

*Research Article***Management of post operative lumbar spondylodiscitis**

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**Abstract**

**Introduction:** Spondylodiscitis is a rare but serious infection of the intervertebral disc with possibly devastating outcome. The peak incidence is in patients under 20 years of age and between 50 and 70 years of age. The incidence ranges from 0.4 - 2.5 per 100,000 per year. Spondylodiscitis occurs secondary to a variety of causes, most notably bloodstream infections (e.g. Staphylococcus aureus) and after surgery. **Aim of the work:** The aim of the work is to compare between conservative management versus fixation in treatment of post operative lumbar spondylodiscitis and prognosis of each one.. **Patients and Methods:** Forty cases with post operative lumbar spondylodiscitis admitted to Minia university hospital reviewed retrospectively. Twenty of them underwent surgical decompression with fixation and the other twenty were treated conservatively. **Results:** Group 1: 20 patients (50%) for conservative management. Group 2: 20 (50%) patients underwent surgical fixation – 16 of them by screws only and 4 by screws and cage. Results according to Age & sex Table (1) The age ranged between 37 years and 67 years with mean/SD (52.57±7.09). As regarding sex, 26 patients were males (65%) and 14 were females (35%). Distribution of the studied cases according to demographic data (n= 40). **Conclusion:** Surgical management of post operative lumbar spondylodiscitis provides less rate of complications than conservative management. There is statistically significant difference between both method of management as regards of post operative complications, VAS score improvement, final clinical outcome (KWC) and post operative neurological status according to ASIA . So surgical fixation is recommended for management in post operative lumbar spondylodiscitis.

**Keywords:** Spondylodiscitis, intervertebral disc, post operative

**Introduction**

Spondylodiscitis is a rare but serious infection of the intervertebral disc with possibly devastating outcome. The peak incidence is in patients under 20 years of age and between 50 and 70 years of age. The incidence ranges from 0.4- 2.5 per 100,000 per year. Spondylodiscitis occurs secondary to a variety of causes, most notably bloodstream infections (e.g. Staphylococcus aureus) and after surgery. The most commonly found pathogen responsible for spondylodiscitis is S. aureus. Haematogenous spread is the major source of pyogenic spondylodiscitis.

Due to the low specificity of signs and symptoms at clinical presentation, a significant delay is about 2–6 months till accurate diagnosis of spontaneous spondylodiscitis. Patients have constant back pain that worsens at night, often associated with radicular pain. Fever is less common<sup>(5)</sup>. Associated neurological deficits,

such as leg weakness, numbness, and incontinence, are present in about one-third of patients.

Erythrocyte sedimentation rate(ESR) is a sensitive marker of infection with low specificity. ESR is also used as a marker of therapeutic response. C-reactive protein (CRP) is also elevated in more than 90% of cases.

Plain radiographs of the spine have low specificity (57%) in diagnosis of spondylodiscitis. In advanced cases, irregularity of vertebral end plates with eventual fragmentation and reduced intervertebral disc space height.

Magnetic resonance imaging (MRI) is the gold standard modality for diagnosis of spondylodiscitis due to its high sensitivity (96%), specificity (94%), and greater capacity to provide detailed anatomical information about surrounding soft tissues and epidural space especially with Gadolinium enhancement.

Systemic antibiotics, rest and bracing are the cornerstone lines of the conservative treatment. But the surgical treatment is indicated in cases not responding to medical treatment, neurological deficit, epidural abscess and progressive segmental kyphotic deformity or mechanical coronal or sagittal instability

Surgical treatment of spinal infections is still a matter of controversy with relative merits and challenging for spinal surgeons. The aim of treatment are: Thorough debridement of infective foci, decompression of neural element, Correction of the deformed spine, posterior fixation by pedicular screws.

Anterior debridement and fusion with or without posterior stabilization appear logical due to destructive anterior lesion of Spondylodiscitis, additional posterior stabilization with anterior surgery can correct and avoid kyphosis, posterior laminectomy alone is avoided as it will increase or lead to segmental kyphotic deformity.

Complication rate of anterior spinal surgery is relatively higher than that of posterior spinal surgery<sup>(19)</sup> especially when performed in patients with chronic lesions with adhesion, in thoracolumbar and lumbosacral junctions, or in patients with a history of previous anterior surgery. Combining anterior and posterior approaches may increase the risks, especially in immunocompromised patients<sup>(20)</sup>

### **Aim of the work**

The aim of the work is to compare between conservative management versus fixation in treatment of post operative lumbar spondylodiscitis and prognosis of each one..

### **Patients and Methods**

Forty cases with post operative lumbar spondylodiscitis admitted to Minia university hospital reviewed retrospectively.

Twenty of them underwent surgical decompression with fixation and the other twenty were treated conservatively

### **Inclusion criteria**

- Patients who undergone to previous lumbar disc prolapse surgery.  
Or presence of neurological deficit or neurological deterioration  
Or epidural or paravertebral abscess  
Or progressive bony destruction with segmental deformity or instability Patient is medically fit for surgery.

### **Exclusion criteria**

- Spontaneous spondylodiscitis
- Cervical or dorsal spondylodiscitis
- Patient is medically unfit for surgery.
- Patient refuse to do operation.

