Unusual Conditions That Every Orthopaedic Surgeon Should Know

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Editors

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A Case-Based Guide

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This book is dedicated to Willhelm Zuelzer, MD, my father, who I have tried to honor all my life.

—Willhelm Zuelzer, Jr MD

Dedicated to my wife, Reddy Prathyusha Soma - my best friend and honest critic.

—Sreenivasulu Metikala, MD

Foreword

With great pleasure, I write this foreword to *Unusual Conditions that Every Orthopaedic Surgeon should Know*. The editors have made a comprehensive study of unusual, rare, odd, and frequently missed conditions over the course of their career. With great passion, they have taught residents and colleagues about these "Zebra" conditions that we all seem to encounter in practice. It is essential to know about the unusual and odd presentations of conditions that we encounter so that we can provide the finest quality of care in a timely manner to our patients. Recognition of the unusual condition and appropriate treatment is essential and helps to differentiate the good surgeon from a great one.

This text covers many unusual conditions that most of us will see once or twice during a career. Some are little bit more frequent such as allergic reactions to commonly used drugs and antiseptics, whereas others are much rarer in the typical orthopaedic surgeon's practice. Recognition of problems such as necrotizing fasciitis, epidural hematoma, adrenal insufficiency, or popliteal entrapment syndrome are essential to prevent severe harm or death to our patients. Other problems such as Ogilvie syndrome and hyponatremia are more common in the postop period. Some of the chapters offer an opportunity to save the patient's life during the care and need to be kept in mind when assessing a patient in an emergent situation pre- or postoperatively.

Reading and learning more about these unusual conditions will make the owner of this book a better orthopaedic surgeon. When you see these unusual conditions, remember their presentation and management, and make a positive intervention in your patient's life at that moment. I enthusiastically recommend reading, learning, and retaining this information for the benefit of your patients. The editors have done a tremendous service to the orthopaedic profession by producing this fine book and are to be commended on an excellent job writing their individual chapters. A tremendous amount of work goes into producing a text such as this, and I hope that the reader enjoys and appreciates the effort that has gone into it.

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Stephen Kates

Preface: “Little Things”

I remember, many years ago, arranging for an orthopaedic surgeon, who was retiring, to talk to the residents about lessons learned during his 40 years of practicing medicine. Virtually no one paid attention to his talk. No one asked questions. Maybe it could have been better organized, but my sense is that the audience did not engage. The audience did not want to look backwards, or even look forward, but was more interested in what was happening “now.” Dealing with “now” is hard enough, and reflecting takes energy and may divert focus. Energy conservation is a priority, because the residents and faculty are often overwhelmed. They often have poor sleep and exercise habits. They have critical relationships to satisfy, including their significant others, children, leaders, patients, and family of patients. They also need to be kind to themselves.

We live in a world where errors will occur, including the ones we make, and we typically use weak defense mechanisms, such as denial. Orthopaedists often talk about the stress of constantly have to be on guard for another disaster, another failure, and another angry patient or leader. I wished I had reflected early in my career, rather than sailing through the stresses. It would have been much better if I actually organized myself proactively. Reflection is not a little thing. It is in this spirit that I am asking for your attention.

We freely admit to being imperfect. And we have the burden of having a patient allow us to inflict hopefully temporary pain and disability, at great expense, on them. What an incredible honor! To justify this honor, we must deal with our imperfections. It took me many years to conclude that to justify this honor we must commit ourselves to being a relentless improvement machine. We will never be perfect, but in order to look in the mirror and answer the question whether we are good enough for this honor, we must honestly reflect on what we do, reflect on what others do with empathy, and again, for emphasis, be thoroughly honest. Agree that to err is human, but to improve is divine. It allows us to be kinder to ourselves. Kinder to others. Transparency and mutually addressing opportunities for improvement is a much better way to enjoy this profession. Be part of a system that relentlessly learns and improves. Do not hide your learning. Have everyone else participate in an

honest, appropriately kind, review of events that should not be repeated, and outcomes that should not be. Learning from each other ultimately increases the return exponentially.

