RESULTS OF ACCURACY IN MAXILLARY JAW SURGERY

Characteristics of the study sample			
		Frequency	**Percent**
GROUP	3D PRINTED	28	56.0
	COMMERCIAL	22	44.0
SEX	MALES	17	34.0
	FEMALES	33	66.0
MAL_OCCLUSION	CLASS II	4	8.0
	CLASS III	46	92.0
PROCEDURES	LEFORT+BSSRO+GENIO	33	66.0
	LEFORT+BSSRO	17	34.0
		Mean±SD	**(Min, Max)**
AGE		24.94±4.21	(18.00, 33.00)
ADVANCEMENT		2.94±0.82	(0.20, 4.00)

Tests of Normality									
	Axis X			Axis Y			Axis Z		
Landmark	Statistic	df	P	Statistic	df	P	Statistic	df	P
POINT_A	0.830	50	0.000	0.806	50	0.000	0.858	50	0.000
U_MID	0.942	50	0.017	0.764	50	0.000	0.876	50	0.000
UR_CANINE	0.882	50	0.000	0.754	50	0.000	0.917	50	0.002
UR_1ST	0.871	50	0.000	0.795	50	0.000	0.836	50	0.000
UL_CANINE	0.922	50	0.003	0.770	50	0.000	0.913	50	0.001
UL_1ST	0.877	50	0.000	0.802	50	0.000	0.853	50	0.000

Differences according to the type of material						
Landmark	GROUP	Mean±SD	Mean difference	95% CI of the difference		P
				Lower	Upper	
Differences in the axis X						
POINT_A	3D PRINTED	0.19±0.16	-0.11	-0.24	0.02	0.143
	COMMERCIAL	0.31±0.26				
U_MID	3D PRINTED	0.24±0.19	-0.25	-0.38	-0.12	0.001
	COMMERCIAL	0.50±0.27				
UR_CANINE	3D PRINTED	0.55±0.36	-0.24	-0.54	0.06	0.249
	COMMERCIAL	0.79±0.62				
UR_1ST	3D PRINTED	0.53±0.30	-0.22	-0.51	0.06	0.305
	COMMERCIAL	0.75±0.60				
UL_CANINE	3D PRINTED	0.47±0.36	-0.25	-0.48	-0.01	0.049
	COMMERCIAL	0.72±0.47				
UL_1ST	3D PRINTED	0.52±0.38	-0.30	-0.58	-0.01	0.048
	COMMERCIAL	0.82±0.57				
Differences in the axis Y						
POINT_A	3D PRINTED	0.21±0.20	-0.07	-0.21	0.08	0.845
	COMMERCIAL	0.27±0.30				
U_MID	3D PRINTED	0.37±0.33	-0.48	-0.84	-0.11	0.004
	COMMERCIAL	0.84±0.78				
UR_CANINE	3D PRINTED	0.43±0.31	-0.51	-0.88	-0.13	0.005
	COMMERCIAL	0.94±0.81				
UR_1ST	3D PRINTED	0.42±0.28	-0.28	-0.52	-0.03	0.052
	COMMERCIAL	0.69±0.57				
UL_CANINE	3D PRINTED	0.43±0.33	-0.43	-0.81	-0.04	0.037
	COMMERCIAL	0.86±0.83				
UL_1ST	3D PRINTED	0.57±0.40	-0.32	-0.69	0.06	0.097
	COMMERCIAL	0.89±0.79				
Differences in the axis Z						
POINT_A	3D PRINTED	0.41±0.31	-0.47	-0.80	-0.13	0.023
	COMMERCIAL	0.87±0.71				
U_MID	3D PRINTED	0.63±0.45	-0.46	-0.85	-0.07	0.032
	COMMERCIAL	1.10±0.80				
UR_CANINE	3D PRINTED	0.61±0.40	-0.23	-0.51	0.05	0.190
	COMMERCIAL	0.84±0.57				
UR_1ST	3D PRINTED	0.45±0.32	-0.26	-0.57	0.05	0.343
	COMMERCIAL	0.71±0.66				
UL_CANINE	3D PRINTED	0.66±0.45	-0.25	-0.57	0.08	0.218
	COMMERCIAL	0.91±0.69				
UL_1ST	3D PRINTED	0.61±0.44	-0.18	-0.50	0.14	0.571
	COMMERCIAL	0.79±0.69				

Differences according to sex						
			Mean	95% CI of the difference		
Landmark	SEX	Mean±SD	difference	Lower	Upper	P
Differences in the axis X						
POINT_A	MALES	0.17±0.18	-0.11	-0.24	0.02	0.080
	FEMALES	0.28±0.23				
U_MID	MALES	0.36±0.23	0.01	-0.15	0.16	0.675
	FEMALES	0.35±0.28				
UR_CANINE	MALES	0.57±0.49	-0.12	-0.42	0.18	0.287
	FEMALES	0.69±0.51				
UR_1ST	MALES	0.58±0.40	-0.06	-0.34	0.22	0.766
	FEMALES	0.64±0.50				
UL_CANINE	MALES	0.61±0.44	0.05	-0.21	0.30	0.667
	FEMALES	0.56±0.43				
UL_1ST	MALES	0.59±0.40	-0.09	-0.39	0.20	0.798
	FEMALES	0.69±0.53				
Differences in the axis Y						
POINT_A	MALES	0.19±0.20	-0.07	-0.22	0.08	0.667
	FEMALES	0.26±0.27				
U_MID	MALES	0.42±0.29	-0.24	-0.53	0.04	0.395
	FEMALES	0.66±0.71				
UR_CANINE	MALES	0.42±0.38	-0.36	-0.73	0.01	0.024
	FEMALES	0.78±0.70				
UR_1ST	MALES	0.49±0.32	-0.07	-0.34	0.20	0.951
	FEMALES	0.56±0.51				
UL_CANINE	MALES	0.48±0.34	-0.21	-0.59	0.17	0.587
	FEMALES	0.69±0.74				
UL_1ST	MALES	0.59±0.49	-0.18	-0.54	0.19	0.346
	FEMALES	0.77±0.67				
Differences in the axis Z						
POINT_A	MALES	0.47±0.45	-0.21	-0.55	0.13	0.296
	FEMALES	0.69±0.62				
U_MID	MALES	0.88±0.57	0.07	-0.33	0.48	0.407
	FEMALES	0.81±0.72				
UR_CANINE	MALES	0.66±0.47	-0.07	-0.37	0.23	0.667
	FEMALES	0.73±0.51				
UR_1ST	MALES	0.56±0.39	-0.01	-0.32	0.30	0.638
	FEMALES	0.57±0.57				
UL_CANINE	MALES	0.74±0.47	-0.04	-0.39	0.31	0.838
	FEMALES	0.78±0.63				
UL_1ST	MALES	0.73±0.47	0.06	-0.28	0.40	0.419
	FEMALES	0.67±0.62				

Differences according to the type of malocclusion						
			Mean	95% CI of the difference		
Landmark	MALOCCLUSION	Mean±SD	difference	Lower	Upper	P
Differences in the axis X						
POINT_A	CLASS 2	0.22±0.21	-0.03	-0.26	0.20	0.592
	CLASS 3	0.24±0.22				
U_MID	CLASS 2	0.42±0.22	0.07	-0.20	0.35	0.431
	CLASS 3	0.35±0.26				
UR_CANINE	CLASS 2	0.62±0.25	-0.04	-0.57	0.49	0.748
	CLASS 3	0.65±0.52				
UR_1ST	CLASS 2	0.39±0.18	-0.25	-0.74	0.24	0.283
	CLASS 3	0.64±0.48				
UL_CANINE	CLASS 2	0.42±0.17	-0.17	-0.62	0.28	0.604
	CLASS 3	0.59±0.44				
UL_1ST	CLASS 2	0.36±0.19	-0.32	-0.83	0.19	0.186
	CLASS 3	0.68±0.50				
Differences in the axis Y						
POINT_A	CLASS 2	0.26±0.17	0.02	-0.24	0.29	0.334
	CLASS 3	0.23±0.26				
U_MID	CLASS 2	0.48±0.21	-0.11	-0.75	0.54	0.721
	CLASS 3	0.59±0.64				
UR_CANINE	CLASS 2	0.56±0.44	-0.11	-0.77	0.56	0.830
	CLASS 3	0.66±0.65				
UR_1ST	CLASS 2	0.45±0.23	-0.10	-0.57	0.38	0.668
	CLASS 3	0.54±0.46				
UL_CANINE	CLASS 2	0.53±0.53	-0.10	-0.77	0.57	0.830
	CLASS 3	0.63±0.65				
UL_1ST	CLASS 2	0.40±0.26	-0.34	-0.98	0.31	0.252
	CLASS 3	0.74±0.63				
Differences in the axis Z						
POINT_A	CLASS 2	0.80±0.84	0.20	-0.40	0.80	0.642
	CLASS 3	0.60±0.55				
U_MID	CLASS 2	0.78±0.35	-0.06	-0.76	0.64	0.721
	CLASS 3	0.84±0.69				
UR_CANINE	CLASS 2	0.68±0.39	-0.03	-0.55	0.49	0.957
	CLASS 3	0.71±0.50				
UR_1ST	CLASS 2	0.56±0.27	-0.01	-0.55	0.53	0.431
	CLASS 3	0.57±0.53				
UL_CANINE	CLASS 2	0.44±0.22	-0.35	-0.96	0.25	0.283
	CLASS 3	0.80±0.59				
UL_1ST	CLASS 2	0.47±0.44	-0.24	-0.84	0.35	0.198
	CLASS 3	0.71±0.58				