### **Age and sex:**

The study contain 25 male (65%) and 15 female (35%), the mean age was 56 (20-65)

### **Comorbidity medical disease:**

14 patient (44%) have DM and two Cardiac (8%) and three have compensated liver disease (HCV) (12%), 9 patients HTN and 8 patient were medically free.

### **Low back pain**

Evaluated by VAS for (back and leg pain), was observed in all patients 100%

### **Radicular lower limb pain**

Was evident in 30 patients (75%), 20 Rt sciatica (50%) and 10 Lt sciatica (25%)

### **Results**

**Group 1:** 20 patients (50%) for conservative management

**Group 2:** 20 (50%) patients underwent surgical fixation – 16 of them by screws only and 4 by screws and cage

### **Results according to Age & sex Table (1)**

□ The age ranged between 37 years and 67 years with mean/SD (52.57±7.09).

□ **As regarding sex,** 26 patients were males (65%) and 14 were females (35%).

**Distribution of the studied cases according to demographic data (n= 40)**

**Table (1): According to age and sex**

		<b>Total (n=40)</b>
<b>Age</b>	<b>Mean±SD (Range)</b>	52.57±7.09 (37-67)
<b>Sex</b>	<b>Male</b>	26 (65%)
	<b>Female</b>	14 (35%)

**Table (2): Comparison between Conservative & Surgical**

	<b>Conservative (n=20)</b>	<b>Surgical (n=20)</b>	<b>P value</b>
<b>Age (years) Mean±SD (Range)</b>	55.25±7.35 (43-67)	49.9±5.84 (37-59)	<b>0.015*</b>
<b>Sex</b>			0.507
<b>Male</b>	12 (60%)	14 (70%)	
<b>Female</b>	8 (40%)	6 (30%)	

## Discussion

Treatment of spinal infections is still a matter of controversy with relative merits and challenging for spinal surgeons. Conservative treatment; Systemic antibiotics, rest and bracing are the first line of treatment but surgical treatment is indicated in cases not responding to medical treatment, and cases with neurological deficit, epidural abscess or paravertebral abscess and progressive segmental kyphotic deformity or mechanical instability and persistent immobilizing pain

**In our study, regarding to age** of patients were ranged between 37 years and 67 years with mean/SD (52.57±7.09). There is no statistically significant difference as regards age.

This agrees with Rolf Sobottke et al., who underwent group of patients of spondylodiscitis aged between fifth and seventh decade Loibel et al., Disagrees with our study as regard age of patients ranged from 28 to 88 years with mean age 66.1 years And this disagreement could be explained by the fact that his patients were 114 with vertebral osteomyelitis and associated with other medical co-morbidity as DM, coronary artery disease, malignancy and respiratory disorders.

Torda A., J et al., Disagrees with our study as regard age of patients the average was 75 years And this disagreement could be explained by the fact that his patients were 20 patients only and he considered that spondylodiscitis is easily missed in whom signs of sepsis may not manifest.

**In our study, regarding to sex** there were 26(65%) male and 14(35%) female.

This agrees with shetty et al., who underwent 19(70%) male and 8(30%) female with spondylodiscitis

Although we reported a predominance of males, others have nearly equal numbers as Loibel et al., who underwent 114 patients there were 55(48%) female.

Also according to lee et al., study in which 18 patients were done, 8(40%) of them were male and 10(60%) were female.

This disagreement could be explained by the fact that his patients were 18 patients and the major cause in his study was epidural nerve block in immunocompromised patients which is more common in females with low threshold pain.

In our study regarding to patients have co-morbid disease were 30 patients (75%) and 10 patients (25%) were medically free.

**In our study regarding to patients have co-morbid disease** 30(75%) patients had co morbid disease - 15 patients were diabetic (37.5%) 10 patients were hypertensive (25%), 3 were HCV positive (3%), 2 were Cardiac (5%) and 10 patients (25%) with no associated comorbidity. This agrees with Loibel et al., study in 88 patients (76%) of 114 patients had co-morbid illness.

While Shetty et al., disagrees with our study whose patients having co-morbid illness were 9 patients (30%) from 27 in his study.

And this disagreement could be explained by his study was on 27 cases with low mean of age that lack from comorbidity and spreading of DM, HCV and HTN in our country.

**In our study as regarding of the spinal level with discitis** 28(70%) of patients were L4, L5 or L5, S1 and (30%) were any other level

This agrees with Lee et al., that have 11(60%) from 18 patients with discitis at L4, L5 or L5, S1.

And disagrees with Ha, K., Y et al., who 10 (40%) of patients with discitis at L4, L5 or L5, S1 and 14(60%) at any other level.

And this disagreement could be explained by the fact that low number of patients in his study.

### Conclusion

Surgical management of post operative lumbar spondylodiscitis provides less rate of complications than conservative management. There is statistically significant difference between both method of management as regards of post operative complications, VAS score improvement, final clinical outcome (KWC) and post operative neurological status according to ASIA. So surgical fixation is recommended for management in post operative lumbar spondylodiscitis.

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