# Paralytic Ileus and Prophylactic Gastrointestinal Motility Medication Use after Spinal Operation

Gyu Yeul Ji MD; Chang Hyun Oh MD; Won Seok Choi; Jung Hoon Kim MD; Chang Sik Yoon MD
Department of Neurosurgery, Spine and Joint Research Institute, Teun Teun Hospital, Seoul, Korea; Department of Neurosurgery, College of Medicine, Inha University, Incheon, Korea

## Introduction

Prospective study checkeing the prevalence of paralytic ileus after spinal operation in supine and prone operative position, and comparing the preventive effect of prophylactic medication.

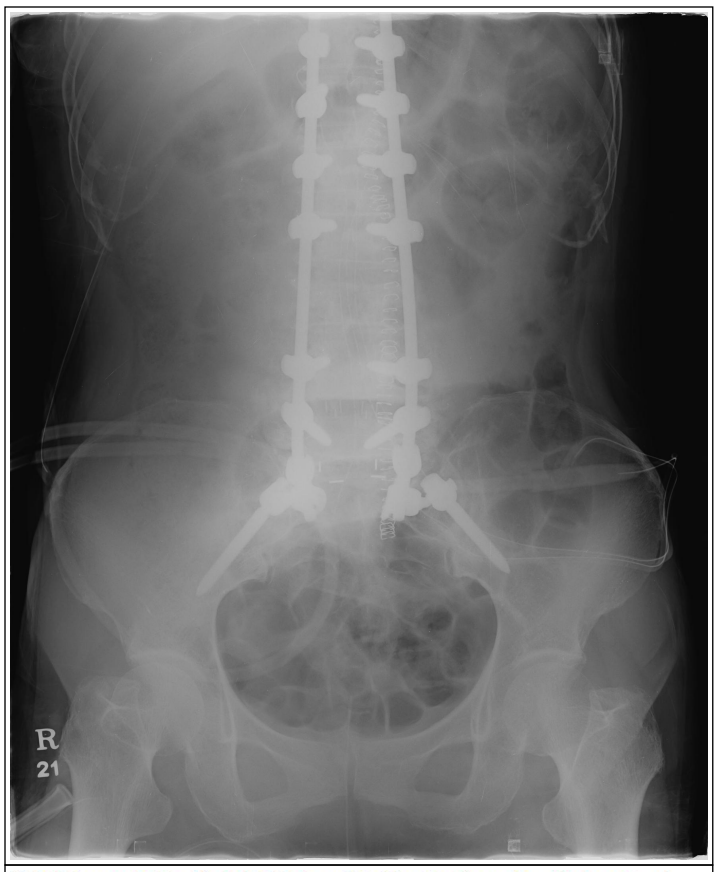


Table 1. Demographic data of the study's first phase, designed to analyze the prevalence of radiographic and symptomatic paralytic ileus after spinal operation

| Category | N | Male ratio | Age |
|---|---|---|---|
| Supine Position | 24 | 79.2% | 52.79±12.18 |
| Cervical artificial disc replacement | 7 | | |
| Cervical anterior discectomy and fusion | 17 | | |
| Prone Position | 58 | 53.5% | 56.43±16.32 |
| Cervical posterior approach | 8 | | |
| Thoracic posterior approach | 9 | | |
| Lumbar posterior approach | 41 | | |
| Total | 82 | | |
| *P*-value between supine and prone position | | 0.03 | 0.328 |

## Methods

All general anesthetic spinal patients from March to November 2012 were included. The study period divided into 2 phase; first phase to analyze the prevalence of radiographic and symptomatic paralytic ileus after spinal operation (24 cases with supine and 58 cases with prone position from March to July), and second phase to compare the therapeutic effect of prophylactic gastrointestinal motility medication for symptomatic paralytic ileus after spinal operation (66 patients (36 cases with prophylactic gastrointestinal motility medication (Buscopan® and Macperan®) and 30 cases with placebos (normal saline) from June to November).

