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Use of Tibial Stem for Patients With Morbid Obesity in Total Knee Arthroplasty

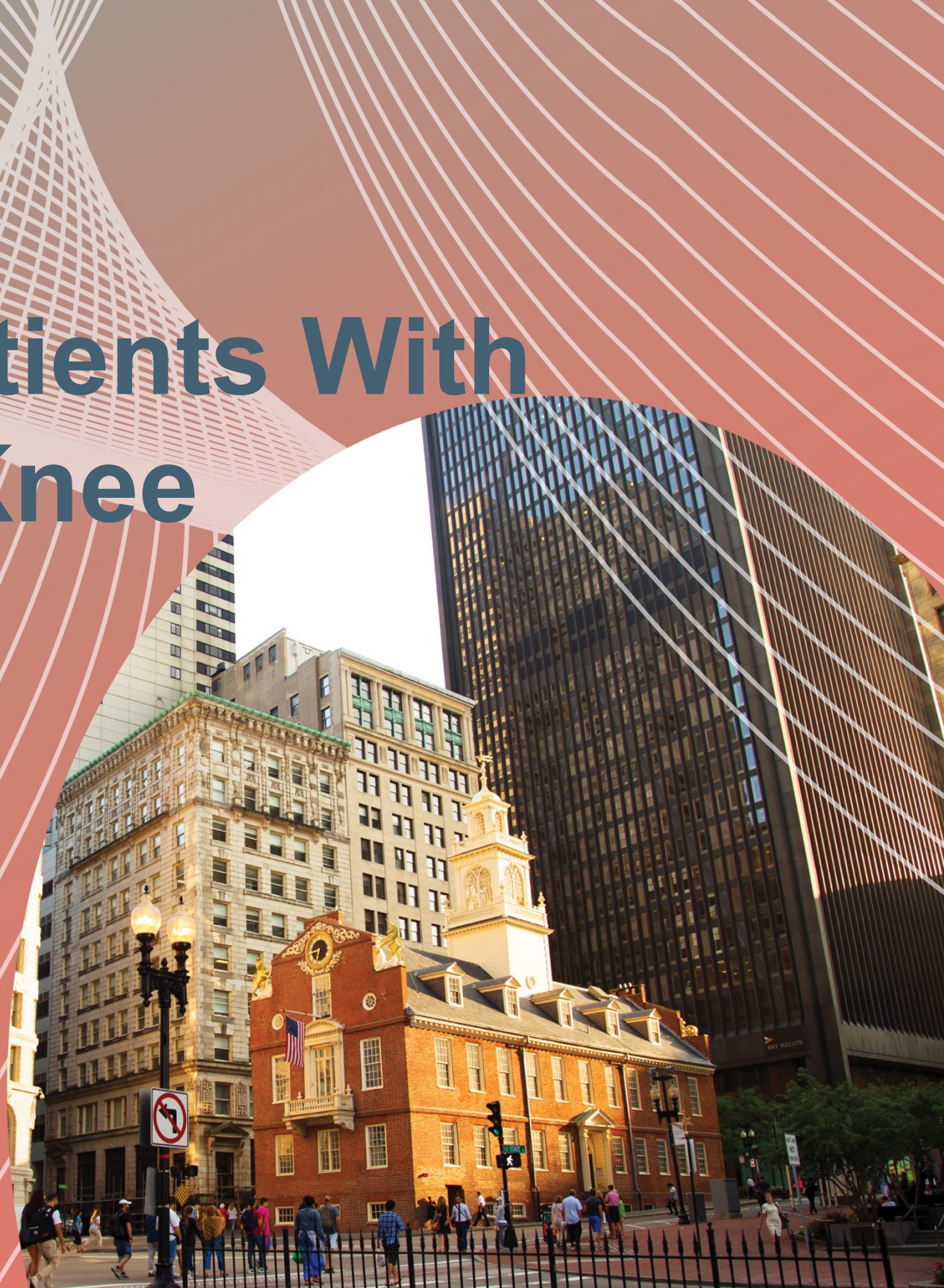
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Disclosures:

All authors declare that they have no conflicts of interest.



INTRODUCTION.

BMI increase to 50% in adult population by 2030 → increase in TKA in morbidly obese patients.^{1, 2}

High risk of mechanical complications: medial bone collapse and tibial aseptic-loosening.^{3, 4}

Tibial stems may be a potential strategy to avoid such complications.^{5, 6, 7}

The aim of this study was to compare *pain, functional capacity, and complications* in morbidly obese patients undergoing TKA **without a tibial stem vs with a tibial stem.**



METHODS.

