

5y complications analysis

```
xls_path <- '../..data/ESSG extraction DEC 2022_3rd report 5Y - ONLY DPS Mod.xlsx'
```

Filters

```
# discarded_patients <- readLines('five_years/discarded_patients')
```

```
data_set %<>%  
  .[, followup_2y :=  
    !is.na(`2 YEAR VISIT - Date of visit`) |  
    !is.na(`3 YEAR VISIT - Date of visit`)] %>%  
  .[, followup_5y :=  
    !is.na(`5 YEAR VISIT - Date of visit`) |  
    !is.na(`6 YEAR VISIT - Date of visit`)]
```

```
# data_set %<>%  
#   .[followup_2y==TRUE] %>%  
#   .[`st1. Date of Stage` %>% as.Date() < as.Date('2016-6-1')]
```

Total Patients for the analysis: 594

Only Major Complications

All complications

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.007	0.118	-0.059	0.953
Age	0.006	0.001	4.880	0.000
GenderMale	-0.028	0.052	-0.543	0.587
Prior_Spine_SurgeryYes	0.043	0.046	0.938	0.349
ASA_classification	0.044	0.036	1.231	0.219
BMI_First_Visit	-0.001	0.005	-0.279	0.781
SiteBOR Op	-0.101	0.056	-1.809	0.071
SiteIST Op	0.159	0.211	0.752	0.452
SiteMAD Op	-0.223	0.068	-3.277	0.001
SiteZUR Op	-0.119	0.053	-2.255	0.024
'5y_vs_2y_effect'	-0.002	0.207	-0.008	0.993
Age:'5y_vs_2y_effect'	-0.002	0.002	-1.079	0.281
GenderMale:'5y_vs_2y_effect'	0.074	0.089	0.824	0.410
Prior_Spine_SurgeryYes:'5y_vs_2y_effect'	-0.129	0.077	-1.667	0.096
ASA_classification:'5y_vs_2y_effect'	-0.009	0.067	-0.133	0.894
BMI_First_Visit:'5y_vs_2y_effect'	-0.002	0.008	-0.264	0.792
SiteBOR Op:'5y_vs_2y_effect'	0.112	0.100	1.127	0.260

SiteIST Op: '5y_vs_2y_effect'	0.244	0.365	0.668	0.505
SiteMAD Op: '5y_vs_2y_effect'	0.217	0.113	1.922	0.055
SiteZUR Op: '5y_vs_2y_effect'	0.086	0.092	0.931	0.352

	Estimate	Std. Error	t value	
(Intercept)	0.057	0.133	0.431	
Age	0.004	0.001	3.375	
GenderMale	-0.018	0.047	-0.395	
Prior_Spine_SurgeryYes	-0.013	0.040	-0.335	
ASA_classification	0.028	0.032	0.866	
BMI_First_Visit	-0.004	0.004	-0.917	
SiteBOR Op	-0.085	0.049	-1.750	
SiteIST Op	0.316	0.191	1.655	
SiteMAD Op	-0.146	0.057	-2.563	
SiteZUR Op	-0.090	0.048	-1.885	
Global_Tilt	0.004	0.001	2.515	
Static_Major_curve_Cobb_angle	0.001	0.001	0.501	
'5y_vs_2y_effect'	0.005	0.105	0.051	
Global_Tilt: '5y_vs_2y_effect'	-0.004	0.002	-1.931	
Static_Major_curve_Cobb_angle: '5y_vs_2y_effect'	-0.001	0.002	-0.610	
	Pr(> t)			
(Intercept)	0.667			
Age	0.001			
GenderMale	0.693			
Prior_Spine_SurgeryYes	0.738			
ASA_classification	0.387			
BMI_First_Visit	0.360			
SiteBOR Op	0.081			
SiteIST Op	0.099			
SiteMAD Op	0.011			
SiteZUR Op	0.060			
Global_Tilt	0.012			
Static_Major_curve_Cobb_angle	0.617			
'5y_vs_2y_effect'	0.960			
Global_Tilt: '5y_vs_2y_effect'	0.054			
Static_Major_curve_Cobb_angle: '5y_vs_2y_effect'	0.542			

Impact of complications on followup

Only considering those with 2 FU

Call:

```
glm(formula = followup_5y ~ ., data = .)
```

Deviance Residuals:

