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Prevalence of Tandem Spinal Stenosis in Korean Males

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Introduction

What is Tandem Spinal Stenosis (TSS)?

TSS is defined as concurrent narrowing of the spinal canal in both the cervical and lumbar regions. First described by Dagi et al. (1987), it re mains frequently missed because symptoms of cervical myelopathy and lumbar spinal stenosis (LSS) overlap considerably.

Why Does It Matter?

- Coexisting cervical myelopathy may be masked by more symptomatic lumbar pathology
- Unrecognized cervical cord compression may progress to irreversible neurological deficits
- In patients undergoing lumbar surgery, unaddressed cervical myelopathy risks neurological deterioration under general anesthesia

Knowledge Gap

No large-scale institutional MRI study on TSS prevalence in Korean males has been previously published. This study addresses that gap.

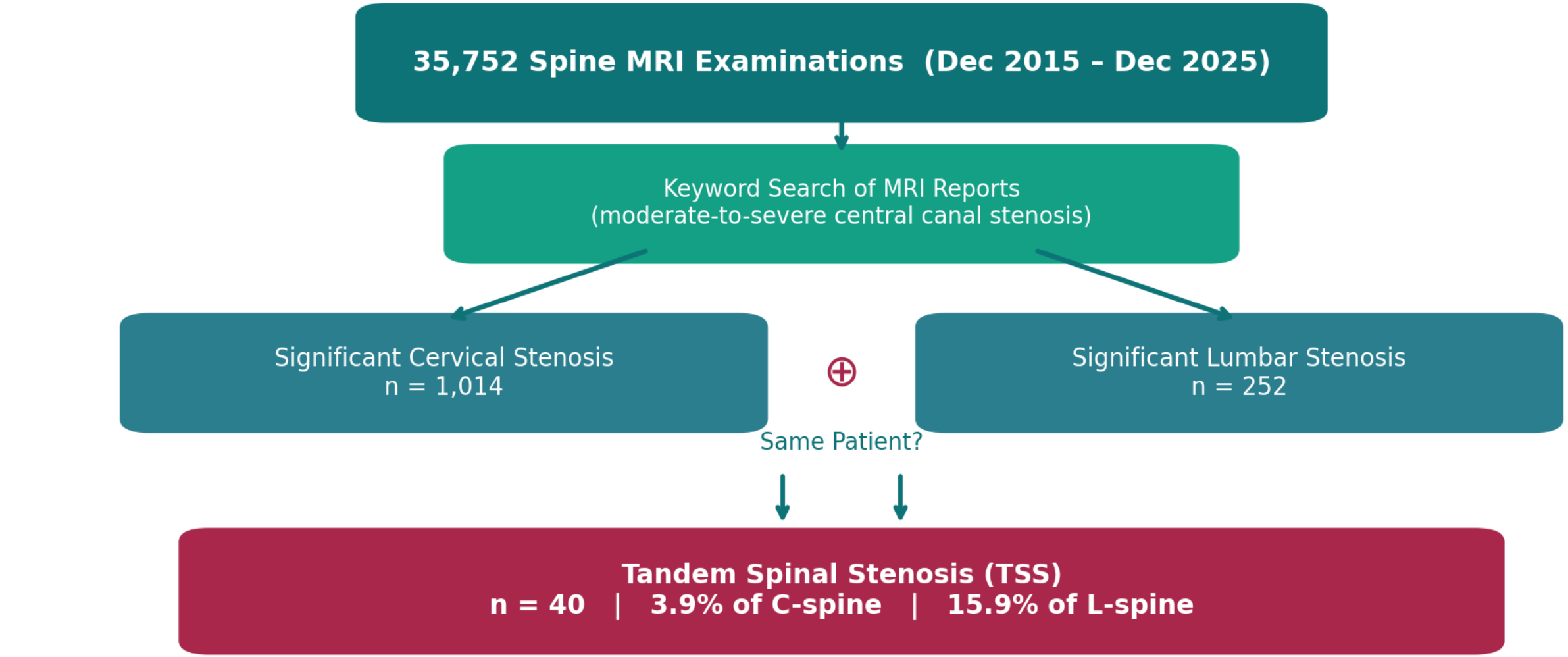
Objectives

This study aimed to:

1. Determine the 10-year prevalence of radiographic TSS among Korean male patients who underwent spine MRI at a single institution.

2. Characterize the age distribution of TSS patients, providing evidence for the clinical necessity of routine contralateral spinal MRI screening.

Materials & Methods



Results — Key Findings

Male patients: 1,014 cervical stenosis, 252 lumbar stenosis.

Radiographic TSS identified in 40 patients.

