## No Difference in Postoperative Complications between Simultaneous and Staged, Bilateral Unicompartmental Knee Arthroplasty

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The safe timing of contralateral surgery following unicompartmental knee arthroplasty (UKA) remains unknown. Therefore, the objective of this study was to examine the differences in postoperative complications in patients undergoing unilateral, simultaneous, and staged bilateral UKA.

## METHODS:

A large insurance administrative claims database was queried for patients undergoing UKA between 2015-2020. Patients undergoing unilateral UKA were matched in a 1:1 fashion based on age, gender, Elixhauser Comorbidity Index (ECI), obesity, diabetes, and smoking status to patients undergoing simultaneous bilateral UKA, bilateral UKA staged 1-90 days, and bilateral UKA staged 91-365 days. Univariate and multivariate analyses were performed to examine the impact of timing of bilateral procedures on 90-day postoperative complications relative to patients who underwent unilateral UKA. Outcomes were considered significant at p<0.05.

## **RESULTS:**

A total of 9,638 patients undergoing UKA were included in the final analysis, of which 5,672 (58.9%) were unilateral, 396 (4.1%) were simultaneous bilateral, 1,496 (15.5%) were bilateral staged between 1-90 days, and 2,074 (21.5%) were bilateral staged between 91-365 days. Univariate analysis identified no significant differences in complications between matched groups except for an increased incidence of wound dehiscence among patients who underwent simultaneous bilateral UKA (0.0% vs. 2.1%, p=0.040) compared to unilateral UKA. However, multivariate analysis demonstrated that simultaneous or staged bilateral UKA at either time point did not increase the risk of any postoperative complication relative to unilateral surgery.

## **DISCUSSION AND CONCLUSION:**

Bilateral UKA can be performed simultaneously or in a staged fashion without increasing the risk of the studied 90-day complications relative to unilateral UKA.

