



ETIOLOGICAL AND CLINICAL PROFILE OF PATIENTS WITH SPACE OCCUPYING LESIONS IN BRAIN

General Medicine

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ABSTRACT

Background: The term “intracranial space occupying lesions” is defined as any neoplasm, benign or malignant, primary or secondary, as well as any inflammatory or infectious mass lying within the cranial cavity. It also includes hematomas, different types of cysts & vascular malformations. Glial tumours account for about 30 % of all primary brain tumours, and 80 % of those are malignant. The clinical features of ICSOL includes general and focal. General features include headache with or without nausea or vomiting, cognitive difficulties, personality change and gait disorder. Focal features include lateralizing hemiparesis, aphasia or visual field defect. **Aims & Objectives:** To study the etiological and clinical profile of patients with space occupying lesions in brain in a tertiary care centre. **Materials And Methods:** This is an observational cross sectional study conducted for one year from 1st September 2020 to 30th august 2021 in Alluri sitaramaraju academy of medical sciences, a tertiary care centre in Eluru. Subjects attending/admitted in the general medicine, neurology and neurosurgery units who were found to have intracranial space occupying lesions on neuroimaging was taken informed consent and history and relevant clinical examination was done. **Results:** Neoplastic lesions were common overall accounting for 76.25 % of ICSOL's. Headache was the most common presenting symptom in our study followed by vomitings and neurological deficits. Motor weakness of the limbs was the most common clinical sign in our study followed by Cerebellar signs and Visual field deficits. Gliomas were the most common ICSOL's among Neoplastic lesions followed by Meningioma and Schwannomas. Fever, vomiting, altered sensorium and weight loss were more common in patients with non neoplastic lesions. Neck rigidity, Kernig's sign were more common in patients with non neoplastic lesions. Cerebellar signs were more common in patients with neoplastic lesions compared with those of non – neoplastic lesions. The term “intracranial space occupying lesions” is defined as any neoplasm, benign or malignant, primary or secondary, as well as any inflammatory or infectious mass lying within the cranial cavity. It also includes hematomas, different types of cysts & vascular malformations. Glial tumours account for about 30 % of all primary brain tumours, and 80 % of those are malignant. The clinical features of ICSOL includes general and focal. General features include headache with or without nausea or vomiting, cognitive difficulties, personality change and gait disorder. Focal features include lateralizing hemiparesis, aphasia or visual field defect. **Aims & Objectives:** To study the etiological and clinical profile of patients with space occupying lesions in brain in a tertiary care centre. **Materials And Methods:** This is an observational cross sectional study conducted for one year from 1st September 2020 to 30th august 2021 in Alluri sitaramaraju academy of medical sciences, a tertiary care centre in Eluru. Subjects attending/admitted in the general medicine, neurology and neurosurgery units who were found to have intracranial space occupying lesions on neuroimaging was taken informed consent and history and relevant clinical examination was done. **Results:** Neoplastic lesions were common overall accounting for 76.25 % of ICSOL's. Headache was the most common presenting symptom in our study followed by vomitings and neurological deficits. Motor weakness of the limbs was the most common clinical sign in our study followed by Cerebellar signs and Visual field deficits. Gliomas were the most common ICSOL's among Neoplastic lesions followed by Meningioma and Schwannomas. Fever, vomiting, altered sensorium and weight loss were more common in patients with non neoplastic lesions. Neck rigidity, Kernig's sign were more common in patients with non neoplastic lesions. Cerebellar signs were more common in patients with neoplastic lesions compared with those of non – neoplastic lesions.

