

The Role of Biofilms in Device-Related Infections, by M. Shirliff, G. Leid, and J. W. Costerton. Springer-Verlag, Berlin, Heidelberg, ISBN: 978-3-540-68113-7; e-ISBN: 978-3-540-68119-9

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The use of surgically implanted or nonsurgically inserted medical devices has received more interest in modern medical practices. This is due to a result of their beneficial effect on quality of life and in some circumstances, on patient survival rates. Upon implantation or insertion into patient's body for exerting the intended purpose such as salvage of normal functions of vital organs, these medical devices are unfortunately becoming the sites of competition between host cell integration and microbial adhesion. Moreover, the nonshedding surfaces of these devices provide ideal substrata for colonization by biofilm-forming microbes. Hence, the incidence of biofilm- and medical devices-related nosocomial infections is also increasing progressively. Therefore, a fundamental concept in the pathogenesis of device-related infections is the formation of biofilms by the infecting microorganisms.

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This multi-authored book starts with a chapter that analyzes the primary source of indwelling medical device fouling, namely, the host microbial skin flora. After that, the chapters are arranged to elucidate the major forms of indwelling medical device infections: orthopaedic implants, biofilm on ventilators, dental implant infections, urinary tract infections due to catheters, intravenous catheter fouling, and endophthalmitis infections. With this view, this book explores the biofilm infections in indwelling devices from the point of both the host and the infecting pathogen. The authors of the individual chapters rightly pointed out the symptoms of biofilm disease such as common features of chronic infections, tissue damage, recalcitrance to antimicrobial therapy, and resistance to clearance by the host immune system. Hence, the role of biofilms in device-related infections is clearly described briefly. Since achieving therapeutic and nonlethal antibiotic dosing regimens within the human host is not possible, surgical intervention in conjunction with the long-term antibiotic therapeutic dosing might be of alternative and useful approach to control or manage the biofilm-associated device infections. The last two chapters found in this book provide a good insight on the use of immunodiagnostics for the early detection of biofilms and the immune responses to indwelling medical devices, respectively. I believe that these last two chapters are welcome additions to literatures concerning the biofilm-associated device infections particularly to highlight the recent modalities for detecting as well as following up the disease within the human host.