

# Ankilozan Spondilit Nedeniyle Zor Entübasyon Olarak Değerlendirilen Olguda Fiberoptik Bronkoskop Eşliğinde Nazotrakeal Entübasyon

## 18. BÖLÜM

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### OLGU

Ondört yıldır ankilozan spondilit nedeniyle takip edilen 48 yaşında erkek hasta timpanoplasti operasyonu öncesi anestezi muayenesinde değerlendirildi. Boyun ekstansiyonu kısıtlı olan hastanın (tragus-duvar mesafesi:28 cm), ağız açıklığı 28 mm, Modifiye Mallampati Skoru ise 4 olarak belirlendi. Mevcut bulgular ışığında zor entübasyon olarak kabul edilen hastaya fiberoptik bronkoskop (FOB) eşliğinde uyanık nazotrakeal entübasyon planlandı.

Hasta operasyon odasına alınmadan önce Macintosh 4 direkt laringoskop, 6.5 ve 7 nolu spiral tüpler, nazogastrik ve orogastrik havayolu, entübasyon için laringeal maske havayolu (ILMA, Fastrach), FOB ve nazal uygulama için %0.25 fenilefrin + %3 lidokain hazır preparatı ile diğer topikalizasyon için izotonik mai ile seyreltilmiş %1'lik lidokain solüsyonu hazırlandı. Gereksinim halinde acil trakeostomi açılması için kulak burun boğaz (KBB) cerrahisi ekibi hazır bulundu. FOB üzerine 7 mm spiralli tüp geçirildi ve ve cihaz distal kısmına steril kayganlaştırıcı jel uygulandı.

Hasta operasyon masasına alındığında başının altına yüksek yastık desteği yapıldı ve supin yatış pozisyonuna alındı. Noninvaziv kan basıncı (KB), kalp atım hızı (KAH) ve oksijen satürasyonu monitörize edildi. Üç dakika süreyle 15 L dk<sup>-1</sup> hızında nazal preoksijenizasyon yapıldı. Entübasyon için uygun burun deliği tespit edilip topikalize edildikten sonra önce nazogastrik havayolu cihazı ile dilatasyon uygulandı. Bu aşamada hastaya sedoanaljezi için 2 mg midazolam ve 50 µg fentanil uygulandı. Akabinde FOB, medial ve posterior istikamette orofarenkse ilerletildi. Bu aşamada bir diğer hekim dili öne doğru alırken FOB ilerletilerek epiglot görüntülendi. Bu noktada aspirasyon portundan lidokain solüsyonu uygulandı. FOB, vokal kordlar arasından trakeaya ilerletildi. Daha

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konforlu bir işlem için gerekli unsurlarsa uygun yöntem seçimi, yöntem konusunda deneyimli hekim, başarısızlık durumunda alternatif yöntemlerin hazırda bulundurulması, uygun topikalizasyon ve gerektiğinde modern ajanlarla kontrollü sedoanaljezi olarak sıralanabilir. Postoperatif süreçte de gelişebilecek ventilasyon problemlerine karşı hazırlıklı olmak adına da cerrahi ya da perkütan trakeostomi seçenekleri, bunları uygulayacak hekimlerle birlikte arka planda bekletilmelidir.

