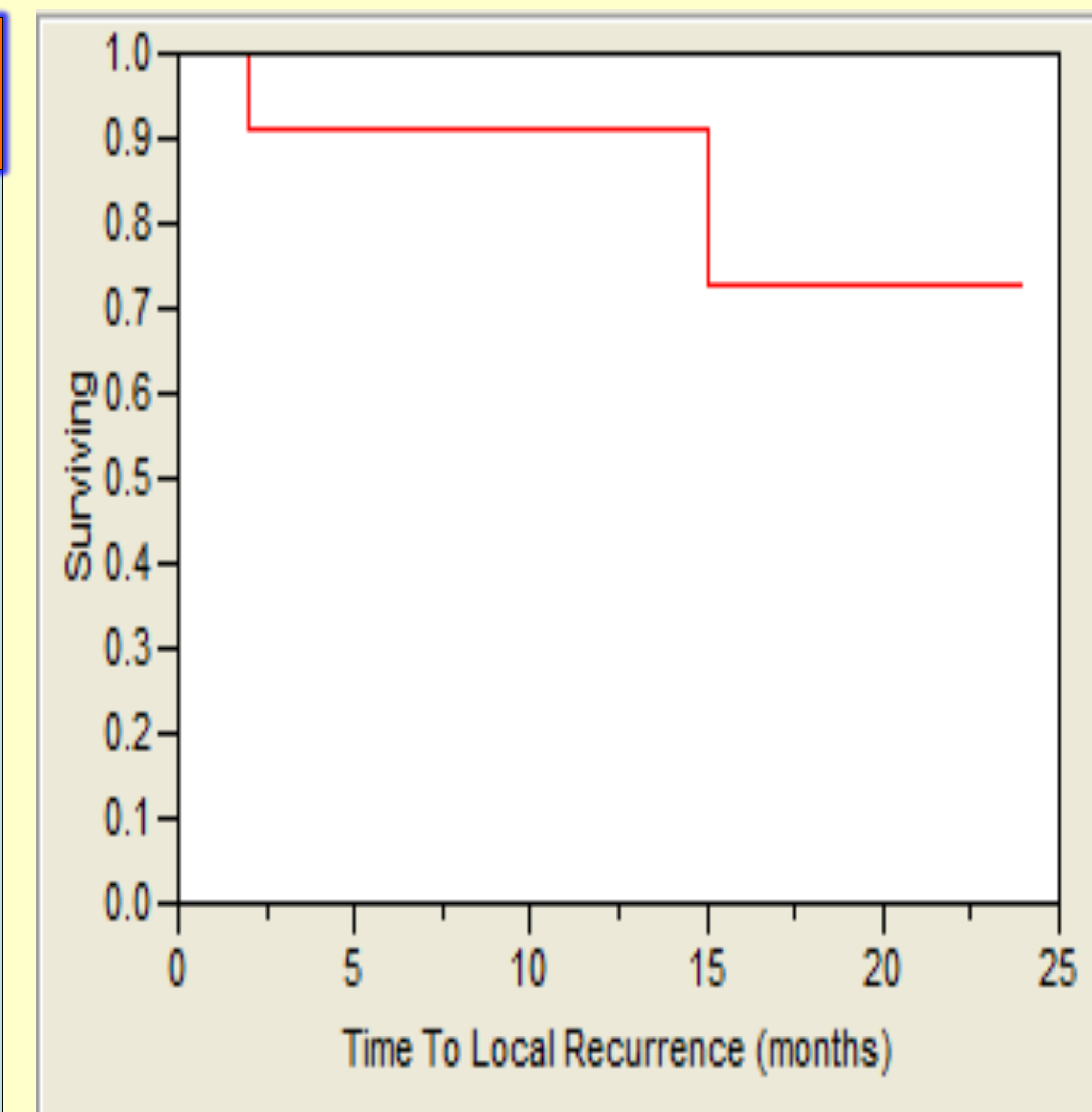


Figure 1. Local Recurrence Free Survival

