

## 5y complications analysis

```
xls_path <- '../..//data/ESSG extraction June 2022_2nd 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: 585

### Only Major Complications

### Stats

	complication_before_2y	has_followup_2y
1:	No	0.690
2:	Yes	0.897

	complication_before_2y	has_followup_5y
1:	No	0.346
2:	Yes	0.493

### Complications stats

- Complications before 2 years: 353
- Proportion of patients with complications before 2 years: 0.2495726
- Complications between 2y and 5y: 83
- Proportion of patients with complications between 2y and 5y: 0.0683761
- p-value testing equality between proportions of complications:  $4.6531911 \times 10^{-17}$

## 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	
	66
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	
	18
Peripheral neurologic complications	
	50
Wound infections	

12  
Wound problems  
20

#### Category of the complication

Central neurologic complications  
0.004987531  
Iatrogenic  
0.164588529  
Mechanical complications: Implant related  
0.082294264  
Mechanical complications: Radiographic  
0.077306733  
Medical: Allergic reactions  
0.002493766  
Medical: Cardiopulmonary  
0.094763092  
Medical: Gastrointestinal  
0.042394015  
Medical: Genitourinary  
0.012468828  
Medical: Hematopoietic  
0.059850374  
Medical: Hepatobiliary  
0.004987531  
Medical: Infectious complications  
0.114713217  
Medical: Non-spine Neurologic  
0.004987531  
Medical: Other  
0.039900249  
Medical: Psychiatric  
0.029925187  
Medical: Renal complications  
0.002493766  
Medical: Thrombotic  
0.012468828  
Pain  
0.044887781  
Peripheral neurologic complications  
0.124688279  
Wound infections  
0.029925187  
Wound problems  
0.049875312

#### 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: 0.1897436
- Reinterventions between 2y and 5y: 60
- Proportion of patients with reintervention between 2y and 5y: 0.0803419
- p-value testing equality between proportions of reinterventions:  $7.0819034 \times 10^{-8}$

### Do complications before 2y affect 2y followup?

	Estimate	Pr(> t )
(Intercept)	1.129	0.000
Age	0.002	0.182
GenderMale	-0.022	0.669
'Prior Spine Surgery'Yes	0.014	0.759
'ASA classification'	-0.054	0.136
'BMI_First Visit'	0.003	0.595
SiteBOR Op	-0.118	0.034
SiteIST Op	-0.386	0.220
SiteMAD Op	0.164	0.021
SiteZUR Op	0.051	0.374
'Global Tilt'	0.001	0.718
'Static Major curve Cobb angle'	0.000	0.902
'ODI - Score (%)_First Visit'	-0.004	0.031
'SRS22 - SRS Subtotal score_First Visit'	-0.163	0.009
'SF36 - PCS_First Visit'	0.001	0.756
'SF36 - MCS_First Visit'	0.002	0.477
complication_before_2yYes	0.177	0.000

### Do complications before 2y affect 5y followup?

	Estimate	Pr(> t )
(Intercept)	0.955	0.002
Age	0.005	0.003

GenderMale	0.053	0.356
'Prior Spine Surgery'Yes	0.021	0.683
'ASA classification'	-0.148	0.000
'BMI_First Visit'	0.001	0.881
SiteBOR Op	-0.060	0.335
SiteIST Op	0.135	0.697
SiteMAD Op	0.192	0.014
SiteZUR Op	0.068	0.282
'Global Tilt'	0.000	0.772
'Static Major curve Cobb angle'	0.001	0.641
'ODI - Score (%)_First Visit'	-0.005	0.008
'SRS22 - SRS Subtotal score_First Visit'	-0.111	0.107
'SF36 - PCS_First Visit'	-0.004	0.285
'SF36 - MCS_First Visit'	0.001	0.826
complication_before_2yYes	0.140	0.009