We have participated in marvelous changes in patient care. We have refined our technology and can accomplish surgical tasks that are truly amazing. Placing patient in traction is now rare. We have a large variety of tools in our shed to stabilize fractured bones and soft tissue injuries. The changes in surgical care are truly amazing. Learning techniques and selecting appropriate implants have their own set of challenges. The surgical options dominate our meetings. And how to bill. And more recently how to avoid and deal with burnout.

In the spirit of the relentless improvement machine, we need to address the issue of knowing the patient—not just the fracture or the arthritic joint or nerve injury which needs to be addressed. To minimize risks and reduce preventable complications, we must know the patient and the high-risk issues associated with the patient. We must pay attention to details. Many years ago, I heard an attending state that we need to only teach the residents the common things—the things they will most likely see in private practice. I disagree. The National Organization for Rare Disorders (NORD) estimated that, in the United States, there are more than 7000 rare diseases (defined as less than 200,000 people in the United States) affecting more than 30 million Americans—roughly 10% of the population [1]. In this NORD rare disease database, there are listed necrotizing fasciitis, syphilis, polymyalgia rheumatica, Addison (adrenal insufficiency) disease, and Ogilvie’s syndrome. The patients with these conditions will be seeing the Orthopaedic Surgeon. Maybe only once or twice a year. Delay in diagnosis may have a major impact on management of these potentially life-shortening conditions. Cumulatively, the rare diseases and conditions likely cost the United States more than 1 trillion dollars annually [2]. We need to balance the technical skills required for our profession, with engagement of our profession with the entire patient. We should strive to be a musculoskeletal expert, but with roots in being still a physician. Unfortunately, it requires energy and focus. A history and physical examination will need to be more thorough to identify these conditions. Diagnosing these conditions requires re-education. This text must be thorough enough, that if you get through it, you have a good chance of placing the important clues on your long-term memory banks and will try to identify and manage them early. I argue this is much more enjoyable than being blindsided. This is the goal of this book.

You will have a hard time seeing what you do not know. The most cost-effective management of patient is to use technology to confirm your clinical impression [3]. We have seen each of the listed conditions repeatedly, with a variety of outcomes. If you come across a patient with resistant hypotension, without obvious cause, do you think of Addison’s disease? You should. Should you worry about hyponatremia preoperatively? Few patients really have a true penicillin allergy, but, potentially, if you change prophylactic antibiotics, infection rates increase with surgical joint replacement. A patient is given a steroid injection in the clinic and has an obvious allergic reaction, and no one really knows what to do. How much epinephrine? Where? This must be hardwired. It will occur in your practice 5 years, 2 months, 3 hours from

now. Patients are being sent home the same day or the next day after joint replacement. Do we warn total joint and spine patients about abdominal distension and make sure we minimize anticholinergic medications preoperatively in elderly patient? Do we make sure Ogilvie’s syndrome is appropriately addressed since patients are discharged so soon after surgery? A patient needs anticoagulation prophylaxis for joint replacement and is on antiseizure medication? What anticoagulant should we use? A young woman receives a gunshot and has retained lead. Should she be warned and followed? Methyl methacrylate is increasingly recommended for fixation of joint replacement for geriatric patients with a hip fracture. What complication is associated with usage and how do we minimize the occurrence? A patient presents to hand clinic with wrist synovitis and ataxia and even has personality changes per family. Do we consider syphilis? Do we realize that this terrible plague is on the rise? A New York Times article notes that alpha gal allergy is identified by meat allergy—do we need to change our protocols for surgery if we identify a meat allergy history?

This book should be considered the beginning of a journey. We need many more chapters. We hope other books and articles and educational effort are made to address other unusual conditions that are important. If you engage early in your career with this topic, return on your investment will be staggering. May this text be the beginning of a journey both for the reader and other writers/editors. It hopefully will provide a basis for AI systems to aid our memory banks. The key is to hardwire your vigilance and perform a thorough history and physical; acknowledge the concept that it is hard to see what you do not know. Technology must be a servant to your mind. There is no substitute.

1. National Organization for Rare Disorders at https://rarediseases.org/
2. Garrison S, Kennedy A, et al. The economic burden of rare diseases: quantifying the sizeable collective burden and offering solutions health affairs (Feb 1 2022). doi: 10.1377/forefront.20220128.987667
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