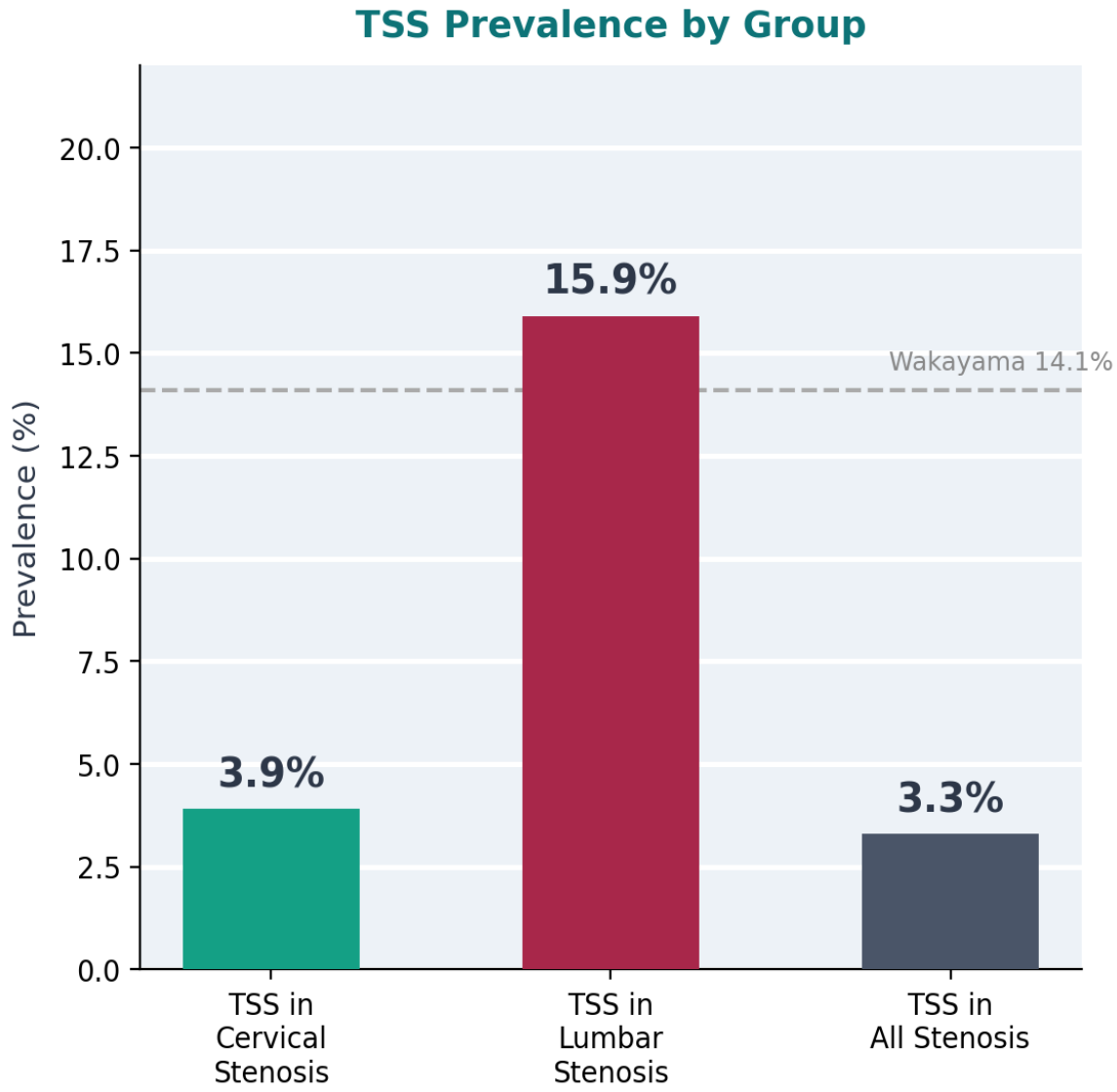
3.9% TSS among cervical stenosis patients (40 / 1,014)

15.9% TSS among lumbar stenosis patients (40/252)

3.3% TSS among all stenosis patients (40 / 1,226)

60.2 yrs Mean age of TSS patients (SD ±9.6 | range 44–82)

