

Factors influencing immediate surgical outcome of lumbar spine stenosis

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Abstract

Introduction: Patients have co-morbid condition, with LSS have poor outcome immediately postoperative, comparing the patients without co-morbid, for first time of discharge up to 3 months, they have poor surgical outcome those with comorbid and complex Posterior Decompressive procedure.

Methods: We retrospectively study for 21 patient was operated in Hospital IBN SINA university hospital at rabat, from 2018 – up to 2022, for 5 years, files those was admitted at department for clinical and radiological diagnosed , and operated for LSS.

Results: The mean age of the 21 patients in our study of LSS is 57 years, at range of the age (40-72), The female gender was 14 out of 21 patient 63.6 %, and 7 of them was male 31.8%, patient had co-morbid was 14/21 =66.6% at different types of co-morbid, isolated Hypertension 2 patient, isolated diabetic, Parkinson, and past history of surgical procedures, 14 cases had co-morbid 7 of them they develop neurological Deficit, it means 50%of them they present Deficit,

Conclusion: The surgical outcome of the patient had co-morbid, with combined posterior decompressive procedures, most of them they presenting poor outcome comparing those without co-morbid and laminectomy only procedure.

Keywords: Lumber spine stenosis; Co-morbid; Posterior decompressive; Laminectomy; Neurological deficit

1. Introduction

Currently world the elder population number growing high, the increasing number of the elder society in world its socioeconomically impact, [1]

The number of the spine disorder increasing with the aged population , main spine degenerative disorders , [1, 2].Lumber spine canal stenosis is one of main disorders the elder patient presenting in the health facilities ,which its causes the narrowing of the spine canal , that compressing the cauda equine and nerve roots .Most of patient had comorbid with multiple medication for treatment of LSS but not respond permanently.

In worldwide the number of the population with LBP related for LSS its progressively increasing year by year

In 1990 and increased by 52.7% to 64.9 million (95% 46.5–87.4 million) in 2017 [2].

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In 2019, the global LBP prevalent cases were 568.4 million, with an age-standardized point-prevalence of 6972.5 per 100,000 population, and 223.5 million incidence cases with an age-standardized annual incidence of 2748.9, globally [3].

In the computed tomography study using a US community-based sample, LSS prevalence was about 19% among patients in the 60s [3].

A Japanese population-based study using a self-administered questionnaire for LSS reported that the prevalence was around 11% in the 70s, which increased with age [4].

Our study most focusing for two main variants, which most of the other study not focusing or interest,

- To determine patients with comorbid operated for LSS immediate impact of the outcome of the post-operative
- To asses effect of specific procedures the outcome patient with LSS?

Our hypothesis is there impact of procedures and comorbid for the immediate outcome of the patient's post-operative.

2. Material and methods

2.1. Our study was observation retrospectively study

Reviews the medical records of the 21 patient was operated in Hospital IBN SINA university hospital at rabat ,from time frame 2018 – up to 2022 , for 5 years ,Files those was admitted at department for clinical and radiological diagnosed ,and operated for LSS.

2.1.1. Including criteria

all patient operated LSS, from 2018-up to 2022, patients in Hospital IBN SINA university hospital at Rabat

2.1.2. Excluding criteria

all patient with LSS not operated, a patient before 2018 or after 2022, patient for other center or hospitals.

2.2. Data was analysis by excel Microsoft

2.2.1. Strength

This study is the primary analysis of files in the department not done before

This study focusing two variants not done before

2.2.2. Weakness

This study conduct one center.

3. Results

In our study the total patient operated was 21 patients , 14 of them they had comorbid , 2 diabetic , 3 hypertension , 3 of the diabetic with hypertension, 1 Parkinson , other comorbid , like hyperthyroidism , nephropathic , and surgical condition all are 5 patients ,

The all patients they had posterior decompressive surgery for different types , simple laminectomy had 8 patients ,laminectomy with discectomy had 6 ,laminectomy with foraminotomy bilateral had 5 , and last laminectomy ,arethrectomy and osteosynthesis had 1 patients .

