

BÖLÜM 15

BİLGİSAYAR DESTEKLİ SİSTEMLERİN ÇOCUK DIŞ HEKİMLİĞİNDE KULLANIM ALANLARI

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BİLGİSAYAR DESTEKLİ TASARIM VE ÜRETİM

Bilgisayar destekli tasarım ve bilgisayar destekli üretim yani CAD/CAM (computer aided design-computer aided manufacturing), teknolojinin birçok alanında uzun yıllardır kullanılan bir üretim şekli olmasına rağmen, ağız içi dokuların optik okuyucular ile bilgisayarda görüntülenebilmesi ABD'den Bruce Altschuler tarafından ilk kez 1977'de sağlanmıştır. 1980'lerde CAD/CAM uygulamaları restoratif diş tedavilerinde kullanılmaya başlanmış, 1984'de ise Fransa'dan Francois Duret, Duret sistemini geliştirmiş ve bir üyeli restorasyonları elde etmiştir. Üretim maliyeti ve uygulanabilirliği ile ilk dental CAD/CAM uygulamasını Cerec sistemi ile İsviçre'den Werner Mörmann ile Marco Brandestini 1988'de gerçekleştirmişlerdir.^(1,2)

CAD (Computer Aided Design) bir ürünü her açıdan görmek, o ürünün gerçek yapı ve şekli hakkında daha iyi fikir edinmek için, bilgisayar ortamında ürünün gerçek ölçüleri kriter alınarak, görüntüsünün oluşturulmasıdır. CAM (Computer Aided Manufacturing) ise sürecin ikinci aşamasıdır. Ölçülen ve planlanan veriler kullanılarak, bilgisayar desteği ile üretimin yapılması anlamına gelir. Böylece gerçek bir obje, üç boyutlu modelinden elde edilir.⁽²⁾

CAD/CAM SİSTEMLERİNİN AŞAMALARI VE YAPI ELEMANLARI

Diş Hekimliğinde kullanılan CAD/CAM sistemlerinin çalışma prensibi 3 aşamadan oluşmaktadır:

1. Ölçü: Verilerin dijital ve 3 boyutlu olarak elde edilmesi

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duğunu vurgulamışlardır.⁽⁶²⁾ PEEK ile üretilen bu yer tutucu prototipleri, CAD/CAM sistemlerinin çocuk diş hekimliğinde kullanım alanlarının yaygınlaşmasına ve gelişmesine öncü olmaktadır.

SONUÇ

Çocuk diş hekimliği bilgisayar destekli sistemlerin kullanımını açısından geniş bir potansiyel kullanım alanı barındırmaktadır. Bilgisayar destekli sistemlerin klinik koşullara entegre edilmesi ve kullanımının yaygınlaştırılması ile çocuklara daha hızlı, etkili ve konforlu tedavi seçenekleri sunulabilir ve bu tedaviler gelecekte geleneksel tedavilerin yerini alabilir.

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