Min	1Q	Median	3Q	Max
-0.7410	-0.4808	0.2756	0.4595	0.7579

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.0901330	0.4223102	-0.213	0.8311

Age	0.0039862	0.0020162	1.977	0.0488 *
GenderMale	0.0600092	0.0730176	0.822	0.4117
'Prior Spine Surgery'Yes	0.0231657	0.0620543	0.373	0.7091
'ASA classification'	-0.1070041	0.0483492	-2.213	0.0275 *
'BMI_First Visit'	0.0005533	0.0065324	0.085	0.9325
SiteBOR Op	-0.0919261	0.0745252	-1.233	0.2182
SiteIST Op	0.0557332	0.3635355	0.153	0.8782
SiteMAD Op	0.1014502	0.0889755	1.140	0.2550
SiteZUR Op	0.0141384	0.0752264	0.188	0.8510
'Global Tilt'	0.0004024	0.0019712	0.204	0.8384
'Static Major curve Cobb angle'	0.0015720	0.0014070	1.117	0.2646
'2Y. ODI - Score (%)'	0.0028554	0.0031606	0.903	0.3669
'2Y. SRS22 - SRS Subtotal score'	0.0263567	0.0954132	0.276	0.7825
'2Y. SF36 - MCS'	0.0038730	0.0037303	1.038	0.2999
'2Y. SF36 - PCS'	0.0028088	0.0055013	0.511	0.6100
complication_before_2yYes	0.0962820	0.0620054	1.553	0.1214

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for gaussian family taken to be 0.2475167)

Null deviance: 93.637 on 374 degrees of freedom
 Residual deviance: 88.611 on 358 degrees of freedom
 (59 observations deleted due to missingness)
 AIC: 559.2

Number of Fisher Scoring iterations: 2

Complication Types

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.268	0.062	-4.335	0.000
Age	0.001	0.001	1.439	0.151
GenderMale	-0.007	0.027	-0.243	0.808
Prior_Spine_SurgeryYes	0.022	0.024	0.903	0.367
ASA_classification	0.047	0.019	2.504	0.013
BMI_First_Visit	0.009	0.003	3.644	0.000
SiteBOR Op	-0.030	0.029	-1.017	0.310
SiteIST Op	-0.106	0.110	-0.961	0.337
SiteMAD Op	-0.041	0.036	-1.143	0.254
SiteZUR Op	-0.067	0.028	-2.425	0.016
'5y_vs_2y_effect'	0.253	0.109	2.330	0.020
Age:'5y_vs_2y_effect'	-0.001	0.001	-0.432	0.666
GenderMale:'5y_vs_2y_effect'	0.033	0.047	0.695	0.487
Prior_Spine_SurgeryYes:'5y_vs_2y_effect'	-0.036	0.040	-0.893	0.372
ASA_classification:'5y_vs_2y_effect'	-0.052	0.035	-1.466	0.143
BMI_First_Visit:'5y_vs_2y_effect'	-0.008	0.004	-1.923	0.055
SiteBOR Op:'5y_vs_2y_effect'	0.011	0.052	0.215	0.830
SiteIST Op:'5y_vs_2y_effect'	0.105	0.191	0.548	0.584
SiteMAD Op:'5y_vs_2y_effect'	0.031	0.059	0.527	0.598
SiteZUR Op:'5y_vs_2y_effect'	0.046	0.048	0.959	0.338

Estimate Std. Error t value

(Intercept)	-0.119	0.068	-1.742
Age	0.001	0.001	1.231
GenderMale	-0.002	0.024	-0.094
Prior_Spine_SurgeryYes	0.004	0.021	0.215
ASA_classification	0.020	0.016	1.244
BMI_First_Visit	0.006	0.002	2.810
SiteBOR Op	-0.033	0.025	-1.303
SiteIST Op	-0.070	0.098	-0.707
SiteMAD Op	-0.026	0.029	-0.902
SiteZUR Op	-0.052	0.024	-2.130
Global_Tilt	0.001	0.001	0.932
Static_Major_curve_Cobb_angle	-0.001	0.001	-1.536
'5y_vs_2y_effect'	-0.055	0.054	-1.013
Global_Tilt:'5y_vs_2y_effect'	-0.002	0.001	-1.589
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	0.001	0.001	0.869

Pr(>|t|)

