IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 25, Issue 6 Ser. 7 (June. 2026), PP 16-23
www.iosrjournals.org

Paraplegia – The Grave Complication of Metastatic Prostate Cancer: A Retrospective Study of Ten Cases and A Review of The Literature

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ABSTRACT
In Nigeria, prostate cancer is the most frequently diagnosed cancer and the leading cause of cancer related deaths among men.
Among its many complications, metastasis to the spine with subsequent paraplegia is a dreaded one.
Paraplegia in prostate cancer is caused by metastatic epidural spinal cord compression (MESCC).
This was a retrospective study of ten (10) men who had paraplegia resulting from histopathological confirmed prostate cancer over a two year period from January 2024 to December 2025 in Aba.
All ten cases (100%) were Adenocarcinoma.
The youngest was 59 years while the eldest was 85 years with a mean age of _____
The highest incidence was observed in two aged groups – 61-70 age group with 4 cases 40% and 71-80 age group with 4 cases 40%.
9 out of the 10 cases (90%) had high grade disease while 1 (10%) had intermediate grade disease.
None of the ten patients had low grade disease.
5 of the 10 patients were seen in the hormone naïve stage with no previous hormonal manipulation.
3 (30%) were seen in the castration resistance stage and 2 (20%) were seen after completion of radiotherapy and chemotherapy.
All 10 (100%) had a combination of androgen deprivation therapy and corticosteroid therapy.
None had surgical management due to extremely low performance status.
2 (20%) had fairly complete reversal of paralysis while 4 (40%) had partial recovery and 4 (40%) had no reversal.
Paraplegia secondary to metastatic prostate cancer is a grave complication.
A high index of suspicion in patients with persistent back pains and lower limb weakness in prostate cancer patients is advocated.
Early investigations, diagnosis and treatment cannot be over emphasized.

KEY WORDS
Prostate cancer, Metastasis, Spinal cord compression, Paraplegia and Aba.

Date of Submission: 15-06-2026 Date of Acceptance: 28-06-2026

I. INTRODUCTION

Paraplegia in prostate cancer is a grave complication and it is caused by metastatic epidural spinal cord compression (MESCC).

It occurs primarily through the extension of the metastatic deposits to the vertebral bones with the extension of the metastases into the spinal canal resulting in:

- Direct mechanical compression of the spinal cord
- Secondary vascular compromise.

The sequence of events include:

- Extradural compression and tumor extension.
- Venous congestion
- Vasogenic oedema
- Irreversible damage

In extradural compression and tumor extension, prostate cancer metastases spread to the vertebrae through the Bartson's venous plexus forming pathologic osteoblastic metastases which grow and

- Penetrate the vertebrae into the epidural space
- Cause vertebral collapse which adds further mechanical pressure unto the spinal cord.

The initial pressure build up causes venous stasis and congestion and oedema within the spinal cord.

Inflammatory response is initiated with subsequent vasogenic oedema which increases the pressure further.

The last stage is the stage irreversible damage.

It is caused by a combination of mechanical pressure and ischaemia.

The sequence of events include:

- Demyelination – damage to the myelin sheaths of the nerves as a result of pressure.
- Axonal loss – permanent injury to the nerve fibers leading to paralysis.
- Vascular compromise – compression of the spinal arteries and epidural venous plexus leading ultimately to ischaemia (insufficient blood flow to the spinal cord) and infarction and necrosis due to lack of oxygen.

The Thoracic spine is most often affected followed by the lumber and then cervical vertebrae.

The symptoms begin with:

- Back pains
- Motor weakness
- Sensory dysfunction
- Sphincter control loss

MRI remains the most effective investigation in diagnosis and anatomic localization of the cord level.

Treatment options include

- Androgen deprivation therapy (Bilateral total orchidectomy)
- Corticosteriod therapy
- Radiotherapy
- Chemotherapy
- Neurosurgery (Laminectomy and decompression)

A multidisciplinary approach in management is most advisable.

Prognosis depends on the stage at diagnosis and treatment.

Recovery is poor once complete paraplegia develops making early diagnosis and treatment critical.