Differences according to the type of procedure						
			Mean difference	95% CI of the difference		
Landmark	PROCEDURE	Mean±SD		Lower	Upper	P
Differences in the axis X						
POINT_A	LEFORT+BSSRO+GENIO	0.24±0.21	0.00	-0.14	0.13	0.766
	LEFORT+BSSRO	0.25±0.24				
U_MID	LEFORT+BSSRO+GENIO	0.33±0.25	-0.07	-0.23	0.08	0.287
	LEFORT+BSSRO	0.40±0.27				
UR_CANINE	LEFORT+BSSRO+GENIO	0.67±0.51	0.04	-0.26	0.35	0.660
	LEFORT+BSSRO	0.62±0.50				
UR_1ST	LEFORT+BSSRO+GENIO	0.64±0.49	0.04	-0.25	0.32	0.798
	LEFORT+BSSRO	0.60±0.42				
UL_CANINE	LEFORT+BSSRO+GENIO	0.56±0.41	-0.06	-0.32	0.19	0.638
	LEFORT+BSSRO	0.62±0.46				
UL_1ST	LEFORT+BSSRO+GENIO	0.60±0.46	-0.16	-0.45	0.14	0.173
	LEFORT+BSSRO	0.76±0.54				
Differences in the axis Y						
POINT_A	LEFORT+BSSRO+GENIO	0.23±0.23	-0.02	-0.17	0.13	0.623
	LEFORT+BSSRO	0.25±0.29				
U_MID	LEFORT+BSSRO+GENIO	0.61±0.67	0.10	-0.27	0.47	0.519
	LEFORT+BSSRO	0.51±0.50				
UR_CANINE	LEFORT+BSSRO+GENIO	0.72±0.71	0.19	-0.19	0.57	0.362
	LEFORT+BSSRO	0.53±0.44				
UR_1ST	LEFORT+BSSRO+GENIO	0.61±0.49	0.22	-0.05	0.48	0.084
	LEFORT+BSSRO	0.39±0.31				
UL_CANINE	LEFORT+BSSRO+GENIO	0.67±0.72	0.15	-0.24	0.53	0.712
	LEFORT+BSSRO	0.52±0.43				
UL_1ST	LEFORT+BSSRO+GENIO	0.71±0.67	0.01	-0.36	0.38	0.751
	LEFORT+BSSRO	0.70±0.51				
Differences in the axis Z						
POINT_A	LEFORT+BSSRO+GENIO	0.48±0.48	-0.39	-0.72	-0.07	0.014
	LEFORT+BSSRO	0.87±0.64				
U_MID	LEFORT+BSSRO+GENIO	0.85±0.69	0.05	-0.35	0.45	0.838
	LEFORT+BSSRO	0.80±0.62				
UR_CANINE	LEFORT+BSSRO+GENIO	0.75±0.52	0.14	-0.16	0.43	0.368
	LEFORT+BSSRO	0.62±0.42				
UR_1ST	LEFORT+BSSRO+GENIO	0.61±0.54	0.12	-0.19	0.43	0.269
	LEFORT+BSSRO	0.49±0.44				
UL_CANINE	LEFORT+BSSRO+GENIO	0.77±0.59	0.02	-0.33	0.36	0.992
	LEFORT+BSSRO	0.76±0.56				
UL_1ST	LEFORT+BSSRO+GENIO	0.61±0.47	-0.26	-0.59	0.08	0.219
	LEFORT+BSSRO	0.86±0.70				

Correlation with age and advancement							
		Axis X		Axis Y		Axis Z	
Landmark	Correlation	AGE	ADVANCEMENT	AGE	ADVANCEMENT	AGE	ADVANCEMENT
POINT_A	Correlation	0.069	-0.053	-0.091	-0.098	0.132	-0.102
	P-value	0.634	0.712	0.531	0.498	0.360	0.481
U_MID	Correlation	-0.070	-0.177	-0.229	-0.085	-0.148	-0.265
	P-value	0.631	0.219	0.110	0.555	0.306	0.063
UR_CANINE	Correlation	-.389**	-0.274	-0.144	-0.221	-.353*	-.343*
	P-value	0.005	0.054	0.320	0.123	0.012	0.015
UR_1ST	Correlation	-0.045	-.293*	-0.222	-0.166	-0.081	-.553**
	P-value	0.756	0.039	0.121	0.249	0.578	0.000
UL_CANINE	Correlation	-0.084	-0.263	-0.067	-0.241	-0.103	-0.116
	P-value	0.563	0.065	0.646	0.091	0.476	0.423
UL_1ST	Correlation	-0.017	-0.232	-0.090	-0.278	0.086	-.313*
	P-value	0.909	0.105	0.534	0.051	0.551	0.027

RESULTS FOR MANDIBULAR ACCURACY IN DOUBLE JAW SURGERY

Characteristics of the study sample			
		Frequency	**Percent**
GROUP	3D printed	30	54.5
	Commercial	25	45.5
SEX	MALE	17	30.9
	FEMALE	38	69.1
MAL_OCCLUSION	CLASS II	9	16.4
	CLASS III	46	83.6
PROCEDURE	LEFORT+BSSRO+GENIO	33	60.0
	LEFORT+BSSRO	17	30.9
	UPP segment+BSSRO+GENIO	5	9.1
		Mean±SD	**(Min, Max)**
AGE (year)		25.38±4.58	(18.00, 38.00)
Advancement	Right side	4.36±0.96	(3.30, 6.10)
	Left side	3.96±3.07	(1.10, 10.20)
Set back	Right side	5.35±2.61	(0.50, 12.60)
	Left side	4.04±2.43	(0.00, 9.20)

Tests of Normality									
	Axis X			Axis Y			Axis Z		
Landmark	Statistic	df	P	Statistic	df	P	Statistic	df	P
POINT_B	0.845	55	0.000	0.890	55	0.000	0.954	55	0.034
MID_INC	0.849	55	0.000	0.844	55	0.000	0.863	55	0.000
R_CANINE	0.845	55	0.000	0.833	55	0.000	0.861	55	0.000
R_1ST	0.847	55	0.000	0.851	55	0.000	0.920	55	0.001
L_CANINE	0.820	55	0.000	0.844	55	0.000	0.846	55	0.000
L_1ST	0.883	55	0.000	0.890	55	0.000	0.916	55	0.001

