TITLE: Spinal Epidural Abscess Patients Have Higher Modified Frailty Indices than Back Pain Patients Upon Emergency Room Presentation: A Retrospective Case-Control Study.

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ABSTRACT:

Introduction:
Frailty is a clinical syndrome in older patients who have less physiologic reserve, resulting in multi-system impairments. Increasing frailty is frequently associated with worse outcomes in medical and surgical subspecialties. Spinal Epidural Abscess (SEA) patients have increased medical comorbidities and increased risk factors for infections (e.g. Diabetes, Smoking, etc.) when compared to control patients. However, nobody has studied the association between frailty and SEA patients when compared to control patients.

Methods:
We reviewed demographic and clinical data for 46 adult SEA patients and paired control patients (non-SEA but matched by age and sex) who presented to the ER with back pain group from 2012 to 2017. We performed regression analyses to identify independent risk factors associated with SEA and to quantify their effects as percent changes in MFI.

Results:
Among the 46 SEA patients, the mean MFI was 1.89, significantly higher than mean MFI for the age paired control group (1.20; p = 0.023), and the hospital length of stay (LOS) in the SEA group was also significantly higher than the control patients (mean LOS: 22.89 vs 1.72; p < 0.001). As expected, SEA patients had a much higher rate of previous invasive spinal procedures (surgery, steroid injections, etc.) compared to control patients (43.48% vs 23.91%; p < 0.001), as invasive spine procedures are known risk factors for SEA. The odds ratio for SEA is 1.08 per MFI unit increment. Multivariable regression modeling identified independent risk factors positively associated with increased MFI as age (+3.07% per year; p = 0.004) and SEA (+102.36%; p = 0.023). A factor negatively associated with increased MFI was IV Drug Use (-66.20%; p = 0.028).

Conclusion: Increasing age and SEA were independently associated with increased MFI and a there is a significantly increased odds ratio for SEA with increased MFI. This is the first study to demonstrate the association of increased MFI and SEA and may be useful as a risk factor to look for with patients presenting with concern for SEA.