II. METHODOLOGY

This was a retrospective study of 10 cases of paraplegia secondary to metastatic prostate cancer seen in 2 years between January 2024 and December 2025.

The case files of the patients were retrieved and relevant information obtained such as:

- Date of presentation
- Age
- Mode of presentation
- Stage of presentation
- Histopathology result and Gleason status
- Treatments given
- State on discharge

These informations were collated, analysed and interpreted.

INCLUSION CRITERIA
All cases of paraplegia secondary to prostate cancer seen within the study period, who were biopsied, had laboratory and radiologic evaluations, treated and discharged were part of this study.

EXCLUSION CRITERIA
Patients without histopathologic confirmation of prostate cancer and who declined treatment were excluded from the study.

III. RESULTS

TABLE 1 – SHOWING THE PROFILES OF THE PATIENTS UNDER REVIEW.

S/N	AGE IN YEARS	GLEASON STATUS	SYMPTOMS
1	68	5 + 4 = 9/10	Paraplegia and Urologic
2	59	4 + 5 = 9/10	Paraplegia and Urologic
3	65	5 + 5 = 10/10	Paraplegia and Urologic
4	72	3 + 4 = 7/10	Paraplegia only
5	77	4 + 4 = 8/10	Paraplegia only
6	63	4 + 4 = 8/10	Paraplegia and Urologic
7	64	5 + 4 = 9/10	Paraplegia only
8	78	4 + 4 = 8/10	Paraplegia and Urologic
9	85	5 + 5 = 10/10	Paraplegia and Urologic
10	80	4 + 5 = 9/10	Paraplegia and Urologic

TABLE 2 – SHOWING DEMOGRAPHIC VARIABLES

S/N	Variable	Outcome
1	Mean Age in years	-
2	Range of Age in year	59 – 85 Years

TABLE 3 – SHOWING THE AGE GROUP CHARACTERISTICS

S/N	AGE GROUP	NUMBER	PERCENTAGE
1	50 – 60 Years	1	10%
2	61 – 70 years	4	40%
3	71-80 years	4	40%
4	81 – 90 years	1	10%
	TOTAL	**10**	**100%**

