Journal Homepage: - www.journalijar.com
INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)
Article DOI: 10.21474/IJAR01/9835
DOI URL: http://dx.doi.org/10.21474/IJAR01/9835
ISSN NO. 2320-5407

RESEARCH ARTICLE

MANAGEMENT OF EXTRADURAL SPINAL TUMORS.

Abd Al Halim Moussa, Usama Mohamed El Shokhaiby and Ahmad El Sayed Zewita.

Manuscript Info

Manuscript History
Received: 08 August 2019
Final Accepted: 10 September 2019
Published: October 2019

Key words:-
Gamba grass, accessions, yield, crude protein, mineral contents, Benin.

Abstract

Background: extradural spinal lesions are the most common representing 60% of all spinal tumors, with the majority originating from the vertebrae. The most common *extradural* tumors are metastatic. They spread from some primary tumor site through the blood stream to the bones of the spinal column. Symptomatic extradural spinal tumors can cause significant morbidity including severe pain and neurologic deficit. Current treatment of these patients typically involves the use of multiple modalities, including surgery, radiation, and chemotherapy.

Methods: 30 patients diagnosed as extradural spinal tumors and managed in neurosurgery departments of Al-Azhar university hospitals and Mansoura International Hospital pro and retrospectively studied and evaluated by taking detailed history and clinical examination. Diagnosis was confirmed by MRI examination and CT. Statistical presentation and analysis of the present study was conducted, using the mean, standard deviation, Chi-square and Analysis of variance tests by SPSS V23.

Results: In our study on 30 cases of extradural spinal tumors, 53.3% of cases were males and 46.7% were females. The mean age was 48.2667y (range; 5 to 70 years). (83.3%) Of cases were managed surgically while (16.7%) were managed conservatively "referred to oncology". (76.0%) Of our 25 surgically managed cases clinically improved and (24.0%) have the same clinical as pre-operative.

Conclusion: The most common pathology in our study was metastasis (72.0%). The posterior approach was the most commonly used approach (84.0%). Correlation between pre-operative clinical picture & clinical progress 6 months post-operative shows that patients not having neurological deficits show better clinical progress.

Introduction:-

Extradural lesions are the most common type of spinal tumors representing 60% of all spinal tumors, with the majority originating from the vertebrae. [1]

The most common *extradural* tumors are metastatic. They spread from some primary tumor site through the blood stream to the bones of the spinal column. [2]

Corresponding Author:-Abd Al Halim Moussa.

Patients with spinal tumors typically present with back pain at the level of the lesion. The symptoms can be of long duration because these lesions grow slowly. The pain tends to be worse at night. Patients may develop weakness, numbness, difficulty walking, and bowel/bladder dysfunction. [2]

A detailed neurological physical examination can localize the level of the spinal cord tumor. Individual muscle groups are tested for strength to determine any signs of weakness. Sensation is tested to evaluate for any sensory deficit. Reflexes are tested at the elbows, hands, knees, and ankles for any abnormalities. The diagnostic test of choice is an MRI study with and without contrast. [3]

Surgery is often performed on spinal tumors in order to obtain tissue for diagnosis, relieve pressure on the spinal cord, and stabilize the spine if necessary. Surgery alone is usually curative for benign tumors. Metastatic tumors are also treated with postoperative radiation therapy. [4]

Material and Methods:-

We pro and retrospectively studied and managed 30 patients with extradural spinal tumors, proven by MRI examination in neurosurgery departments of Al-Azhar university hospitals and Mansoura International Hospital. We excluded any patients with intra-dural extra-medullary spinal tumors and patients with intra-medullary spinal tumors of all age groups. The data collected included age, sex, full history, pre-operative clinical evaluation, imaging studies "mostly MRI and possibly CT", Management options, surgical approach, aim of surgery, histo-pathological examination, post-operative clinical evaluation and post-operative MRI. Before surgery, written informed consent was obtained from the patient.

Results:-

In our study on 30 cases of extradural spinal tumors, 53.3% of cases were males and 46.7% were females. The mean age was 48.2667y (range; 5 to 70 years).

