BÖLÜM 6

HAVAYOLU AÇIKLIĞININ SAĞLANMASI VE OKSİJENASYON

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GİRİŞ

Anestezistlerin başlıca sorumluluklarından birisi de havayolu açıklığının sağlanması ve bu işlem sırasında meydana gelebilecek komplikasyonların önlenmesidir. Bu bölümde havayolu anatomisi, havayolunun sağlanmasında kullanılan ekipman, pozisyon, teknikler ve oksijenasyon oksijenasyon açıklanacaktır.

ANATOMİ

Üst havayolu ağız, burun, farinks, larinks ve ana bronştan oluşmaktadır. Ağız ve farinks aynı zamanda gastrointestinal sistemin bir parçasıdır. Laringeal yapılar ise akciğeri kısmen aspirasyona karşı korumaktadır.

Havayolunun dışarıya açılan iki kısmı vardır. Bunlar, nazofarinks aracılığıyla burun ve orofarinks aracılığıyla ağızdır. Nazofarinks ve orofarinks önde damakla birbirinden ayrılırken, arkada ise farinkste birleşirler. Farinks U şekinde bir fibromusküler bir yapı olup, kafatası kaidesinden başlayıp krikoid kıkırdağa kadar uzanmaktadır. Burun, ağız ve larinks sırasıyla nazofarinks, orofarinks ve hipofarinkse açılmaktadır. Nazofarinks, orofarinksten posteriordaki hayali bir düzlem aracılığıyla ayrılmaktadır (Şekil 1). Dil köküdeki epiglot, hipofarinksi orofarinksten ayırmaktadır. Epiglot, yutma hareketi sırasında larinks açıklığını üstten kapatarak akciğere aspirasyonu önlemektedir. Larinks, ligament ve kaslardan oluşan bir kıkırdak iskelet yapıdır. Dil kökünden trakeaya kadar uzanır. Çocuk ve erişkinde C4-6 düzeyindeyken, yenidoğanlarda C3 düzeyindedir. Ligamentlerle birbirine bağlanan tiroid, krikoid, aritenoid (çift), kornikulat (çift),

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morbid obez hastaların oksijen satürasyonu %95 üzerinde geçirdiği süre apneik oksijenasyon uygulananların yaklaşık iki katıdır (58). Karbondioksit düzeyleri her bir dakikada 3 – 4 mmHg yükseldiğinden dolayı en fazla 15 dakika uygulanabilir (59).

Apneik oksijenasyon, yüksek akımlı nazal kanüllerle uygulanırsa buna THRIVE (transnasal humidified rapid insufflation ventilatory exchange) olarak isimlendirilir. Burna yerleştirilen özel bir kanülle ısıtılmış ve nemlendirilmiş olan oksijen, istenilen konsantrasyonda, hızlı (≥ 30 lt/dk) bir şekilde verilerek hem oksijenasyon hem de karbondioksitin temizlenmesini sağlar. CO_2 klirens mekanizması halen güncel araştırmaların konusu olup, kardiyak osilasyonlarla meydana gelen gaz hareketinin supraglottik akım girdaplarıyla etkileşimi sonucunda olduğu düşünülmektedir (60). Preoksijenasyon ve apneik oksijenasyonun her ikisinde de kullanılabilir. Preoksijenasyon 30 lt/dk %100 O2 ile 3 dakika boyunca ağız kapalı bir şekilde tidal hacim solunmasıyla gerçekleştirilir. Apne sonrası akım 70 lt/dk'ya çıkarılarak havayolu güvene alınana kadar apneik oksijenasyon uygulanır. THRIVE, aynı zamanda larinks cerrahilerinde, trakeal tüpün cerrahiyi engelleyeceği durumlarda da kullanılabilir (61). Arteryel CO_2 yükselme hızı THRIVE ile daha yavaş olacağından, CO_2 seviyelerinin ölçülmediği durumlarda 30 dakika kullanılması önerilmektedir. Transkutanöz veya arteryal kan gazlarıyla aralıklarla CO_2 düzeyleri değerlendirildiğinde daha uzun süre kullanılabilir (62).

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