Differences according to the type of material						
Landmark	GROUP	Mean±SD	Mean difference	95% CI of the difference		P
				Lower	Upper	
Differences in the axis X						
POINT_B	3D printed	0.40±0.49	-0.18	-0.44	0.08	0.072
	Commercial	0.58±0.48				
MID_INC	3D printed	0.39±0.39	-0.07	-0.29	0.14	0.488
	Commercial	0.47±0.39				
R_CANINE	3D printed	0.38±0.27	-0.20	-0.42	0.02	0.146
	Commercial	0.58±0.49				
R_1ST	3D printed	0.39±0.28	-0.23	-0.44	-0.02	0.030
	Commercial	0.63±0.45				
L_CANINE	3D printed	0.39±0.29	-0.23	-0.47	0.01	0.132
	Commercial	0.63±0.54				
L_1ST	3D printed	0.32±0.32	-0.29	-0.49	-0.10	0.002
	Commercial	0.61±0.39				
Differences in the axis Y						
POINT_B	3D printed	0.75±0.61	-0.11	-0.46	0.24	0.494
	Commercial	0.86±0.67				
MID_INC	3D printed	0.34±0.27	-0.32	-0.59	-0.05	0.171
	Commercial	0.66±0.61				
R_CANINE	3D printed	0.34±0.31	-0.15	-0.37	0.06	0.276
	Commercial	0.49±0.45				
R_1ST	3D printed	0.36±0.35	-0.26	-0.48	-0.04	0.017
	Commercial	0.61±0.46				
L_CANINE	3D printed	0.35±0.28	-0.24	-0.48	-0.01	0.124
	Commercial	0.59±0.52				
L_1ST	3D printed	0.48±0.45	-0.12	-0.35	0.11	0.103
	Commercial	0.60±0.40				
Differences in the axis Z						
POINT_B	3D printed	1.27±0.68	-0.03	-0.43	0.37	0.966
	Commercial	1.30±0.81				
MID_INC	3D printed	0.51±0.34	0.00	-0.21	0.22	0.504
	Commercial	0.51±0.46				
R_CANINE	3D printed	0.44±0.30	-0.15	-0.39	0.10	0.624
	Commercial	0.58±0.53				
R_1ST	3D printed	0.61±0.45	-0.05	-0.31	0.20	0.774
	Commercial	0.66±0.49				
L_CANINE	3D printed	0.41±0.28	-0.22	-0.42	-0.03	0.024
	Commercial	0.64±0.43				
L_1ST	3D printed	0.51±0.37	-0.25	-0.48	-0.02	0.046
	Commercial	0.76±0.48				

Differences according to sex						
Landmark	SEX	Mean±SD	Mean difference	95% CI of the difference		P
				Lower	Upper	
Differences in the axis X						
POINT_B	MALE	0.38±0.49	-0.15	-0.44	0.13	0.164
	FEMALE	0.53±0.49				
MID_INC	MALE	0.44±0.42	0.03	-0.20	0.25	0.927
	FEMALE	0.42±0.38				
R_CANINE	MALE	0.28±0.21	-0.27	-0.45	-0.10	0.006
	FEMALE	0.56±0.43				
R_1ST	MALE	0.47±0.33	-0.04	-0.27	0.18	0.870
	FEMALE	0.51±0.41				
L_CANINE	MALE	0.44±0.23	-0.08	-0.28	0.11	0.636
	FEMALE	0.53±0.49				
L_1ST	MALE	0.51±0.43	0.08	-0.14	0.30	0.579
	FEMALE	0.42±0.36				
Differences in the axis Y						
POINT_B	MALE	0.53±0.45	-0.38	-0.74	-0.02	0.036
	FEMALE	0.91±0.68				
MID_INC	MALE	0.51±0.54	0.04	-0.25	0.32	0.799
	FEMALE	0.47±0.46				
R_CANINE	MALE	0.32±0.35	-0.13	-0.36	0.10	0.244
	FEMALE	0.45±0.40				
R_1ST	MALE	0.41±0.45	-0.10	-0.34	0.15	0.196
	FEMALE	0.50±0.41				
L_CANINE	MALE	0.47±0.38	0.01	-0.24	0.26	0.642
	FEMALE	0.45±0.44				
L_1ST	MALE	0.52±0.49	-0.03	-0.28	0.23	0.591
	FEMALE	0.55±0.41				
Differences in the axis Z						
POINT_B	MALE	1.35±0.80	0.09	-0.34	0.52	0.855
	FEMALE	1.25±0.71				
MID_INC	MALE	0.52±0.41	0.01	-0.22	0.24	0.899
	FEMALE	0.51±0.39				
R_CANINE	MALE	0.52±0.40	0.02	-0.23	0.27	0.799
	FEMALE	0.50±0.44				
R_1ST	MALE	0.75±0.54	0.17	-0.10	0.44	0.267
	FEMALE	0.58±0.42				
L_CANINE	MALE	0.50±0.37	-0.02	-0.23	0.20	0.702
	FEMALE	0.52±0.38				
L_1ST	MALE	0.64±0.49	0.02	-0.24	0.28	1.000
	FEMALE	0.62±0.42				

Differences according to malocclusion						
Landmark	MAL_OCCLUSION	Mean±SD	Mean difference	95% CI of the difference		P
				Lower	Upper	
Differences in the axis X						
POINT_B_X	CLASS II	0.28±0.22	-0.24	-0.46	-0.02	0.387
	CLASS III	0.52±0.52				
MID_INC_X	CLASS II	0.43±0.18	0.00	-0.28	0.29	0.285
	CLASS III	0.43±0.42				
R_CANINE_X	CLASS II	0.57±0.27	0.12	-0.17	0.41	0.116
	CLASS III	0.45±0.42				
R_1ST_X	CLASS II	0.45±0.24	-0.05	-0.33	0.23	0.982
	CLASS III	0.51±0.41				
L_CANINE_X	CLASS II	0.44±0.36	-0.07	-0.38	0.25	0.820
	CLASS III	0.51±0.44				
L_1ST_X	CLASS II	0.43±0.30	-0.02	-0.30	0.26	0.991
	CLASS III	0.45±0.40				
Differences in the axis Y						
POINT_B_Y	CLASS II	0.58±0.29	-0.26	-0.55	0.02	0.426
	CLASS III	0.84±0.68				
MID_INC_Y	CLASS II	0.35±0.29	-0.16	-0.51	0.19	0.532
	CLASS III	0.51±0.51				
R_CANINE_Y	CLASS II	0.31±0.36	-0.12	-0.41	0.16	0.172
	CLASS III	0.43±0.39				
R_1ST_Y	CLASS II	0.51±0.45	0.04	-0.26	0.35	0.641
	CLASS III	0.47±0.42				
L_CANINE_Y	CLASS II	0.42±0.39	-0.04	-0.35	0.27	0.802
	CLASS III	0.46±0.43				
L_1ST_Y	CLASS II	0.40±0.18	-0.16	-0.35	0.02	0.495
	CLASS III	0.56±0.46				
Differences in the axis Z						
POINT_B_Z	CLASS II	0.91±0.44	-0.44	-0.97	0.08	0.097
	CLASS III	1.35±0.76				
MID_INC_Z	CLASS II	0.42±0.32	-0.11	-0.39	0.18	0.554
	CLASS III	0.53±0.40				
R_CANINE_Z	CLASS II	0.36±0.23	-0.17	-0.48	0.13	0.375
	CLASS III	0.53±0.45				
R_1ST_Z	CLASS II	0.64±0.38	0.01	-0.34	0.35	0.750
	CLASS III	0.63±0.48				
L_CANINE_Z	CLASS II	0.40±0.29	-0.14	-0.41	0.13	0.255
	CLASS III	0.54±0.38				
L_1ST_Z	CLASS II	0.52±0.28	-0.13	-0.45	0.19	0.554
	CLASS III	0.64±0.46				

Differences according to procedure				
Landmark	LEFORT+BSSRO+GENIO	LEFORT+BSSRO	UPP segment+BSSRO+GENIO	P
Differences in the axis X				
POINT_B	0.53±0.54	0.45±0.43	0.23±0.15	0.673
MID_INC	0.44±0.43	0.39±0.36	0.46±0.16	0.491
R_CANINE	0.48±0.45	0.40±0.31	0.67±0.14	0.112
R_1ST	0.47±0.38	0.55±0.42	0.50±0.29	0.670
L_CANINE	0.46±0.41	0.55±0.48	0.60±0.42	0.489
L_1ST	0.38±0.29	0.56±0.52	0.54±0.28	0.443
Differences in the axis Y				
POINT_B	0.98±0.68[a]	0.53±0.49[b]	0.47±0.28	0.022
MID_INC	0.50±0.44	0.49±0.59	0.33±0.33	0.251
R_CANINE	0.43±0.43	0.40±0.35	0.29±0.25	0.772
R_1ST	0.48±0.43	0.42±0.37	0.57±0.54	0.666
L_CANINE	0.46±0.40	0.45±0.49	0.49±0.41	0.796
L_1ST	0.44±0.34	0.77±0.55	0.39±0.17	0.086
Differences in the axis Z				
POINT_B	1.40±0.65	1.24±0.90	0.68±0.27	0.056
MID_INC	0.56±0.44	0.43±0.27	0.53±0.41	0.624
R_CANINE	0.57±0.43	0.43±0.44	0.33±0.10	0.249
R_1ST	0.66±0.50	0.56±0.45	0.72±0.22	0.471
L_CANINE	0.49±0.43	0.54±0.26	0.56±0.27	0.286
L_1ST	0.58±0.46	0.70±0.46	0.67±0.18	0.428

Different superscript letters refer to significant differences.

