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## Why Do Patients Seek a Spine Surgeon?

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#### **Abstract**

**Study Design:** Retrospective review of chief complaints (CCs) of patients seeking care at a specialty spine clinic with the diagnosis of degenerative scoliosis or lumbar stenosis.

**Objectives:** The purpose of the study was to ascertain why patients seek care from spine surgeons. Specifically, we asked whether pain or deformity was more common. Secondarily, we studied the correlation of progressive curve magnitude with perceived functionality.

**Background:** Scant research is available on what leads a patient to be seen in a clinic. Degenerative scoliosis is often correlated with pain in the low back and extremities, symptoms that impinge on quality of life in the elderly. Some research suggests there is no correlation between progressive curve magnitude and perceived functionality.

**Methods:** Charts and radiographs of 351 consecutive patients were reviewed. Patient inclusion criteria were as follows: 1) they were seen at our spine clinic in one 12-month period, 2) their chief diagnosis was degenerative scoliosis or lumbar stenosis, 3) they were 50 years of age or older, and 4) they had no known prior history of scoliosis. Oswestry Disability Index (ODI) data were recorded.

**Results:** Of 351 patients, 160 reported their CC was combination back + leg pain on the initial visit survey, 123 complained of back pain only, and 42 complained of leg pain only. Ten complained of deformity or deformity + pain. Patients with degenerative scoliosis + spinal stenosis represented 25% of the study population; 11% were diagnosed with degenerative scoliosis only; 64% with stenosis only. Of the 122 patients with a Cobb angle of greater than 10°, only 10 complained of deformity or deformity + pain on the initial visit survey.

**Conclusions:** Patients most often presented because of pain, specifically back, leg, or a combination of both. Patients seldom complained of deformity only, even among patients exhibiting a Cobb angle of greater than 30 degrees.

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Keywords: Chief complaint; Spine deformity; Scoliosis; Stenosis; Back pain; Leg pain

#### Introduction

Adult degenerative de novo scoliosis (DDS) is characterized by scoliosis forming after the spine has reached maturity [1]. The number of patients presenting in clinic with DDS is increasing, probably because of the aging population. Scoliosis in adults has been associated with low back and leg pain, as well as deformity, and affects the quality of life of the elderly [2]. What leads patients to be seen in clinic remains a matter of speculation. Research exists on treatment of DDS given certain indications [3], yet scant literature exists on what motivates patients to be

seen. Because of DDS's association with pain and deformity, we sought to identify whether these associations are motivational factors for patients to be seen for treatment by a spine surgeon. Specifically, we sought to quantify the number of patients who complained primarily of pain, deformity, or both. Because the incidence of degenerative scoliosis represents a prevalence ranging from 6% to 68% [4-6], identifying the motivational factors for clinical presentation may shed light on DDS's etiology, an area that is also not yet well understood [1]. A corollary to this study is the recognition that increasing curve size is not necessarily causal of pain or loss of function [7,8]. Rather, it has been found that sagittal imbalance is a greater indicator of pain and loss of function [8], and coronal imbalance has been correlated with decreased functionality [9]. For this reason, the Oswestry Disability Index (ODI) was collected to ascertain if there was a correlation, if any, between increasing Cobb angle and functionality. We did not study whether these patients had received surgery or what

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surgery, if any, had been performed, this topic having been recently commented upon by others [10].

#### Materials

A chart review was conducted using electronic medical records. Patients were included in the study based on three criteria. They were 1) seen at our center during one 12-month period, 2) aged 50 years or older, 3) recorded as having a chief diagnosis of degenerative scoliosis or lumbar stenosis, and 4) not known to have a prior history of scoliosis. Those with known idiopathic adolescent scoliosis were excluded. Whether patients had been previously evaluated by a spine surgeon or treated by nonsurgeon health care provider is not known.

#### Methods

Patient self-reported chief complaint (Patient CC) was obtained from either the initial visit survey or the initial visit note made by the attending surgeon. In the initial visit survey, patients are asked to fill out a terse, one-line description of their symptoms prompted by "Chief Complaint." The second prompt, "Describe the onset, symptoms and related issues of the condition for which you are seeking treatment," is followed by a six-line space for response. Six possible data were recorded for patient self-reported CC: 1) back pain only, 2) leg pain only, 3) combination back and leg pain, 4) deformity only, 5) deformity and pain, and 6) no response or blank. Where the first prompt was insufficiently specific, did not mention one of the above categories 1-5, or was blank, the second prompt was consulted. For example, if the first response was "pins and needles, numbness, and pain," the second prompt may have shed light on where these sensations occurred, thus allowing the patient's complaint to be categorized. If both prompts were blank, the Patient CC was recorded as "blank." The patient's ODI was obtained from the initial visit survey. If it was left blank, no values were recorded.

The attending surgeon's recorded patient chief complaint (Attending CC) was obtained from the patient initial visit note. The response was recorded as it fell into one of the above six categories. The patient's radiograph was checked to confirm the presence of a degenerative scoliosis and obtain the Cobb angle measurement.

Cohen's Kappa was used to measure agreement between Patient CC and Attending CC. The chi-square test was used to compare the proportions of patients complaining of deformity or deformity + pain between patients with curves greater than  $30^{\circ}$  and patients with curves of less than  $30^{\circ}$ .

#### Results

Included in the study were 351 patients: 199 women and 152 men. Patients received care from one of nine surgeons whose practices differ by subspecialty (e.g., adolescent deformity vs adult degeneration). This resulted in

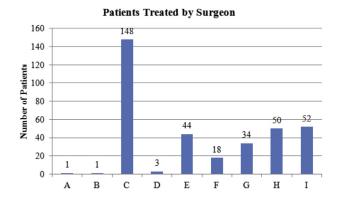


Fig. 1. Distribution of patients by attending surgeon.

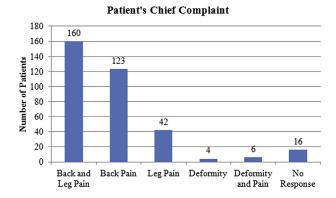


Fig. 2. Distribution of patient self-reported chief complaints.

differences in the numbers of included patients from each surgeon (Fig. 1). Nevertheless, none were excluded from the final data set. One surgeon, whose practice primarily treats patients with degenerative scoliosis and/or stenosis, accounted for 42% of the data.

#### Chief complaints

The most common Patient CC was combination back and leg pain (46% of patients), followed by back pain only (35%) and leg pain only (12%). Four of 351 patients complained of deformity only (1%) and 6 of combination

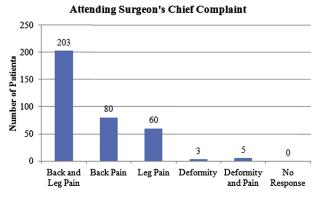


Fig. 3. Distribution of attending surgeon's recorded chief complaints.

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