

**Title: Delay in the diagnosis of metastatic spinal pathology during the Sars-cov-19 pandemic.**

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**Keywords: SARS-CoV-2 - COVID-19 -Coronavirus - Spine surgery - Spinal metastases**

## **Introduction**

The novel coronavirus firstly emerged in Wuhan, People's Republic of China, in December 2019. On March 11<sup>th</sup>, 2020 the World Health Organization (WHO) declared COVID-19 was spreading as a pandemic. In Argentina, the first outbreak of infection was identified on March 3<sup>rd</sup>, 2020. Since April 2020, the assistance activity changed progressively with the suspension of elective surgeries and giving priority to urgent cases and emergencies. The objective of the present study is to retrospectively analyze two groups of patients with metastatic spinal pathology surgery, before and after the diagnosis of the first SARS-CoV-19 case in Argentina. The hypothesis is that patients with metastatic spinal pathology present a more advanced neurological state (Frankel scale) at the time of surgery than before the pandemic, due to SARS-CoV-19.

## **Material and Methods**

The present is a retrospective observational study of surgically treated patients from January 1<sup>st</sup>, 2016 to May 15<sup>th</sup>, 2021 with a diagnosis of metastatic spinal pathology. Data collected: age, sex, comorbidities, neurological status (Frankel scale), Tomita and Tokuhashi scores, Spinal Instability Neoplastic Score (SINS), Epidural spinal cord compression scale (ESCC), days of hospitalization, complications, type of discharge, mortality and unscheduled hospital readmission, number of spinal metastases and type of surgery. A comparative analysis between two groups which were treated surgically before and after the appearance of the first SARS-CoV 19 case in Argentina was performed in order to evaluate the impact of SARS-CoV-19 spreading in patients with surgery for metastatic spinal pathology.

## **Results**

A total of 20 surgical procedures were analyzed, 9 patients in the Covid group and 11 patients in the no-Covid group. The analysis showed no statistically significant difference in: days of hospitalization, reoperation within 30 days, mortality within 30 days, mortality within 90 days, unscheduled hospital readmission at 90 days after surgery, SINS score, ESCC scale, Frankel scale preoperative and Frankel scale postoperative, and number of spinal metastases at diagnosis ( $p=0.399$ ,  $p=0.178$ ,  $p=0.353$ ;  $p=0.769$ ,  $p=0.881$ ,  $p=0.668$ ,  $p=0.401$ ,  $p=0.235$ ,  $p=0.383$ )

Significant differences were observed in unscheduled hospital readmissions at 30 days ( $p=0.024$ ). 55% of the patients in the Covid group were readmitted to the hospital within 30 days after surgery. One of the patients died related to covid within 90 after surgery. Proportionally in time, more patients were surgically treated since the pandemic was confirmed in Argentina than before it.

## **Conclusion**

During the SARS-CoV-19 pandemic lockdown, more surgeries were performed for metastatic spinal pathology in our hospital in comparison to previous months. Our hypothesis was not proven, since no statistically significant differences were found in the groups regarding the preoperative Frankel scale.

As a main limitation, the sample was small, with only 20 patients. Despite this, we believe that this one could be a preliminary investigation to carry out multicenter research and obtain results about spinal oncologic surgery in Argentina and Latin America during the pandemic lockdown.