Correlations with age and advancement on both sides										
		Axis X			Axis Y			Axis Z		
Landmark	Correlation	AGE	ADV_R	ADV_L	AGE	ADV_R	ADV_L	AGE	ADV_R	ADV_L
POINT_B	Correlation	0.004	0.138	-0.045	-0.054	0.100	-0.103	-0.024	0.228	0.148
	P-value	0.975	0.317	0.742	0.695	0.467	0.454	0.860	0.093	0.280
MID_INC	Correlation	-0.086	0.251	-0.045	-0.163	0.183	0.031	-0.086	0.311	0.012
	P-value	0.533	0.065	0.744	0.235	0.181	0.822	0.531	0.021	0.933
R_CANINE	Correlation	-0.013	0.091	0.014	0.039	0.250	0.166	-0.114	0.288	0.073
	P-value	0.927	0.508	0.917	0.778	0.066	0.226	0.405	0.033	0.596
R_1ST	Correlation	-0.287	-0.086	0.027	-0.230	-0.140	0.088	-0.257	0.014	-0.035
	P-value	0.033	0.533	0.846	0.090	0.309	0.521	0.058	0.921	0.801
L_CANINE	Correlation	-0.303	-0.054	0.172	-0.157	0.081	-0.010	-0.254	-0.058	0.114
	P-value	0.024	0.698	0.208	0.253	0.555	0.940	0.061	0.675	0.406
L_1ST	Correlation	0.015	0.077	-0.044	-0.071	-0.054	0.014	-0.047	-0.094	-0.013
	P-value	0.915	0.576	0.750	0.605	0.698	0.920	0.732	0.495	0.923

RESULTS FOR MANDIBULAR ACCURACY IN SINGLE JAW SURGERY

Characteristics of the study sample			
		Frequency	**Percent**
GROUP	3D	12	52.2
	commercial Titanium	11	47.8
SEX	MALE	4	17.4
	FEMALE	19	82.6
MAL_OCCLUSION	CLASS II	6	26.1
	CLASS III	17	73.9
		Mean±SD	**(Min, Max)**
AGE (years)		25.52±5.24	(19.00, 38.00)
Advancement	Right side	6.43±1.76	(3.80, 9.10)
	Left side	5.57±1.97	(3.30, 8.00)
Set back	Right side	4.14±1.92	(1.10, 7.43)
	Left side	3.76±1.53	(0.00, 6.10)

Tests of Normality									
	Axis X			**Axis Y**			**Axis Z**		
	Statistic	**df**	**P**	**Statistic**	**df**	**P**	**Statistic**	**df**	**P**
POINT_B	0.809	23	0.001	0.942	23	0.201	0.846	23	0.002
MID_INC	0.966	23	0.601	0.860	23	0.004	0.935	23	0.139
R_CANINE	0.885	23	0.012	0.930	23	0.108	0.866	23	0.005
R_1ST	0.857	23	0.004	0.834	23	0.001	0.884	23	0.012
L_CANINE	0.959	23	0.449	0.702	23	0.000	0.839	23	0.002
L_1ST	0.707	23	0.000	0.842	23	0.002	0.826	23	0.001

Differences according to the type of material						
Landmark	**GROUP**	**Mean±SD**	**Mean difference**	**95% CI of the difference**		**P***
				Lower	**Upper**	
Differences in the Axis X						
POINT_B	3D printed	0.12±0.10	-0.08	-0.24	0.08	0.758
	commercial	0.20±0.23				
MID_INC	3D printed	0.44±0.24	0.05	-0.14	0.24	0.609[a]
	commercial	0.39±0.20				
R_CANINE	3D printed	0.50±0.32	0.01	-0.29	0.30	0.902
	commercial	0.50±0.35				
R_1ST	3D printed	0.60±0.46	-0.07	-0.55	0.40	0.854
	commercial	0.67±0.63				
L_CANINE	3D printed	0.35±0.20	-0.08	-0.26	0.11	0.404[a]
	commercial	0.43±0.22				
L_1ST	3D printed	0.52±0.54	-0.02	-0.42	0.38	0.356
	commercial	0.54±0.35				
Differences in the Axis Y						
POINT_B	3D printed	0.34±0.19	-0.04	-0.24	0.16	0.698[a]
	commercial	0.38±0.27				
MID_INC	3D printed	0.29±0.25	-0.07	-0.33	0.19	0.667
	commercial	0.36±0.35				
R_CANINE	3D printed	0.40±0.28	0.00	-0.28	0.27	0.975[a]
	commercial	0.40±0.35				
R_1ST	3D printed	0.70±0.72	0.14	-0.41	0.69	0.498
	commercial	0.56±0.52				
L_CANINE	3D printed	0.19±0.14	-0.34	-0.72	0.05	0.218
	commercial	0.53±0.56				
L_1ST	3D printed	0.49±0.47	0.02	-0.31	0.36	0.622
	commercial	0.46±0.29				
Differences in the Axis Z						
POINT_B	3D printed	0.36±0.22	-0.28	-0.61	0.06	0.196
	commercial	0.64±0.47				
MID_INC	3D printed	0.46±0.37	-0.02	-0.30	0.26	0.867[a]
	commercial	0.48±0.26				
R_CANINE	3D printed	0.53±0.38	0.02	-0.27	0.32	0.902
	commercial	0.51±0.28				
R_1ST	3D printed	0.75±0.58	-0.03	-0.54	0.49	0.902
	commercial	0.77±0.60				
L_CANINE	3D printed	0.34±0.28	-0.27	-0.54	0.00	0.027
	commercial	0.60±0.34				
L_1ST	3D printed	0.60±0.58	-0.11	-0.52	0.30	0.074
	commercial	0.71±0.32				

** Mann-Whitney U test was used unless otherwise indicated; [a] Independent t-test was used; P< 0.05 is considered significant.*

Differences according to sex						
Landmark	**SEX**	**Mean±SD**	**Mean difference**	**95% CI of the difference**		**P***
				Lower	**Upper**	
Differences in the Axis X						
POINT_B	MALE	0.10±0.11	-0.07	-0.27	0.13	0.417
	FEMALE	0.17±0.18				
MID_INC	MALE	0.48±0.10	0.08	-0.17	0.33	0.519[a]
	FEMALE	0.40±0.23				
R_CANINE	MALE	0.45±0.41	-0.06	-0.45	0.32	0.570
	FEMALE	0.51±0.32				
R_1ST	MALE	0.37±0.31	-0.32	-0.93	0.29	0.224
	FEMALE	0.69±0.56				
L_CANINE	MALE	0.27±0.15	-0.14	-0.38	0.10	0.235[a]
	FEMALE	0.41±0.22				
L_1ST	MALE	0.25±0.13	-0.33	-0.84	0.17	0.035
	FEMALE	0.58±0.48				
Differences in the Axis Y						
POINT_B	MALE	0.25±0.33	-0.13	-0.39	0.12	0.292[a]
	FEMALE	0.38±0.20				
MID_INC	MALE	0.23±0.23	-0.12	-0.46	0.22	0.372
	FEMALE	0.35±0.31				
R_CANINE	MALE	0.42±0.17	0.03	-0.23	0.28	0.824[a]
	FEMALE	0.39±0.33				
R_1ST	MALE	0.40±0.49	-0.28	-1.00	0.43	0.465
	FEMALE	0.68±0.65				
L_CANINE	MALE	0.29±0.28	-0.07	-0.57	0.43	1.000
	FEMALE	0.36±0.46				
L_1ST	MALE	0.34±0.34	-0.16	-0.61	0.28	0.394
	FEMALE	0.50±0.39				
POINT_B	MALE	0.46±0.32	-0.04	-0.49	0.40	0.935
	FEMALE	0.50±0.40				
Differences in the Axis Z						
MID_INC	MALE	0.57±0.45	0.12	-0.25	0.48	0.506[a]
	FEMALE	0.45±0.29				
R_CANINE	MALE	0.51±0.34	-0.01	-0.40	0.38	0.746
	FEMALE	0.53±0.34				
R_1ST	MALE	0.53±0.38	-0.28	-0.94	0.38	0.372
	FEMALE	0.81±0.61				
L_CANINE	MALE	0.37±0.09	-0.12	-0.31	0.08	0.715
	FEMALE	0.48±0.36				
L_1ST	MALE	0.40±0.18	-0.30	-0.84	0.23	0.194
	FEMALE	0.70±0.50				