The most common main presenting symptom was back pain (36.7%) followed by paraparesis (36.7%), paraplegia (10.0%), quadriparesis (6.7%) and hemiparesis (6.7%) while back pain and radiculopathy (3.3%).

Main presenting symptom		
	N	**%**
Back pain	11	36.7
Paraplegia	3	10.0
Paraparesis	11	36.7
Quadriparesis	2	6.7
Back Pain & Radiculopathy	1	3. 3
Hemiparesis	2	6.7
Total	30	100.00

Table 1:-Main presenting symptom

(83.3%) Of cases were managed surgically while (16.7%) were managed conservatively. (52.0%) Of cases operated for decompression and tumor excision, (32.0%) operated for excision and fixation, (4.0%) for biopsy and (4.0%) for biopsy and bone cement while (8.0%) operated for biopsy, bone cement and fixation. (84.0%) Of our surgically managed cases are operated by posterior approach, (8.0%) are operated anteriorly and (8.0%) are operated antero-laterally.

Of posterior group (76.2%) of cases were clinically improved and (23.8%) have the same clinical picture. Of anterior group there were 2 cases (100.0%) and clinically improved. Of antero-lateral group 1 case (50.0%) improved and one case (50.0%) had the same clinical picture.

Follow	**Approach**								**Chi-Square**	
	Posterior		**Anterior**		**Anterolateral**		**Total**			
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**X^2**	**P-value**
Improved	16	76.2	2	100.00	1	50.0	19	76.0	1.373	0.503
The same	5	23.8	0	0.00	1	50.0	6	24.0		

Total	21	100.00	2	100.00	2	100.00	25	100.00		

Table 2:-Correlation between surgical approach & clinical outcome

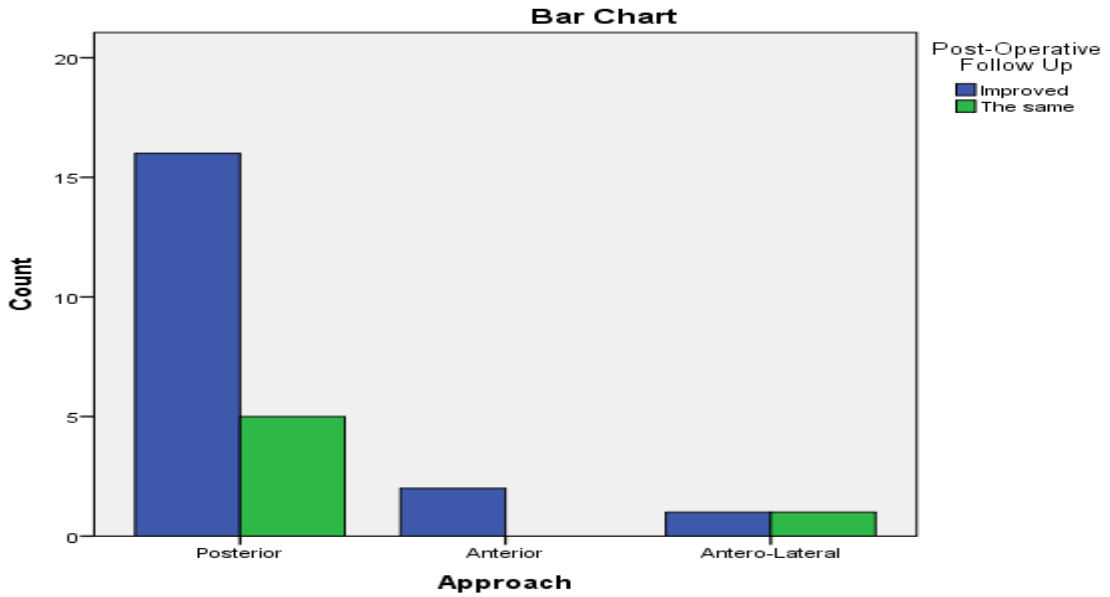

Fig 1:-Correlation between surgical approach & clinical outcome

Tumor in of our cases were all extradural, (72.0%) of them were metastatic, (8.0%) Aneurysmal Bone Cyst, (8.0%) Hemangioendothelioma, (4.0%) Chordoma, (4.0%) Cavernous Hemangioma and (4.0%) Arachnoid cyst.