KEYWORDS

Intracranial space occupying lesions (ICSOL), Neoplastic lesions, Non Neoplastic lesions, neuroimaging

INTRODUCTION:

The term “intracranial space occupying lesions” is defined as any neoplasm, benign or malignant, primary or secondary, as well as any inflammatory or infectious mass lying within the cranial cavity. It also includes hematomas, different types of cysts & vascular malformations. They are classified broadly as congenital, traumatic, inflammatory, parasitic and neoplastic. Glial tumours account for about 30 % of all primary brain tumours, and 80 % of those are malignant. Meningiomas account for 35%, vestibular schwannomas 10% and CNS lymphomas about 2%. Brain metastasis are three times more common than all primary brain tumours. The clinical features of ICSOL fall into two categories: general and focal. General features include headache with or without nausea or vomiting, cognitive difficulties, personality change and gait disorder. The classic headache associated with a brain tumour is most evident in the morning and improves during the day, but this pattern is seen in only a minority of patients. Headaches are often holocephalic but can be ipsilateral to the side of a tumour. Focal features include lateralizing hemiparesis, aphasia or visual field defect. Seizures are a common presentation of brain tumours, occurring in about 25% of patients with brain metastasis or malignant gliomas. The goals of diagnostic imaging in the patient with suspected ICSOL include: detection of presence of SOL, its location & assessment of the presence & severity of

secondary changes, e.g., oedema, herniation, haemorrhage. Imaging is characteristic for many primary and metastatic tumours and sometimes will suffice to establish a diagnosis. Some of the ICSOL's have characteristic locations – like Epidermoid cysts are usually found in the cerebellopontine angle, Dermoids have a midline location,

Toxoplasmosis has predilection for the basal ganglia etc. ISOL's may produce False localizing signs like third or sixth nerve palsy and bilateral extensor plantar responses produced by herniation syndromes, and an extensor plantar response occurring ipsilateral to a hemispheric tumour as a result of compression of the opposite cerebral peduncle against the tentorium.

MATERIALS AND METHODS:

This is an observational cross sectional study conducted for one year from 1st September 2020 to 30th august 2021 in Alluri sitaramaraju academy of medical sciences, a tertiary care centre in Eluru. Subjects attending/admitted in the general medicine, neurology and neurosurgery units who were found to have intracranial space occupying lesions on neuroimaging was taken informed consent and history and relevant clinical examination was done.

Inclusion Criteria:

Patients who found to have ICSOL's on neuroimaging and individuals who gave informed written consent.

Exclusion Criteria:

Patients with infarcts, Patients with bony lesions of skull, Patients with intracranial hematomas either traumatic or non-traumatic.

RESULTS:

Following data was recorded and analyzed 80 patients were included, mean age in the study group was 55.7 +/- 19.6. Males were 39(48.75%) and females were 41(51.25%).

Table-1: Symptoms in Intracranial Space Occupying Lesions.

Symptoms	No. of patients	Percentage%
Fever	13	16.25
Headache	55	68.75
Vomitings	22	27.5
seizures	12	15
Altered sensorium	11	13.75
Blurred vision	14	17.5
Diplopia	1	1.25
Deafness	5	6.25
Tinnitus	2	2.5
Dizziness	13	16.25
Ataxia	4	5
Neurological deficit	21	26.25
Slurred speech	3	3.75
Amenorrhea	1	1.25
Weight loss	4	5

Among the study patients, headache was the most common presentation seen in 68.75% patients followed by vomiting and neurological deficit seen in 27.5% and 26.25% of patients respectively.

Table-2: Signs in Intracranial Space Occupying Lesions

Signs	No. of patients	Percentage%
Motor weakness of limbs	17	21.25
UMN facial nerve palsy	2	2.5
LMN facial nerve palsy	1	1.25
Lateral gaze palsy	1	1.25
Hypertonia of limbs	-	-
Hyperreflexia	-	-
Babinski sign	3	3.75
Kernigs sign	6	7.5
Neck rigidity	8	10
Cerebellar signs	12	15
Hemifacial sensory loss	2	2.5
Drowsiness	3	3.75
Hypoglossal nerve palsy	1	1.25
Visual deficit	12	15

Motor weakness of limbs was the most common finding seen in 21.25% of patients in our study followed by cerebellar signs and visual deficit each observed in 15% of patients.