Non blind, randomized, single-center clinical trial

Patients with morbid obesity (BMI >40 kg/m²) who underwent TKA

Between July 2015 - July 2017

Prosthesis **without** a tibial stem

Group A=63

n=112

Group B=49

Prosthesis **with** a tibial stem

VAS scale, WOMAC questionnaire, IKDC 2000 form, post-op complications

5 year follow-up

Qualitative variables

Quantitative variables

Comparison between groups

SPSS version 25

Frequencies and percentages (%)

Mean and SD: parametric distribution
Median and IR: nonparametric distribution

Continuous variables: Kruskal-Wallis
Categorical variables: (χ^2)

p<0.05 statistically significant



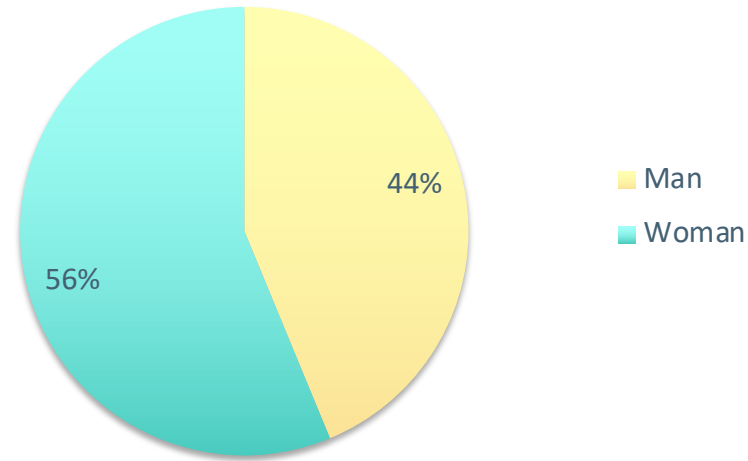
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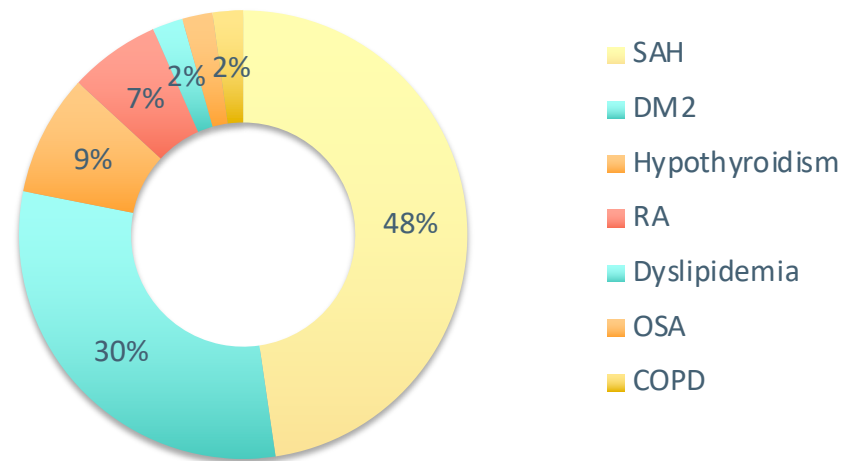
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RESULTS.

