IMPROVING OUTCOMES FOR TRANSPLANT PATIENTS: CONTRIBUTION OF A DENTAL HYGIENIST

C. Michele E. Lloid[a,b,c]

Editor's Note

A dental hygienist pioneer in providing oral care for cancer and transplant patients describes her contribution to the well-being of this population and why she feels this is a viable career option. She also explains the astute observation made by she and her colleagues that cytomegalovirus was responsible for acute oral lesions experienced by transplant patients and how this resulted in a paradigm changing approach to diagnosis and treatment.

ABSTRACT

A dental hygienist member of an interdisciplinary medical team can contribute to improved outcomes when cancer and transplant patients experience oral sequelae.

Background and purpose

Cancer and transplant patients benefit from care provided by an interdisciplinary team comprised of general and oral health care providers. Diagnostic and supportive care including assessment and stabilization of oral health as well as management of treatment and disease sequelae are essential treatment planning components. This article provides support for a dental hygienist team member contributing toward optimal care for this patient population at high risk for infection and other serious complications.

Methods

A dental hygienist manager of an oral medicine service that provides clinical care for transplant patients describes how her position within a cancer research center has evolved. Using case scenarios, the impact of an interdisciplinary medical transplant team on patient care is presented.

Conclusions

A dental hygienist, interested in working with oncology or transplant patients, as part of an interdisciplinary medical team, can contribute toward the well-being of patients and experience a challenging and rewarding career that combines aspects of medicine and dentistry.

INTRODUCTION

The multidisciplinary team for transplant care includes dental hygienists as participants in inpatient rounds. As a team member, I was asked to see a patient with unusually severe oral mucositis.[1,2] A clinical examination and diagnostics failed to identify secondary problems that could be contributing to the severity of the patient's condition. Over the ensuing week, I followed this patient, a young woman in her twenties with a doting husband and family. I watched as her mouth improved

[a]RDH, BA, MS, Oral Medicine Service, Seattle Cancer Care Alliance, Seattle, WA, USA

[b]RDH, BA, MS, Department of Oral Medicine, University of Washington School of Dentistry, Seattle, WA, USA

[c]RDH, BA, MS, Department of Oral Health Sciences, University of Washington School of Dentistry, Seattle, WA, USA

Corresponding author: C. Michele E. Lloid. Tel.: +1 206 288 6435.
E-Mail: mlloid@seattlecca.org

J Evid Base Dent Pract 2016:16S: [99-103]

1532-3382/$36.00

http://dx.doi.org/10.1016/j.jebdp.2016.01.021

Keywords: Dental hygienist, Cancer, Oral care, Oral complications, Hematopoietic stem cell transplant, Oral medicine

and she rapidly progressed, gaining strength enough to walk the halls. The next week I returned to find her room empty. Buoyed at the thought of her discharge, I inquired about her status before contacting her to set up a follow-up examination. I learned that she had passed away due to cardiac arrest related to cumulative toxicity from chemotherapy. I struggled to understand, as it seemed that she had survived the worst part and was looking forward to recovery. Nothing in any of my training had prepared me for this. There was no lecture on the tenuous nature of transplant patients. There certainly was no formal course in the acute phase of dying and death. This incident was a pivotal point in my career as I questioned whether there is a role for a dental hygienist in high acuity care. Could a dental hygienist join in the management of patients undergoing medical treatment which could be the last hope at saving or even prolonging their lives? If so, was I capable? I came to learn that the answer to these questions was yes.

AN INNOVATIVE FINDING AND A PUBLICATION

Carole, a 31-year-old mother of 3, was 6 weeks out from a bone marrow transplant (BMT) for acute leukemia. Conventional chemotherapy had put her disease into remission twice, but it recurred. BMT was an option, as she was fortunate to have a family member to serve as her donor. During the early recovery period, after receiving the chemotherapy and total body irradiation (TBI) to prepare her for transplant, she experienced severe persistent oral mucositis (See **Figure 1**), which included tongue ulcers. She also developed acute graft-vs-host disease (GVHD) of her skin, oral cavity, and liver.[3-5] Despite the complications, Carole slowly continued to improve on systemic and topical treatment for GVHD. However, she reported increasingly severe pain from her tongue ulcers. She was tearful, rocking side to side in her bed and requiring high doses of intravenous pain medications, but with very little relief. The lesions had been previously assessed for signs of trauma and various infections including swab cultures for herpes simplex virus (HSV). In the absence of relevant findings, symptoms were presumed related to her acute GVHD. Topical steroid rinses eventually stabilized the tongue symptoms, but the lesions never resolved. Transplant recipients are monitored closely because of the significant risk for infection including those caused by the herpes viruses including herpes simplex, varicella zoster, and cytomegalovirus (CMV), which if undiagnosed or untreated can be life threatening.[6] Once an individual is infected, the viruses can remain latent for many years, yet can reactivate during immunosuppression.

Carole's repeat examinations and superficial swab cultures remained negative for any causative factors. Because previously we had observed lesions of oral mucositis resolve even in the absence of bone marrow recovery, the hope was that they would eventually heal. However, there was little that could be done other than to optimize pain management and provide supportive care, neither of which was adequate. Fortunately in Carole's case, a routine surveillance urine culture collected a week before the worsening of her tongue symptoms detected CMV. A few days later, a culture of fluid from her lungs revealed CMV pneumonia. Ganciclovir, a new antiviral agent at the time, was initiated, and over the course of 7-10 days, her pneumonia cleared and the tongue lesions and pain completely resolved. Carole improved rapidly and was eventually discharged back to her home to be followed by her local oncologist to continue recovery.

Figure 1. Grade 2-3 oral mucositis.

Source: Courtesy of Dr Mark M. Schubert, DDS, MSD.

Figure 2. Oral cytomegalovirus.

Source: Courtesy of Dr Mark M. Schubert, DDS, MSD.

After our experience with Carole, we explored the possibility that other patients with similar clinical presentations might also be at risk for oral CMV involvement. Because of the persistent nature, lack of positive test results, and therapy failures, we wondered if biopsies of the tongue lesions, rather than a superficial swab test, might reveal other findings. Consequently, biopsies were obtained from patients who developed the same clinical picture as Carole. These biopsies revealed CMV inclusion bodies from the granulation tissue at the base of the ulcer. Because of this location of the virus, superficial swab cultures would have been inadequate (see **Figure 2**).

CMV etiology had been considered in years prior and dismissed by those with significant expertise. However, it is the