Spectrum of Spinal Lesions - A 5-Year Study

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ABSTRACT

Introduction: Spinal lesions are divided into neoplastic lesions and non neoplastic lesions, again non neoplastic divided into inflammatory and infections like cysticercosis. Neoplastic lesions divided into benign, malignant and metastatic deposits.

Aims & Objectives:

1. Spinal lesions in relation to their site,

2. Spinal lesions in relation to age and sex

3. Spinal lesions in relation to their morphology.

Materials and Methods: This study is a retrospective study. A total of seventy nine cases were included in the study over a period of 5 years from June 2020 to May 2025.

Results: Our study shows male are more common than females with ratio of 1.4:1 (M: F). Among 79 specimens 50 (63.3%) were Non-Neoplastic and 29 (36.7%) were Neoplastic lesions. Tuberculosis (34.2%, age 31-70yrs) is the most common spinal lesion and meningioma (17.8%, age 41-50yrs) is the most common benign neoplastic tumor observed.

Discussion and Conclusion: Histopathological examination is important for diagnosis of spinal lesions. Our study shows Tuberculosis is the most common spinal lesion and meningioma is the most common benign neoplastic lesion. Carcinomatous metastasis was the most common malignant lesion. *Keywords:* Spinal lesions, chordoma, Pott's spine, meningioma.

INTRODUCTION

Spinal lesions are divided into congenital malformations, inflammatory and infective disorders, vascular malformations, and neoplasms ⁽¹⁾. Spinal lesions are categorized as lesions of spinal meninges, spinal nerve roots, spinal cord. Spinal lesions are further divided into congenital malformations, and infective inflammatory disorders. degenerative and reactive changes, vascular malformations and neoplasms. ⁽²⁾ Proper knowledge of clinical and radiological imaging features of spinal lesions can streamline the process of diagnosis and treatment which finally improves the prognosis. Histopathological examination is important for accurate diagnosis of spinal lesions

AIMS AND OBJECTIVES

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MATERIALS & METHODS

The present study is a retrospective study. Total of 79 biopsy specimens were included in the study. The study is done over a period of 5 years from June 2020 to May 2025.

Exclusion criteria:

Patients presenting with autolysed samples were excluded.

METHODS

Relevant clinical data and imaging details were reviewed. Specimens were fixed in formalin (10%). Routine histopathological processing was done. Sections were stained with Hematoxylin and Eosin. All the data was divided in different categorized and summarized into percentage. Total 79 patients were analysed. The most common complaint was back pain followed by paresthesia and paraparesis.

RESULT

Spinal lesions in relation to sex

Out of 79 cases males are more common than females in relation to occurrence of spinal lesions

Male 46 cases (58.2%) followed by female 33 cases (41.8%)

Spinal lesions in relation to age

Considering occurrence of spinal lesions according to age the commonest age group of presentation is 51-60 yrs (25%) followed by 41-50yrs (23.2%), 31-40yrs (19.6%), 61-70yrs (17.8%), 11-20yrs (7.1%), followed by 21-30yrs (5.3%), 71-80yrs (1.8%).

Distribution of neoplastic and non neoplastic spinal lesions

Among total of 79 cases, Non-Neoplastic lesions are commonest 50 cases (63.3%) followed by neoplastic lesions 29 cases (36.7%)

Type of lesion	Spinal lesion	Number of cases	Percentage
Neoplastic (36.7%)			
	Meningioma	14	17.8 %
	Schwannoma	4	5.0 %
	Neurofibroma	3	3.8 %
	Hemangioma	2	2.5 %
	Solitary fibrous tumor	2	2.5%
	Carcinomatous deposits	2	2.5%
	Lymphoma	1	1.3 %
	Chordoma	1	1.3%
Non neoplastic (63.3%)			
	Potts Spine (TB spine)	27	34.2 %
	Inflammatory pathology	20	25.3 %
	Cysticercosis	3	3.8 %
	Total cases	79	100%

 Table 1 Histopathological Spectrum and Frequency of occurrence of Spinal Lesions

Distribution of Spinal Lesions based on location

Coming to Distribution of Spinal Lesions based on location, Cervical 3 (3.8%), Cervicothoracic 1 (1.3%), Thoracic 38 (48.1%), Thoracolumbar 7 (8.9%), Lumbar 27 (34.1%), Lumbosacral 2 (2.5%), Sacral 1 (1.3%)

Spinal lesions in relation to age

Among 79 cases of spinal lesions Potts Spine is commonest 27 cases followed by Inflammatory pathology 20 cases followed by Meningioma 14 cases followed by schwannoma 4 cases, followed bv Neurofibroma 3 cases, Cysticercosis 3 cases followed by Carcinomatous deposits 2 cases, Solitary fibrous tumor 2 cases, Hemangioma 2 cases followed by Lymphoma, Chordoma each 1 case.





FIGURE 3:X400H&E Tuberculosis



FIGURE 5:X400 H&E Neurocysticercosis



DISCUSSION

Spinal space occupying lesions causes significant morbidity and mortality. ⁽³⁾ Commonest presentations include Back

FIGURE 2: X400 H&E Hemangioma



FIGURE 4:X400H&EMeningioma



FIGURE6:X400H&E Schwannoma



pain, paresthesia, and paraperesis. The spinal region with wide spectrum of spinal lesions shows a great challenge to neurosurgeons, radiologists and pathologists for accurate diagnosis and treatment. Although other investigations and imaging studies gives an idea about the probable diagnosis, but the histopathological examination remains the gold standard for the diagnosis.

Comparison with other studies:

Jain AK, Singh S, Sinha S^{(4).} et al and in our study, Thoracic (48.2 %) region was the most frequently involved site.

Dr S P Tathe, Dr S N Parate at al. studies had the same results.⁽⁶⁾

- The most affected age group was 50-60 years
- There was male predominance noted
- Tuberculosis was the commonest non neoplastic lesion.

N. Soomro et al studies showed that tuberculosis was the commonest histological diagnosis.

Studies Comparative study		Our Study	
Jain AK, Singh S,	Most commonly involved site is thoracic	Most commonly involved site is thoracic	
Sinha S et al (3)	region	region	
Nitin M. Gadgil et al 4 (4)	Tuberculosis was the most common lesion	Tuberculosis was the most common	
	related to	spinal lesion related to	
	-Age and sex	-Age and sex prediction	
Dr S P Tathe,	-Most affected age was 50-60 years	-Most affected age was 50-60 years	
Dr S N Parate et	-Male predominance	-Male predominance	
at (5)	-Tuberculosis was the commonest lesion	-Tuberculosis was the commonest lesion	
I.N. Soomro et al	Tuberculosis was most common lesion	Tuberculosis was most common lesion	

TABLE NO:2 COMPARISON WITH OTHER STUDIES

CONCLUSION

Non -Neoplastic lesions constitute majority of the spinal space occupying lesions over neoplastic lesions. Tuberculosis was the most common spinal lesion observed. In this study males are common than females in occurrence of spinal lesions, and the most common affected age group was 40-60yrs. Spinal lesions diagnosis was mainly depended on histopathological findings.

Declaration by Authors

Ethical Approval: Approved Acknowledgement: None Source of Funding: None Conflict of Interest: No conflicts of interest declared.

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