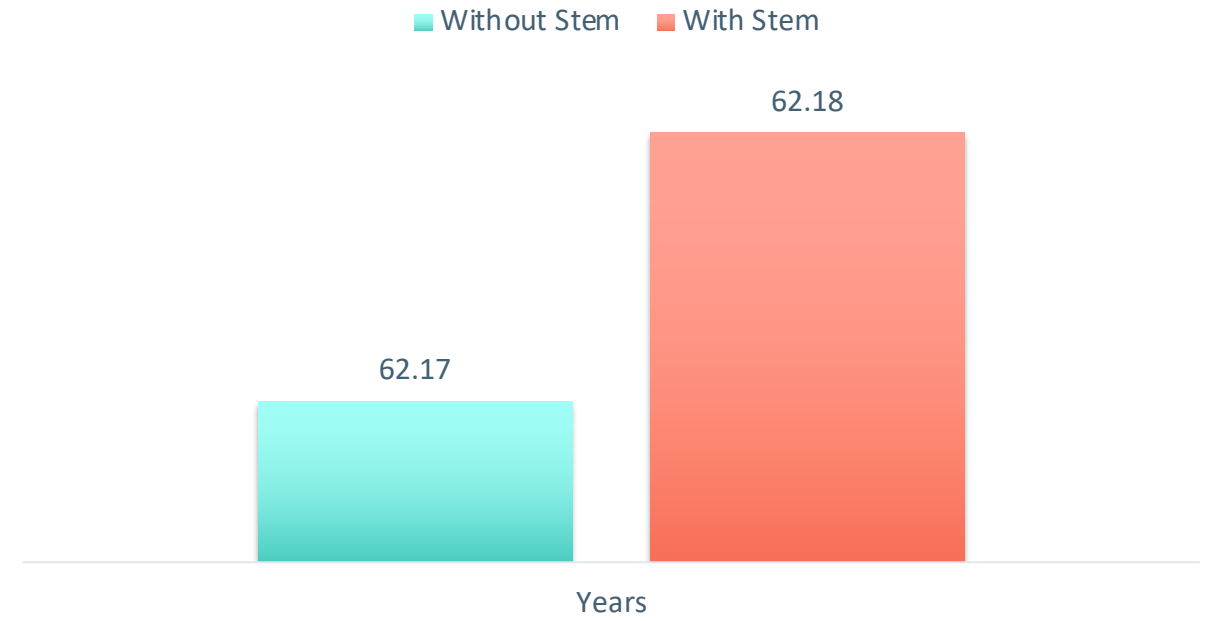
Sex



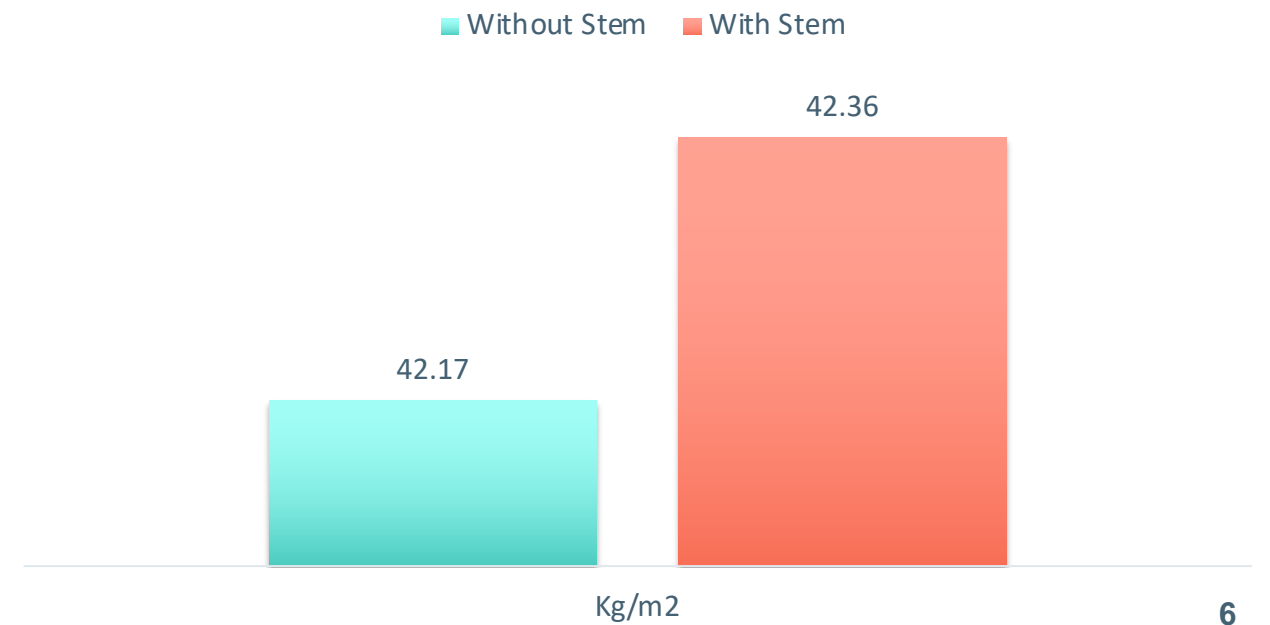
Comorbidities



Mean Age



Mean BMI



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RESULTS.

Table I. General data.