** Mann-Whitney U test was used unless otherwise indicated; [a] Independent t-test was used; P< 0.05 is considered significant.*

Difference according to malocclusion						
			Mean	95% CI of the difference		
Landmark	**MALOCCLUSION**	**Mean±SD**	**difference**	**Lower**	**Upper**	**P***
Differences in the axis X						
POINT_B	CLASS II	0.13±0.10	-0.04	-0.21	0.13	0.833
	CLASS III	0.17±0.19				
MID_INC	CLASS II	0.30±0.26	-0.16	-0.36	0.05	0.127[a]
	CLASS III	0.46±0.19				
R_CANINE	CLASS II	0.44±0.31	-0.09	-0.42	0.24	0.484
	CLASS III	0.52±0.34				
R_1ST	CLASS II	0.60±0.30	-0.04	-0.58	0.50	0.624
	CLASS III	0.64±0.60				
L_CANINE	CLASS II	0.42±0.16	0.04	-0.17	0.26	0.681[a]
	CLASS III	0.38±0.23				
L_1ST	CLASS II	0.69±0.72	0.22	-0.23	0.67	0.462
	CLASS III	0.47±0.32				
Differences in the axis Y						
POINT_B	CLASS II	0.40±0.23	0.06	-0.17	0.28	0.590[a]
	CLASS III	0.34±0.23				
MID_INC	CLASS II	0.22±0.18	-0.14	-0.43	0.15	0.462
	CLASS III	0.36±0.32				
R_CANINE	CLASS II	0.39±0.29	-0.01	-0.32	0.30	0.951[a]
	CLASS III	0.40±0.32				
R_1ST	CLASS II	0.77±0.71	0.18	-0.44	0.80	0.310
	CLASS III	0.58±0.60				
L_CANINE	CLASS II	0.22±0.07	-0.18	-0.44	0.08	0.700
	CLASS III	0.40±0.49				
L_1ST	CLASS II	0.63±0.62	0.21	-0.16	0.59	0.528
	CLASS III	0.42±0.26				
Differences in the axis Z						
POINT_B	CLASS II	0.50±0.49	0.00	-0.38	0.39	0.806
	CLASS III	0.50±0.35				
MID_INC	CLASS II	0.28±0.22	-0.26	-0.56	0.03	0.076[a]
	CLASS III	0.54±0.32				
R_CANINE	CLASS II	0.53±0.37	0.01	-0.33	0.35	0.779
	CLASS III	0.52±0.33				
R_1ST	CLASS II	0.66±0.33	-0.14	-0.72	0.44	1.000
	CLASS III	0.80±0.64				
L_CANINE	CLASS II	0.35±0.21	-0.16	-0.49	0.17	0.344
	CLASS III	0.51±0.37				
L_1ST	CLASS II	0.76±0.79	0.14	-0.69	0.97	0.624
	CLASS III	0.61±0.32				

** Mann-Whitney U test was used unless otherwise indicated; [a] Independent t-test was used; P< 0.05 is considered significant.*

Differences according to procedure						
			Mean	95% CI of the difference		
Landmark	**PROCEDURE**	**Mean±SD**	**difference**	**Lower**	**Upper**	**P***
Differences in the axis X						
POINT_B	BSSRO+GENIO	0.13±0.11	-0.20	-0.70	0.30	0.516
	BSSRO	0.32±0.32				
MID_INC	BSSRO+GENIO	0.41±0.24	-0.04	-0.18	0.09	0.490[a]
	BSSRO	0.45±0.07				
R_CANINE	BSSRO+GENIO	0.52±0.35	0.11	-0.27	0.49	0.871
	BSSRO	0.41±0.20				
R_1ST	BSSRO+GENIO	0.65±0.53	0.12	-0.50	0.75	0.417
	BSSRO	0.53±0.61				
L_CANINE	BSSRO+GENIO	0.41±0.22	0.13	-0.11	0.37	0.287[a]
	BSSRO	0.28±0.17				
L_1ST	BSSRO+GENIO	0.51±0.43	-0.12	-0.64	0.41	0.935
	BSSRO	0.62±0.61				
Differences in the axis Y						
POINT_B	BSSRO+GENIO	0.35±0.20	-0.02	-0.60	0.56	0.906a
	BSSRO	0.38±0.38				
MID_INC	BSSRO+GENIO	0.30±0.24	-0.13	-0.95	0.69	0.935
	BSSRO	0.43±0.53				
R_CANINE	BSSRO+GENIO	0.39±0.32	-0.06	-0.42	0.30	0.733[a]
	BSSRO	0.45±0.27				
R_1ST	BSSRO+GENIO	0.70±0.65	0.40	-0.30	1.11	0.144
	BSSRO	0.30±0.33				
L_CANINE	BSSRO+GENIO	0.29±0.37	-0.34	-0.82	0.13	0.256
	BSSRO	0.63±0.65				
L_1ST	BSSRO+GENIO	0.45±0.39	-0.11	-0.56	0.33	0.351
	BSSRO	0.57±0.36				
Differences in the axis Z						
POINT_B	BSSRO+GENIO	0.45±0.36	-0.29	-0.72	0.14	0.256
	BSSRO	0.74±0.45				
MID_INC	BSSRO+GENIO	0.46±0.34	-0.07	-0.44	0.29	0.675[a]
	BSSRO	0.53±0.19				
R_CANINE	BSSRO+GENIO	0.52±0.34	0.00	-0.39	0.39	1.000
	BSSRO	0.52±0.34				
R_1ST	BSSRO+GENIO	0.79±0.55	0.17	-0.50	0.84	0.256
	BSSRO	0.62±0.78				
L_CANINE	BSSRO+GENIO	0.45±0.34	-0.09	-0.48	0.30	0.224
	BSSRO	0.54±0.34				
L_1ST	BSSRO+GENIO	0.64±0.47	-0.07	-0.62	0.48	0.746
	BSSRO	0.71±0.53				

** Mann-Whitney U test was used unless otherwise indicated; [a] Independent t-test was used; P< 0.05 is considered significant.*

Correlations with age and advancement on both sides										
		Axis X			Axis Y			Axis Z		
Landmark	**Correlation***	**AGE**	**ADV_R**	**ADV_L**	**AGE**	**ADV_R**	**ADV_L**	**AGE**	**ADV_R**	**ADV_L**
POINT_B	Correlation	-0.122	0.051	-0.190	0.005	0.142	0.254	-0.082	-0.178	-0.179
	P-value	0.578	0.817	0.384	0.981[a]	0.519[a]	0.243[a]	0.711	0.418	0.414
MID_INC	Correlation	0.406	-0.253	-0.369	0.046	0.073	-0.092	0.084	-0.298	-0.044
	P-value	0.055[a]	0.244[a]	0.083[a]	0.835	0.740	0.677	0.704[a]	0.167[a]	0.841[a]
R_CANINE	Correlation	-0.133	-0.073	-0.423	-0.209	0.097	0.002	-0.140	-0.006	-0.053
	P-value	0.545	0.742	0.044	0.339[a]	0.661[a]	0.994[a]	0.525	0.977	0.808
R_1ST	Correlation	-0.193	0.266	-0.021	-0.265	0.402	-0.090	-0.160	0.189	-0.247
	P-value	0.377	0.220	0.925	0.221	0.057	0.682	0.466	0.387	0.256
L_CANINE	Correlation	-0.122	0.355	0.202	-0.365	0.382	0.324	0.073	0.104	0.175
	P-value	0.580[a]	0.097[a]	0.356[a]	0.087	0.072	0.132	0.741	0.637	0.423
L_1ST	Correlation	-0.110	0.513	0.162	0.035	0.302	0.228	-0.113	0.187	0.083
	P-value	0.619	0.012	0.461	0.873	0.162	0.295	0.609	0.392	0.708

** Spearman Correlation Coefficient test was used unless otherwise indicated; [a] Pearson Correlation Coefficient test was used; P< 0.05 is considered significant.*