(Intercept)	0.082
Age	0.219
GenderMale	0.925
Prior_Spine_SurgeryYes	0.830
ASA_classification	0.214
BMI_First_Visit	0.005
SiteBOR Op	0.193
SiteIST Op	0.480
SiteMAD Op	0.367
SiteZUR Op	0.034
Global_Tilt	0.351
Static_Major_curve_Cobb_angle	0.125
'5y_vs_2y_effect'	0.311
Global_Tilt:'5y_vs_2y_effect'	0.113
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	0.385

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.090	0.083	-1.077	0.282
Age	0.002	0.001	2.587	0.010
GenderMale	-0.032	0.037	-0.873	0.383
Prior_Spine_SurgeryYes	0.029	0.033	0.894	0.372
ASA_classification	-0.001	0.025	-0.049	0.961
BMI_First_Visit	0.003	0.003	0.748	0.455
SiteBOR Op	0.044	0.039	1.114	0.266
SiteIST Op	-0.086	0.149	-0.576	0.565
SiteMAD Op	-0.006	0.048	-0.125	0.901
SiteZUR Op	-0.038	0.037	-1.034	0.302
'5y_vs_2y_effect'	0.011	0.147	0.074	0.941
Age:'5y_vs_2y_effect'	-0.001	0.002	-0.318	0.750
GenderMale:'5y_vs_2y_effect'	0.057	0.063	0.905	0.366
Prior_Spine_SurgeryYes:'5y_vs_2y_effect'	-0.048	0.055	-0.882	0.378
ASA_classification:'5y_vs_2y_effect'	0.051	0.047	1.083	0.279
BMI_First_Visit:'5y_vs_2y_effect'	-0.003	0.006	-0.564	0.573
SiteBOR Op:'5y_vs_2y_effect'	-0.001	0.070	-0.018	0.986
SiteIST Op:'5y_vs_2y_effect'	0.502	0.258	1.946	0.052
SiteMAD Op:'5y_vs_2y_effect'	0.020	0.080	0.249	0.804
SiteZUR Op:'5y_vs_2y_effect'	-0.012	0.065	-0.187	0.852

	Estimate	Std. Error	t value
(Intercept)	-0.127	0.096	-1.326
Age	0.002	0.001	2.460
GenderMale	-0.018	0.034	-0.533
Prior_Spine_SurgeryYes	0.018	0.029	0.623
ASA_classification	0.012	0.023	0.498
BMI_First_Visit	0.002	0.003	0.609
SiteBOR Op	0.028	0.035	0.806
SiteIST Op	0.100	0.138	0.728
SiteMAD Op	-0.004	0.041	-0.093
SiteZUR Op	-0.050	0.034	-1.458
Global_Tilt	0.000	0.001	0.295
Static_Major_curve_Cobb_angle	0.001	0.001	0.858
'5y_vs_2y_effect'	-0.033	0.076	-0.441
Global_Tilt:'5y_vs_2y_effect'	0.001	0.002	0.712
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	0.000	0.001	0.020

Pr(>|t|)

(Intercept)	0.185
Age	0.014
GenderMale	0.594
Prior_Spine_SurgeryYes	0.534
ASA_classification	0.619
BMI_First_Visit	0.543
SiteBOR Op	0.420
SiteIST Op	0.467
SiteMAD Op	0.926
SiteZUR Op	0.145
Global_Tilt	0.768
Static_Major_curve_Cobb_angle	0.391
'5y_vs_2y_effect'	0.660
Global_Tilt:'5y_vs_2y_effect'	0.477
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	0.984