The incidence was found to be higher after 60 years

FIG 1 – HISTOGRAM

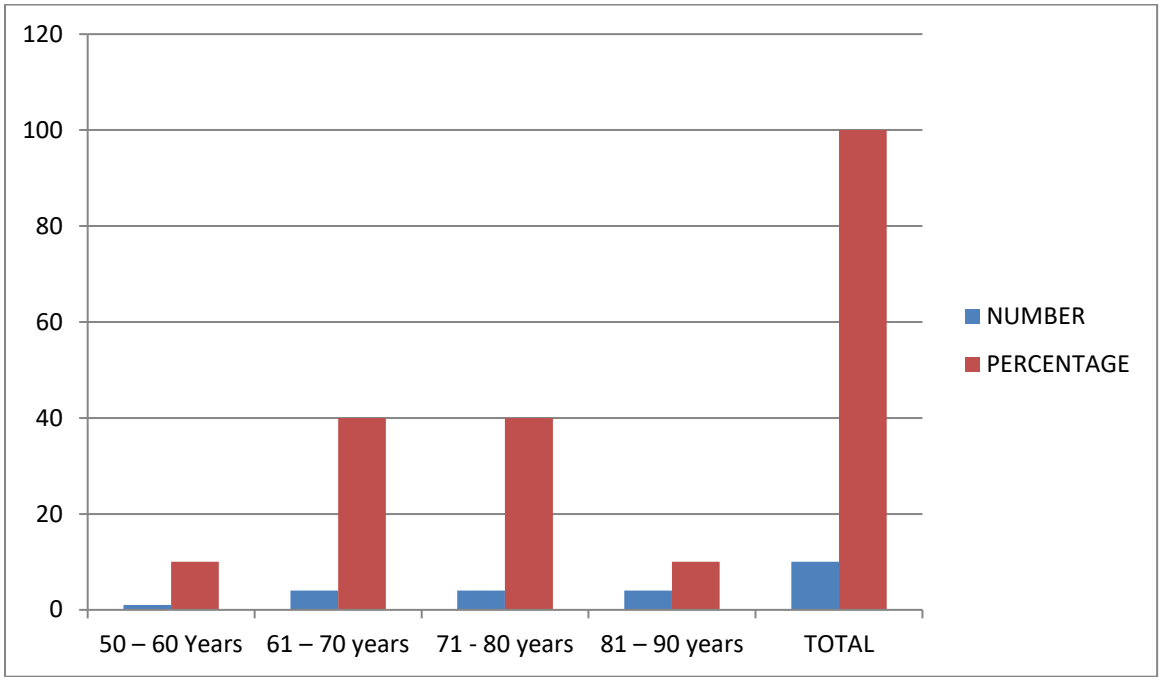


TABLE 4 – SHOWING THE GRADE OF THE TUMOR

S/N	GRADE	NUMBER	PERCENTAGE
1	Low grade Gleason 6	0	0%
2	Intermediate grade Gleason 7	1	10%
3	High grade Gleason 8 – 10	9	90%
	TOTAL	**10**	**100%**

The incidence appeared higher in the high grade tumor

FIG 2 – HISTOGRAM

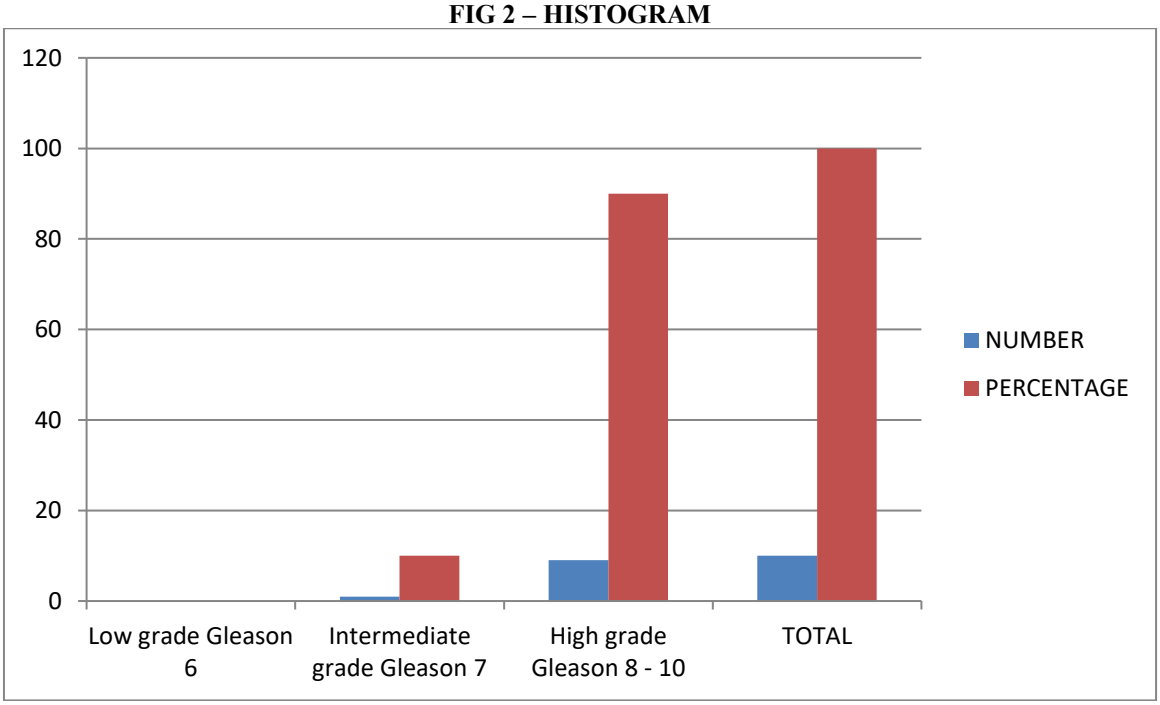


TABLE 5 – SHOWING THE STAGE AT PRESENTATION

S/N	STAGE AT PRESENTATION	NUMBER	PERCENTAGE
1	Hormone naïve (No previous hormonal manipulation)	5	50%
2	Hormone/Castration resistance	3	30%
3	Post prostate radiotherapy/Chemotherapy	2	20%
	TOTAL	**10**	**100%**