RESULTS FOR GENIOPLASTY ACCURACY IN DOUBLE JAW SURGERY

Characteristics of the study sample			
		Frequency	Percent
GROUP	3D PRINTED	20	55.6
	COMMERCIAL	16	44.4
SEX	MALE	8	22.2
	FEMALE	28	77.8
MALOCCLUSION	CLASS 2	9	25.0
	CLASS 3	27	75.0
PROCEDURE	LEFORT+BSSRO+GENIO	31	86.1
	SEGMENT+GENIOPLASTY	5	13.9
		(Mean±SD)	(Min, Max)
Age (years)		(24.42±4.11)	(18.00, 33.00)
ADVANCEMENT (mm)		(4.88±1.36)	(1.50, 8.00)

Tests of normality for data distribution									
	Axis X			Axis Y			Axis Z		
	Statistic	df	P	Statistic	df	P	Statistic	df	P
POGONION	0.747	36	0.000	0.811	36	0.000	0.874	36	0.001
MENTON	0.818	36	0.000	0.919	36	0.012	0.768	36	0.000
R_MENTON	0.905	36	0.005	0.925	36	0.018	0.751	36	0.000
L_MENTON	0.845	36	0.000	0.935	36	0.035	0.848	36	0.000
R_ANT	0.759	36	0.000	0.841	36	0.000	0.861	36	0.000
L_ANT	0.779	36	0.000	0.752	36	0.000	0.877	36	0.001

Differences according to the type of material						
Landmark	GROUP	Mean±SD	Mean difference	95% CI of the difference		P
				Lower	Upper	
Differences in the axis X						
POGONION	3D PRINTED	0.08±0.11	-0.13	-0.26	0.00	0.056
	COMMERCIAL	0.21±0.23				
MENTON	3D PRINTED	0.08±0.12	-0.30	-0.44	-0.17	0.000
	COMMERCIAL	0.38±0.25				
R_MENTON	3D PRINTED	0.46±0.51	-0.30	-0.62	0.02	0.011
	COMMERCIAL	0.76±0.40				
L_MENTON	3D PRINTED	0.42±0.39	-0.38	-0.71	-0.04	0.020
	COMMERCIAL	0.79±0.55				
R_ANT	3D PRINTED	0.33±0.24	-0.27	-0.57	0.04	0.119
	COMMERCIAL	0.60±0.54				
L_ANT	3D PRINTED	0.39±0.31	-0.35	-0.68	-0.03	0.028
	COMMERCIAL	0.74±0.62				
Differences in the axis Y						
POGONION	3D PRINTED	0.47±0.60	-0.69	-1.21	-0.16	0.005
	COMMERCIAL	1.15±0.95				
MENTON	3D PRINTED	0.69±0.81	-1.65	-2.16	-1.13	0.000
	COMMERCIAL	2.33±0.69				
R_MENTON	3D PRINTED	0.85±0.83	-1.49	-2.04	-0.94	0.000
	COMMERCIAL	2.34±0.76				
L_MENTON	3D PRINTED	1.02±0.75	-1.22	-1.74	-0.70	0.000
	COMMERCIAL	2.24±0.79				
R_ANT	3D PRINTED	0.36±0.44	-0.02	-0.28	0.25	0.445
	COMMERCIAL	0.37±0.31				
L_ANT	3D PRINTED	0.50±0.64	-0.13	-0.58	0.31	0.390
	COMMERCIAL	0.63±0.68				
Differences in the axis Z						
POGONION	3D PRINTED	0.70±0.65	-0.38	-0.90	0.13	0.226
	COMMERCIAL	1.08±0.87				
MENTON	3D PRINTED	0.49±0.69	-0.28	-0.73	0.16	0.022
	COMMERCIAL	0.78±0.60				
R_MENTON	3D PRINTED	0.74±0.93	0.06	-0.48	0.59	0.714
	COMMERCIAL	0.69±0.54				
L_MENTON	3D PRINTED	0.67±0.74	-0.07	-0.50	0.37	0.157
	COMMERCIAL	0.73±0.45				
R_ANT	3D PRINTED	0.55±0.43	-0.46	-0.88	-0.05	0.054
	COMMERCIAL	1.01±0.77				
L_ANT	3D PRINTED	0.60±0.41	-0.50	-0.90	-0.11	0.026
	COMMERCIAL	1.11±0.74				

Differences according to sex						
Landmark	SEX	Mean±SD	Mean difference	95% CI of the difference		P
				Lower	Upper	
Differences in the axis X						
POGONION	MALE	0.07±0.09	-0.08	-0.23	0.06	0.101
	FEMALE	0.15±0.20				
MENTON	MALE	0.16±0.15	-0.08	-0.27	0.12	0.648
	FEMALE	0.23±0.26				
R_MENTON	MALE	0.68±0.71	0.11	-0.29	0.50	0.985
	FEMALE	0.57±0.41				
L_MENTON	MALE	0.52±0.52	-0.08	-0.49	0.33	0.505
	FEMALE	0.60±0.50				
R_ANT	MALE	0.23±0.17	-0.28	-0.61	0.05	0.050
	FEMALE	0.51±0.45				
L_ANT	MALE	0.33±0.25	-0.28	-0.68	0.12	0.114
	FEMALE	0.61±0.53				
Differences in the axis Y						
POGONION	MALE	0.71±0.83	-0.07	-0.77	0.62	0.505
	FEMALE	0.79±0.86				
MENTON	MALE	1.26±1.39	-0.20	-1.12	0.72	0.581
	FEMALE	1.46±1.05				
R_MENTON	MALE	1.59±1.37	0.10	-0.80	1.00	0.894
	FEMALE	1.48±1.03				
L_MENTON	MALE	1.50±0.97	-0.08	-0.89	0.72	0.924
	FEMALE	1.58±0.99				
R_ANT	MALE	0.30±0.30	-0.08	-0.39	0.24	0.568
	FEMALE	0.38±0.40				
L_ANT	MALE	0.51±0.53	-0.06	-0.60	0.48	0.648
	FEMALE	0.57±0.69				
Differences in the axis Z						
POGONION	MALE	0.75±0.44	-0.16	-0.62	0.31	0.894
	FEMALE	0.90±0.84				
MENTON	MALE	0.54±0.59	-0.10	-0.65	0.44	0.746
	FEMALE	0.64±0.69				
R_MENTON	MALE	0.96±1.20	0.31	-0.32	0.94	0.662
	FEMALE	0.65±0.62				
L_MENTON	MALE	0.88±0.71	0.24	-0.27	0.75	0.196
	FEMALE	0.64±0.60				
R_ANT	MALE	0.36±0.35	-0.51	-1.01	-0.01	0.014
	FEMALE	0.87±0.66				
L_ANT	MALE	0.61±0.37	-0.28	-0.79	0.22	0.361
	FEMALE	0.89±0.67				

Differences according to malocclusion						
Landmark	MALOCCLUSION	Mean±SD	Mean difference	95% CI of the difference		P
				Lower	Upper	
Differences in the axis X						
POGONION	CLASS 2	0.04±0.05	-0.13	-0.22	-0.05	0.139
	CLASS 3	0.17±0.20				
MENTON	CLASS 2	0.21±0.23	0.00	-0.19	0.18	0.841
	CLASS 3	0.22±0.25				
R_MENTON	CLASS 2	0.68±0.35	0.11	-0.27	0.49	0.228
	CLASS 3	0.57±0.52				
L_MENTON	CLASS 2	0.39±0.31	-0.26	-0.65	0.13	0.188
	CLASS 3	0.65±0.54				
R_ANT	CLASS 2	0.38±0.30	-0.09	-0.43	0.24	0.798
	CLASS 3	0.47±0.45				
L_ANT	CLASS 2	0.52±0.36	-0.03	-0.42	0.37	0.971
	CLASS 3	0.55±0.54				
Differences in the axis Y						
POGONION	CLASS 2	0.70±0.66	-0.09	-0.75	0.58	0.884
	CLASS 3	0.79±0.90				
MENTON	CLASS 2	1.41±1.02	-0.01	-0.89	0.88	0.826
	CLASS 3	1.42±1.16				
R_MENTON	CLASS 2	1.60±0.90	0.12	-0.74	0.98	0.535
	CLASS 3	1.48±1.16				
L_MENTON	CLASS 2	1.37±1.09	-0.25	-1.02	0.51	0.324
	CLASS 3	1.62±0.95				
R_ANT	CLASS 2	0.42±0.35	0.07	-0.23	0.37	0.523
	CLASS 3	0.35±0.39				
L_ANT	CLASS 2	0.64±0.67	0.11	-0.40	0.63	0.235
	CLASS 3	0.53±0.66				
Differences in the axis Z						
POGONION	CLASS 2	0.54±0.48	-0.44	-1.03	0.15	0.144
	CLASS 3	0.98±0.82				
MENTON	CLASS 2	0.45±0.31	-0.22	-0.74	0.30	0.742
	CLASS 3	0.67±0.74				
R_MENTON	CLASS 2	0.53±0.33	-0.25	-0.85	0.36	0.942
	CLASS 3	0.78±0.87				
L_MENTON	CLASS 2	0.56±0.35	-0.18	-0.67	0.31	0.855
	CLASS 3	0.74±0.69				
R_ANT	CLASS 2	0.63±0.52	-0.17	-0.67	0.34	0.535
	CLASS 3	0.80±0.68				
L_ANT	CLASS 2	0.85±0.50	0.04	-0.46	0.53	0.523
	CLASS 3	0.82±0.67				