Pathology		
	N	**%**
Metastases	18	72.0
Chordoma	1	4.0
Aneurysmal Bone Cyst	2	8.0
Cavernous Hemangioma	1	4.0
Hemangioendothelioma	2	8.0
Arachnoid Cyst	1	4.0
Total	25	100

Table 3:- Pathology

Correlation between pre-operative clinical picture & clinical progress 6 months post-operative shows if there is major neurological deficit, only surgery can reliably and quickly restore function.

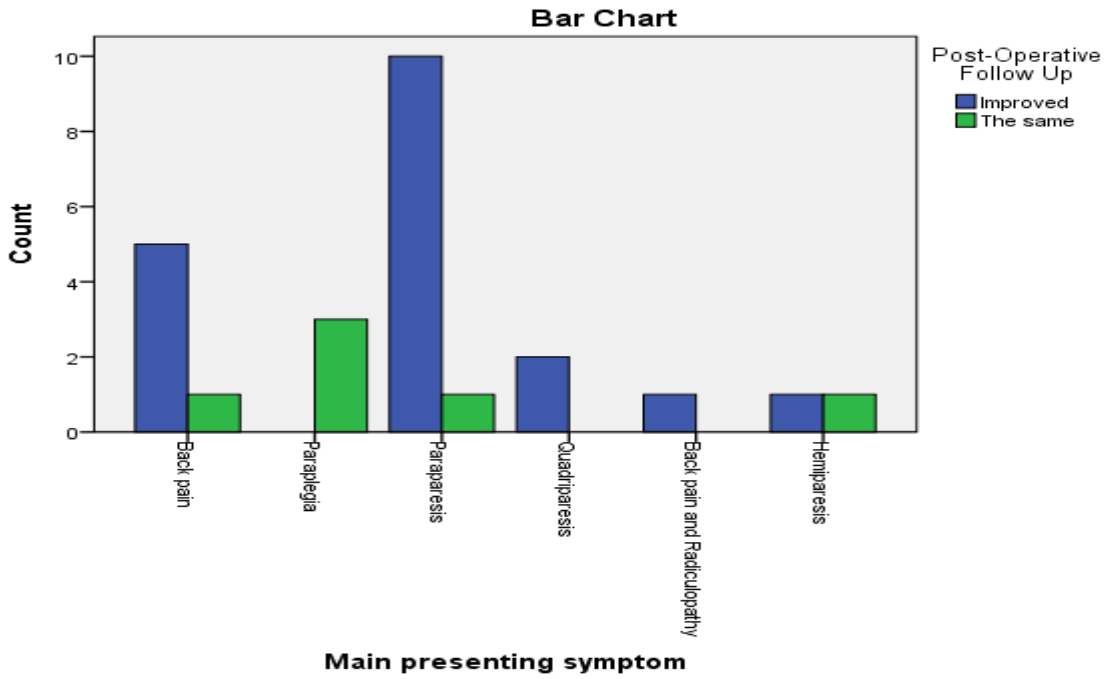

Fig 2:-Correlation between presenting symptoms & clinical outcome

Discussion:-

Extradural spinal tumors affect many neurological functions of the body. Motor, sensory and autonomic functions are affected in progressive manner resulting in undesirable impact on daily life. Therefore optimum management is of significant value. Surgery is the first option in treatment of extradural spinal tumors to overcome bad impact of these tumors.

In our study on 30 cases of extradural spinal tumors, 53.3% of cases were males and 46.7% were females.

The mean age was 48.2667y (range; 5 to 70 years), this is nearly as in literatures as ***Engelhard et al.(2010)*** which there is 430 case 56.7% females, 43.3% males and the main age was 49.3y .

In our study the most common main presenting symptom was back pain (36.7%) followed by paraparesis (36.7%).

Back pain was the most common initial symptom in ***Jemmella et al 2005*** (42%) followed by different grades of motor weakness (38%).