## KAYNAKLAR

1. Eipe N, Fossey S, Kingwell SP. Airway management in cervical spine ankylosing spondylitis: Between a rock and a hard place. *Indian journal of anaesthesia*. 2013;57(6): 592-595.
2. Akbas S, Ozkan AS, Ucar M, et al. Zor Entübasyon Beklenen Ankilozan Spondilitli Hastada Uyanık Fiberoptik Nazotrakeal Entübasyon. *Anatolian Clinic Journal of Medical Sciences*. 2018; 23(2): 93-96.
3. Wang PK, Luo PH, Chen A, et al. Emergency tracheal intubation in an ankylosing spondylitis patient in the lateral position using the GlideScope. *Acta anaesthesiologica Taiwanica*. 2008;46(2):80-81.
4. Kang JM, Lee KW, Kim DO, et al. Airway management of an ankylosing spondylitis patient with severe temporomandibular joint ankylosis and impossible mouth opening. *Korean journal of anesthesiology*. 2013;64(1):84-86.
5. Frerk C, Mitchell VS, McNarry AE, et al. Difficult Airway Society 2015 guidelines for management of unanticipated difficult intubation in adults. *British journal of anaesthesia*. 2015;115(6):827-848.
6. Bradley P, Chapman G, Crooke B, Greenland K. Airway Assessment, ANZCA. Technical Report. 2016. Available from: <http://www.anzca.edu.au/documents/pu-airway-assessment-20160916v1.pdf>
7. Selvi O, Kahraman T, Senturk O, et al. Evaluation of the reliability of preoperative descriptive airway assessment tests in prediction of the Cormack-Lehane score: A prospective randomized clinical study. *Journal of Clinical Anesthesiology*. 2017; 36: 21-26.
8. Shiga T, Wajima Z, Inoue T, et al. Predicting difficult intubation in apparently normal patients: a meta-analysis of bedside screening test performance. *Anesthesiology*. 2005;103(2):429-437.
9. Adnet F, Borron SW, Racine SX, et al. The intubation difficulty scale (IDS): proposal and evaluation of a new score characterizing the complexity of endotracheal intubation. *Anesthesiology*. 1997;87(6):1290-1297.
10. Ahmed A, Azim A. Difficult tracheal intubation in critically ill. *Journal of intensive care*. 2018;6:49. doi:10.1186/s40560-018-0318-4.
11. Cabrera JL, Auerbach JS, Merelman AH, et al. The High-Risk Airway. *Emergency medicine clinics of North America*. 2020;38(2):401-417.
12. De Jong A, Jung B, Jaber S. Intubation in the ICU: we could improve our practice. *Critical Care*. 2014;18(2):209. Published 2014 Mar 18. doi:10.1186/cc13776
13. Campling EA, Devlin HB, Hoile RW, et al. The report of the National Confidential Enquiry into Perioperative Deaths 1992/1993. London: National Confidential Enquiry into Perioperative Deaths; 1995. [www.ncepod.org.uk/pdf/1992\\_3/Full Report 1992-1993.pdf](http://www.ncepod.org.uk/pdf/1992_3/Full%20Report%201992-1993.pdf).
14. Collins SR, Blank RS. Fiberoptic intubation: an overview and update. *Respiratory Care*. 2014;59(6):865-880.
15. Stackhouse RA, Marks JD, Bainton CR. Performing fiberoptic endotracheal intubation: clinical

- cal aspects. *International anesthesiology clinics*. 1994;32(4):57-73.
16. Hagberg CA, Vogt-Harenkamp C, Kamal J. A retrospective analysis of airway management in obese patients at a teaching institution. *Journal of clinical anesthesia*. 2009;21(5):348-351.
  17. Hagberg CA, Arttime CA. Airway Management in the Adult. In: Miller RF (ed.) *Miller's Anesthesia*. Philadelphia: Elsevier Saunders;2015. p.1647-1684.
  18. Moore A, Schrickler T. Awake videolaryngoscopy versus fiberoptic bronchoscopy. *Current opinion in anaesthesiology*. 2019;32(6):764-768.
  19. Lim WY, Wong P. Awake supraglottic airway guided flexible bronchoscopic intubation in patients with anticipated difficult airways: a case series and narrative review. *Korean journal of anesthesiology*. 2019;72(6):548-557.
  20. Karlik J, Aziz M. Recent trends in airway management. *F1000Research*. 2017;6:159. Feb 17. doi:10.12688/f1000research.10311.1.
  21. Kramer A, Müller D, Pfortner R, et al. Fiberoptic vs videolaryngoscopic (C-MAC®) D-BLA-DE) nasal awake intubation under local anaesthesia. *Anaesthesia*. 2015;70(4):400-406.
  22. Rosenstock CV, Thøgersen B, Afshari A, et al. Awake fiberoptic or awake video laryngoscopic tracheal intubation in patients with anticipated difficult airway management: a randomized clinical trial. *Anesthesiology*. 2012;116(6): 1210-1216.
  23. Fitzgerald E, Hodzovic I, Smith AF. 'From darkness into light': time to make awake intubation with videolaryngoscopy the primary technique for an anticipated difficult airway?. *Anaesthesia*. 2015;70(4):387-392.
  24. Bryan YF, Morgan AG, Johnson KN, et al. Procedural Challenges During Intubation in Patients With Oropharyngeal Masses: A Prospective Observational Study. *Anesthesia and analgesia*. 2019;128(6):1256-1263.
  25. Aziz MF, Brambrink AM, Healy DW, et al. Success of Intubation Rescue Techniques after Failed Direct Laryngoscopy in Adults: A Retrospective Comparative Analysis from the Multicenter Perioperative Outcomes Group. *Anesthesiology*. 2016;125(4):656-666.
  26. Holmes MG, Dagal A, Feinstein BA, et al. Airway Management Practice in Adults With an Unstable Cervical Spine: The Harborview Medical Center Experience. *Anesthesia and analgesia*. 2018;127(2):450-454.
  27. Berkow LC, