

TUMOR BED MARGINS VS SPECIMEN MARGINS IN ORAL CAVITY CANCER: TOO CLOSE TO CALL?

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Introduction

- Failure to obtain negative surgical margins is a well-known risk factor of locoregional recurrence in head & neck cancer1-2
- Positive margins may occur 1.7 times more frequently in oral cavity squamous cell carcinoma (OCSCC)
- The routine assessment of intraoperative margins has long been the standard of care
- Controversy remains regarding the best method for the sampling and analysis of surgical margins

Objectives

- To determine the accuracy of an oriented tumor bed margin sampling technique
- To evaluate the effect on local and overall recurrences of oriented tumor bed margins versus specimen margins sampling and technique

Method

- Design: multicenter retrospective cohort study (December 2015 to august 2020)
- Population: primary OCSCC undergoing primary curative surgery
 - Group 1: oriented tumor bed margins (OTBM) technique
 - Group 2: standard tumor bed margins (STBM) technique
- *Exclusion: OCSCC in the past 5 years, synchronous HN cancer, history of cervicofacial RT
- *Adjuvant therapy based on tumor bed margins status for group 1 and final specimen margins status for group 2
- Analyses: Kaplan-Meier survival curves and multivariate Cox-regression model
- OTMB technique:**
 - Marking of peripheral margins (1 cm measured with a ruler)
 - Delimitation of the specimen with electrocautery (Colorado tip)
 - Delimitation of peripheral margins with specimen kept in place
 - Division of peripheral margins with sutures for precise delimitation of boundaries
 - Removal and orientation of the main specimen
 - Deep margin excision (tumor bed); the patient side is marked with ink

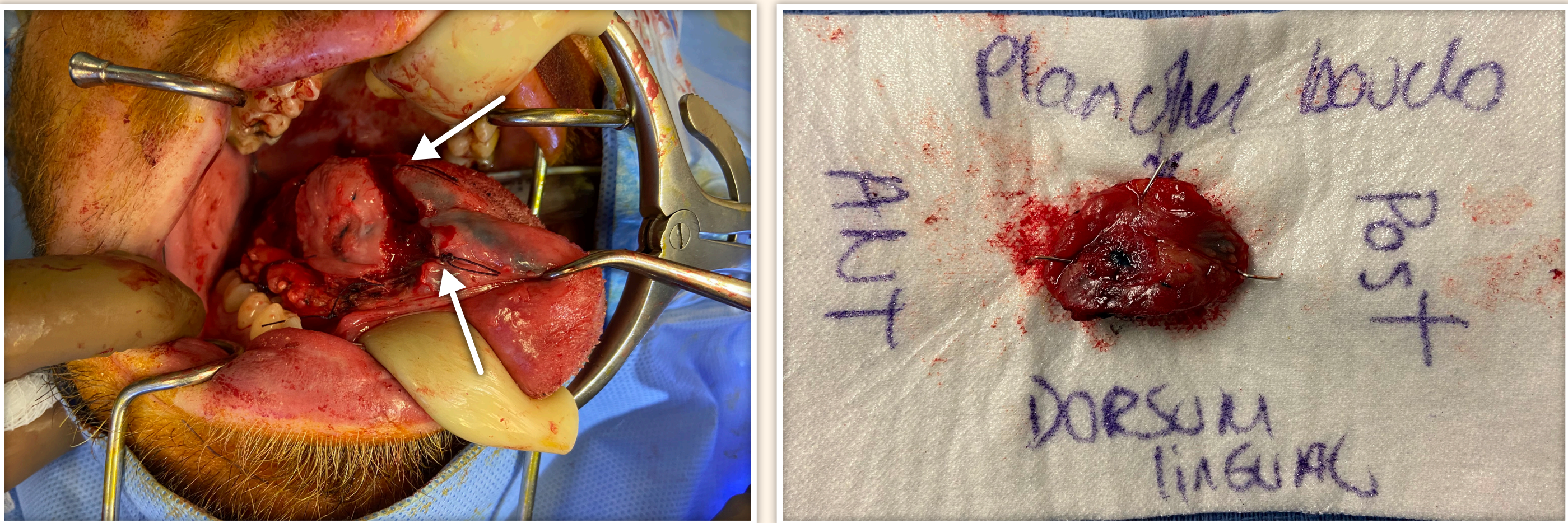


Figure 1. A) delimitation of peripheral margins with the specimen kept in place & division of tumor bed margins with sutures (arrows). **B)** orientation of the specimen.

Results

1. Demographic

Characteristics		OTBM (N = 78)	STBM (N = 76)	P value
Age		62.9 (12.8)	61.3 (14.7)	0,48
Female		35	27	0,24
Tumor stage (T)	T1-T2	62	55	0,3
	T3-T4	16	21	
Smoking	Never	23	14	0,11
	Ever	17	13	
	Active	36	48	
Alcohol	Normal	48	37	0,19
	Stoped	3	6	
	Active	25	32	
Tumor size (SD)		20.9 (13.8)	25.5 (13.62)	0,03
Free flap		24	49	< 0.0001
Tumor location	Tongue	48	55	0,074
	Floor + tongue	23	11	
	Floor of mouth	7	10	
Nodes	N0	53	43	0,49
	N1	10	13	
	N2 +	15	19	
PNI +		23	28	0,35
LVI +		22	27	0,35
Radiotherapy		36	39	0,09
Chemotherapy		11	17	0,18

2. Technique accuracy

OTBM

- Sensitivity: 50%
- Specificity: 96.6%
- Negative predictive value: 80%
- Positive predictive value: 87.7%

3. Margin status

	Status	OTBM	STBM	P value
Specimen margins	Negative	46/75 (61.3%)	58/75 (77.3%)	0.0894
	Positive	17/75 (22.7%)	12/75 (16%)	
	Close	12/75 (16%)	5/75 (6.7%)	
Final margins*	Negative	78/80 (97.5%)	58/75 (77.3%)	< 0.0001
	Positive	2/80 (2.5%)	12/75 (16%)	
	Close	0/80 (0%)	5/75 (6.7%)	

*Final margins status is used for the choice of adjuvant therapy

4. Recurrences

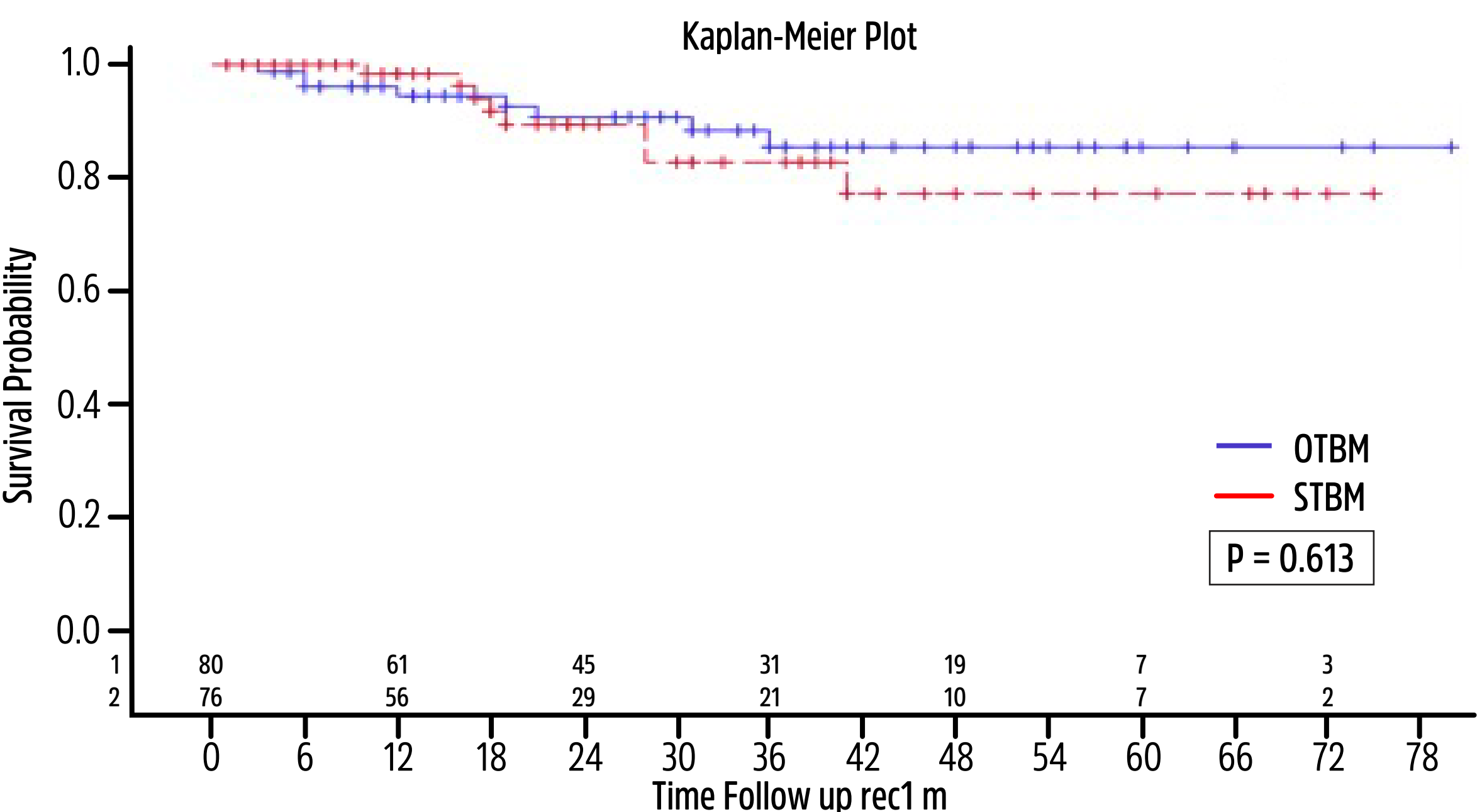


Figure 2. Local recurrences: OTBM (blue line) vs STBM (red line).

