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ADRIENNE HART

*Biofilm-based Healthcare-associated
Infections* BoD - Books on Demand

Vascular graft infection is a complex and challenging problem for the vascular surgeon. Despite significant advances that have been made in managing patient problems associated with graft infection during the last 25 years, the topic of vascular graft infection has been only loosely covered in various textbooks. Fortunately, this monograph fills this void of information by offering a wealth of useful, clearly organized clinical knowledge

Handbook of Bacterial Adhesion Springer Nature

The aim of this book is to provide readers with a wide overview of the main healthcare-associated infections caused by bacteria and fungi able to grow as biofilm. The recently acquired knowledge on the pivotal role played by biofilm-growing microorganisms in healthcare-related infections has given a new dynamic to detection, prevention and treatment of these infections in patients admitted to both acute care hospitals and long-term care facilities. Clinicians, hygienists and microbiologists will be updated by leading scientists on the state-of-art of biofilm-based infections and on the most innovative strategies for prevention and treatment of these infections, often caused by emerging multidrug-resistant biofilm-growing microorganisms.

Biofilms and Implantable Medical Devices Springer

This book contains a collection of different biodegradation research activities where biological processes take place. The book has two main sections: A) Polymers and Surfactants Biodegradation and B) Biodegradation: Microbial Behaviour.

ASM General Meeting 2011 Program Book BoD - Books on Demand

Rather than existing in a planktonic or free-living form, evidence indicates that microbes show a preference for living in a

sessile form within complex communities called biofilms. Biofilms appear to afford microbes a survival advantage by optimizing nutrition, offering protection against hostile elements, and providing a network for cell-to-cell signaling and genetic exchange. Biofilms, Infection, and Antimicrobial Therapy provides an in-depth exploration of biofilms, offering broad background information, as well a detailed look at the serious concerns to which biofilm-associated infections give rise. Prosthetic device infections, such as those involving artificial heart valves, intravascular catheters, or prosthetic joints, are prime examples of biofilm-associated infections. With the increasing use of such devices in the modern practice of medicine, the prevalence of these infections is expected to increase. Unfortunately, one of the most troubling characteristics of microbes found in biofilms is a profound resistance to antimicrobial agents. As biofilm-associated infections are particularly difficult to treat, they result in significant mortality, morbidity, and increased economic burden. Clearly, a better understanding of the pathogenesis of these infections and improved means for prevention and treatment are urgently needed! In *Biofilms, Infection, and Antimicrobial Therapy*, Drs Pace, Rupp, and Finch assemble the contributions of more than 50 of the world's leading authorities on microbial biofilms who present recent findings on antibacterial tolerance and bacterial persistence associated with biofilms and discusses the implications of those findings with regard to human health. They explore the molecular mechanisms of bacterial adherence, biofilm formation, regulation of biofilm maintenance, and cell-to-cell communication and present the latest information on various treatment protocols that should aid physicians in the treatment of these refractory and often difficult-to-treat infections.

Musculoskeletal Infections Springer Science & Business Media

The purpose of this book was to offer an overview of recent insights into the current state of arthroplasty. The tremendous long term success of Sir

Charnley's total hip arthroplasty has encouraged many researchers to treat pain, improve function and create solutions for higher quality of life. Indeed and as described in a special chapter of this book, arthroplasty is an emerging field in the joints of upper extremity and spine. However, there are inborn complications in any foreign design brought to the human body. First, in the chapter on infections we endeavor to provide a comprehensive, up-to-date analysis and description of the management of this difficult problem. Second, the immune system is faced with a strange material coming in huge amounts of micro-particles from the tribology code. Therefore, great attention to the problem of aseptic loosening has been addressed in special chapters on loosening and on materials currently available for arthroplasty.

Arthroplasty Springer Science & Business Media

This book examines biofilms in nature. Organized into four parts, this book addresses biofilms in wastewater treatment, inhibition of biofilm formation, biofilms and infection, and ecology of biofilms. It is designed for clinicians, researchers, and industry professionals in the fields of microbiology, biotechnology, ecology, and medicine as well as graduate and postgraduate students.

Culture Negative Orthopedic Biofilm Infections Springer

This book will cover both the evidence for biofilms in many chronic bacterial infections as well as the problems facing these infections such as diagnostics and treatment regimes. A still increasing interest and emphasis on the sessile bacterial lifestyle biofilms has been seen since it was realized that that less than 0.1% of the total microbial biomass lives in the planktonic mode of growth. The term was coined in 1978 by Costerton et al. who defined the term biofilm for the first time. In 1993 the American Society for Microbiology (ASM) recognised that the biofilm mode of growth was relevant to microbiology. Lately many articles have been published on the clinical implications of bacterial biofilms. Both original articles and reviews concerning the biofilm

problem are available.

