

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
- Total patients with 2YFU: 434
- Total patients with 2Y and 5YFU: 216
- Patients with complications before 2y: 131

- Patients without complications before 2y: 303
- Patients with complications between 2y-5y: 34
- Patients without complications between 2y-5y: 182
- Patients with 2y complications and 2y-5y complications: 21
- Patients with 2y complications and without 2y-5y complications: 51
- Patients without 2y complications and 2y-5y complications: 13
- Patients without 2y complications and without 2y-5y complications: 131
- Complications before 2 years: 353
- Proportion of patients with complications before 2 years: 0.2154605
- Complications between 2y and 5y: 83
- Proportion of patients with complications between 2y and 5y: 0.0559211
- p-value testing equality between proportions of complications: $9.0675026 \times 10^{-16}$

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: 7.733577×10^{-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