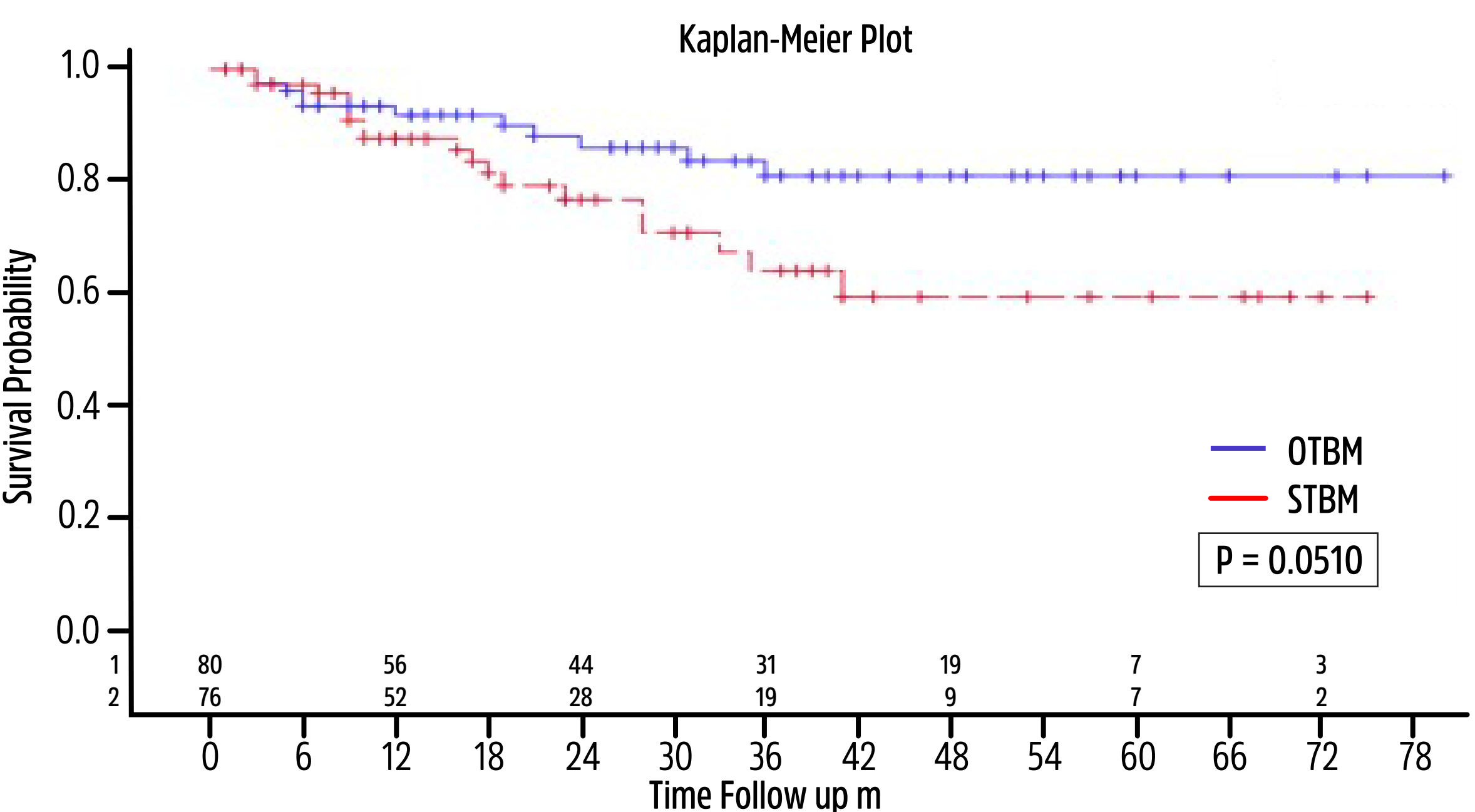


Figure 3. Overall recurrences: OTBM (blue line) vs STBM (red line).

Multivariate Cox-model

Local recurrence

HR: 0.83 (0.275 - 2.501)

Overall Recurrence

HR: 1.375 (0.609 - 3.103)

Adjustment parameters:

- Adjuvant radiotherapy (RT)
- Tumor stage (T)
- Perineural invasion (PNI)
- Lymphovascular invasion (LVI)

Conclusion

- OTBM technique has a good PPV and NPV, and overall better sensitivity than previously published studies, but could still be improved4;
- Adjusted and unadjusted analysis revealed a small but non-significant reduction of local recurrences with the oriented tumor bed margin technique;
- Recent evidence has suggested that specimen margins have a stronger correlation with local recurrences5-8 – However, even when relying on specimen margins, it is critical to correctly locate the sites of residual positive margins on the tumor bed for further resections;
- Most studies comparing surgical bed margins and specimen margins present unadjusted data, leaving room for significant biases – Therefore the evidence is not yet sufficient to justify a drastic change in clinical practice;
- Better quality data/adjusted data is needed before a change in practice can occur.

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