We found the incidence higher in hormone naïve tumors

FIG 3 – HISTOGRAM

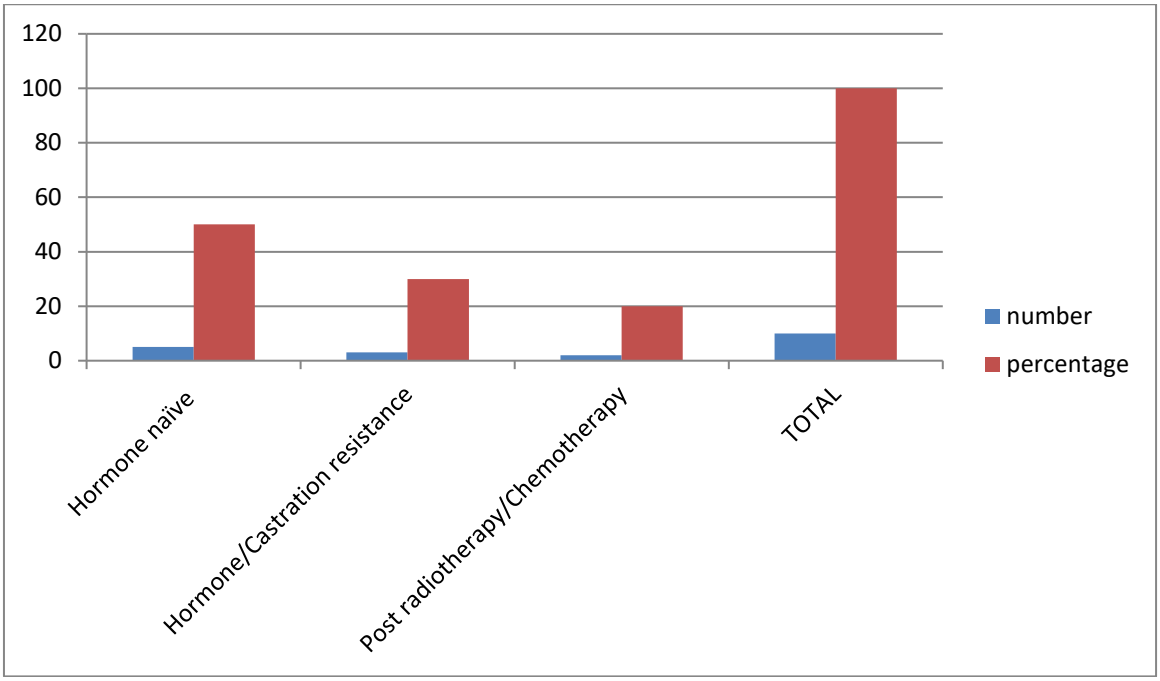
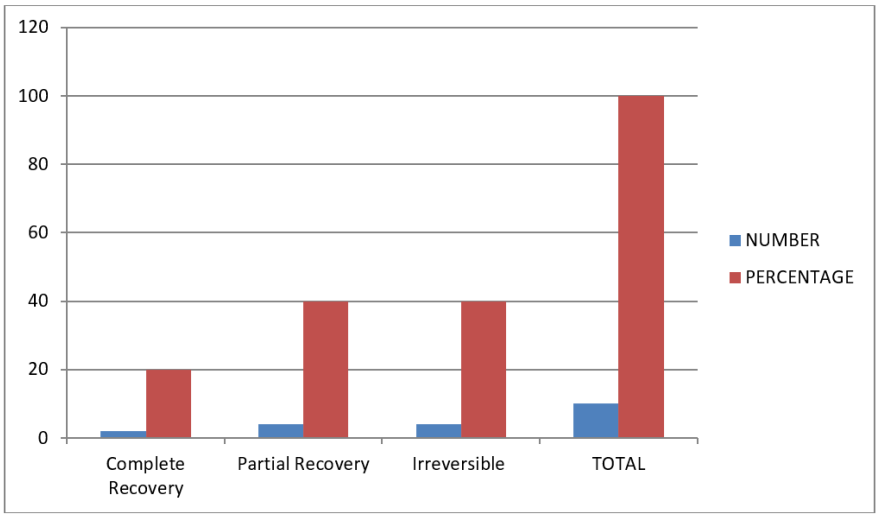


