

Introduction

Multi-level thoracolumbar spine fusion surgery is useful for degenerative spine diseases, but it has many operation-related complications.

Anti-platelet medications such as aspirin and clopidogrel block the hemostatic cascades, increasing the likelihood of intraoperative bleeding risk during and after surgery.

Our study aimed to evaluate the perioperative morbidities of patients taking anti-platelet medication prior to multi-level thoracolumbar spine surgery.

Methods

We retrospectively reviewed the medical records of 65 patients who underwent multi-level spine surgery from January 2009 to November 2014 at our institution.

All patients had the operations performed for degenerative spinal disease and had an ASA score II or III in preoperative assessment.

These patients were divided into two groups:

- the control group (n=45) did not take any anti-platelet medications prior to surgery
- the anti-platelet group (n=20) discontinued the anti-platelet medication 7 days before the spine surgery.

The patients' age, BMI, medical history, operation time, estimated intraoperative blood loss, and transfusion of blood products were assessed.

Results

Operative data

Mean intraoperative EBL (p value=0.291)

- control group : 842±504cc
- antiplatelet group : 792±383cc

Transfusion rate (p value=0.525)

- control group : 60%
- antiplatelet group : 55%

Operative time (p value=0.917)

- control group : 6.07hr
- antiplatelet group : 6.01hr

Anti-platelet agent did not increase the intraoperative bleeding tendency and prolong the operative time.

Operative results considering fusion level

- The elongation of the fusion level caused a tendency to increase the EBL, operative time, and transfusion rate.
- However, except for the transfusion rate, nothing was statistically significant.

Relationship between postoperative complications and anti-platelet medication

- Operative site infection is a major cause of major complications.
- Some cases did not improve with the administration of antibiotics, and revision operations had to be performed.
- Surgery-related complications did not happen in all cases.
- Major complication rates were slightly higher in the control group (8.9% in control group vs. 5% in anti-platelet group).

Other factors associated with major complications

- Only patients with a long hospital stay and a prior history of cancer have a significantly higher risk for incidence of complications.
- Other values such as age, HT, DM, fusion level, and operative time did not influence the incidence of complications

Conclusions

Surgical complication-related perioperative bleeding has had serious influences on surgical outcomes.

Spine surgeons have been reluctant to perform multi-level spine surgery on patients who were taking anti-platelet medications.

According to our study, preoperative anti-platelet therapy did not increase bleeding-related complications.

Spine operations can be performed relatively safely if the comorbidities of patients are considered.