



# Is Dental Evaluation before Cardiac and Aortic Surgery Needed: A Review Communication



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Submission: 📅 July 25, 2018; Published: 📅 August 08, 2018

## Abstract

Many studies and publications have been devoted to identifying the etiologies and sources of postoperative infections. While the etiologies of these infections may be unknown, the consequences are enormous and include: increased morbidity and mortality; increased hospital costs funding the development of new drugs; and patients and family dissatisfaction. Surgical site infection is responsible for about 20% of all infections. The preoperative evaluation clinic, where patients are examined several days before scheduled surgical procedure offers an opportunity to prevent oral sourced of infections by recommending a dental evaluation. The integration of dental clearance into the preoperative evaluation, may contribute to a decrease in and/or prevent surgical infection.

**Keywords:** Preoperative evaluation; Etiology of postoperative infection; Endocarditis; Dental clearance

## Introduction

Two million hospitalized patients annually develop health-care associated infections (HCAI), contributing to around 90,000 death each year in the United States [1]. Many studies and publications have been devoted to identifying the etiologies and sources of these infections. While the etiologies of these infections may be unknown, consequences are enormous. They includes: increased: morbidity and mortality; hospital cost; increased hospital lengths of stay; funding for development of new drugs; and patient and family dissatisfaction. From HCAI, surgical site infections are responsible for about 20 - 25% of all infections. Many infections are of unknown etiology and anesthesiologists, surgeons, intensivists, bacteriologists and pathologists are working to identify the other causes of infections [2-7].

Our institution opened a specialized preoperative evaluation clinic (PEC) designated for cardiothoracic patients scheduled for elective day admission surgery [8,9]. The clinic is staffed by an attending anesthesiologist from the division of cardiac anesthesia, one nurse practitioner from cardiac surgery, an additional nurse with several years of experiences in cardiac surgical intensive care unit and one nursing assistant. The PEC is financed by the Departments of Anesthesiology and Cardiac Surgery.

The PEC has been developed to streamline the preoperative assessment by coordinating all aspects of anesthetic, surgical, dental, medical, nursing and postoperative recovery care. The PEC

has enhanced our possibility to apply the available guidelines, and implement effective preoperative protocols, leading to improvement of patient care and cost reduction. One of the most important aspects of the PEC is the increasing patient/family satisfaction during and after hospital stay, Patient burdens in the time of stress and anxiety during illness can be decreased by a well-functioning PEC.

The preoperative evaluation clinic (PEC) may also contribute to the prevention of surgical infections. Dental disease is one of the common sources of infections. Theories concerning a possible connection between oral and systemic health can be trace back a long time and have been revisited in numerous publications [10-19]. An undiagnosed oral infection can adversely affect the surgical outcome, leading to morbidity, mortality, costs and even potential; liability.

The PEC, where patients are examined days ahead of the scheduled surgical procedure offers an opportunity to prevent oral sources of infection by recommending a dental examination and clearance. Presently, a preoperative dental evaluation is not a routine practice in many institutions. The American Heart Association guidelines on prevention of infectious endocarditis (IE) and other bacteremia's, emphasize the value of eliminating dental disease, which supports the importance of a preoperative dental evaluation [15]. There are no clear recommendations regarding the indication for preoperative dental evaluation for patients scheduled

for elective surgery (cardiac, aortic, organ transplantation, orthopedic, oncological and other).

In our opinion, which is supported by others, a preoperative evaluation of oral health may prevent a dental etiology of bacteremia, IE and other infections. The integration of dental examination into the PEC may contribute to a decrease or prevent the surgical infections. Cardiac and major vascular surgery is associated with significant morbidity, mortality, and socioeconomic expenses. Presently, a dental screening is not a practice in many hospitals. There are several reasons for this omission. First, patient education regarding this association may be lacking. Second, the surgeon may overlook the importance of eliminating the potential source of infections before surgery. Third, patients may not have adequate insurance coverage [16].

In our institution, patients get recommendation for dental evaluation at the initial encounter. Majority of the patients had dental evaluation before admission to PEC. If the patients are missing dental clearance, we are able to arrange the basic dental evaluation in our oral surgical department. The situation is different in the case of an urgent or emergency surgery, where we use common sense and forgo dental evaluation [18]. The association between poor dental health and the risk of infective endocarditis, as well as other systemic infection, has been well demonstrated [7-19]. Cotti et al review the controversial issue in the relationship between oral care and cardiovascular diseases is how and whether to manage and prevent oral infections prior to cardiovascular surgical procedures [20].

In conclusion, the dental clearance is important portion of function of PEC. The oral cavity is readily accessible and visible part of the body and provides the window to assess the overall health. Not long ago, former U.S. Surgeon General C. E. Koop asserted, "You are not healthy without good oral health" [21].

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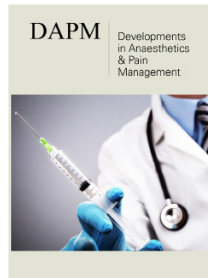
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