



Spinal Epidural Abscesses: The Los Angeles County + University of Southern California 1999-2011
Experience
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Introduction

Spinal epidural abscesses (SEA) remain a potentially life-threatening ailment that can lead to paralysis by the accumulation of purulent material in the epidural space. Some studies document that patients diagnosed with SEA account for 0.2 to 1.2 cases per 10,000 hospital admissions. We analyzed the factors that contributed more significantly in Los Angeles, one of the most populous cities in the world; whether subtle findings prompted a more fastidious inquiry as the years progressed; and whether LA was distinct in its predisposing factors that led to SEA.

Methods

Retrospective analysis of 169 patients diagnosed with a SEA from 1999 to 2011. We reviewed clinical exams; lab findings such as ESR, CRP, WBC, blood cultures, and wound cultures; neuroimaging studies performed; and predisposing illnesses (i.e. HIV/AIDS, diabetes mellitus).

Results

Of the 169 patients, more than 30% are IVDA and 10-15% had liver disease (i.e. Hepatitis B/C or cirrhosis). Having had previous spinal surgery combined with diabetes resulted in a higher incidence of SEA. Length of time it took from arrival to diagnosis decreased from an average of 4-24 hours to 5 hours. More than 50% of our population demonstrated elevated WBC or CRP. S. aureus was the predominant causative organism identified from the abscesses. MRI was the modality of choice during these years, with its usage increasing substantially in those patients scanned after 2011

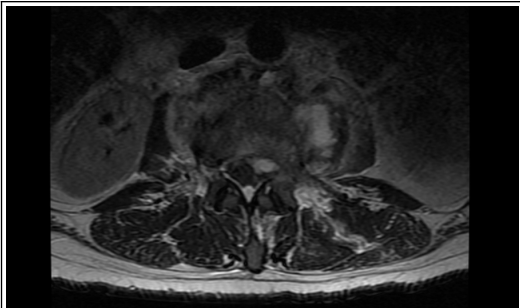


FIGURE 1: AXIAL REPRESENTATION OF EPIDURAL ABSCESS LOCATED ANTERIOR TO THECAL SAC AT LUMBAR LEVEL 3

Conclusions

Neuroimaging advances and recognizing subtle findings have improved the ability to diagnose SEAs at LAC+USC. IVDA, hepatitis, and DM were main predisposing factors. Liver disease may be secondary to IVDA and alcoholism. In large-scale institutions, socioeconomic factors are significant contributors to the incidence of SEAs. Treatment of spinal epidural abscesses goes far beyond antibiotic or surgical management. It must include a more comprehensive paradigm that monitors intravenous drug users and alcoholics closely.



FIGURE 2: SAGITTAL EPIDURAL ABSCESS LOCATED ANTERIOR TO THECAL SAC AT LUMBAR LEVELS 2 AND 3. ALSO APPARENT IS OSTEOMYELITIS

References

1-Ziu M, Dengler B, Cordell D, Bartanusz V. Diagnosis and management of primary pyogenic spinal infections in intravenous recreational drug users. Neurosurg Focus. 2014 Aug;37(2):E3.
2-Shweikeh F1, Saeed K, Bukavina L, Zyck S, Drazin D, Steinmetz MP. An institutional series and contemporary review of bacterial spinal epidural abscess: current status and future directions. Neurosurg Focus. 2014 Aug;37(2):E9.
3-Arko L 4th, Quach E, Nguyen V, Chang D, Sukul V, Kim BS. Medical and surgical management of spinal epidural abscess: a systematic review. Neurosurg Focus. 2014 Aug;37(2):E4.
4-Thiruganasambandamoorthy V1, Turko E2, Ansell D3, Vaidyanathan A4, Wells GA5, Stiell IG1. Risk factors for serious underlying pathology in adult emergency department nontraumatic low back pain patients. J Emerg Med. 2014 Jul;47(1):1-11.
5-Ghobrial GM1, Beygi S, Viereck MJ, Maulucci CM, Sharan A, Heller J, Jallo J, Prasad S, Harrop JS. Timing in the surgical evacuation of spinal epidural abscesses. Neurosurg Focus. 2014 Aug;37(2):E1.
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