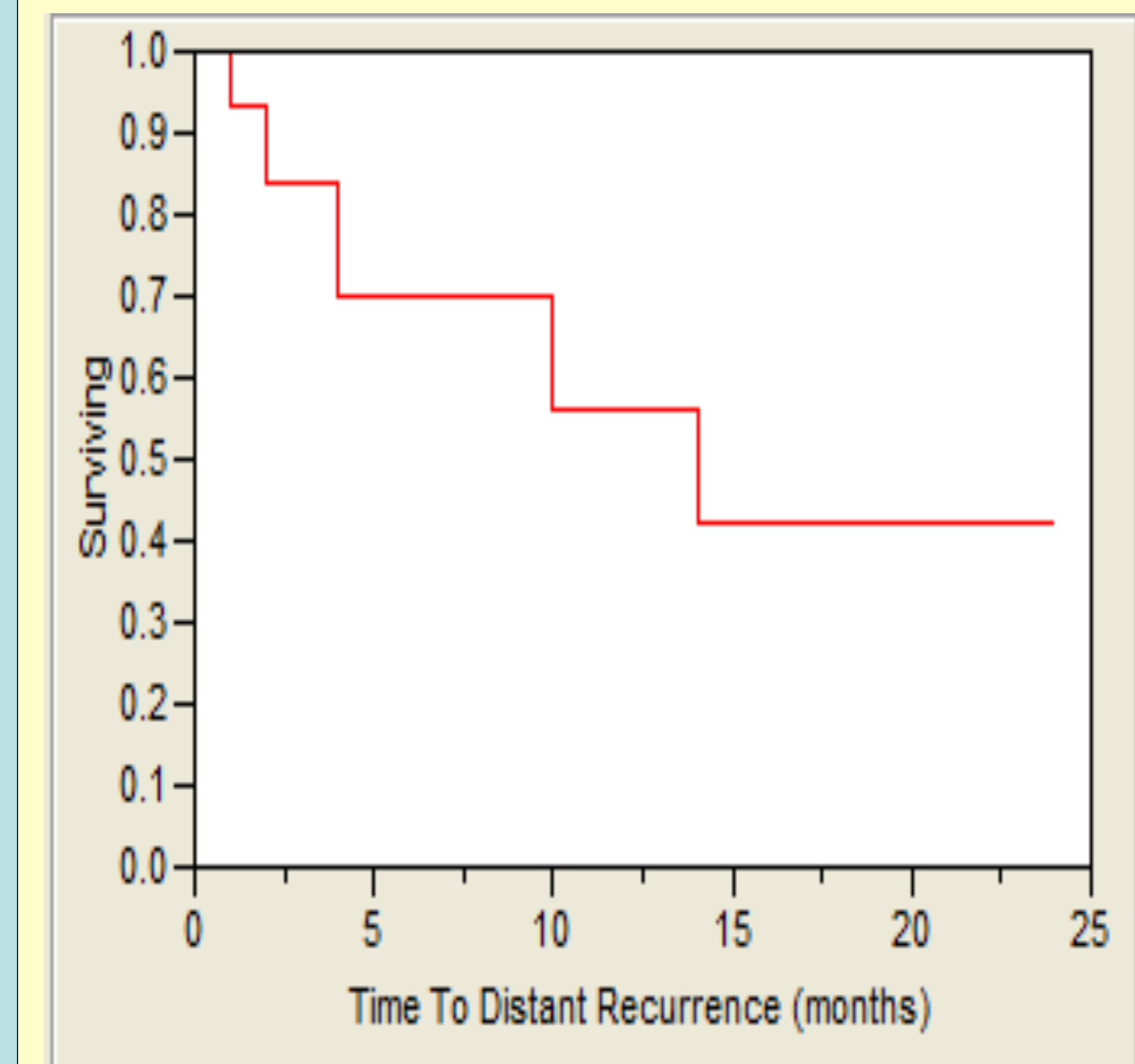


Figure 2. Distant Recurrence Free Survival

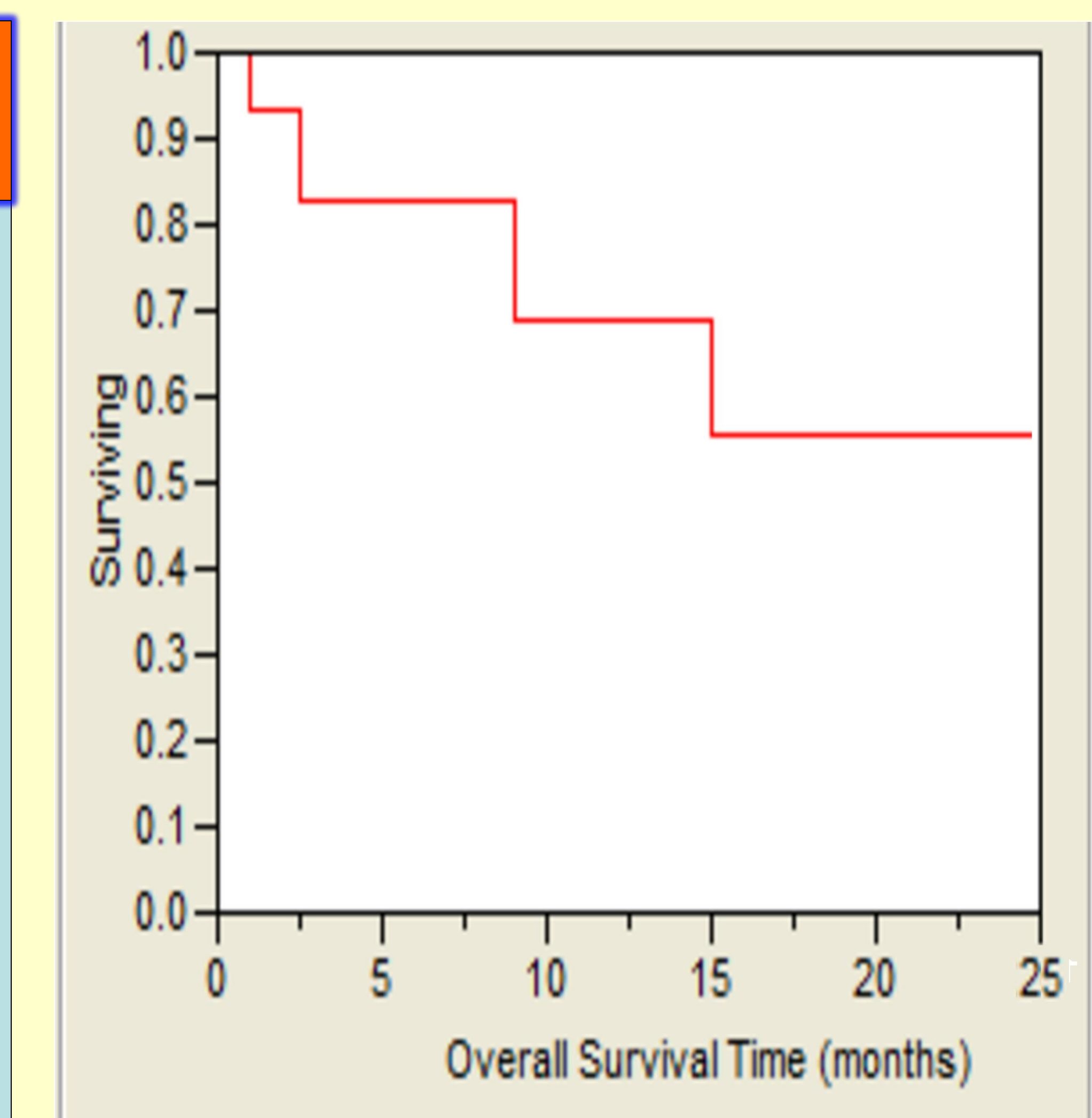


Figure 3. Overall Survival



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