

MORE IS NOT BETTER: PROLONGED ANTIMICROBIAL PROPHYLAXIS AND SURGICAL SITE INFECTION AFTER SACRAL AND SACROPELVIC RESECTIONS



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INTRODUCTION

Sacral and sacrophelvic resections in the oncological context are highly complex procedures, associated with a high risk of surgical site infection (SSI), due to extensive tissue dissection, dead space formation, proximity to pelvic viscera, and frequent need for flap reconstruction. Despite advances in reconstructive techniques and perioperative management, SSI remains a frequent complication, with a relevant impact on reoperations, length of hospital stay, and functional recovery. In this scenario, prolonged antimicrobial prophylaxis is widely used, although there is a lack of robust evidence to support its efficacy.

OBJECTIVE

The aim is to evaluate risk factors for SSI after sacral and sacrophelvic resections in the treatment of primary sacrum tumors, with emphasis on the impact of the duration of antimicrobial prophylaxis.

METHODOLOGY

This was a retrospective cohort study including consecutive patients who underwent sacral and/or sacrophelvic resections with soft tissue reconstruction. SSI was defined according to CDC criteria, including classification according to depth. Clinical, surgical, and microbiological variables were evaluated. Variables with $p < 0.20$ in the univariate analysis were included in a multivariable logistic regression model to identify independent predictors of SSI.

RESULTS

A total of 38 patients were included, with an incidence of SSI of 24% (9/38), including superficial, deep, and bone infections. Most infections were microbiologically confirmed, with a predominance of gram-negative bacilli, and the occurrence of polymicrobial cases. In the multivariate analysis, the use of corticosteroids/immunosuppression (OR 64.8; $p = 0.049$) and the longer duration of antimicrobial prophylaxis (OR 2.45 per additional day; $p = 0.027$) were identified as independent predictors of SSI. A progressive increase in the risk of SSI was observed with the prolongation of antimicrobial prophylaxis.

Table 1. Clinical, surgical, and microbiological characteristics of patients who developed surgical site infection.

Case	Age/sex	Diagnosis	Comorbidities and risk factors	Surgical characteristics	SSI depth	Microorganism(s)	Management and outcome
1	76/M	Recurrent soft-tissue sarcoma	Diabetes, hypertension, preoperative anemia	Anterior; 6 h; no flap	Organ/space	<i>Providencia reitgeri</i>	No debridement; no recurrence
2	53/F	Colorectal cancer metastasis	Preoperative anemia, chronic steroid use, ulcerative colitis	Combined; 10 h; no flap	Deep	<i>K. pneumoniae</i> , <i>Enterococcus</i> spp., <i>Acinetobacter</i> spp.	One debridement; no recurrence
3	22/F	Ewing sarcoma	Diabetes, chronic steroid use	Anterior; 14 h; no flap	Deep	<i>K. pneumoniae</i> , <i>M. morganii</i>	No debridement; recurrence
4	34/F	Chordoma	Hepatic steatosis	Combined; 15 h; no flap	Deep	<i>Pseudomonas</i> spp.	No debridement; no recurrence
5	44/F	Rectal cancer metastasis	Preoperative anemia, obesity	Combined; 15 h; immediate VRAM flap	Deep	<i>K. pneumoniae</i> , <i>S. aureus</i>	Two debridements; no recurrence
6	71/F	Lymphoma	Diabetes, preoperative anemia, chronic steroid use	Combined; 10 h; no flap	Superficial	<i>Escherichia coli</i>	No debridement; no recurrence
7	17/M	Osteosarcoma	Chronic steroid use, major depression	Anterior; 8 h; no flap	Superficial	Culture-negative	No debridement; no recurrence
8	53/F	Ovarian cancer metastasis	Chronic steroid use	Posterior; 4 h; no flap	Superficial	<i>E. coli</i>	No debridement; no recurrence
9	16/M	Osteosarcoma	Chronic steroid use	Anterior; 6 h; no flap	Superficial	<i>S. aureus</i>	No debridement; no recurrence

CONCLUSION

Prolonged antimicrobial prophylaxis was associated with a higher risk of SSI, questioning its routine use in this scenario. These findings reinforce the need for more individualized perioperative strategies, based on risk stratification, in highly complex pelvic surgeries.

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