Differences according to the type of procedure						
			Mean	95% CI of the difference		
Landmark	PROCEDURE	Mean±SD	difference	Lower	Upper	P
Differences in the axis X						
POGONION	LEFORT+BSSRO+GENIO	0.15±0.19	0.13	0.06	0.20	0.170
	SEGMENT+GENIOPLASTY	0.02±0.02				
MENTON	LEFORT+BSSRO+GENIO	0.23±0.25	0.09	-0.15	0.32	0.664
	SEGMENT+GENIOPLASTY	0.14±0.14				
R_MENTON	LEFORT+BSSRO+GENIO	0.57±0.50	-0.19	-0.67	0.29	0.208
	SEGMENT+GENIOPLASTY	0.76±0.39				
L_MENTON	LEFORT+BSSRO+GENIO	0.59±0.53	0.05	-0.45	0.54	0.801
	SEGMENT+GENIOPLASTY	0.54±0.32				
R_ANT	LEFORT+BSSRO+GENIO	0.46±0.44	0.06	-0.35	0.48	0.945
	SEGMENT+GENIOPLASTY	0.39±0.25				
L_ANT	LEFORT+BSSRO+GENIO	0.52±0.51	-0.16	-0.65	0.33	0.282
	SEGMENT+GENIOPLASTY	0.68±0.41				
Differences in the axis Y						
POGONION	LEFORT+BSSRO+GENIO	0.81±0.89	0.27	-0.56	1.09	0.909
	SEGMENT+GENIOPLASTY	0.54±0.33				
MENTON	LEFORT+BSSRO+GENIO	1.44±1.16	0.18	-0.93	1.29	0.631
	SEGMENT+GENIOPLASTY	1.26±0.83				
R_MENTON	LEFORT+BSSRO+GENIO	1.50±1.14	-0.07	-1.16	1.01	0.631
	SEGMENT+GENIOPLASTY	1.57±0.80				
L_MENTON	LEFORT+BSSRO+GENIO	1.63±0.95	0.55	-0.40	1.50	0.177
	SEGMENT+GENIOPLASTY	1.09±1.10				
R_ANT	LEFORT+BSSRO+GENIO	0.33±0.39	-0.23	-0.60	0.14	0.104
	SEGMENT+GENIOPLASTY	0.56±0.30				
L_ANT	LEFORT+BSSRO+GENIO	0.49±0.62	-0.46	-1.09	0.17	0.095
	SEGMENT+GENIOPLASTY	0.95±0.79				
Differences in the axis Z						
POGONION	LEFORT+BSSRO+GENIO	0.94±0.81	0.50	0.16	0.85	0.225
	SEGMENT+GENIOPLASTY	0.44±0.20				
MENTON	LEFORT+BSSRO+GENIO	0.66±0.70	0.30	-0.35	0.95	0.372
	SEGMENT+GENIOPLASTY	0.36±0.29				
R_MENTON	LEFORT+BSSRO+GENIO	0.75±0.82	0.20	-0.57	0.97	0.927
	SEGMENT+GENIOPLASTY	0.54±0.46				
L_MENTON	LEFORT+BSSRO+GENIO	0.71±0.65	0.11	-0.51	0.72	0.945
	SEGMENT+GENIOPLASTY	0.60±0.44				
R_ANT	LEFORT+BSSRO+GENIO	0.77±0.66	0.08	-0.55	0.72	0.837
	SEGMENT+GENIOPLASTY	0.69±0.54				
L_ANT	LEFORT+BSSRO+GENIO	0.78±0.64	-0.32	-0.93	0.29	0.115
	SEGMENT+GENIOPLASTY	1.10±0.48				

Correlation with age and amount of advancement							
		Axis X		Axis Y		Axis Z	
Landmark	Correlation	Age	ADVANCEMENT	Age	ADVANCEMENT	Age	ADVANCEMENT
SM	Correlation	-0.344	0.118	-0.171	0.138	-0.140	0.062
	P-value	0.040	0.492	0.320	0.421	0.416	0.721
ME	Correlation	-0.065	0.285	-0.187	0.161	-0.035	0.433
	P-value	0.707	0.092	0.274	0.348	0.840	0.008
MER	Correlation	0.057	0.375	-0.158	0.209	0.098	0.275
	P-value	0.742	0.024	0.357	0.222	0.569	0.104
MEL	Correlation	-0.054	0.188	-0.270	0.004	0.041	0.206
	P-value	0.754	0.271	0.111	0.980	0.814	0.228
SR	Correlation	0.067	0.323	0.207	0.357	-0.198	0.184
	P-value	0.699	0.055	0.225	0.032	0.247	0.282
SL	Correlation	-0.164	0.147	0.104	0.232	-0.170	0.089
	P-value	0.338	0.393	0.545	0.173	0.321	0.606

RESULTS FOR GENIOPLASTY ACCURACY IN SINGLE MANDIBULAR JAW SURGERY

Characteristics of the study sample			
		Frequency	Percent
GROUP	3D PRINTED	10	58.8
	COMMERCIAL	7	41.2
SEX	MALE	3	17.6
	FEMALE	14	82.4
MALOCCLUSION	CLASS 2	5	29.4
	CLASS 3	12	70.6
PROCEDURE	BSSRO+GENIO	17	100.0
		Mean±SD	(Min, Max)
Age		25.35±4.97	(19.00, 38.00)
ADVANCEMENT		4.59±1.42	(2.00, 8.00)

Tests of normality									
	Axis X			Axis Y			Axis Z		
	Statistic	df	P	Statistic	df	P	Statistic	df	P
POGONION	0.892	17	0.049	0.916	17	0.125	0.972	17	0.844
MENTON	0.883	17	0.036	0.945	17	0.386	0.748	17	0.000
R_MENTON	0.862	17	0.017	0.736	17	0.000	0.812	17	0.003
L_MENTON	0.835	17	0.006	0.933	17	0.244	0.846	17	0.009
R_ANT	0.853	17	0.012	0.684	17	0.000	0.853	17	0.012
L_ANT	0.908	17	0.094	0.885	17	0.039	0.905	17	0.084

