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Case Report

Spontaneous and rapid resolution of a massive lumbar disc herniation

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ABSTRACT

Background: Most lumbar disc herniations can be successfully treated conservatively. However, massive lumbar disc herniations are often treated surgically to avoid permanent cauda equina syndromes/neurological deficits and potential litigation. Nevertheless, here, we present a 51-year-old female who refused lumbar surgery due to coronavirus disease 2019 (COVID-19) and sustained a full spontaneous recovery without surgical intervention.

Case Description: A 51-year-old female presented with a massive lumbar disc herniation at the L5S1 level. Despite refusing surgery for fear of getting COVID-19, she spontaneously neurologically improved without any residual neurological or radiographic sequelae.

Conclusion: Although the vast majority of patients with massive lumbar disc herniations are managed surgically, there are rare instances in which nonoperative management may be successful.

Keywords: Cauda equina syndrome, Conservative treatment, Coronavirus disease 2019, Litigation, Massive lumbar disc

INTRODUCTION

The first radiological demonstration of the spontaneous regression of a lumbar disc herniation was published in 1984[5] followed by a large number of comparable reports.[2] While a lumbar disc herniation at L4/5 or L5/S1 is the most common cause of the cauda equina syndrome, only 1–2% of all lumbar disc herniations will lead to cauda equina syndrome (CES).[9]

Nevertheless, most spinal surgeons are reluctant to treat massive lumbar disc herniations conservatively due to the risk for developing a CES and permanent neurological sequelae.[10] Further, inadequately treated/untreated CES due to such large disc herniations has resulted in often successful plaintiff-based medicolegal suits.[4]

CASE PRESENTATION

Case history

A 51-year-old female presented with a 1-day history of the spontaneous onset of lower back pain radiating to both legs. On examination, she had mild right-sided plantar flexion weakness (4/5), without any bladder nor bowel disturbance.

The emergent magnetic resonance imaging (MRI) demonstrated a massive L5S1 lumbar disc herniation [Figures 1-3].

Patient refused surgery

The patient refused surgery as she was afraid that a hospital admission could result in her contracting coronavirus disease 2019 (COVID-19). Rather, she was treated with nonsteroidal anti-inflammatory medication, gabapentin, and weekly clinical examinations. Notably, we clearly discussed the risks/complications of her developing a CES and the potential for a permanent, irreversible neurological injury/deficit.

The patient spontaneously improved and was able to return to work within 2 weeks. Three months later, she was neurologically normal, and the repeat MRI scan showed near-complete resolution of the original L5S1 massive disc herniation [Figure 4].

DISCUSSION

We reviewed six studies that described the conservative treatment of patients with massive lumbar disc herniations [Table 1].[1,3,6-8,10]

All patients were treated conservatively due to patient choice and because none presented with CES. The six studies yielded a total of 117 patients with massive lumbar disc herniations, treated conservatively for whom follow-up to symptomatic or radiological resolution or both were available. Although six patients eventually required surgery; only one patient

Figure 1: Sagittal T2 magnetic resonance imaging demonstrating massive L5S1 disc herniation.

Figure 2: Axial magnetic resonance imaging image showing herniated disc fragment occupying >50% of the spinal canal in the axial plane at the L5S1 level.

Table 1: Six identified studies, listed in chronological order of publication, of patients with massive lumbar disc herniations treated conservatively.

Study	Study type	Number of patients treated nonoperatively	Number of patients undergoing ESI	No. of patients operated subsequently	Number of patients developing CES (impending or established) subsequently	Follow-up MRI
Cribb *et al.*, 2007.[5]	Retrospective	15	Not stated	1	0	All
Benson *et al.*, 2010[3]	Prospective	35	Not stated	4	0	32
Jeon *et al.*, 2013[7]	Retrospective	21	19	0	0	0
Hong *et al.*, 2016[10]	Retrospective	28	28		0	All
Jung *et al.*, 2017[8]	Case report	1	0	0	0	1
Ying *et al.*, 2018[10]	Observational	17	3	1	1 (impending)	1

