

## 5y complications analysis

```
# xls_path <- '../..data/ESSG Extraction_DEC_OP_NON DePuy v7.xlsx'
xls_path <- '../..data/Dataset 4th 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: 633

### Stats

	complication_before_2y	has_followup_2y
1:	No	0.622
2:	Yes	0.897

	complication_before_2y	has_followup_5y
1:	No	0.312
2:	Yes	0.493

### Major Complications Stats

- Total patients: 608
- Complications before 2 years: 353
- Patients with complications before 2 years: 146
- Proportion of patients with complications before 2 years: 0.2401316

- Complications between 2y and 5y: 83
- Patients with complications before 5 years: 40
- Proportion of patients with complications between 2y and 5y: 0.0657895
- p-value testing equality between proportions of complications:  $5.9967239 \times 10^{-17}$

### Minor Complications Stats

- Complications before 2 years: 401
- Proportion of patients with complications before 2 years: 0.3667763
- Complications between 2y and 5y: 35
- Proportion of patients with complications between 2y and 5y: 0.0460526
- p-value testing equality between proportions of complications:  $5.4020851 \times 10^{-43}$

### 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

- Total patients: 608.
- Reinterventions before 2 years: 157
- Patients with reintervention before 2 years: 111
- Proportion of patients with reintervention before 2 years: 0.1825658
- Reinterventions between 2y and 5y: 60
- Patients with reintervention before 5 years: 47
- Proportion of patients with reintervention between 2y and 5y: 0.0773026
- p-value testing equality between proportions of reinterventions:  $7.733577 \times 10^{-8}$

### 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