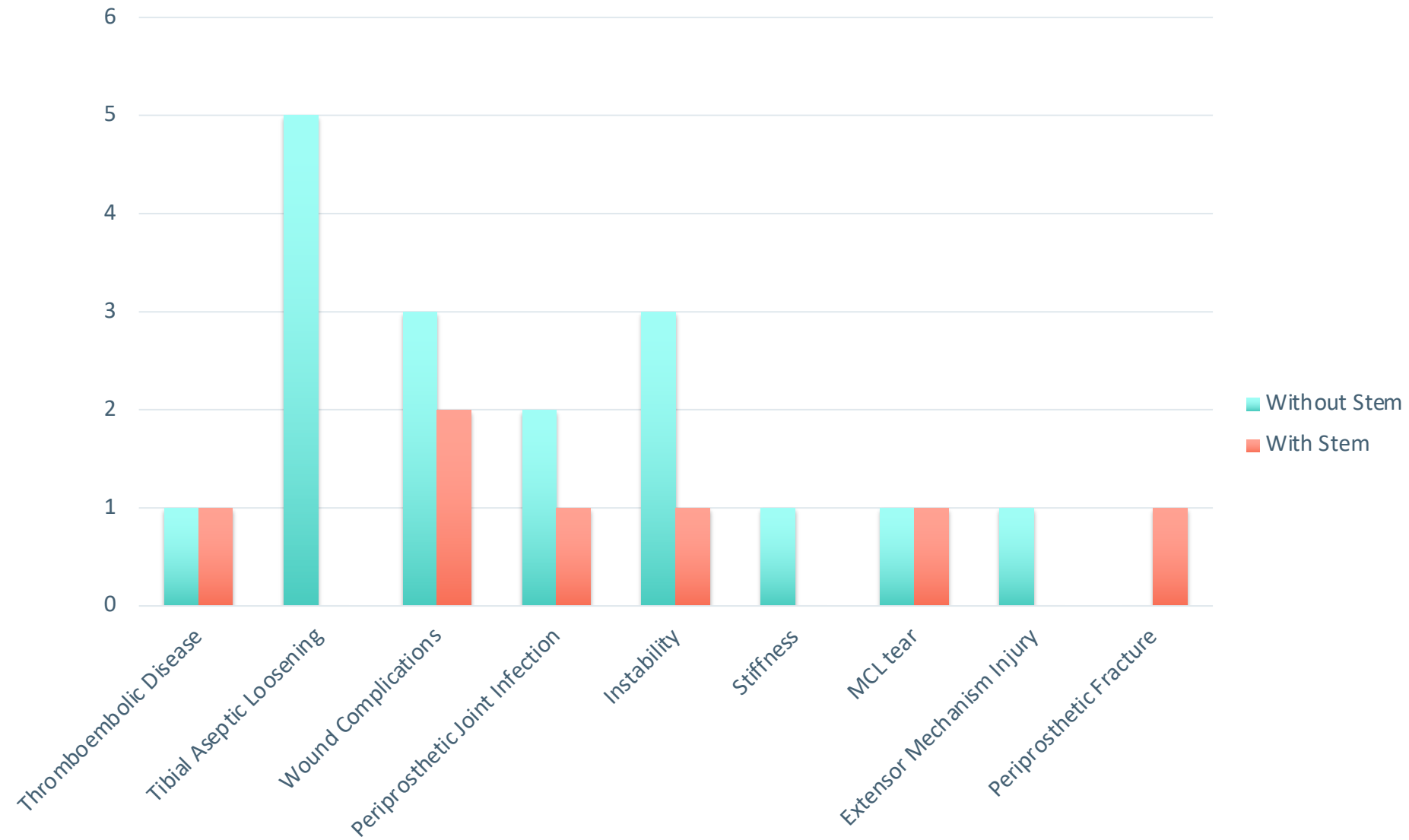
Variable		Full sample		With Stem		Without Stem	
		Mean	SD	Mean	SD	Mean	SD
Pre-surgical	EVA	9.3	.74	9.30	0.77	9.45	.71
	WOMAC	57.2	4.9	56.70	5.44	57.84	4.13
	IKDC	23.9	5.0	24.08	5.08	23.76	4.98
Pos-surgical	EVA	.47	.77	0.57	0.89	0.55	.56
	WOMAC	5.1	3.7	6.02	3.97	4.12	3.12
	IKDC	76.2	12.7	71.19	13.51	82.74	7.89

Table II. Pre and post-surgical values according to treatment.