Racing for the Surface Springer Nature
During the recent transition between acute diseases caused by swarms of single planktonic bacteria, and chronic infections caused by bacteria growing in slime-enclosed biofilms, a general clinical consensus has emerged that pathologies with bacterial etiologies are frequently culture negative. Because biofilm infections now affect 17 million Americans per year (killing approximately 450,000), the suggestion that these common and lethal infections regularly go unnoticed by the only FDA-approved method for their detection and characterization is a matter of urgent concern. Biologically, we would expect that planktonic bacterial cells would colonize any new surface, including the surface of an agar plate, while the specialized sessile cells of a biofilm community would have no such proclivity. In the study of biofilm diseases ranging from otitis media to prostatitis, it was found that direct microscopy and DNA- and RNA-based molecular methods regularly document the presence of living bacteria in tissues and samples that are culture negative. The editors selected orthopedic biofilm infections as the subject of this book because these infections occur against a background of microbiological sterility in which modern molecular methods would be expected to find bacterial DNA, RNA-based microscopic methods would be expected to locate bacterial cells, and cultures would be negative. Moreover, in Orthopedics we find an already biofilm-adapted surgical group in which current strategies are based on the meticulous removal of compromised tissues, antibiotic options as based on high biofilm-killing local doses, and there are practical bedside strategies for dealing with biofilm infections. So here is where the new paradigm of biofilm infection meets the equally new paradigm of the culture negativity of biofilms, and this volume presents a conceptual synthesis that may soon combine the most effective molecular methods for the detection and identification of bacteria with a surgical discipline that is ready to help patients.

Biodegradation Coe-Truman Technologies
Approximately 60% of all hospital-associated infections, over one million cases per year, are due to biofilms that have formed on indwelling medical devices. Device-related biofilm infections increase hospital stays and add over one billion dollars/year to U.S. hospitalization costs. Since the use and the types of indwelling medical devices commonly used in modern healthcare are continuously expanding, especially with an

aging population, the incidence of biofilm infections will also continue to rise. The central problem with microbial biofilm infections of foreign bodies is their propensity to resist clearance by the host immune system and all antimicrobial agents tested to date. In fact, compared to their free floating, planktonic counterparts, microbes within a biofilm are 50 - 500 times more resistant to antimicrobial agents. Therefore, achieving therapeutic and non-lethal dosing regimens within the human host is impossible. The end result is a conversion from an acute infection to one that is persistent, chronic, and recurrent, most often requiring device removal in order to eliminate the infection. This text will describe the major types of device-related infections, and will explain the host, pathogen, and the unique properties of their interactions in order to gain a better understanding of these recalcitrant infections.

Prosthetic Joint Infections Frontiers Media SA

Histological evaluation of the periprosthetic soft and osseous tissues is an important analytical tool. Its standardization is essential to generate accurate and reproducible data which allow comparisons for academic institutions, arthroplasty registries, and government regulatory agencies worldwide. It is also part of multidisciplinary evaluation of orthopedic implant failures and provides valuable information to be integrated with the clinical data, allergological tests, radiological exams, microbiological analysis, and biomechanical assessment of the implant wear.

Topics in Ecological and Environmental Microbiology Springer Science & Business Media

This book provides an in-depth overview of the aetiology, treatment and prevention of infections following knee arthroplasty. It presents up-to-date information on available techniques and salvage procedures for complex patients with infected, total knee arthroplasty. Divided into 5 sections, this book explores biomaterials, clinical manifestations, diagnosis, treatment and prevention, including preoperative optimisation, in order to reduce knee infections. This book is a valuable reference resource for practicing orthopaedic surgeons, residents, and medical students wishing to understand the fundamental concepts in infectious disease medicine needed in current orthopaedic practice.

The Microbiology of Skin, Soft Tissue, Bone and Joint Infections John Wiley & Sons

This important reference textbook covers the surgical management of all major orthopaedic and traumatological conditions. The book will act as the major source of education and guidance in surgical practice for surgeons and trainees, especially those preparing for higher surgical examinations and the Board of Orthopaedics and Traumatology examinations within and beyond Europe. The emphasis throughout is on the application of current knowledge and research to technical problems, how to avoid operative problems, and how to salvage complications if they occur. The didactic text is complemented by abundant illustrations that highlight the essentials of each clinical scenario. The authors are all recognized international authorities active at congresses and workshops as well as in universities and hospitals across the world.