TABLE 6 – SHOWING THE STATE OF RECOVERY AFTER TREATMENT

S/N	RECOVERY	NUMBER	PERCENTAGE
1	Complete Recovery	2	20%
2	Partial Recovery	4	40%
3	Irreversible	4	40%
	TOTAL	**10**	**100%**

FIG 4 – HISTOGRAM



IV. DISCUSSION

Paraplegia secondary to prostate cancer is the most common malignant paraplegia seen in men.
It is a grave complication of prostate cancer with poor prognosis.
Paraplegia occurs in every stage of prostate cancer

- Before hormonal manipulation
- After hormonal manipulation
- After radiotherapy to the prostate and
- After chemotherapy

In our study, we found the incidence higher in the elderly age group.
The incidence was highest 90% in the high grade disease with the Gleason sum 8-10.
We also found the incidence higher in hormone naïve tumors.
Complete recovery was found to be low after treatment.
None of the patients had neurosurgical decompression because of low performance status.
According to Dilan A. Patel et al on their work on diagnostic and therapeutic strategies for patients with malignant epidural spinal cord compression (MESCC), they concluded that MESCC is an oncologic emergency with potential for devastating the patient if not promptly diagnosed and treated.
MESCC is diagnosed by imaging. MRI is the most sensitive test preferably with Godalinium.
Once MESCC is suspected, patients with neurologic deficits should receive prompt administration of dexamethazone with 10mg iv loading dose followed by 4mg 6 hourly.
Consultation with medical oncology, radiation oncology and neurosurgery is imperative in order to facilitate a multidisciplinary approach.
Although spinal surgery is the most effective method for relief of cord compression and is necessary if there is spinal instability, surgery is only used in selected patients because of poor performance status and short life expectancy.
Radiation therapy therefore is the most commonly used therapy for patients with MESCC after surgical decompression or in patients who are not surgical candidates.
Conventional fractionated radiation alone can achieve modest neurologic outcomes in selected radiosensitive tumors.
According to R. Grant et al in their work on metastatic epidural spinal cord compression: current concepts and treatments, they concluded that MESCC is a medical emergency complicating the course of 5-10% of patients with cancer.
When the diagnosis and treatment are early with the patient ambulatory, prognosis for continued ambulation is good.
If the patient is non ambulatory or paraplegic, prognosis for meaningful recovery of motor function is markedly decreased.
N. Eke in his work on symptomatic spinal cord involvement in prostate cancer, concluded that all forms of treatment are palliative. Treatment options include:

- Hormonal manipulation
- Radiotherapy
- Laminectomy. Each often with high dose of steroids.

Resurgence of symptoms after an initial relief by hormonal manipulation suggests escape from endocrine control and portends a poor prognosis.
According to T.U Mbaeri in their work on malignant spinal cord compression from prostate cancer in a resource poor setting: a need for improvement, they concluded that the duration of cord compression and the degree of neurosurgical deficits are the main predictors of outcome.
According to R.M Jameson in their work on paraplegia and prostate cancer stated that laminectomy is recommended only in patients with rapidly progressing neurological signs.
The treatment of choice is orchidectomy rather than hormonal treatment in the elderly age groups due to cardiovascular complications of oestrogens.
Peter J. Hoskin et al concluded that metastatic spinal cord compression carries a poor prognosis. Urgent treatment will maintain and improve motor function in patients still presenting ambulant but those with paraplegia at presentation do not improve and have very short survival.
H. Tazi et al in their work on spinal cord compression in prostate cancer concluded that outlook in patients with spinal cord compression from metastatic prostate cancer is poor.
Efforts must instead be concentrated on prevention of spinal cord compression.
Patients with hormonal resistant prostate cancer who develop persistent back pains should undergo imaging – bone scans or spine MRI with subsequent local radiotherapy to the spine if metastases are identified.