14 cases had co-morbid 7 of them they develop neurological Deficit, it means 50%of them they present Deficit,

Specific patients had only laminectomy developed 25% of them deficit, instead the other complex procedures 75 % developed neurological deficit,

It indicated the simple or laminectomy only has good outcome comparing to the complex posterior decompressive surgery,

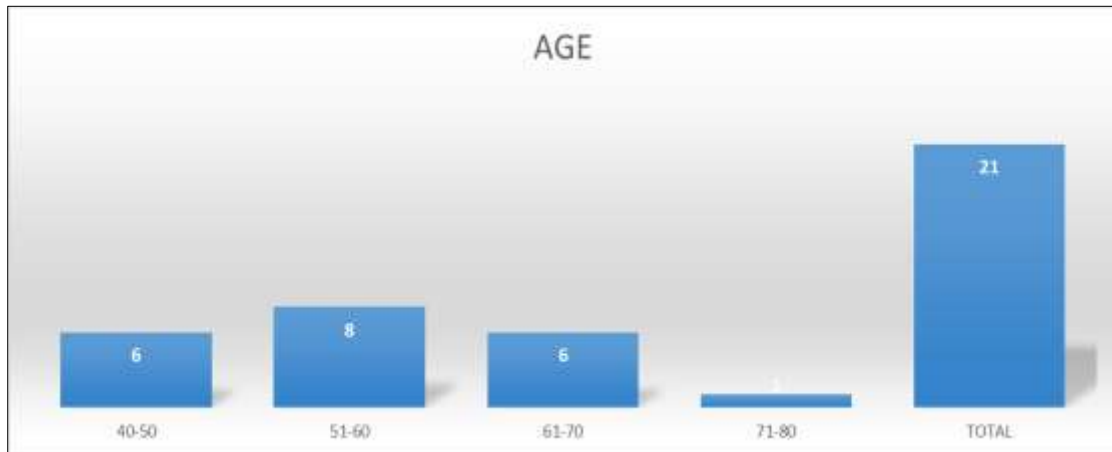


Figure 1 Total patient was 21 , 6 out of 21 the are between age (40-50), 8 out of 21(51-60), and 6 of them are between (61-70), and last one is between (71-80)

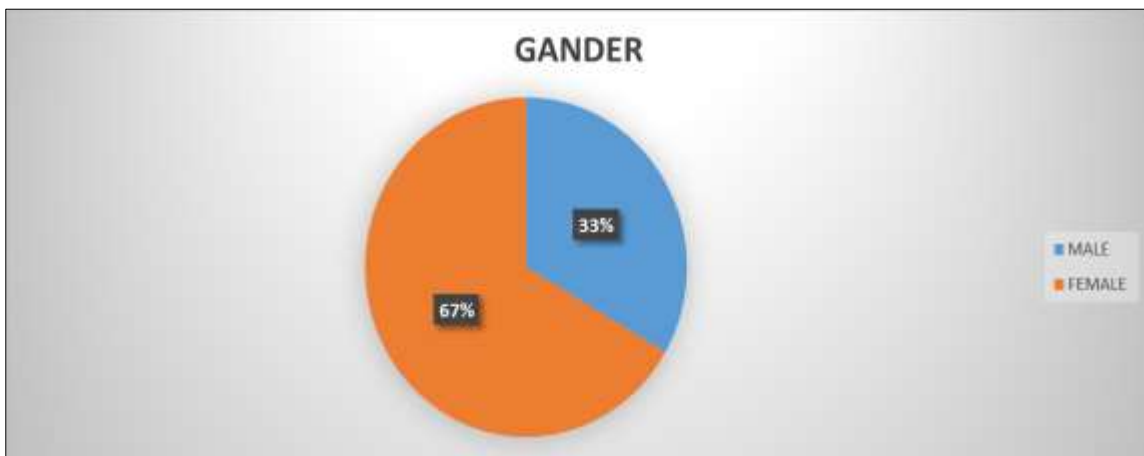


Figure 2 The above diagram shows the female patient more then to male patient in our study which is 67% are Female which is = to 14 patient, and 33% are male which = 7 patient in our study

Table 1 The all patient and procedures they pass

Groups	Procedure	Total No. 21
1	Laminectomy	8
2	laminectomy +discectomy	6
3	Laminectomy +foraminotomy	5
4	Laminectomy+Foraminotomy+Discectomy	1
5	Laminectomy +arthrectomy +osteosynthesis	1