Table 2. Demographic data of the study's second phase for determining the effectiveness of prophylactic gastrointestinal motility medications in preventing symptomatic paralytic ileus after a spinal operation

| Category | N | Male ratio | Age |
|---|---|---|---|
| Treatment with prophylactic gastrointestinal motility medications | 36 | 47.2% | 52.71±14.20 |
| Supine Position | 8 | | |
| Prone Position | 28 | | |
| Treatment with a placebo | 30 | 60.0% | 58.63±12.98 |
| Supine Position | 7 | | |
| Prone Position | 23 | | |
| Total | 66 | | |
| *P*-value between subject and control groups | | 0.308 | 0.080 |

## Results

The basic demographic data of the each subgroup were not different without meaningful values. In the first phase study to analyze the prevalence of paralytic ileus, 27 patients (32.9%) of radiographic paralytic ileus and 11 patients (13.4%) of symptomatic paralytic ileus were observed. The radiographic paralytic ileus was statistically significantly increased in prone positioned patients (p=0.044), but the symptomatic paralytic ileus was statistically not different between supine and prone positioned patients (p=0.385). The therapeutic effect of prophylactic gastrointestinal motility medication after spinal operation, the prophylactic medication was not useful to prevent the symptomatic paralytic ileus (11.1% with prophylactic medication group and 16.7% with placebo groups, p=0.513).

Table 3. Radiographic and symptomatic paralytic ileus after spinal operation in the supine or prone position

| Category | Supine position | Prone position | Total | *P*-value |
|---|---|---|---|---|
| No radiographic paralytic ileus | 20 | 35 | 55 | |
| Radiographic paralytic ileus | 4 | 23 | 27 | 0.044 |
| Total | 24 | 58 | 82 | |
| No symptomatic paralytic ileus | 22 | 49 | 71 | |
| Symptomatic paralytic ileus | 2 | 9 | 11 | 0.385 |
| Total | 24 | 58 | 82 | |

## Conclusions

During the spinal operative, the prone position contributed the radiographic paralytic ileus, but not less contributed the symptomatic paralytic ileus. Unfortunately, the prophylactic motility medication for prevent symptomatic paralytic ileus is not useful in spine surgery.

Table 4. Symptomatic paralytic ileus according to the use of prophylactic gastrointestinal motility medications after spinal operation

| Category | Prophylactic medications | Placebo | Total | *P*-value |
|---|---|---|---|---|
| No symptomatic paralytic ileus | 32 | 25 | 57 | |
| Symptomatic paralytic ileus | 4 | 5 | 9 | 0.513 |
| Total | 36 | 30 | 66 | |

## Learning Objectives

The radiographic paralytic ileus was increased in prone positioned patients, but the symptomatic paralytic ileus was not different between supine and prone positioned patients. The prophylactic medication was not useful to prevent the symptomatic paralytic ileus, but this result could be interfered by multiple variants.

## References

J Spinal Disord 14:541-545, 2001 Spine (Phila Pa 1976) 14:1301-1307, 1989 J Healthc Qual 15:17-20, 1993 Int J Clin Pract 51:327-329, 1997 Can J Neurol Sci 27:77-78, 2000 World J Gastroenterol 11:4776-4781, 2005 Spine (Phila Pa 1976) 32:2232-2237, 2007 J Bone Joint Surg (Am) 79:1642-1647, 1997 Br J Surg 79:99-103, 1992 Can J Surg 42:133-137, 1999 Spine (Phila Pa 1976) 20:1592-1599, 1995 Surg Endosc 14:300-304, 2000 Drugs 62:2603-2615, 2002 J Neurosurg Spine 10:60-65, 2009 N Engl J Med 341:137-141, 1999 J Neurosurg Spine 10:578-584, 2009 Gastrointest Endosc Clin North Am 7:499-508, 1997 J Spinal Disord Tech 16:502-507, 2003 Am J Ther 14:561-566, 200