V. CONCLUSION

Metastatic epidural spinal cord compression secondary to prostate cancer carries a poor prognosis.
All options of treatment are at best palliative.
Therefore, emphasis should be more on preventive strategies rather than therapeutic strategies.
Early investigations and treatment should be commenced on patients with prostate cancer who develop persistent back pains and lower limb weakness.

REFERENCES

1. N. Eke
   Symptomatic spinal cord involvement in prostate cancer
   Cent Afr J med 2001 Feb.

2. Andrea Marmirol et al
   Adverse in hospital outcomes in patients with paraplegia who undergo radical prostatectomy
   BJU Int 2025 Oct 10:137(1) 209-215

3. Dirk Rades et al
   Evaluation of functional outcome and local control after radiotherapy for metastatic spinal cord compression in patients with prostate cancer.
   J Urol 2006 Feb.

4. R.M. Jameson
   Paraplegia and prostate cancer
   Eur Urol 1983

5. M. Nagata et al
   Treatment and prognosis of patients with paraplegia or quadriplegia because of metastatic spinal cord compression in prostate cancer
   Prostate cancer prostatic dis 2003

6. H. Tazi et al
   Spinal cord compression in metastatic prostate cancer
   Eur urol 2003 Nov

7. Sead Crnalic et al
   Outcome after surgery for metastatic spinal cord compression in 54 patients with prostate cancer
   Acta orthop 2012 Feb

8. Peter J. Hoskin et al
   Metastatic spinal cord compression: radiotherapy outcome and dose fractionation
   Radiother Oncol 2003 Aug

9. Ndubuisi Eke
   Paraplegia in prostate cancer
   Sahel medicinal journal 3(2) p 69-73 Jul-Dec 2000

10. Paul D. Ekwere et al
    The changing pattern of prostate cancer in Nigeria: current status in the South Eastern states
    J Natl med Assoc. 2002 July

11. Cole J.S, Patchell R.A
    Metastatic spinal cord compression
    Lancet neurol 2008 7:459-66 10:1016/S1474-4422(08) 70089-9

12. Loblaw D.A, Laperriere N.J, Mackillop W.J
A population based study of malignant spinal cord compression in Ontario
Clin Oncol 2003, 15211-7

13. Prabhat Poudel, Fullipe Piazzi Tavares, Zacharyl Tataryn, Serdar Kaya and Ekehard M Kasper
Neurosurgical recovery after complete paraplegia due to metastatic prostate cancer. A case report
Cureus journal of medical sciences.

14. Charles Malisaba Posite, Henry Wabinga and Ibe Michael Usman
Clinicopathological features, management and treatment outcome of prostate cancer in West and Central Africa: a systematic review.
African journal of urology vol 32. Article number 12, March 2026

15. Arshat Gupta, Nitesh Gahlot and Poonam Ethence
Complete paraplegia with diffuse osteolytic skeletal metastases: an uncommon presentation of carcinomal of the prostate.
Spinal cord series and cases 6, Article number 25(2020)

16. Charles E. Howtrey, Melton J Welch, Joseph D Schmidt, David A. Culp and Rubin H Flocks
Paraplegia and paraparesis due to prostate cancer: use of intravenous diethyl stiloesterol diphosphate.
Urology volume 4 issue 6 October 1974, Pages 431-434

17. Paul A Scott, Inder Perkash, Donald Mode, Victoria A. Wolfe and Marth K. Terris
Prostate cancer diagnosed in spinal cord – injured patient is more commonly advanced stage than in able bodied patients.
Adult urology volum3 63, issue 3 page 509-512, March 2004

18. T.U Mbaeri C. Odo, E.A Obiesie, J.A Abiahu and J.C Orakwe
Malignant spinal cord compression from prostate cancer in a resource poor setting: A need for improvement.
Nigerian journal of urology March – Sept 2018 volume 8 number 1 and 2