SURGICAL OUTCOMES OF PRIMARY SPINAL TUMORS

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AO Masters Symposium – Spinal Tumor and Infection

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SURGICAL OUTCOMES OF SPINAL TUMORS

• Tumor recurrence
• Malignisation (sarcomatous degeneration) of benign tumors
• Spreading with metastasis
• Survival rate
• Pain relieve
• Neurological improvement
• Ability of patients
• Life quality
• Surgical complications
FACTOR AFFECTING THE SURGICAL OUTCOMES OF SPINAL TUMORS

- Type of tumors
- Localization
- Size
- Spreading
- Clinical presentation
- Type of surgery
- Patients condition
- Learning curve of techniques & specialists…
TYPE OF PRIMARY TUMORS
BENIGN

Eosinophilic Cranulomas (Langerhans Cell Histiocytosis)
• The best treatment is unknown (surgery rarely indicated)

Osteoid Osteoma
• Recurrence is unlikely if it was totally removed
• Complete pain relief & spontaneous deformity correction for less than 15 months

TYPE OF PRIMARY TUMORS
BENIGN

Osteoblastoma
- Recurrence rate (after internal curettage or marginal en bloc excision) – 10%

Lucas DR, Unni KK, McLeod RA et al, Osteoblastoma: clinicopathologic study of 306 cases. Hum Pathol 1994;25;117-134

Osteochondroma
- Recurrence rate extremely low, but some facts of regrowth after subtotal excision has been reported

TYPE OF PRIMARY TUMORS

BENIGN

Aneurysmal Bone Cyst
- Recurrence rate (after all type of treatment) – 5-10%


Giant Cell Tumor
- Recurrence rate after subtotal resection – 80%
- Recurrence rate after en bloc excision < 25%
- Incidence of pulmonary metastases ranges from 2% to 9%


Multiple Myeloma and Plasmacytoma

- Rare surgery indicated
- Survival with multiple myeloma is 28 months
- Survival solitary plasmacytoma exceeds 60 months
- Solitary plasmacytoma of the spine, long-term remission can be expected with local treatment alone (bisphosphonate therapy and thalidomide/dexamethasone combination treatment)
- Pain relieved >80% after kyphoplasty/vertebroplasty
- 10% death rate in the early stages


Lymphoma
• Rare surgery indicated
• After decompression - chemotherapy before radiation therapy


Ewing’s Sarcoma
• No convincing evidence of local control improving by surgically
• Surgery should be reserved for neurological complication & deformity
• 5-year survival rates 33-48%


TYPE OF PRIMARY TUMORS
MALIGNANT

Osteosarcoma

- En bloc surgical excision prolonged tumor free survival
- Median survival (with complete aggressive treatment) – 23 month


Chordoma

- Surgery is the method of choice
- Inadequate surgical treatment with tumor recurrent is frequent.
- 5-years survival rates - 50%
- 10-years survival rates - 28%


Chondrosarcoma

- En bloc surgical excision is the method of choice with recurrence rate 0-20%
- Intralesional curettage is associated with 70-100% recurrence
- 60% of patients die after 1.5 years after recurrence
- 5-years survival rates - 64%
- 10-years survival rates - 40%


tumor recurrence

mortality in resection
RECURRENT

Local recurrence of primary bone tumors of spine resulted in disease progression and death in 92% of cases

• Adequacy of the surgical margins at the time of definitive surgery
• Marginal means that the surgeon has operated along the layer of reactive tissue that surrounds the tumor (pseudocapsule)
• “Radical” margins are impossible
• Radiation and chemotherapy for incomplete surgical resection (excluding resistant)


**LOCAL RECURRENTCE AND MORTALITY OF MALIGNANT LESION**

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<thead>
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THE MORBIDITY OF SURGICAL RESECTION

- Altered anatomy secondary to tumor growth
- Bleeding from the tumor or epidural veins
- Manipulation or sacrifice of vascular or nervous structures
- Fibrosis due to previous surgery
- Wound dehiscence or infection due to preoperative radiation therapy or inappropriate closure techniques


## SPREADING OF METASTASIS AND SURVIVAL

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<th>Survival with MTS</th>
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<td>Osteosarcoma</td>
<td>11 months</td>
<td>7 months</td>
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<td>Ewing sarcoma</td>
<td>26 months</td>
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<td>Chondrosarcoma</td>
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LIFE QUALITY

BEFORE TREATMENT

Physical components - **dominant**
(physical function, role physical, body pain)

Mental components - **secondary**
(vitality, social functioning, role emotional, mental health)

FALL

LIFE QUALITY

AFTER TREATMENT

Spondylectomy

Physical components - **dominant**
(physical function, role physical, body pain)

Frankel score

↑ 1 or more stage

Mental components - **secondary**
(vitality, social functioning, role emotional, mental health)


TAKE HOME MESSAGES

• Ambiguity and difficulty in advancing the quality of care for these rare tumors

• Should be recorded in regional registries

• Optimal management - multidisciplinary team

• Patients selection for surgery

• Wide surgical margin increase the positive outcomes & … The complication rate
Excellence in Spine

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