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.082	0.033	-2.492	0.013
Age	0.000	0.000	-0.266	0.790
GenderMale	-0.003	0.015	-0.181	0.856
Prior_Spine_SurgeryYes	0.021	0.013	1.586	0.113
ASA_classification	0.021	0.010	2.047	0.041
BMI_First_Visit	0.003	0.001	2.313	0.021
SiteBOR Op	-0.005	0.016	-0.316	0.752
SiteIST Op	-0.049	0.059	-0.839	0.402
SiteMAD Op	-0.034	0.019	-1.794	0.073
SiteZUR Op	-0.035	0.015	-2.402	0.017
'5y_vs_2y_effect'	0.082	0.058	1.419	0.156
Age:'5y_vs_2y_effect'	0.000	0.001	0.144	0.885
GenderMale:'5y_vs_2y_effect'	0.003	0.025	0.106	0.916
Prior_Spine_SurgeryYes:'5y_vs_2y_effect'	-0.021	0.022	-0.950	0.342
ASA_classification:'5y_vs_2y_effect'	-0.021	0.019	-1.094	0.274
BMI_First_Visit:'5y_vs_2y_effect'	-0.003	0.002	-1.313	0.190
SiteBOR Op:'5y_vs_2y_effect'	0.005	0.028	0.177	0.860
SiteIST Op:'5y_vs_2y_effect'	0.049	0.102	0.485	0.628
SiteMAD Op:'5y_vs_2y_effect'	0.034	0.032	1.081	0.280
SiteZUR Op:'5y_vs_2y_effect'	0.035	0.026	1.372	0.171

	Estimate	Std. Error	t value
(Intercept)	-0.074	0.034	-2.167
Age	0.000	0.000	0.930
GenderMale	-0.001	0.012	-0.087
Prior_Spine_SurgeryYes	0.013	0.010	1.246
ASA_classification	0.009	0.008	1.091
BMI_First_Visit	0.001	0.001	0.968
SiteBOR Op	0.002	0.013	0.133
SiteIST Op	-0.014	0.049	-0.295
SiteMAD Op	-0.017	0.015	-1.190
SiteZUR Op	-0.016	0.012	-1.292
Global_Tilt	0.000	0.000	0.363
Static_Major_curve_Cobb_angle	0.001	0.000	2.464
'5y_vs_2y_effect'	0.023	0.027	0.854
Global_Tilt:'5y_vs_2y_effect'	-0.001	0.001	-1.139
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	-0.001	0.000	-1.223

Pr(>|t|)

(Intercept)	0.031
Age	0.353
GenderMale	0.931
Prior_Spine_SurgeryYes	0.213
ASA_classification	0.276
BMI_First_Visit	0.333
SiteBOR Op	0.894
SiteIST Op	0.768
SiteMAD Op	0.234
SiteZUR Op	0.197
Global_Tilt	0.717
Static_Major_curve_Cobb_angle	0.014
'5y_vs_2y_effect'	0.394
Global_Tilt:'5y_vs_2y_effect'	0.255
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	0.222

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.004	0.041	-0.102	0.919
Age	0.000	0.000	-0.041	0.967
GenderMale	0.014	0.018	0.804	0.422
Prior_Spine_SurgeryYes	0.030	0.016	1.888	0.059
ASA_classification	0.038	0.012	3.086	0.002
BMI_First_Visit	-0.001	0.002	-0.674	0.500
SiteBOR Op	-0.021	0.019	-1.081	0.280
SiteIST Op	0.171	0.073	2.353	0.019
SiteMAD Op	-0.056	0.023	-2.379	0.018
SiteZUR Op	-0.046	0.018	-2.505	0.012
'5y_vs_2y_effect'	0.004	0.072	0.058	0.954
Age:'5y_vs_2y_effect'	0.000	0.001	0.022	0.982
GenderMale:'5y_vs_2y_effect'	-0.014	0.031	-0.469	0.639
Prior_Spine_SurgeryYes:'5y_vs_2y_effect'	-0.030	0.027	-1.131	0.258
ASA_classification:'5y_vs_2y_effect'	-0.038	0.023	-1.650	0.100
BMI_First_Visit:'5y_vs_2y_effect'	0.001	0.003	0.383	0.702
SiteBOR Op:'5y_vs_2y_effect'	0.021	0.034	0.605	0.546
SiteIST Op:'5y_vs_2y_effect'	-0.171	0.126	-1.360	0.174
SiteMAD Op:'5y_vs_2y_effect'	0.056	0.039	1.432	0.153
SiteZUR Op:'5y_vs_2y_effect'	0.046	0.032	1.431	0.153

