CNS Neoplasm

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<table>
<thead>
<tr>
<th>Tumour Type</th>
<th>Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>41300</td>
<td>(15%)</td>
</tr>
<tr>
<td>Lung</td>
<td>38190</td>
<td>(14%)</td>
</tr>
<tr>
<td>Large bowel</td>
<td>35410</td>
<td>(13%)</td>
</tr>
<tr>
<td>Prostate</td>
<td>24710</td>
<td>(9%)</td>
</tr>
<tr>
<td>Bladder</td>
<td>12470</td>
<td>(5%)</td>
</tr>
<tr>
<td>Stomach</td>
<td>9750</td>
<td>(4%)</td>
</tr>
<tr>
<td>Non-Hodgkin's lymphoma</td>
<td>9010</td>
<td>(3%)</td>
</tr>
<tr>
<td>Head and neck</td>
<td>7780</td>
<td>(3%)</td>
</tr>
<tr>
<td>Oesophagus</td>
<td>7230</td>
<td>(3%)</td>
</tr>
<tr>
<td>Pancreas</td>
<td>6990</td>
<td>(3%)</td>
</tr>
<tr>
<td>Ovary</td>
<td>6790</td>
<td>(3%)</td>
</tr>
<tr>
<td>Leukaemia</td>
<td>6660</td>
<td>(2%)</td>
</tr>
<tr>
<td>Kidney</td>
<td>6000</td>
<td>(2%)</td>
</tr>
<tr>
<td>Malignant melanoma</td>
<td>5990</td>
<td>(2%)</td>
</tr>
<tr>
<td>Body of uterus</td>
<td>5200</td>
<td>(2%)</td>
</tr>
<tr>
<td>Multiple myeloma</td>
<td>4400</td>
<td>(2%)</td>
</tr>
<tr>
<td>Brain and CNS</td>
<td>3350</td>
<td>(1%)</td>
</tr>
<tr>
<td>Cervix</td>
<td>3200</td>
<td>(1%)</td>
</tr>
</tbody>
</table>
CNS tumors

• **Leading cause** of cancer-related deaths in children (males and females) under age 20 (leukemia is the first)

• **Second leading cause** of cancer-related deaths in **males** ages 20-39 (leukemia is the first).

• **Fifth leading cause** of cancer-related deaths in **females** ages 20-39.
CNS NEOPLASIA

Primary

All ages
But more frequent in children and older adults

Metastatic

Adults

Brain, spinal cord, pituitary and pineal gland tumors
CNS tumors

• The **worldwide** incidence rate of *primary malignant* … 3.4 per 100,000

• The incidence rates were higher in more developed countries (5.1 per 100,000) than in less developed countries (3.0 per 100,000)

• **Pediatric Incidence (Ages 0-14 Years)** … 5.3 cases per 100,000
<table>
<thead>
<tr>
<th>Type</th>
<th>% of all primary brain tumors</th>
<th>% of all malignant tumors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meningiomas</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>Gliomas</td>
<td>30</td>
<td>80</td>
</tr>
<tr>
<td>Glioblastomas</td>
<td>17</td>
<td>54 % of all gliomas.</td>
</tr>
<tr>
<td>Astrocytomas</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Astrocytomas and glioblastomas combined</td>
<td></td>
<td>76% of all gliomas.</td>
</tr>
<tr>
<td>Nerve sheath tumors (such as acoustic neuromas)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pituitary tumors</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Lymphomas</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Oligodendrogliomas</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Medulloblastomas/embryonal/primitive tumors</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Case 1

- 6 years, boy
- Repeated vomiting
- Disturbed walking, frequent falls
What have occurred to this patient?
Where?
What is the Causing pathology?
What will you do?
How will you manage?
Cystic Pilocytic Astrocytoma
Case 2

- 55 years, female.
- Presented with Gradual onset of progressive headache over 10 years
- Personality changes, Un-depressed behavior
- Decrease visual acuity
What have occurred to this patient?
Where?
What is the Causing pathology?
What will you do?
How will you manage?
Cystic Astrocytoma
Glioblastoma multiforme
Acoustic Neuroma
Case 3

- 40 Years- Female
- 8 months
- Amenorrhea
- Galactoria
- O/E:
  - Bilateral Hemianopia
What have occurred to this patient?
Where?
What is the Causing pathology?
What will you do?
Management

• Medical

• Surgical
Case 4

• 33 Years- Female
• Progressive weakness over 2 years
• Started during pregnancy
• On presentation:
  – Total quadriplegia
  – Disturbed position sense & 2 point discrimination
What have occurred to this patient?
Where?
What is the Causing pathology?
What will you do?
How will you manage?
Spinal meningioma
Spinal Astrocytoma
Spinal Ependymoma
Primary CNS tumors by behavior

The diagram illustrates the distribution of primary CNS tumors across different age groups. The percentages are categorized by tumor behavior: Malignant - others, Malignant - High-grade astrocytoma, Malignant - Low-grade astrocytoma, Uncertain/borderline behavior, and Benign behavior.

- **0-14 years**:
  - Malignant - others: 5
  - High-grade astrocytoma: 10
  - Low-grade astrocytoma: 22
  - Uncertain/borderline: 7
  - Benign: 27

- **15-24 years**:
  - Malignant - others: 41
  - High-grade astrocytoma: 1
  - Low-grade astrocytoma: 8

- **25-84 years**:
  - Malignant - others: 31
  - High-grade astrocytoma: 26

The percentage distribution shows that the majority of tumors are benign, with a significant proportion being low-grade astrocytomas in older age groups.
Primary CNS tumors by histology
Primary CNS tumors by site