		M	SD	t	gl	p
EVA	Without Stem	.57	.89	63.25	62	.00
	With Stem	.55	.56	75.16	48	.00
WOMAC	Without Stem	6.02	3.97	72.98	62	.00
	With Stem	4.12	3.12	81.24	48	.00
IKDC 2000	Without Stem	71.19	13.51	-28.01	62	.00
	With Stem	82.74	7.89	-46.01	48	.00

RESULTS.

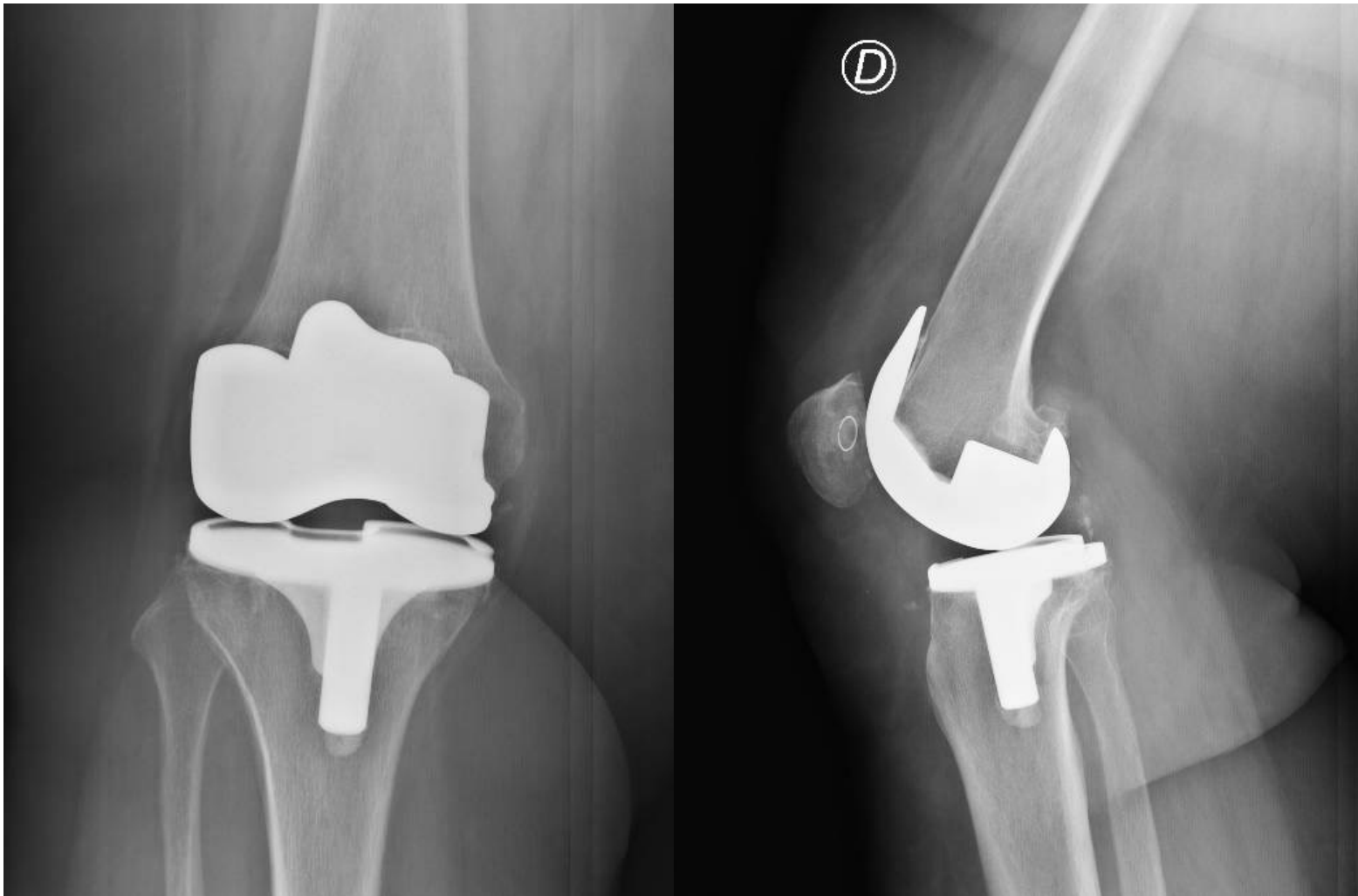
Post-operative Complications



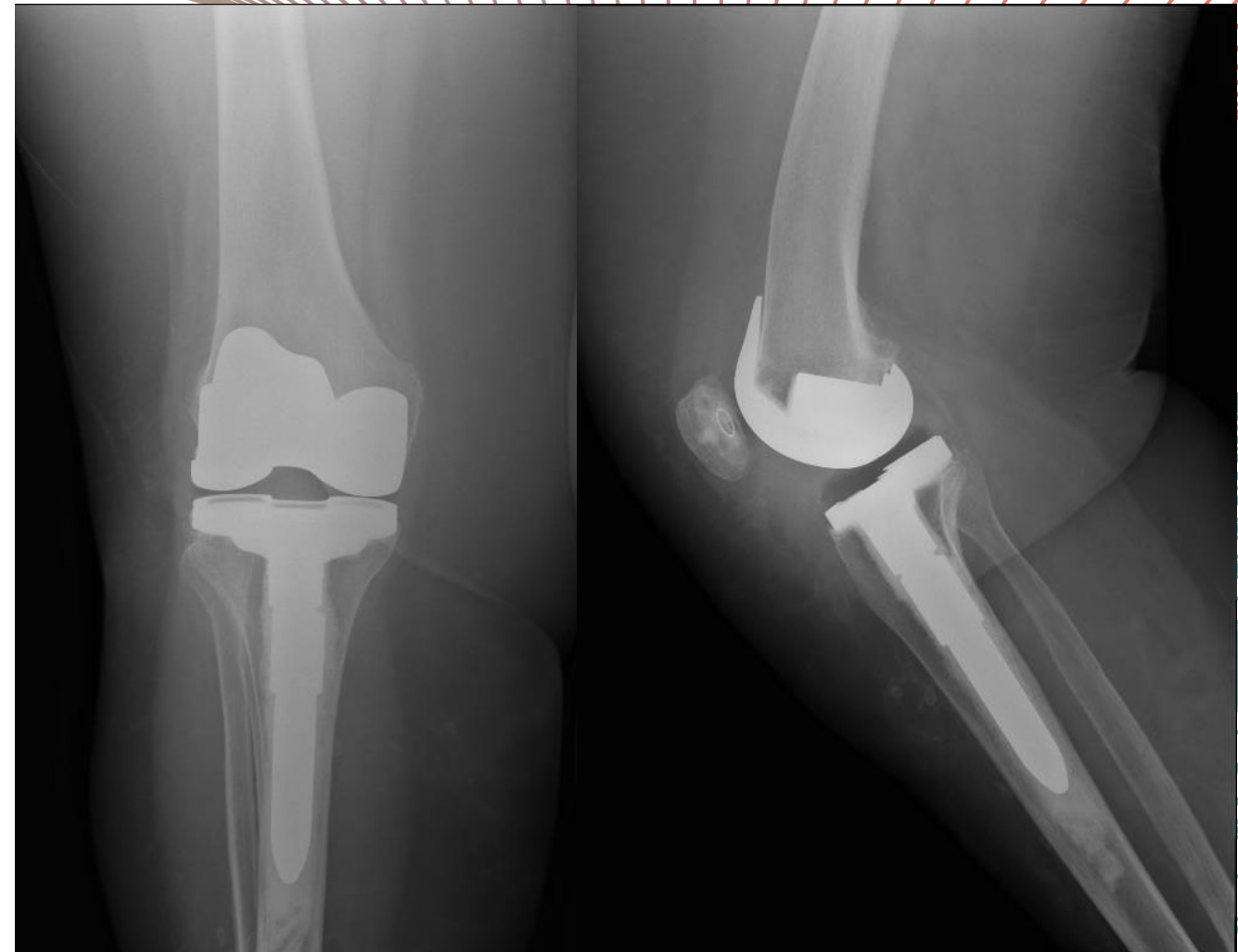
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Group A patient 30 months after TKA presents partial radiolucencies in tibial zone 1 according to the Knee Society Radiographic Evaluation System⁸.



Group B patient 36 months after TKA with no clinical or radiographic signs of loosening.



CONCLUSIONS.

Results of this study suggest that use of tibial stems in TKA reduces the risk of aseptic tibial loosening in morbidly obese patients at early follow-up.

Long-term follow-up should be performed to determine implant longevity, late complications, and revision risk.

Patients with higher risk of loosening should be characterized based on other variables (e. g. osteoporosis, degree of deformity, activity level, etc.).



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