Tumor in of our cases were all extradural, (72.0%) of them were metastatic, (8.0%) Aneurysmal Bone Cyst, (8.0%) Hemangioendothelioma, (4.0%) Chordoma, (4.0%) Cavernous Hemangioma and (4.0%) Arachnoid cyst.

Arura & Kumar (2015) results nearly as our results, as the major diagnosis in extradural cases was metastases.

In our study (83.3%) of cases were managed surgically while (16.7%) were managed conservatively. That what the literature states that the surgery is the 1st management option for most cases of spine tumors if no marked risks or contraindications , as in ***Engelhard et al.(2010)*.**

(52.0%) Of our cases operated for decompression and tumor excision. (32.0%) Of cases operated for excision and fixation.

Arura & Kumar (2015) also have done tumor total excision for (51.53%) of cases.

(84.0%) Of our surgically managed cases were operated by posterior approach, (8.0%) were operated anteriorly and (8.0%) were operated antero-laterally.

The posterior approach was the most commonly used approach in literatures as in ***Engelhard et al. (2010)*** .

Literatures also shows that the most common source of spine metastases was the lung , breast , prostate & kidney as in ***Bartels , etal (2008)*** [101] ***, Tomita , et al (2001) .***

6 Months post-operative (76.0%) of our 25 surgically managed cases clinically improved and (24.0%) had the same clinical picture.

In ***Arura & Kumar (2015)*** (79.92%) of cases are clinically improved by variable degrees, (15.31%) as pre-operative & (5.41%) are deteriorated.

Of 25 surgically managed cases, 21 had posterior approach, 2 had anterior and 2 had antero-lateral approach. Of posterior group (76.2%) of cases were clinically improved and (23.8%) had the same clinical picture. Of anterior group there were 2 cases (100.0%) and clinically improved. Of antero-lateral group 1 case (50.0%) improved and one case (50.0%) had the same clinical picture.

Results of posterior approach are similar to that in literatures according to clinical progress as in ***Arura & Kumar (2015)*** which study 111 cases of spine tumors operated by posterior approach, (79.92%) of cases are clinically improved by variable degrees, (15.31%) as pre-operative.

Correlation between pre-operative clinical picture & clinical progress 6 months post-operative shows that the patients not having neurological deficits show better clinical progress as in ***Arura & Kumar (2015)***.

Conclusion:-

Treatment of spine and spinal cord tumors is complex and a multidisciplinary approach is required. Primary treatment of spinal tumors is surgical resection. The indication for surgery may be neurological deficit or pain without epidural compression of the spinal cord. If there is major neurological deficit, only surgery can reliably and quickly restore function.

Surgical treatment based on decompression of the spinal cord together with restoration of spinal stability may reduce pain and reestablish function. Selection of surgical approach depends also on multiple factors such as: tumor location according to the cord, tumor size, aim of surgery, patient general condition and expected survival & improvement. The posterior approach is the most commonly used approach.

Early recognition of the signs and symptoms of spinal tumors facilitates early diagnostic evaluation and treatment, potentially minimizes neurologic morbidity, and may improve outcome.

References:-

1. WHO Classification of Tumours of the Central Nervous System, 4th ed, Louis DN, Ohgaki H, Wiestler OD, Cavenee WK (Eds), IARC, Lyon 2016.
2. Byrne TN. Spinal cord compression from epidural metastases. The New England journal of medicine. 1992 Aug 27;327(9):614-9. doi: 10.1056/NEJM199208273270907. PubMed PMID: 1296600.
3. Hatrick NC, Lucas JD, Timothy AR, Smith MA. The surgical treatment of metastatic disease of the spine. Radiother Oncol J Eur Soc Ther Radiol Oncol 2000 Sep;56(3):335e9.
4. Laufer I, Rubin DG, Lis E, et al. The NOMS framework: approach to the treatment of spinal metastatic tumors. Oncologist. 2013 Jun;18(6):744-51. doi: 10.1634/theoncologist.2012-0293. PubMed PMID: 23709750; PubMed Central PMCID: PMCPMC4063402.