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Editorial

Spinal infections: What is new in 2023



Diagnosing and treating spinal infections has posed a veritable challenge to physicians worldwide over the decades. Part of the problem stems from the fact that the initial symptoms with which a patient harboring spinal infection presents is not really different from the vast majority of patients who visit the emergency room or out-patient clinics from degenerative conditions. Given its surreptitious presentation, early diagnosis of spinal infections can prove to be elusive - delays from the onset of symptoms to reaching a diagnosis are not uncommon [1]. Failure to provide timely treatment to patients with spinal infections can leave them grappling with catastrophic complications such as a permanent spinal cord injury, disabling back pain, residual deformity and life-threatening septicemia.

The numbers, with respect to demographics and financial burden of spinal infections, make for bleak reading. Despite improvement in public hygiene and socioeconomic conditions, the incidence of spinal infections across the world continues to be on the rise. While an improvement in imaging modalities may be one reason behind more of such infections being diagnosed, other factors such as aging populations, immunocompromised patients surviving their primary illnesses and the rampant use or misuse of opioids and other intravenous drugs cannot be ignored.

The stark contrast in the epidemiology of spinal infections between developed and the developing countries has made it difficult to develop or adopt a unified global approach to management of spinal infections. In developed countries, typical pathogens such as *Staphylococcus aureus*, *Streptococcus* species and enteric bacteria dominate the epidemiology [2]. In developing countries, however, tuberculosis is ubiquitous and remains quite overwhelmingly, the most commonly encountered spinal infection [3].

This special issue of the *North American Spine Society Journal (NASSJ)* compiles and collates a list of scholarly articles written by experts in the field that cover various aspects of spinal infections – ranging from diagnostics to surgical management.

The articles by Dhodapkar et al. [4], Dayer et al. [5] and Gonzalez et al. [6] can be read in conjunction to answer several important questions: (1) What should be the recommended battery of tests to order in a patient where spinal infection is suspected, (2) What is the role of various imaging tools and situations where one of them is decidedly superior to others, and (3) How can imaging and laboratory investigations be directed to detect organisms which are less commonly encountered?

Given that traditional culture-based microbiological tests have met with rather low rates of success with respect to diagnosing spinal infection and identifying the causative organism, the importance of nucleic acid amplification assays (NAAs) and histopathological assessment has been emphasized. The potential of metagenomic next-generation sequencing (mNGS) to be the next big step in laboratory diagnostics of spinal infections has also been indicated.

The articles on spinal tuberculosis (STB) should interest not just the readers from developing countries, but also readers from North American and Europe where tuberculosis is seeing a resurgence due to global migration and increased numbers of immunocompromised patients. Shanmuganathan et al. [7] have adequately summarized the current standard-of-care for patients with spinal tuberculosis—knowledge which has been accrued over years of research in developing countries. Surgeons from developed countries may note that uncomplicated STB is a medical disease, and surgery is reserved for specific indications. At the same time, in countries where tuberculosis is not endemic—it is likely to be relegated to a distant differential diagnosis. In such a scenario, it becomes imperative to know the non-infectious conditions which can mimic STB clinically and radiologically—something which the article by Garg et al. [8] delves on.

The last set of scholarly articles in this special issue focuses on spinal infections in the postoperative setting and on rational use of antibiotics with the pressing need to develop hospital-level antibiotic stewardship programs. The multidisciplinary nature of management of spinal infections expands the scope of these articles and readers should find that the learning points and the message expounded in these articles may go well beyond the subject of spinal infections and find resonance in managing patients with osteoarticular infections as a whole.

In envisioning and bringing to life this special issue, an attempt has been made to focus on some of the more recent advances in the field of spinal infections—to bring the readers to speed with the latest on the topic of the special issue. The purpose is to revisit the basic principles of managing spinal infections, reinforce what we know already works and is backed by solid evidence and explore or delve deeper into recent developments that may have an important bearing on how spinal infections are diagnosed or managed in the years to come. The global representation of authorship in these articles has also ensured that all aspects of spinal infections—be it pyogenic infections, tubercular infections, atypical spinal infections and spinal infections that develop in a

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post-surgical setting—are extensively covered, making this an issue that has “something in it for everyone.” We hope the readers of NASSJ have an enlightening and stimulating experience in perusing the contents of this special issue.

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