Differences in accuracy between T0-T1 according to the group of the study						
	GROUP	Mean±SD	Mean difference	95% CI of the difference		P
				Lower	Upper	
Differences in the axis X						
SM	3D- Printed PCP	0.07±0.07	-0.03	-0.10	0.04	0.283
	CTP	0.10±0.06				
ME	3D- Printed PCP	0.13±0.12	-0.05	-0.18	0.07	0.354
	CTP	0.19±0.11				
MER	3D- Printed PCP	0.35±0.26	-0.07	-0.46	0.32	0.845
	CTP	0.42±0.49				
MEL	3D- Printed PCP	0.46±0.24	-0.07	-0.69	0.55	0.495
	CTP	0.53±0.66				
SR	3D- Printed PCP	0.45±0.40	0.07	-0.35	0.49	0.558
	CTP	0.37±0.41				
SL	3D- Printed PCP	0.44±0.38	-0.29	-0.76	0.18	0.208*
	CTP	0.73±0.54				
Differences in the axis Y						
SM	3D- Printed PCP	0.71±0.34	0.18	-0.20	0.55	0.328*
	CTP	0.53±0.38				
ME	3D- Printed PCP	0.93±0.45	-0.06	-0.62	0.50	0.828*
	CTP	0.99±0.63				
MER	3D- Printed PCP	0.74±0.57	-0.21	-0.90	0.48	0.922
	CTP	0.94±0.78				
MEL	3D- Printed PCP	1.12±0.68	-0.03	-0.79	0.73	0.931*
	CTP	1.15±0.78				
SR	3D- Printed PCP	0.48±0.70	0.21	-0.38	0.80	0.845
	CTP	0.27±0.21				
SL	3D- Printed PCP	0.50±0.61	-0.28	-0.86	0.30	0.097
	CTP	0.78±0.44				
Differences in the axis z						
SM	3D- Printed PCP	0.96±0.40	0.26	-0.24	0.75	0.288*
	CTP	0.70±0.56				
ME	3D- Printed PCP	0.47±0.49	0.30	-0.14	0.74	0.097
	CTP	0.17±0.29				
MER	3D- Printed PCP	0.30±0.31	0.10	-0.18	0.38	0.380
	CTP	0.20±0.18				
MEL	3D- Printed PCP	0.61±0.58	-0.02	-0.71	0.68	0.922
	CTP	0.62±0.76				
SR	3D- Printed PCP	0.62±0.61	0.01	-0.61	0.64	0.845
	CTP	0.60±0.57				
SL	3D- Printed PCP	0.91±0.83	-0.13	-0.90	0.64	0.716*
	CTP	1.05±0.56				

*Mann-Whitney U test was used unless otherwise indicated; * Independent t-test was used.*

Differences according to sex						
	SEX	Mean±SD	Mean difference	95% CI of the difference		P
				Lower	Upper	
Difference in the axis X						
SM	MALE	0.03±0.01	-0.06	-0.11	-0.02	0.078
	FEMALE	0.10±0.07				
ME	MALE	0.12±0.02	-0.04	-0.12	0.04	0.900
	FEMALE	0.16±0.13				
MER	MALE	0.15±0.06	-0.28	-0.76	0.20	0.257
	FEMALE	0.43±0.38				
MEL	MALE	0.41±0.24	-0.10	-0.72	0.53	0.900
	FEMALE	0.50±0.49				
SR	MALE	0.50±0.64	0.10	-0.44	0.65	0.900
	FEMALE	0.40±0.35				
SL	MALE	0.62±0.49	0.08	-0.57	0.72	0.805*
	FEMALE	0.55±0.47				
Difference in the axis Y						
SM	MALE	0.66±0.45	0.02	-0.48	0.52	0.923*
	FEMALE	0.63±0.36				
ME	MALE	0.99±0.58	0.04	-0.68	0.77	0.900*
	FEMALE	0.95±0.53				
MER	MALE	0.50±0.06	-0.39	-1.27	0.49	0.313
	FEMALE	0.89±0.70				
MEL	MALE	0.94±0.57	-0.23	-1.21	0.74	0.617*
	FEMALE	1.18±0.74				
SR	MALE	0.33±0.28	-0.09	-0.86	0.69	0.801
	FEMALE	0.41±0.60				
SL	MALE	0.39±0.32	-0.28	-1.04	0.48	0.450
	FEMALE	0.67±0.59				
Difference in the axis Z						
SM	MALE	0.87±0.39	0.03	-0.64	0.69	0.929*
	FEMALE	0.85±0.50				
ME	MALE	0.41±0.31	0.08	-0.53	0.68	0.378
	FEMALE	0.33±0.47				
MER	MALE	0.20±0.06	-0.07	-0.44	0.30	0.614
	FEMALE	0.27±0.29				
MEL	MALE	0.24±0.25	-0.45	-0.97	0.07	0.313
	FEMALE	0.69±0.67				
SR	MALE	0.66±0.72	0.06	-0.74	0.86	1.000
	FEMALE	0.60±0.57				
SL	MALE	1.01±0.74	0.06	-0.94	1.05	0.904*
	FEMALE	0.96±0.73				

*Mann-Whitney U test was used unless otherwise indicated; * Independent t-test was used.*

Differences according to malocclusion						
	MALOCCLUSION	Mean±SD	Mean difference	95% CI of the difference		P
				Lower	Upper	
Differences in the axis X						
SM	CLASS 2	0.08±0.06	-0.01	-0.09	0.06	0.752
	CLASS 3	0.09±0.07				
ME	CLASS 2	0.24±0.15	0.12	-0.07	0.31	0.073
	CLASS 3	0.12±0.08				
MER	CLASS 2	0.31±0.26	-0.10	-0.52	0.32	0.833
	CLASS 3	0.41±0.40				
MEL	CLASS 2	0.52±0.32	0.05	-0.47	0.58	0.399
	CLASS 3	0.47±0.50				
SR	CLASS 2	0.26±0.28	-0.22	-0.66	0.22	0.246
	CLASS 3	0.48±0.42				
SL	CLASS 2	0.55±0.43	-0.01	-0.55	0.52	0.956*
	CLASS 3	0.57±0.49				
Differences in the axis Y						
SM	CLASS 2	0.76±0.26	0.18	-0.23	0.59	0.367*
	CLASS 3	0.59±0.39				
ME	CLASS 2	0.93±0.42	-0.03	-0.64	0.57	0.906*
	CLASS 3	0.96±0.57				
MER	CLASS 2	0.48±0.26	-0.49	-1.20	0.22	0.140
	CLASS 3	0.97±0.71				
MEL	CLASS 2	1.19±0.88	0.08	-0.74	0.91	0.833*
	CLASS 3	1.11±0.66				
SR	CLASS 2	0.21±0.41	-0.27	-0.90	0.37	0.058
	CLASS 3	0.47±0.60				
SL	CLASS 2	0.32±0.34	-0.43	-1.03	0.17	0.140
	CLASS 3	0.74±0.59				
Differences in the axis Z						
SM	CLASS 2	1.02±0.42	0.24	-0.30	0.78	0.352*
	CLASS 3	0.78±0.49				
ME	CLASS 2	0.73±0.60	0.54	-0.19	1.27	0.027
	CLASS 3	0.19±0.23				
MER	CLASS 2	0.28±0.36	0.03	-0.27	0.34	0.916
	CLASS 3	0.25±0.23				
MEL	CLASS 2	0.84±0.63	0.32	-0.40	1.05	0.206
	CLASS 3	0.52±0.64				
SR	CLASS 2	0.43±0.31	-0.25	-0.91	0.40	0.673
	CLASS 3	0.69±0.65				
SL	CLASS 2	0.93±0.62	-0.05	-0.88	0.78	0.901*
	CLASS 3	0.98±0.77				

*Mann-Whitney U test was used unless otherwise indicated; * Independent t-test was used.*

Reading according to the procedure			
	Axis X	Axis Y	Axis Z
SM	0.08±0.07	0.64±0.36	0.85±0.47
ME	0.15±0.12	0.95±0.52	0.35±0.44
MER	0.38±0.36	0.82±0.65	0.26±0.26
MEL	0.49±0.45	1.13±0.70	0.62±0.64
SR	0.42±0.39	0.40±0.55	0.61±0.57
SL	0.56±0.46	0.62±0.55	0.97±0.71

Correlation with age and advancement							
		Axis X		Axis Y		Axis Z	
		Age	ADVANCEMENT	Age	ADVANCEMENT	Age	ADVANCEMENT
SM	Correlation	-0.116	0.382	-0.440	-0.072	-0.374	0.019
	P-value	0.658	0.131	0.077*	0.785*	0.139*	0.943*
ME	Correlation	-0.078	-0.529	-0.040	0.047	0.320	0.070
	P-value	0.767	0.029	0.879*	0.857*	0.210	0.791
MER	Correlation	-0.108	-0.179	-0.225	-0.156	0.055	-0.210
	P-value	0.679	0.493	0.384	0.549	0.833	0.418
MEL	Correlation	0.108	0.140	-0.130	-0.022	-0.044	-0.049
	P-value	0.679	0.591	0.618*	0.932*	0.866	0.853
SR	Correlation	0.495	0.112	0.373	0.077	0.400	0.303
	P-value	0.043	0.670	0.140	0.768	0.111	0.237
SL	Correlation	-0.157	0.126	-0.018	0.326	-0.009	0.500
	P-value	0.546*	0.630*	0.944	0.202	0.972*	0.041*

*Spearman Correlation Coefficient test was used unless otherwise indicated; * Pearson Correlation Coefficient test was used.*