Management of Serous Wound Drainage following Spinal Surgery: Is Empiric Oral Antibiotic Treatment Appropriate?

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INTRODUCTION: The role of empiric oral antibiotic treatment in the management of serous wound drainage following spine surgery is controversial. Oral antibiotic management may be associated with more risk than benefit, and may be inappropriately flagged as a surgical site infection which can adversely impact surgeon and hospital ratings. While there may be a clear rationale for prescribing oral antibiotics in patients reporting purulent discharge from their incision after spinal surgery, it is less clear if oral antibiotics decrease the rate of incision and drainage (I&D) for patients who have serous drainage without initial signs of a surgical site infection. The purpose of this study is to determine if prescribing empiric oral antibiotic treatment for patient-reported serous wound drainage is beneficial or not.

METHODS: At a large tertiary-care spine center, a consecutive series of patients were identified from a prospectively maintained postoperative phone call log. Three hundred thirty one (331) patients called into the office reporting wound concerns. Serous drainage from the surgical incision without obvious signs/symptoms of infection was reported by 90% of the patients (298/311). Empiric oral antibiotics were prescribed to 38% (112/298) based solely on the treating surgeon's preference. In order to control for selection bias, patients who received antibiotics (AbxTx) were propensity matched to patients who did not (No AbxTx) based on sex, age, BMI, ASA grade, smoking status, prior spine surgery, anatomic location and number of surgical levels. The number of patients who developed a subsequent SSI requiring a surgical I&D were determined.

RESULTS: As expected with propensity matching, the demographic and surgical characteristics of the two cohorts were similar. Although there were more patients in the AbxTx group who required an I&D (n=17, 17%) compared to the No AbxTx group (n=9, 9%), this difference was not statistically significant (p=0.139). The intra-operative culture results showed no growth in almost all the patients requiring an I&D in AbxTx group (16/17, 94%) and in 67% (6/9) in the No AbxTx group (p=0.103). One patient in each group required a return to the operating room within the year after the initial I&D for instrumentation removal and repeat I&D for chronic infection.

DISCUSSION AND CONCLUSION: In this large series of patients with serous wound drainage after home discharge following spine surgery, 87% resolved without the need for repeat surgical intervention. Empiric treatment with oral antibiotics did not reduce the need for a future incision and drainage or the development of a chronic infection. Oral antibiotics may lead to a negative intra-operative culture for those requiring an I&D impacting the ability to prescribe a specific antibiotic regimen post I&D.

	Antibiotic Prescribed for Wound Complaint		
	No	Yes	
Total	98	98	
Sex, N			0.666
Female	57	53	
Male	41	45	
Age, years, Mean (SD)	57.71 (14.90)	56.65 (13.04)	0.596
BMI, kg/m^2, Mean (SD)	32.86 (8.49)	33.50 (6.25)	0.548
ASA Grade (1-4), N			0.330
1	2	2	
2	32	29	
3	61	67	
4	3	0	
Smoker, N	28	32	0.642
Diabetic, N	30	26	0.635
Prior Spine Surgery, N	29	32	0.758
Approach, N			0.335
Anterior Only	3	1	
Posterior Only	63	57	
Antero-Posterior	32	40	
Number of Surgical Levels, Mean (SD)	2.56 (2.76)	2.60 (2.61)	0.915
Anatomic Level, N			
Cervical	3	8	
Lumbar	84	77	
Cervico-Thoracic	2	7	
Thoracolumbar	9	6	
Vancomycin, g			0.273
0	26	31	
1	29	18	
2	41	48	
3	2	1	
Drain used, N	69	75	0.419
Wound Complication, N			0.688
Anterior Only	5	8	
Both	1	1	
Only	92	89	
I&D, N	9	17	0.139
Wound Problems One Year post, N	1	1	1.000
No growth, N	6	16	0.103