CES: Cauda equina syndrome, MRI: Magnetic resonance imaging, ESI: Epidural steroid injection

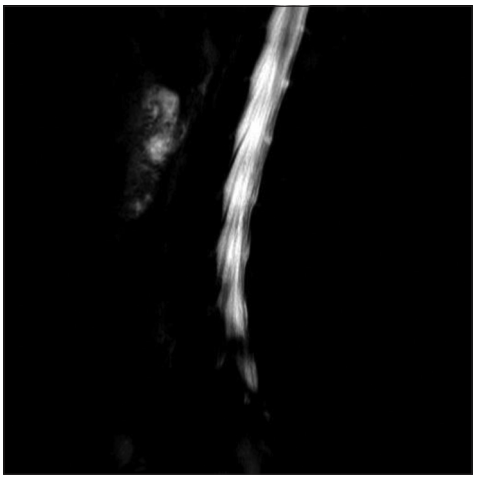

Figure 3: Myelographic magnetic resonance imaging sequence demonstrating complete "obstruction" at L5S1.

Figure 4: Follow-up magnetic resonance imaging at 3 months showing near-complete resolution of L5S1 disc herniation.

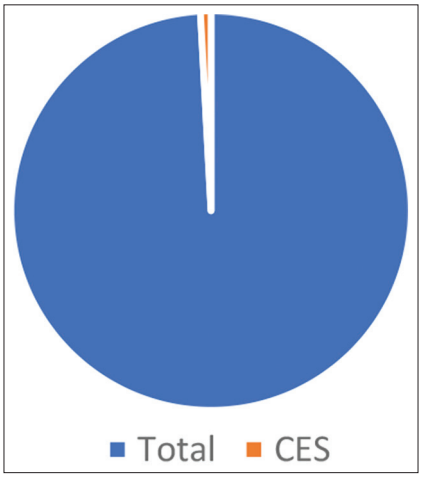

Figure 5: Number of total patients and number developing cauda equina syndrome depicted as a pie chart.

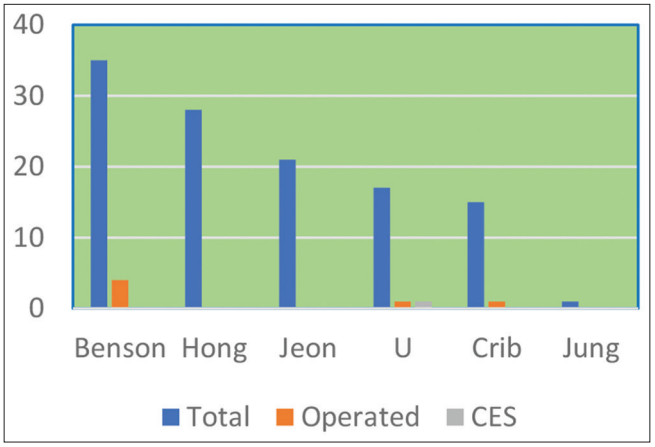

Figure 6: Clustered column depicting the number of included patients in each study and numbers undergoing subsequent surgery and/or developing cauda equina syndrome.

underwent surgery for an impending CES, making an uneventful recovery.[10] The remaining five patients had surgery for intractable pain [Figures 5 and 6].

Both Hong *et al.*[6] and Cribb *et al.*[3] described patients who experienced significant clinical resolution despite minimal to no change in disc herniation size on repeat MRI.

Further, all the patients in Hong *et al.*[6] and 19/21 in Jeon *et al.*[7] studies received epidural steroid injections (ESI), and none required surgery.

CONCLUSION

Due to the fear of contracting COVID-19, a 51-year-old female with a massive L5S1 disc herniation but minimal neurological deficit pursued a nonsurgical route resulting in full spontaneous resolution of her deficit and original MRI findings (3 months later).

Declaration of patient consent

Patient's consent not required as patient's identity is not disclosed or compromised.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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