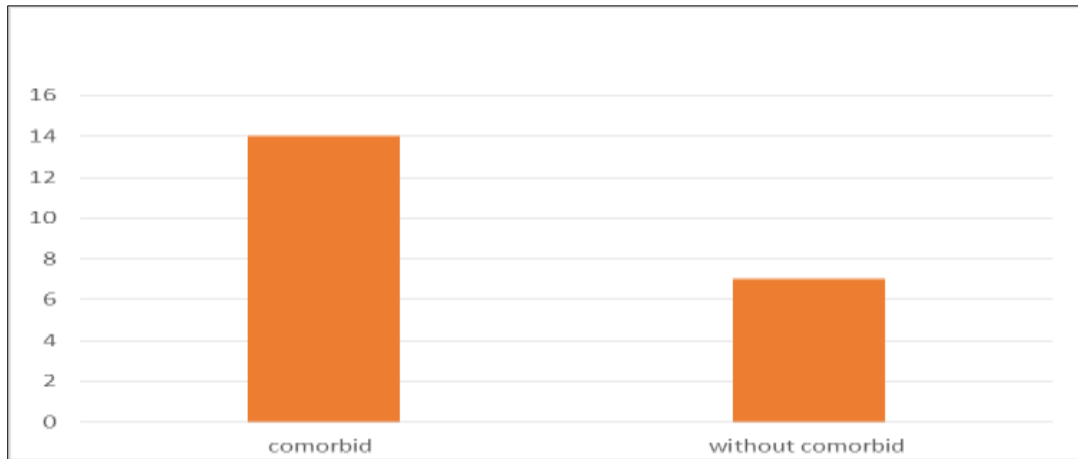


Figure 3 Patients operated LSS with or without comorbid

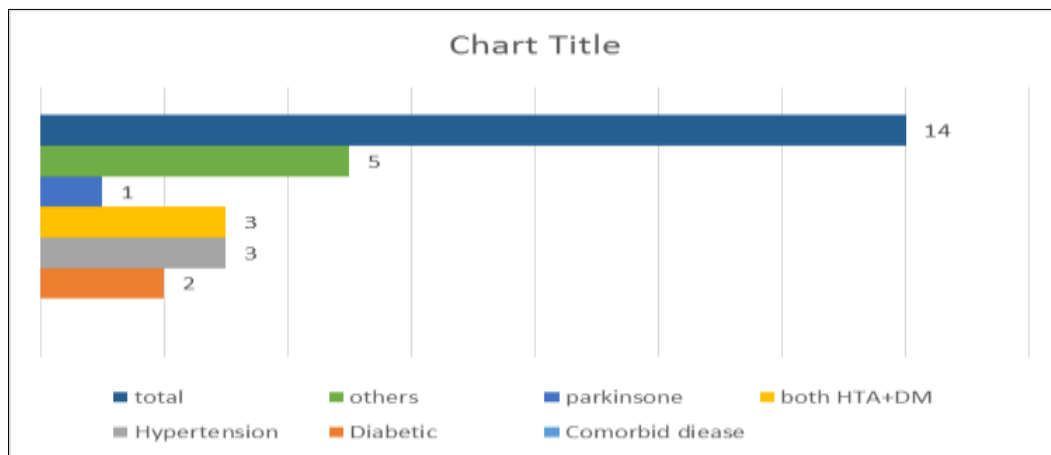


Figure 4 14 patients operated for LSS had comorbid ,5 of them had others like hyperthyroid and rheumatoid , 3 had hypertension +diabetic ,3 of them had pure hypertension , 2 of them pure diabetic , and last one had Parkinson.

