
Incidence of Spinal Lesions in Peshawar

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Introduction

One hundred cases of Laminectomies were carried out in the Department of Neurosurgery, Lady Reading Hospital, Peshawar in 2 years between 1986-88 and wide range of pathologies were noted in these cases.

Material and Methods

The case incidence was categorised on the basis of pathology, level of spinal cord effected, age group and sex incidence.

Percentage Incidence of Various Cases

Prolapse Disc	48%
Primary Cord Tumour	13%
Secondary Cord Tumour	19%
Spinal Stenosis with Hypertrophied Lig. Flavum	9%
Fire Arm Injuries	5%
Arachnoiditis	6%

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PROLAPSE DISC

This was found to be the commonest lesion in the Laminectomies performed. The lesions were diagnosed with myelogram, confirmed at operation and routine disc biopsy and histology were obtained.

Level of Disc

L4-5	33 cases	68.7%
L5-S1	10 cases	20.8%
L3-4	4 cases	8.3%
L2-3	1 case	2.08%

Age Incidence

Average age	36.5 years
Highest age limit	60.0 years
Lowest age limit	12.0 years

Sex Incidence

Male	41 cases	85.4%
Female	7 cases	14.5%

Presentation and Management

It was observed that disc lesion was common in farm workers, labourers and village dwellers.

75% cases presented with sciatic pain with severe disability. 17% cases with neurological defects, ranging from hypoesthesia, depressed jerks,

and Extensor Hallucis Longus paresis or paralysis and foot drop. 8% with established Cauda Equina syndrome ranging from saddle anaesthesia, weakness of legs, urinary retention, other sphincteric problems and sensory levels.

These warranted emergency intervention. In these cases the disc was completely extruded and was lying in spinal canal, constituting complete block at that level. Complete cure was achieved in these cases with return of motor functions and minor residual urinary problems were cleared in 4-6 months. These patients were back on their jobs in due course of time. After routine laminectomies residual backache or stiffness was tackled with physiotherapy, rehabilitation and exercises.

Use of steroids pre-or post-operatively was avoided except in cases of relatively long standing cord compression in which cord looked unhealthy at operation.

PRIMARY CORD TUMOURS

Total 13%

Types

Meningiomas	5 cases	38.4%
Neurofibromas	4 cases	30.7%
Ependymomas	2 cases	15.3%
Haemangiomas	2 cases	15.3%

Level

Commonest: Between D4-D8

Age Incidence

Average 25 years

Highest age group 55 years

Lowest age group 10 years

Sex Incidence

Male 8 cases 61.5%

Female 5 cases 38.5%

Sloof and Associates (Mayo Clinic) have sub-classified⁹ the incidence of each tumour as follows:

Meningiomas 25.5%

Neurofibroma 29.0%

Vascular Tomours 6.2%

Ependymoma 12.8%

Astrocytoma 6.5%

Sarcoma 11.9%

Others 8.1%

Characteristics of Common Spinal Cord Tumours

	NEUROFIBROMA	MENINGIOMA	EPENDYMOMA
Incidence	1/4 of all Spinal Tumours	1/5	1/8
Sex	Equal	4/5 female	3/4 male
Level	1/2 in thorax	2/3 in thorax	1/2 in lumbar

The tumours of spinal cord and its coverings are rare. The true incidence in general public is difficult to determine, since most of the statistics have been accumulated from large neurosurgical units. The two studies are, however, important:

1. Kurland (1958)

This shows that in a population of 100,000 people, 12.9 spinal cord tumours were seen in Rochester and Minnesota.

2. Gummundsson (1954-63)

In Iceland it was shown that the incidence was 1.1 spinal cord tumours in a population of 100,000.

3. Nittner (1976)

He suggested that 1/5 of CNS tumours occur in spinal cord.

4. In our series (1986-88)

If the ratio is spread over the provincial population then the actual incidence of spinal tumours is less than 0.1%.

Presentation, Diagnosis and Management

Majority (78%) cases presented with paraparesis, paralysis, urinary retention and sensory levels. 22% cases presented as backache and root pains. Myelogram diagnosis as filling defects or complete block was noticed, confirmed at operations and subsequently by histology in all cases.

After 10 months of follow-up, majority of the cases were on their feet and walking without support. 1.5% cases had urinary control problem for more than 12 months particularly where blocks were of longer duration i.e. paraplegia existed more than 3-4 months.

METASTATIC TUMOURS

Primary tumours are most prevalent in patients under 50 years of age while metastatic tumours are common over 50 years of age. The most common group is between ages 50-70.

Torma states that extradural spinal tumours constitutes 20-30% of all spinal tumours¹⁰. The most common metastatic tumours are from lung, breast, prostate and kidney. These occur frequently in thoracic area.

Metastatic Tumours Incidence

Total 19%

Types

Secondary Adenocarcinoma	8 cases	42.0%
Direct Lung Extension	5 cases	26.3%
Prostatic carcinoma	6 cases	31.5%

Level

Commonest	D3-D8
Least Common	L2-L4

Age Incidence

Average age	52 years
Highest age	75 years
Lowest age	30 years

Sex incidence

Male	14 cases	73.6%
Female	5 cases	26.3%

Presentation and Management

The most common presentation of metastatic tumours was paraplegia with sphincteric problems.

The highest ratio was of metastatic adenocarcinoma thyroid, kidney and prostate and less common from other sites.

The diagnosis was confirmed by histology; and routine post-operative radiotherapy was given.

SPINAL STENOSIS

Total	9%		
Level	L4-L5	4 cases	44.4%
	L2-L3	4 cases	44.4%
	D10-D12	1 case	11.2%

Age Incidence

Average age	40 years
Highest age	60 years
Lowest age	20 years

Sex Incidence

Male	8 cases	88.8%
Female	1 case	11.2%

Spinal stenosis presented with hypertrophied ligamentum flavum. The commonest complaint was backache and sometimes with sciatic symptoms but less frequently with frank neurological deficits. Mylogram showed blocks at various level described above. Total laminectomy with sometimes a level above and below showed no lesions and dura opened showed no lesions either. In all such cases ligamentum flavum was thickened and canal was narrow. In majority of cases a previous history of trauma was present. Post-operatively recovery was remarkable with one case having residual backache which lasted for 9 months.

FIRE ARM INJURIES

Total	5%		
Level	D6-D7	2 cases	40%
	D1-D2	1 case	20%
	D3-D9	1 case	20%
	L1-L2	1 case	20%

Age Incidence

Average age	28.2 years
Highest age	25 years
Lowest age	20 years

Sex Incidence

Male	4 cases	80%
Female	1 case	20%

The actual incidence of firearm injuries is very high in this part of the world. Only those cases are included in the series in which laminectomies were carried out. These were with CSF fistulas, monoplegias or sometimes with bullets in spinal canal. In 2 of the cases explorative laminectomy was done where short range gun fire occurred. There was gun powder, clothes etc. taken into spinal canal with the missile.

CSF fistulas with loss of dura matter was repaired with fascia lata graft or (in 2 cases) with artificial Liodura as the fascia lata graft did not take. The CSF leak stopped completely and wound healed nicely. The results of those cases in which spinal cord was destroyed are understandable but the results of the cases with monoplegia due to fire arms were encouraging.

ARACHNOIDITIS

Total	6%		
Level	D6-D8	2 cases	33.3%
	D6-D12	2 cases	33.3%
	D7-D12	1 case	16.66%
	D12-L4	1 case	16.66%

Age Incidence

Average age	35.3 years
Highest age	60 years
Lowest age	18 years

Sex Incidence

Male	4 cases	66.6%
Female	2 cases	33.4%

Six cases were presented as complete block at myelogram which turned out to be arachnoiditis at operation. 3 cases had previous lumbar punctures infected, with frank pus and adhesions in the canal, and the rest of three out of 6 cases were of idiopathic nature.

The presentation in 4 cases was paraplegia; 2 cases with monoplegia. Decompression was done with post-operative steroid cover and intensive physiotherapy. The results of paraplegic cases were not encouraging.

Conclusion

The majority of cases in this series were of PIVD with lower income groups, lower middle class, residing in periphery; professionally as farm workers, labourers, heavy vehicle drivers and those female carrying heavy loads.

The tumour incidence is as in other societies. Fire arm injuries though very common, little operative intervention was done due to obvious reasons and only those cases included here in which laminectomy was done due to described reason. Spinal stenosis is common in post-traumatic cases and forms a part of a number of patients presenting with severe backache.

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