Bone and Joint Infections Academic Press
Infections of the bones (osteomyelitis) and joints (septic arthritis) are serious health problems which require antibiotics and often surgery. Awareness among health professionals of the causes and treatment options for various types of bone and joint infections is essential for effective resolution. Bone and Joint Infections takes a multidisciplinary approach in covering the diagnostic and therapeutic treatment of osteomyelitis and septic arthritis, including different types of implant-associated infections. Correct and rapid diagnosis of bone and joint infection is crucial, and requires the input of a variety of specialists. Bone and Joint Infection takes a similarly collaborative and comprehensive approach, including chapters authored by clinicians, laboratory specialists, and surgeons. Covering the basic microbiology and clinical aspects of bone and joint infection, this book will be a valuable resource both for researchers in the lab and for physicians and surgeons seeking a comprehensive reference on osteomyelitis and septic arthritis.

Periprosthetic Joint Infections BoD - Books on Demand

The Desk Encyclopedia of Microbiology, Second Edition is a single-volume comprehensive guide to microbiology for the advanced reader. Derived from the six volume e-only Encyclopedia of Microbiology, Third Edition, it bridges the gap between introductory texts and specialized reviews. Covering topics ranging from the basic science of microbiology to the current "hot" topics in the field, it will be invaluable for obtaining background information on a broad range of microbiological topics, preparing lectures and preparing grant applications

and reports. * The most comprehensive single-volume source providing an overview of microbiology to non-specialists * Bridges the gap between introductory texts and specialized reviews. * Provides concise and general overviews of important topics within the field making it a helpful resource when preparing for lectures, writing reports, or drafting grant applications

Innovative Approaches in The Management of Bone and Joint Infection Academic Press

Periprosthetic Joint Infection of the Hip and Knee is a practical reference for the diagnosis and treatment of total joint infections following hip and knee arthroplasty. In addition to useful chapters presenting common tests and algorithms used for diagnosis, the book gives background on the epidemiology, risk factors, and prevention strategies of periprosthetic joint infection. Additionally, practical clinical information is given, including antibiotic treatment strategies and delivery methods and medical optimization techniques for physicians to follow for patient care and follow-up. Covering a topic that is currently underrepresented in the medical literature, Periprosthetic Joint Infection of the Hip and Knee will be useful to orthopedic surgeons, rheumatologists, and other physicians involved in the care of patients with hip and knee prosthetic implants.

Recent Advances in Arthroplasty
Woodhead Publishing

The aim of this book is to provide readers with a wide overview of the main healthcare-associated infections caused by bacteria and fungi able to grow as biofilm. The recently acquired knowledge on the pivotal role played by biofilm-growing microorganisms in healthcare-related infections has given a new dynamic to detection, prevention and treatment of these infections in patients admitted to both acute care hospitals and long-term care facilities. Clinicians, hygienists and microbiologists will be updated by leading scientists on the state-of-art of biofilm-based infections and on the most innovative strategies for prevention and treatment of these infections, often caused by emerging multidrug-resistant biofilm-growing microorganisms.

Periprosthetic Joint Infection of the Hip and Knee Cambridge University Press

This book provides an in-depth understanding of a comprehensive approach to revision total hip arthroplasty and its complications from leading authorities in the field. Topics include the discussion of failure mechanisms, evaluations of the painful total hip, descriptions of pre-operative planning and preparation for surgery, surgical techniques for the acetabulum and femur, and evaluation of post-operative complications. There are also discussions on neurologic injury, anesthetic complications, cardiac complications, femoral stem breakage and abdominal complications. In addition there is a

section on the future of total revision hip arthroplasty and a discussion on medical malpractice. With over 500 illustrations, this is the definitive volume on revision total hip arthroplasty.

Regenerative Medicine and Plastic Surgery
Springer

This text provides a guide to understanding the mechanisms involved in the pathogenesis of musculoskeletal sepsis. It covers areas such as bone, cartilage, soft tissue, and biomaterial interaction in the face of infection.

Revision Total Hip Arthroplasty
Springer

Bacterial pathogens have been becoming the main problem in hospital and community-acquired infections. It is hard to treat the strains that are resistant to antibiotics, due to the causing recurrent and untreatable infections. In recent years, the combination treatments and the novel technologies have been preferred to overcome the emergence of antibacterial resistance of pathogens. In this book, examples of pathogenesis by clinical cases, control by antibiotics and bioactive antimicrobials, control by novel technologies with the collection of up-to-date researches and reviews are presented. This book can be useful for researchers interested in antibacterials, bioactive compounds, and novel technologies.

Bacterial Biofilms Springer Science & Business Media

Biochemistry and ecology of biofilms from industrial, medical and other viewpoints.