POSTERIOR TOTAL VERTEBRECTOMY: A CASE REPORT
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Abstract
Presenting the experience of the neurosurgery department in Casablanca regarding posterior total vertebrectomy through a case treated within our institution.

Introduction
Thoracotomy is a conventional surgical approach that is commonly selected for patients who require reconstruction of their thoracic spine.; other approaches can be preconised for lesions in upper thoracic levels such as posterior total vertebrectomy.

Methods and Materials / Case report
Case of a 36-year-old female patient with a history of breast cancer and a spinal metastasis. Medulitary compression syndrome with motor deficit of the lower extremities and hypoesthesia
Presented with paraplegia, hyperexcitability of the myotic reflex, sub-nipple sensory level, positive babinski sign, negative hoffman's sign, and bilateral epileptoid tremors

Therapeutic approach
The therapeutic decision was to perform a total vertebrectomy via a posterior approach. The procedure involved resection of the posterior rib arches in the subpleural space, control of the lateral aspect of the vertebral bodies, Igation or preservation of intercostal pedicles, and control of the posterior medistinum by finger palpation. Unilateral osteosynthesis was also performed, followed by extended laminectomy on adjacent levels, pediculectomy up to the level of the vertebral body, and section of the root at the tumoral lesion level. Clip or ligature was applied at the level of the dura mater, and needles were used to identify the disc level. The noble elements of the posterior medistinum were protected with mallaeble, bent-over valves, and two Gigi saws were placed. The adjacent vertebral bodies were sectioned with the saws from front to back, allowing for the cutting of the anterior and posterior longitudinal ligaments. The tumor mass was impacted with a graft punch, and a rotational movement around the spinal axis allowed for the extraction of the tumor. It is important to perform chest wall reconstruction in cases of resection involving multiple rib levels.

The result of the pathological examination is: vertebral localization and involvement of soft tissues by a luminal B phenotype breast carcinoma.

Discussion
After a thorough analysis of all the elements, a therapeutic decision is made for each specific case. This may involve radiotherapy alone, surgery alone, or a combination of both, depending on individual factors.

The SINS (Spinal Instability Neoplastic Score) is a classification system that helps surgeons assess spinal instability due to tumor metastasises. It consists of three domains evaluated and scored on a scale of 0 to 18:
- Tumor Location (6 points): This category evaluates the location of the tumor metastasis in the spine, assigning points based on the affected region (e.g., cervical, thoracic, lumbar, sacral).
- Lesion Type (6 points): This category assesses the type of tumor lesion and its impact on spinal stability. Lytic (destructive) and mixed lytic-sclerotic lesions are considered more unstable than sclerotic (hardened bone) lesions.
- Spinal Integrity (6 points): This category evaluates the integrity of various spinal elements, such as ligaments, joints, and discs. Involvement of these structures increases the risk of instability.

The total score obtained by adding the points from the three categories determines the degree of instability of the spinal metastasis, ranging from 0 to 18. A higher score indicates greater instability.

The SINS is used as a preoperative assessment tool to assist surgeons in deciding the best treatment for patients with spinal metastases. It provides valuable information to determine if surgical intervention is necessary and which therapeutic options are most appropriate for each specific case.

References
3. Cho et al., « Review of Metastatic Spine Tumour Classification and Indications for Surgery ».
4. Laufer et al., « The NOMS Framework ».

The review on metastatic spine tumor classification and indications for surgery, based on the consensus statement of the global spine tumor study group, highlights the importance of a standardized classification system for metastatic spine tumors to guide treatment decisions. The proposed classification system considers tumor biology, spinal instability, and patient factors in determining the appropriate treatment approach. The goal is to achieve optimal tumor control, neurological preservation, pain relief, and improvement in the patient’s quality of life.

The NOMS framework (Neurological, Oncological, Mechanical, and Systemic) is an approach to the treatment of spinal metastatic tumors that considers various factors to guide decision-making and develop an individualized treatment plan. It involves assessing neurological function, primary cancer type and prognosis, spinal stability, and overall health status of the patient. The framework emphasizes a multidisciplinary approach and aims to optimize outcomes by addressing neurological deficits, controlling tumor growth, preserving spinal stability, and improving the patient’s quality of life.

Conclusions
Despite significant advancements in medical treatment, surgery still plays a major role in the management of spinal metastases. Minimally invasive techniques have reduced the surgical morbidity and allow for the prompt continuation of systemic therapies. Stereotactic radiosurgery (SRS) has revolutionized the treatment of radioresistant tumors.

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