Table 1, Patient demographics of unmatched cohorts							Table 2. Patient demographics of matched coberts									Tele 3.	Table 5. Universe analysis of 99-day complications after the second UKA within the marched others										1884 - Matrianae anaysis of components within 99 days of the second U.S.A. Under those are expressed control to unimatest					
	Unillational	Unilatoral Simultaneous Staged 1-90 days Staged 91-365 days p value			Sinaltanessa		Stepal 1-99 days		Stagod 35-365 days				Santason			Stagot LPE-feco			Stegot.15.365.deco				Simultaneous		Staged 3-99-floo		Stagot 51-365 days					
N	5672	166	1496	2074			United	of Miles	at e	Unitered	Bibrood		Unibered	Ethored			Unibered	Bilatoni	-	Unkreni	Silversi		Unibered	Bilateral			OR (M-CPG)		OR (M CPI)	-	OR (M CPI)	-
Female	3061 (54.0%)	164 (41.4%)	663 (44,3%)	1104 (53.2%)	<0.001	N	285	295		826	826		1196	1196		Superficial Infection	1000	10.79	0.479	40.29	69,7%	9.751	10.50	69.5%	1.000	Seperficial Infection	NA.		1.40(8.36.5.75) 2.46(9.76.00)	0.622	0.76 (0.19.1.09) 0.76 (0.19.1.09)	
Are	63.5 ± 10.4	62.8 + 9.2	62.1 ± 9.4	63.2 ± 9.4	<0.001	Femile	118 (48.	to mrem	100	0 377 (10.4%)	377 (41.6%)	1.000	600 (05.0%)	600 (55.0%)	1.000	Periorosibele Frances	1020	10.70	1.000	4(0.5%)	19(1.2%)	0.190	1020	5(84%)	0.421	Periprombetic Fracture	NA NA		244(9.79+000)	0.119	330 (316-176)	0.368
DCI	4.76 ± 3.18	$3.81 \pm 2.91$	3.93 ± 2.79	4.25 = 3.06	<0.001	Age	62.5 4.5	2 62.5 a	12 037	62.7 + 8.9	62.T+8.8	0.856	63.0 + 9.0	640+93	9,566	NTE	7(24%)	10.89	0.339	1(0.8%)	1000	1,800	7,0400	4(6.7%)	1.000	Artic Kaleer Interv	E-42 (E-85 E-50)	9214	1.83 (9.29-1.75)	0963	9.75 (9.20-1.15) 9.49 (9.00-1.15)	0.029
Comerbidities						BCI	3.15+2	21 3.15 4	21 1.00	0 3.57 ± 2.57	3.97 ± 2.97	1,000	3.66 × 2.43	3.66 = 2.43	1,000	Acre Kidney Injury Cardiac Aread	2.0250	10.79	1.000	10.89	19(1.2%)	9,813	1970	490752	0.585	Cardiac Arena	NA.	0.001	NA.		NA.	
Tebacco Use	953 (16.8%)	36 (9.1%)	340 (22.7%)	427 (20.6%)	<0.001	Comorkie										Wound Debourser	0 (6.0%)	60.0%	0.049	10.29	3 (6.4%)	0.584	12 (1.0%)	6 (8.7%)	0.297	Wound Debication Manageman	NA.		9.54 (9.11-2.19) 3.82 (9.27-48.69)	0.365	9.46 (9.14 1.29)	0.142
Diabetes	1020 (18.0%)	40 (10.1%)	267 (17.8%)	414 (20.0%)	<0.001	Tebucus	2se 14 (4.8)	<ul><li>(4)</li></ul>	N) 1.96			1.000		147 (12.3%)		Sensons	OUTES!	0 (0.0%)	1.000	1(83%)	3 (6.4%)	0.817	1000	1 (6.7%)	1.000	Permenia	1.07 (0.25.11.2%)	460	341(386130)	0.362	AH 025199	0.00
Obosky	1072 (18.9%)	59 (14,9%)	422 (28.2%)	634 (30.6%)	<0.001	Diabetes	13 (4.5					1.000	117 (9.8%)	117 (9.8%)		Parameria Transferios	2 (9.7%)	10.89	1.000	10.89	2 (6.2%)	9.409	1030	10.00	1.000	Transfusion	NA.		8.39 (9.82-3.20)	0.421	9.48 (930.3.21)	0.429
ECL, Elishauser Comorbidity Index; Values expressed as N (N) or mean a standard deviation					Obmity	29 (5.9			0 158 (15.1%)			237 (19,8%)	237 (19,8%)	1.000	Urisary Tract Mileston	70.00	10.70	0.775	16.250	15(1892	9.721	M 0.450	HATES	0.005	Unionly True Infection Mornilly	8.71 (9.28-2.51)	9,967	9.84 (9.38-1.79)	0.648	9.49 (9.24-691)	6.009	
		FCI, Elishasus Consorbidity Index, Values expensed as N (Fig or mose a standard deviation.								Metality	1000	60,00	1.000	10.29	0.86%	1,900	1000	0.8550	1.000	Response	NA.		141/2414/80	0.365	9.67 (9.12.1.20)	0.110						
													Responsive	1020	10.89	0.247	10.89	12 (1.7%)	9,356	18 (9.8%)	4 (6.7%)	0.188	ED Vise	149 (329 400)	0.69	147 (333 136)	0.144	9.72 (9.62 1.21)	9217			
																ED Visit Restriction	7 (2.0%)	30/31/6/7	0.623	21 (0.3%)	30 (2.414)	0.379	39 (2.86)	26 (2.2%)	0.299	Restminism	3.17(9.92-14.59)	9,399	8.86 (0.45 LSI)	0.682	9,29 (9,144,52)	
												Rodinana No Confessor	20.00	17/11/20	0.148	210394	25 (3.0%)	9,888	118 (5.5%)	H4.3%	-0.801	Any Complication	139(0.79146)	9,252	131(0.55114)	6,225	9,54 (9,394.76)	-9,991				
												Fili pelps	Any Complication 34 (5.2%) 37 (1.17%) 0.25 85 (18.2%) T4 (5.0%) 0.404 118 (5.9%) 76 (5.9%) +0.881 Fits peripendularia joint individue, VTE, remosa discubinariation, ED, Encapsesy Organismes								(6), with ratio C.I. confidence interval; PE, perspendents joint infection, VEE, venue describerationing, EE, Emergency Exputement, Vis., not applicable, and whose olds ratio could not be calculated that in 8 create in a Year one group.											