

Bölüm 12

DİŞ HEKİMLİĞİNDE LAZER

Merve İŞCAN YAPAR¹

GİRİŞ

İngilizce “Light Amplification by Stimulated Emission of Radiation” sözcüklerinin baş harflerinden oluşan lazer, uyarılmış radyasyon salınımı ile güçlendirilmiş ışık anlamına gelmektedir. Atom yörüngesinde bulunan elektronlara dışardan enerji verildiğinde kendi enerjilerinden daha yüksek enerjilere çıkıp, taban enerjilerine dönmeleri sırasında verdikleri bir enerji oluşur. Bu enerji yayılımına spontan emisyon denir. Dışardan enerji verildiğinde eklenen kuantum enerjisiyle birlikte yayılan enerjiye ise lazerin çalışmasının ana prensibi olan uyarılmış (stimulated) emisyon denir (1, 2).

Temeli 1905 yılında Albert Einstein tarafından atılan lazer ışığını, 1960 yılında Theodore Maiman lazer cihazı üreterek kullanmıştır. İlk klinik uygulama 1968 yılında Argon lazerin oftalmoloji alanında kullanılmasıyla bildirilmiştir. 1972 yılında karbondioksit (CO₂) ve Neodymium:Yttrium-Aluminum-Garnet (Nd:YAG) lazerler otoarengoloji ve gastrointestinal cerrahide kullanılmıştır. Diş hekimliğinde lazerlerin ilk kullanımı 1989 yılında FDA'nın (Food and Drug Administration) onaylamasıyla başlamıştır. 1997 yılında ise erbium, chromium: yttrium, scandium, gallium, garnet (Er,Cr:YSGG) lazerler piyasaya sürülmüştür (1,3).

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SONUÇ

Lazerlerin daha az invaziv olması, ağrısız ve kanamasız tedavi avantajlarından dolayı diş hekimliğinin farklı alanlarında kullanımı oldukça yaygındır. Ancak lazer kullanımı sırasında oluşabilecek dezavantajları azaltmak ve etkili bir tedavi yapabilmek için lazerler hakkında bilgi sahibi olunmalıdır. Lazerler doğru bir şekilde uygulandıklarında hastalara ve diş hekimlerine pek çok avantaj sağlayan cihazlardır.

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