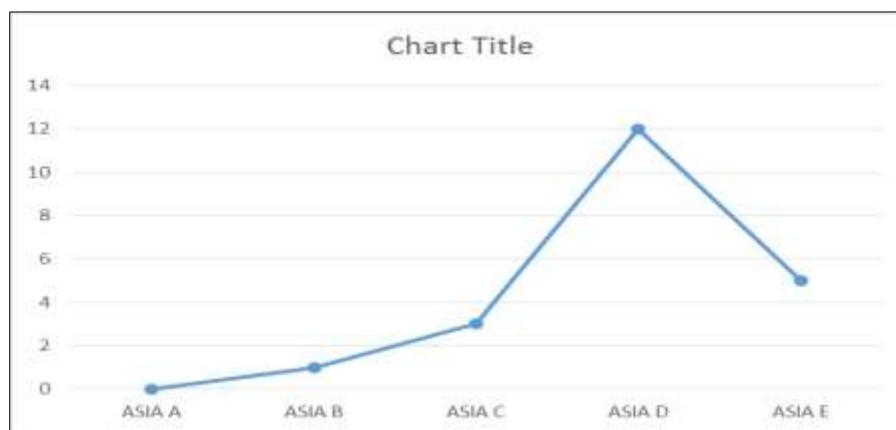


Figure 5 Diagrame is preop ASIA assesment ,;-total patients are 21 , for ASIA assesments , ASIA b there is 1 patient, ASIA c are 3 patients , ASIA d 12 patients , ASIA e are 5 patients ,

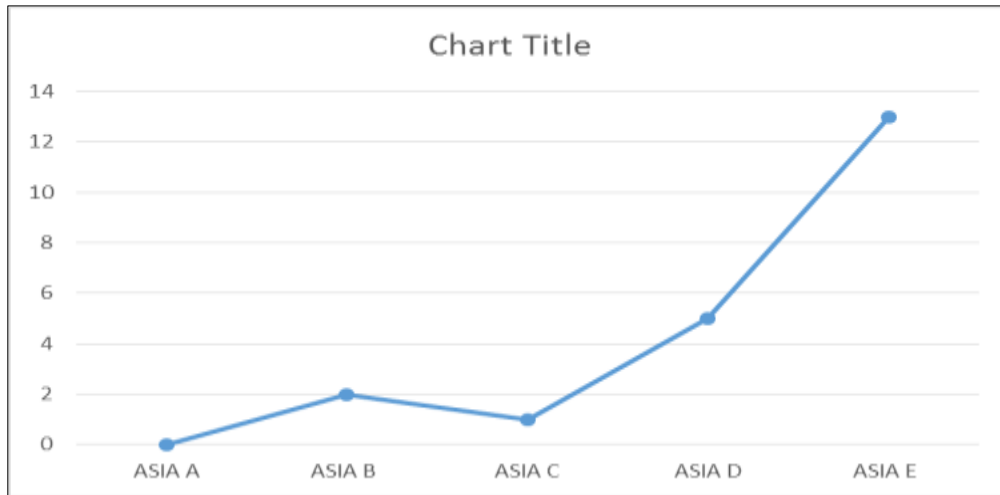


Figure 6 Postop ASIA assessment are Total patient operated are 21 patients, post op there is no patient for ASIA a 0, ASIA b there is 2 patients, ASIA c for 1 patient, ASIA d are 5 patients ,ASIA e 13 patients.

4. Discussion

Previous studies have indicated that surgery in patients with LSS is superior to no operative care.^{9, 10}, J.N. Weinstein et al, which is the same outcome of the study, indicates the patient operated they get benefit.

And our study shows the same result of the patient had surgical management has great improvement for the symptoms comparing the non-surgical managed.

In our the study was focusing the mainly two variants for comorbid and type of the procedure both of those variants will have great outcome , and most of the studies they evaluate those factors individual or separately comparing out study ,

4.1. For the operated for complex spine posterior decompression have poor outcome instead simple laminectomy

Patients has comorbid condition beside the LSS operated there is effect outcome especially diabetic, in our study also the most of the patients develop poor outcome the have the comorbid, diabetic, hypertension or both. For previous studies shows longer duration and uncontrolled diabetes were risk factors for LCS and directly correlate with the severity of LCS and outcome.

5. Conclusion

The surgical outcome of the patient had co-morbid, with complex posterior decompressive procedures, most of them they presenting poor outcome comparing those without co-morbid and laminectomy only procedure.

In this study shows the early management and good care of the multidisciplinary approach will reduce the poor outcome for post-operative of Lumber spine stenosis.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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