	Estimate	Std. Error	t value	
(Intercept)	0.012	0.046	0.262	
Age	0.000	0.000	-0.218	
GenderMale	0.009	0.016	0.547	
Prior_Spine_SurgeryYes	0.019	0.014	1.376	
ASA_classification	0.028	0.011	2.505	
BMI_First_Visit	-0.002	0.001	-1.225	
SiteBOR Op	-0.015	0.017	-0.910	
SiteIST Op	0.150	0.066	2.278	
SiteMAD Op	-0.039	0.020	-1.968	
SiteZUR Op	-0.032	0.016	-1.929	
Global_Tilt	0.001	0.001	1.327	
Static_Major_curve_Cobb_angle	0.000	0.000	0.470	
'5y_vs_2y_effect'	-0.002	0.036	-0.062	
Global_Tilt:'5y_vs_2y_effect'	-0.001	0.001	-1.383	
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	0.000	0.001	-0.036	
	Pr(> t)			
(Intercept)	0.793			
Age	0.828			
GenderMale	0.585			
Prior_Spine_SurgeryYes	0.169			
ASA_classification	0.013			
BMI_First_Visit	0.221			
SiteBOR Op	0.363			
SiteIST Op	0.023			
SiteMAD Op	0.050			
SiteZUR Op	0.054			
Global_Tilt	0.185			
Static_Major_curve_Cobb_angle	0.639			
'5y_vs_2y_effect'	0.951			
Global_Tilt:'5y_vs_2y_effect'	0.167			
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	0.972			

Reinterventions

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	0.649	0.331	1.959	0.050
Age	0.003	0.004	0.707	0.480
GenderMale	-0.017	0.128	-0.129	0.897
Prior_Spine_SurgeryYes	0.133	0.095	1.398	0.163
ASA_classification	-0.009	0.095	-0.096	0.923
BMI_First_Visit	0.024	0.010	2.382	0.017
SiteBOR Op	0.003	0.136	0.021	0.983
SiteIST Op	-0.676	0.491	-1.378	0.169
SiteMAD Op	0.029	0.215	0.135	0.893
SiteZUR Op	-0.158	0.122	-1.292	0.197
'5y_vs_2y_effect'	-0.687	0.352	-1.951	0.051
Age:'5y_vs_2y_effect'	0.000	0.004	0.111	0.911
GenderMale:'5y_vs_2y_effect'	-0.019	0.138	-0.140	0.888
Prior_Spine_SurgeryYes:'5y_vs_2y_effect'	-0.158	0.106	-1.489	0.137
ASA_classification:'5y_vs_2y_effect'	-0.007	0.102	-0.072	0.943
BMI_First_Visit:'5y_vs_2y_effect'	-0.021	0.011	-1.944	0.052
SiteBOR Op:'5y_vs_2y_effect'	-0.032	0.146	-0.222	0.824

SiteIST Op: '5y_vs_2y_effect'	0.786	0.538	1.462	0.144
SiteMAD Op: '5y_vs_2y_effect'	-0.047	0.227	-0.205	0.837
SiteZUR Op: '5y_vs_2y_effect'	0.111	0.134	0.832	0.406

	Estimate	Std. Error	t value
(Intercept)	1.316	0.212	6.202
Age	0.003	0.001	1.715
GenderMale	-0.018	0.054	-0.334
Prior_Spine_SurgeryYes	0.003	0.046	0.062
ASA_classification	-0.007	0.037	-0.191
BMI_First_Visit	0.008	0.005	1.596
SiteBOR Op	-0.047	0.054	-0.870
SiteIST Op	-0.045	0.228	-0.198
SiteMAD Op	-0.037	0.073	-0.509
SiteZUR Op	-0.092	0.055	-1.678
Global_Tilt	-0.001	0.003	-0.227
Static_Major_curve_Cobb_angle	-0.003	0.002	-1.520
'5y_vs_2y_effect'	-1.462	0.169	-8.658
Global_Tilt: '5y_vs_2y_effect'	0.000	0.004	0.082
Static_Major_curve_Cobb_angle: '5y_vs_2y_effect'	0.004	0.002	1.435

	Pr(> t)
(Intercept)	0.000
Age	0.087
GenderMale	0.738
Prior_Spine_SurgeryYes	0.951
ASA_classification	0.849
BMI_First_Visit	0.111
SiteBOR Op	0.385
SiteIST Op	0.843
SiteMAD Op	0.611
SiteZUR Op	0.094
Global_Tilt	0.821
Static_Major_curve_Cobb_angle	0.129
'5y_vs_2y_effect'	0.000
Global_Tilt: '5y_vs_2y_effect'	0.935
Static_Major_curve_Cobb_angle: '5y_vs_2y_effect'	0.152