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# Clinical Presentation, Management and Outcomes of Sacral Metastases: A Multicentre, Prospective Case Series

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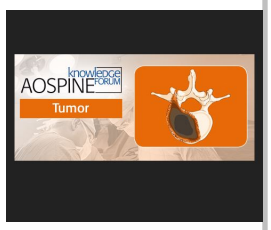


## INTRODUCTION

Most surgeons are unfamiliar with the treatment of sacral metastases.

### Objectives

1- To describe patient's outcomes in terms of Health-Related Quality of Life (HRQOL) and pain for patients with sacral metastases treated either with surgery and/or radiation therapy (RT)

2-To describe the adverse event profile following RT or surgery and to observe how treatment affects neurologic function (lower extremity motor score, bowel and bladder function) in this population.

## METHODS

Data were obtained from the Epidemiology, Process and Outcomes of Spine Oncology (EPOSO),a prospective multicenter observational study on Spinal Metastases.

Between August 2013 and February 2017

INCLUSION CRITERIA

Age between 18-75 years old

Treated for sacral metastases (S1 to S5) with surgery and/or radiotherapy were included

EXCLUSION CRITERIA

The primary site of cancer is the central nervous system or spine

OUTCOME MEASURES

HRQOL assessed by the Spine Oncology Study Group Outcomes Questionnaire (SOSGOQv2.0), the Short Form-36 version 2 (SF-36v2), and the EuroQol-5Dimension (EQ-5D)

Pain numeric rating scale (NRS), AEs, lower extremities motor score (ASIA), and bowel and bladder function were also recorded

FOLLOW-UP

Baseline, 6 weeks, 3 months and 6 months

STATISTCAL ANALYSIS

Differences in baseline parameters were tested by using Fisher's exact test for categorical variables and t-test or Wilcoxon rank sum test for continuous variables. $P < 0.05$ was considered significant.

## RESULTS

-23 patients with sacral metastases: 8 patients underwent surgery +/- RT and 15 patients underwent RT alone.

-At 6-month, 3 (37.5%) surgical patients and 2 (13.3%) RT patients were deceased.

-10 AEs occurred in the surgical cohort, dominated by wound complications (n = 3).

### HRQOL

| | | Surgery (+/- radiotherapy) | | Radiotherapy | | |
|---|---|---|---|---|---|---|
| EQ-5D | n | Mean (95% CI) | P-value | Mean (95% CI) | P-value | P-Value |
| Baseline | 21 | 0.50 (0.28; 0.72) | | 0.65 (0.49; 0.80) | | 0.255 |
| 6 weeks | 19 | 0.56 (0.42; 0.70) | 0.996 | 0.77 (0.67; 0.87) | 0.653 | 0.019 |
| 3 months | 16 | 0.71 (0.56; 0.87) | 0.560 | 0.71 (0.60; 0.81) | 0.993 | 0.927 |
| 6 months | 11 | 0.53 (0.30; 0.77) | 1.000 | 0.78 (0.62; 0.94) | 0.876 | 0.088 |
| SF-36v2 PCS | | | | | | |
| Baseline | 22 | 30.5 (21.1; 39.8) | | 37.2 (30.2; 44.3) | | 0.241 |
| 6 weeks | 19 | 32.0 (23.5; 40.5) | 0.995 | 35.4 (29.0; 41.8) | 0.940 | 0.514 |
| 3 months | 16 | 26.4 (18.4; 34.3) | 0.878 | 35.0 (29.1; 40.8) | 0.962 | 0.086 |
| 6 months | 11 | 25.0 (10.8; 39.1) | 0.983 | 40.4 (31.0; 49.8) | 0.991 | 0.071 |
| SOSGOQV2.0 | | | | | | |
| Baseline | 22 | 50.4 (35.8; 64.9) | | 65.8 (54.8; 76.8) | | 0.094 |
| 6 weeks | 19 | 57.3 (44.4; 70.2) | 0.767 | 69.0 (59.2; 78.8) | 0.970 | 0.146 |
| 3 months | 16 | 56.9 (40.7; 73.0) | 0.967 | 63.4 (51.9; 74.9) | 0.999 | 0.498 |
| 6 months | 11 | 56.1 (36.0; 76.3) | 0.985 | 76.2 (62.6; 89.8) | 0.274 | 0.097 |

There was a trend showing that surgical patients had worse baseline HRQOL.

### Bowel and Bladder function

| Treatment | Bowel and bladder function | Baseline | 6 weeks | 3 months | 6 months |
|---|---|---|---|---|---|
| Surgery (+/- radiotherapy) | n | 8 | 7 | 4 | 2 |
| | Normal function (%) | 6 (75) | 7 (100) | 3 (75) | 1 (100) |
| | Partial loss | 2 (25) | 0 (0) | 1 (25) | 0 (0) |
| | Complete | 0 (0) | 0 (0) | 0 (0) | 0 (0) |
| Radiotherapy | n | 15 | 14 | 12 | 9 |
| | Normal function (%) | 14 (93.3) | 14 (100) | 11 (91.7) | 9 (100) |
| | Partial loss | 1 (6.7) | 0 (0) | 1 (8.3) | 0 (0) |
| | Complete | 0 (0) | 0 (0) | 0 (0) | 0 (0) |

Bowel and bladder function improved at 6 weeks in both group

### Neurologic function

| Treatment | Neurologic function | Baseline | 6 weeks | 3 months | 6 months |
|---|---|---|---|---|---|
| Surgery (+/- radiotherapy) | ASIA Impairment Scale (%) | | | | |
| | A/B/C | 0 (0) | 0 (0) | 0 (0) | 0 (0) |
| | D | 04 (50.0) | 2 (28.6) | 1 (25.0) | 0 (0) |
| | E | 4 (50.0) | 5 (71.4) | 3 (75.0) | 2 (100) |
| | AIS lower extremity motor scale, Mean (SD) | 48.6 (2.1) | 48.8 (2.4) | 48 (4.0) | 50 (0) |
| Radiotherapy | ASIA Impairment Scale (%) | | | | |
| | A/B/C | 0 (0) | 0 (0) | 0 (0) | 0 (0) |
| | D | 1(6.7) | 1 (7.1) | 1 (8.3) | 1 (11.1) |
| | E | 14 (93.3) | 13 (92.9) | 11 (91.7) | 8 (88.9) |
| | AIS lower extremity motor scale, Mean (SD) | 48.3 (5.4) | 48.3 (6.1) | 49 (3.2) | 48.8 (3.7) |

The lower extremity mean motor score marginally improved at 3 months.

## CONCLUSION

Modern management of sacral metastases encompasses surgery and/or RT. Both alternatives appear to be reasonable therapeutic options. Based on patient's symptomatology, more aggressive treatment including surgery may be beneficial. This prospective case-series described improvements in HRQOL and pain following both treatments. Furthermore, an acceptable adverse event rate and stabilisation of the neurologic deficits can be anticipated with either surgery and/or RT.

### Learning Objectives

By the end of this session, participants should be able to :

1) Describe modern management of sacral metastases

2) Discuss the role of surgery and RT in the treatment of sacral metastases

3) Explain that improvement in HRQOL and pain can be anticipated with treatment of sacral metastases.