Table-3: Etiology of Intracranial Space Occupying Lesions

Etiology	No. of patients	Percentage
Glioma	24	30
Meningioma	12	15
Schwannoma	12	15
Tuberculoma	12	15
Toxoplasmosis	2	2.5
Ependymoma	2	2.5
Metastasis	2	2.5
Colloid cyst of 3rd ventricle	2	2.5
Craniopharyngioma	2	2.5
Arachnoid cyst	2	2.5
Medulloblastoma	2	2.5
Pituitary adenoma	2	2.5
Pinealoma	1	1.25
Brain abscess	1	1.25
Chordoma	1	1.25
Hemangioblastoma	1	1.25

Gliomas were the most common etiology observed in 30% of patients,

followed by meningioma, schwannoma and tuberculoma each accounting for 15%. Overall 76.25% of intracranial space occupying lesions were neoplastic.

DISCUSSION:

The term " intracranial space occupying lesions " is defined as any neoplasm, benign or malignant, primary or secondary, as well as any inflammatory or infectious mass lying within the cranial cavity. It also includes hematomas, different types of cysts & vascular malformations. They are classified broadly as congenital, traumatic, inflammatory, parasitic and neoplastic. The clinical features of ICSOL fall into two categories: general and focal. General features include headache with or without nausea or vomiting, cognitive difficulties, personality change and gait disorder. Focal features include lateralizing hemiparesis, aphasia or visual field defect.

Seizures are a common presentation of brain tumours, occurring in about 25% of patients with brain metastasis or malignant gliomas. Some of the ICSOL's have characteristic locations – like Epidermoid cysts are usually found in the cerebellopontine angle, Dermoids have a midline location, Toxoplasmosis has predilection for the basal ganglia etc. ISOL's may produce False localizing signs like third or sixth nerve palsy and bilateral extensor plantar responses produced by herniation syndromes, and an extensor plantar response occurring ipsilateral to a hemispheric tumour as a result of compression of the opposite cerebral peduncle against the tentorium. In our study 80 patients were included, mean age in the study group was 55.7 +/- 19.6. Males were 39(48.75%) and females were 41(51.25%). Males and females are effected almost equally with a ratio of 0.95:1. Among the study patients, headache was the most common presentation seen in 68.75% patients followed by vomiting and neurological deficit seen in 27.5% and 26.25% of patients respectively. Motor weakness of limbs was the most common finding seen in 21.25% of patients in our study followed by cerebellar signs and visual deficit each observed in 15% of patients. Gliomas were the most common etiology observed in 30% of patients, followed by meningioma, schwannoma and tuberculoma each accounting for 15%. Overall 76.25% of intracranial space occupying lesions were neoplastic. Among Non neoplastic lesions Tuberculomas were the most common followed by Arachnoid cyst and colloid cyst. Patients with ICSOL's can present with hearing loss and slurred speech. Most common location of Schwannomas in our study was Cerebello Pontine angle.

CONCLUSION:

In our study Males and females are effected almost equally. Neoplastic lesions were common overall accounting for 76.25 % of ICSOL 's. Headache was the most common presenting symptom in our study followed by vomitings and neurological deficits. Motor weakness of the limbs was the most common clinical sign in our study followed by Cerebellar signs and Visual field deficits. Gliomas were the most common ICSOL's among Neoplastic lesions followed by Meningioma and Schwannomas. Among Non neoplastic lesions Tuberculomas were the most common followed by Arachnoid cyst and colloid cyst. Fever, vomiting, altered sensorium and weight loss were more common in patients with non neoplastic lesions. Neck rigidity, Kernig's sign were more common in patients with non neoplastic lesions. Cerebellar signs were more common in patients with neoplastic lesions compared with those of non – neoplastic lesions. Patients with ICSOL's can present with hearing loss and slurred speech. Most common location of Schwannomas in our study was Cerebello Pontine angle.

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