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EDITORIAL VIEW PERIOPERATIVE MEDICINE

Rheumatologic diseases at the crossroads of anesthesia, pain medicine and intensive care: an under-recognized interface

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ABSTRACT

Rheumatologic diseases present very specific but often unnoticed complexities for anesthesiologists, pain management specialists and critical care providers. The varied systemic consequences of rheumatologic diseases, chronic inflammation, pain processing abnormalities and immunosuppression impact perioperative care, pain management and critical care outcome. Patients with rheumatoid arthritis, axial spondyloarthropathy, systemic lupus erythematosus, systemic vasculitis and systemic sclerosis possess a high risk of perioperative complications related to intricate airway, cardiopulmonary and infectious disease issues, as well as chronic pain. This editorial focuses on the interplay between rheumatology and anesthesia as an ever-evolving field, with particular regard to the importance of a multi-disciplinary approach to perioperative pain management and critical care outcome.

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INTRODUCTION

Rheumatologic diseases have classically been categorized as chronic inflammatory and autoimmune disorders that are generally managed on an outpatient basis, and are usually contained within a particular subset of the medical world.[1,2] However, these diseases are significant players even within the worlds of anesthesia, pain management and critical care medicine. Recent advancements in disease-modifying agents have dramatically enhanced survival rates and patient function.[1,2] Therefore, the phenomenon of functioning rheumatologic patient populations requiring surgical interventions and critical care referral is becoming increasingly common. Nevertheless, rheumatologic disease is an underappreciated factor in operative risk, analgesic complexity and outcomes of critically ill patients, despite this growing clinical burden.[3,4] Multisystem involvement and disease, as well as immunosuppressive therapy and altered pain mechanisms, can create a complex scenario for the anesthesiologist, pain specialist and intensivist who increasingly must appreciate its complexities.[3,4]

Systemic involvement and perioperative risk:

Rheumatologic diseases such as rheumatoid arthritis, axial pondyloarthritis, systemic lupus erythematosus (SLE), systemic sclerosis and systemic vasculitides have involvement of various body systems with direct implications for anesthesia care. Assessment of the airway may be difficult due to cervical spine instability, atlantoaxial subluxation, temporomandibular joint disease and cricoarytenoid joint arthritis.[4,5] The involvement of pulmonary system due to interstitial lung disease, pulmonary hypertension and restrictive lung disease greatly increases the possibility of per-operative and post-operative complications including hypoxemia and respiratory failure.[6] Cardiac complications such as myocarditis, valvular disease and accelerated atherosclerosis, associated with rheumatologic disorders, further complicate anesthesia care.[7] However,

such disease-specific findings are often not included in the preoperative investigations, especially if the need for surgery does not seem to be related to the rheumatologic condition. Disease states like rheumatologic disorders need to be considered as separate perioperative risk factors. From an intensive care viewpoint, rheumatologic disease flares, infections and drug toxicities are very common reasons for ICU admission. Life-threatening situations like acute lupus pneumonitis, diffuse alveolar hemorrhage in vasculitis and myocarditis all need prompt diagnostic and multidisciplinary management.[6,7]

Pain in rheumatologic disease - beyond nociception:

While pain is a hallmark symptom of rheumatologic disease, it cannot be ascribed to peripheral inflammation alone, as inflammatory pain is often accompanied by neuropathic and centralized pain mechanisms including central sensitization and associated fibromyalgia.[2,4] Pain can thus not always be correlated with objective measures of disease activity and surgical insult in rheumatologic conditions, as might be expected. These mechanisms have major implications in terms of pain management during the perioperative period or in chronic cases. Opioid-based approaches are usually ineffectual and may lead to adverse consequences by causing tolerance, opioid-induced hyperalgesia, addiction and infections.[8,9] Multimodal analgesia, along with regional anesthesia, non-opioid pharmacologic agents and non-pharmacologic approaches, needs to be emphasized.[8,9] Patient assessment for disproportionate postoperative pain risk is helpful for providing realistic preoperative counseling. Recognition of central sensitization is also helpful in avoiding the escalation of opiate use.

Immunosuppression, infection risk and critical illness:

The widespread use of corticosteroids, conventional and biologic DMARDs has revolutionized the practice of rheumatologic medicine, creating new potential perioperative and critical care issues because immunosuppressed patients have an increased risk of postoperative infections, sepsis and poor wound healing.[7,10] Long-term corticosteroids can lead to adrenocortical suppression and require stress dose corticosteroid coverage during the perioperative period.[9,11] Distinguishing infection from disease flare or drug toxicity can be challenging in the ICU since fever, cytopenias and organ dysfunction are features that are common across the board for infection, flare or drug toxicity. Management for all these conditions is very different. The need for interaction with the rheumatologists in such cases cannot be overstressed.

Regional anesthesia and procedural considerations:

Regional anesthesia techniques provide many advantages in rheumatologic diseases, including superior pain relief and opioid-sparing potential.[12,13] However, unusual body anatomy due to joint deformities, spinal problems or multiple surgeries may complicate regional anesthesia techniques.[12,13] Moreover, long-term use of steroids, osteoporosis and coagulopathy are potential risks in these patients. The widespread use of ultrasound in regional anesthetic techniques has significantly improved their feasibility and safety in this group and therefore should continue.[12,13] Current evidence-based recommendations on the use of regional anesthetic techniques in patients receiving biologic agents or long-term immunosuppression are lacking and this area merits further research.

Ethical considerations and goals of care in the ICU:

A significant proportion of the non-surgical admissions to the ICU are seen among the various rheumatologic illnesses.[14,15] Severe and life-threatening conditions include vasculitis, myositis, pneumonitis and catastrophic antiphospholipid syndrome. Neurological, pulmonary and cardiac involvements are associated with high mortality and morbidity.[6,7,15] Severe disease can result in progressive organ dysfunction, repeated ICU admissions and reduced quality of life. Ethically challenging decisions regarding interventions such as intubation, renal replacement therapy or prolonged life-sustaining therapy may also occur.[11,15] Anesthesiologists and intensivists have an important role to play in facilitating early, patient-centered goals of care discussions that align treatment decisions with patient values and prognosis. Early involvement of palliative care services, often simultaneously with other disease-directed treatments, may have a positive impact on symptom management and quality of care.

The need for multidisciplinary collaboration and research:

Despite their increasing clinical relevance, rheumatologic diseases are underrepresented in the anesthesia and critical care literature. Collaborative research in this area in particular is urgently needed, as understanding its perioperative risk stratification, pain management and outcome in the ICU setting can highly benefit this growing category of patients. It is therefore

important that educational programs highlight rheumatology-anesthesia and critical care interface in the training programs.

CONCLUSION

In conclusion, rheumatologic diseases represent a vital but underappreciated link between anesthesia, pain management and critical care medicine. Due to their systemic involvement, complex pain syndromes and immunomodulatory therapies, rheumatologic diseases require a refined and multidisciplinary approach. Greater awareness and collaboration have the potential to substantially improve the safety, efficacy and outcomes of perioperative, pain and critical care management of rheumatologic diseases as the burden of these disorders continues to increase.

Conflict of interest

Nil declared by the author.

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