

5y complications analysis

```
xls_path <- '../..data/ESSG extraction June 2022_1st report 5Y - ONLY DPS.xlsx'
```

Filters

We need those with and without 2 FU for the ‘Do complications before 2y affect 2y followup?’ analysis.

```
# 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: 575

Only Major Complications

Stats

	complication_before_2y	has_followup_2y
1:	No	0.706
2:	Yes	0.897

	complication_before_2y	has_followup_5y
1:	No	0.354
2:	Yes	0.493

Complications stats

- Complications before 2 years: 353
- Proportion of patients with complications before 2 years: 0.253913
- Complications between 2y and 5y: 83
- Proportion of patients with complications between 2y and 5y: 0.0695652
- p-value testing equality between proportions of complications: $4.1359773 \times 10^{-17}$

Major Complications before 2y

Category of the complication	
Central neurologic complications	11
Iatrogenic	25
Mechanical complications: Implant related	81
Mechanical complications: Radiographic	76
Medical: Cardiopulmonary	24
Medical: Gastrointestinal	3
Medical: Genitourinary	2
Medical: Hepatobiliary	1
Medical: Infectious complications	12
Medical: Non-spine Neurologic	1
Medical: Other	1
Medical: Renal complications	3
Medical: Thrombotic	3
Pain	12
Peripheral neurologic complications	35
Wound infections	48
Wound problems	15

Category of the complication	
Central neurologic complications	0.031161473
Iatrogenic	0.070821530
Mechanical complications: Implant related	0.229461756
Mechanical complications: Radiographic	0.215297450
Medical: Cardiopulmonary	0.067988669
Medical: Gastrointestinal	0.008498584
Medical: Genitourinary	0.005665722
Medical: Hepatobiliary	

	0.002832861
Medical: Infectious complications	0.033994334
Medical: Non-spine Neurologic	0.002832861
Medical: Other	0.002832861
Medical: Renal complications	0.008498584
Medical: Thrombotic	0.008498584
Pain	0.033994334
Peripheral neurologic complications	0.099150142
Wound infections	0.135977337
Wound problems	0.042492918

Major Complications between 2y and 5y

Category of the complication	
Central neurologic complications	2
Iatrogenic	1
Mechanical complications: Implant related	49
Mechanical complications: Radiographic	12
Medical: Death	1
Medical: Genitourinary	1
Pain	7
Peripheral neurologic complications	5
Wound infections	3
Wound problems	2

Category of the complication	
Central neurologic complications	0.02409639
Iatrogenic	0.01204819
Mechanical complications: Implant related	0.59036145
Mechanical complications: Radiographic	0.14457831

Medical: Death	0.01204819
Medical: Genitourinary	0.01204819
Pain	0.08433735
Peripheral neurologic complications	0.06024096
Wound infections	0.03614458
Wound problems	0.02409639

Minor Complications before 2y

Category of the complication	
Central neurologic complications	2
Iatrogenic	65
Mechanical complications: Implant related	33
Mechanical complications: Radiographic	31
Medical: Allergic reactions	1
Medical: Cardiopulmonary	38
Medical: Gastrointestinal	17
Medical: Genitourinary	5
Medical: Hematopoietic	24
Medical: Hepatobiliary	2
Medical: Infectious complications	46
Medical: Non-spine Neurologic	2
Medical: Other	16
Medical: Psychiatric	12
Medical: Renal complications	1
Medical: Thrombotic	5
Pain	17
Peripheral neurologic complications	50
Wound infections	

12
Wound problems
20

Category of the complication

Central neurologic complications
0.005012531
Iatrogenic
0.162907268
Mechanical complications: Implant related
0.082706767
Mechanical complications: Radiographic
0.077694236
Medical: Allergic reactions
0.002506266
Medical: Cardiopulmonary
0.095238095
Medical: Gastrointestinal
0.042606516
Medical: Genitourinary
0.012531328
Medical: Hematopoietic
0.060150376
Medical: Hepatobiliary
0.005012531
Medical: Infectious complications
0.115288221
Medical: Non-spine Neurologic
0.005012531
Medical: Other
0.040100251
Medical: Psychiatric
0.030075188
Medical: Renal complications
0.002506266
Medical: Thrombotic
0.012531328
Pain
0.042606516
Peripheral neurologic complications
0.125313283
Wound infections
0.030075188
Wound problems
0.050125313

Minor Complications between 2y and 5y

Category of the complication

Mechanical complications: Implant related
19
Mechanical complications: Radiographic
13

	Pain
	2
Peripheral neurologic complications	1

Category of the complication	
Mechanical complications: Implant related	0.54285714
Mechanical complications: Radiographic	0.37142857
Pain	0.05714286
Peripheral neurologic complications	0.02857143

Reinterventions before 2 years

- Reinterventions before 2 years: 157
- Proportion of patients with reintervention before 2 years: 0.1930435
- Reinterventions between 2y and 5y: 60
- Proportion of patients with reintervention between 2y and 5y: 0.0817391
- p-value testing equality between proportions of reinterventions: 6.7986776×10^{-8}

Do complications before 2y affect 2y followup?

	Estimate	Pr(> t)
(Intercept)	1.224	0.000
Age	0.002	0.306
GenderMale	-0.009	0.859
'Prior Spine Surgery'Yes	0.021	0.656
'ASA classification'	-0.042	0.240
'BMI_First Visit'	0.001	0.790
SiteBOR Op	-0.133	0.017
SiteIST Op	-0.392	0.207
SiteMAD Op	0.135	0.054
SiteZUR Op	0.029	0.609
'Global Tilt'	0.001	0.584
'Static Major curve Cobb angle'	0.000	0.672
'ODI - Score (%)_First Visit'	-0.004	0.018
'SRS22 - SRS Subtotal score_First Visit'	-0.147	0.018
'SF36 - PCS_First Visit'	0.000	0.960
'SF36 - MCS_First Visit'	0.001	0.608
complication_before_2yYes	0.158	0.001

Do complications before 2y affect 5y followup?

	Estimate	Pr(> t)
(Intercept)	0.993	0.001
Age	0.005	0.004

GenderMale	0.062	0.295
'Prior Spine Surgery'Yes	0.023	0.659
'ASA classification'	-0.147	0.000
'BMI_First Visit'	0.000	0.947
SiteBOR Op	-0.068	0.278
SiteIST Op	0.134	0.701
SiteMAD Op	0.180	0.023
SiteZUR Op	0.062	0.341
'Global Tilt'	0.000	0.814
'Static Major curve Cobb angle'	0.000	0.711
'ODI - Score (%)_First Visit'	-0.006	0.007
'SRS22 - SRS Subtotal score_First Visit'	-0.106	0.128
'SF36 - PCS_First Visit'	-0.004	0.252
'SF36 - MCS_First Visit'	0.000	0.868
complication_before_2yYes	0.131	0.015