— ~7 years older than cervical-only patients



Results — Table 1

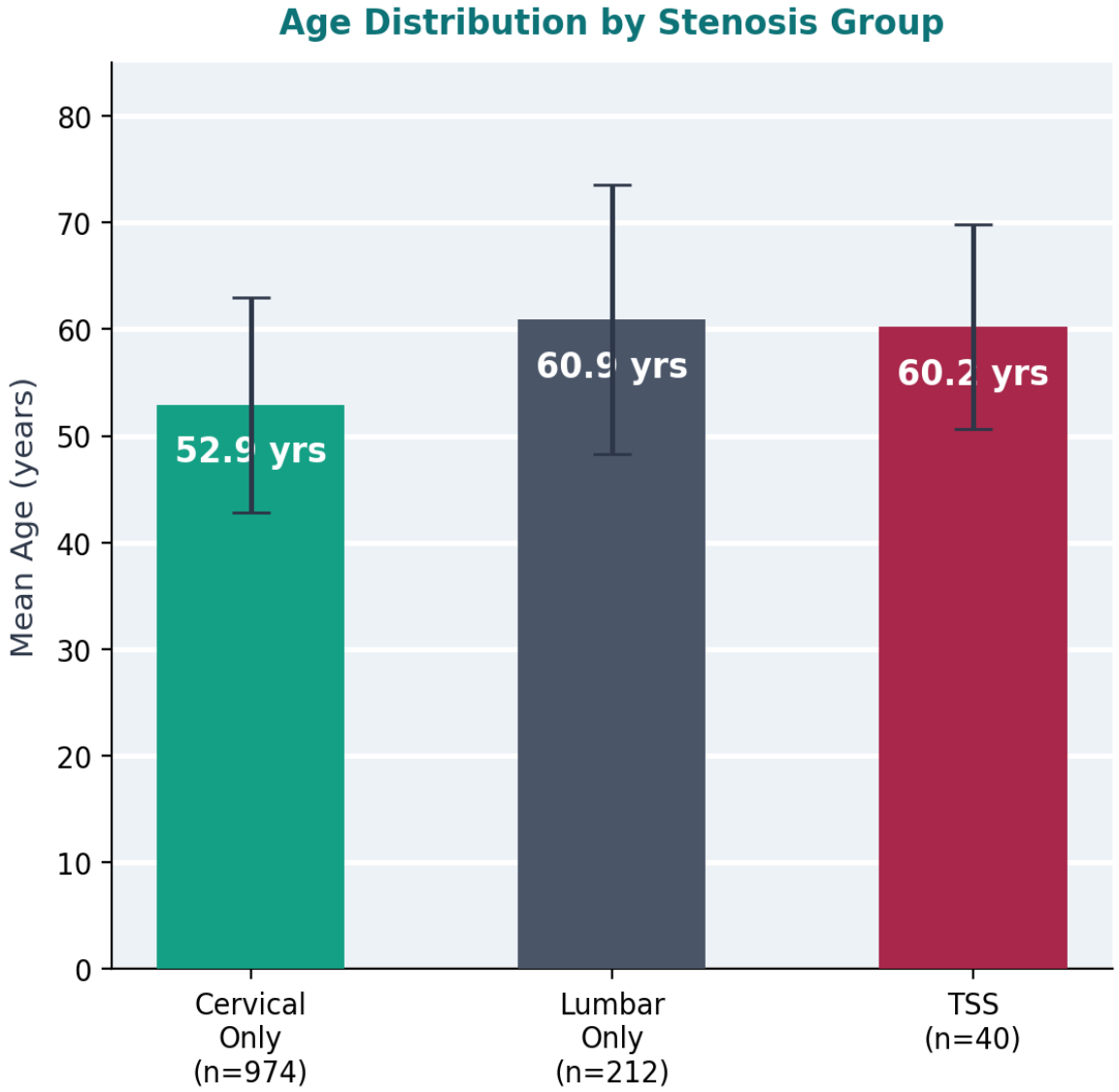
Category	N	Prevalence (%)
Total spine MRI examinations (10-yr)	35,752	—
Cervical MRI	11,555	32.3% of total spine MRIs
Lumbar MRI	23,601	66.0% of total spine MRIs
Male pts – significant cervical stenosis	1,014	8.8% of cervical MRIs
Male pts – significant lumbar stenosis	252	1.1% of lumbar MRIs
Male pts – stenosis in either region	1,226	—
Tandem Spinal Stenosis (C + L)	**40**	**3.9% of C-spine; 15.9% of L-spine**

Results — Table 2: Age Distribution

Group	N	Mean Age
Cervical stenosis only	974	52.9 ±10.1 yrs
Lumbar stenosis only	212	60.9 ±12.6 yrs
Tandem spinal stenosis	**40**	**60.2 ±9.6 yrs**

Key Observation

- TSS patients ~7 years older than cervical-only patients
- TSS age comparable to lumbar-only
  — consistent with multilevel degeneration
- TSS predominantly affects middle-aged to elderly males



Discussion

Comparison with Existing Literature

- Wakayama Spine Study (population-based): 14.1% TSS in men.
- Our lower overall rate (3.3%) reflects clinical vs. community screening
- Our 15.9% in lumbar stenosis patients aligns with hospital-based studies (Lee SH et al. 24%; Ghobrial et al. 23%)
- TSS patients ~7 years older than cervical-only patients — consistent with cumulative multilevel degeneration

Clinical Implications & Recommendation

- Nearly 1 in 6 lumbar stenosis patients harbors concurrent significant cervical stenosis — often clinically silent
- Cervical decompression should be prioritized when myelopathy coexists; unaddressed cervical compression durin g lumbar surgery risks irreversible neurological injury

➤ **Routine cervical MRI screening strongly recommended in all lumbar stenosis patients**

Conclusion

- ✓ Radiographic TSS was identified in **3.9%** of Korean males with significant cervical stenosis and **15.9%** of tho se with significant lumbar stenosis over a 10-year period
- ✓ Approximately **1 in 6** patients evaluated for lumbar spinal stenosis had concurrent significant cervical stenos is
- ✓ TSS patients were **~7 years older** than cervical-only stenosis patients — consistent with cumulative multileve l degeneration
- ✓ These findings provide strong evidence for **systematic cervical MRI screening** in all patients presenting with lumbar spinal stenosis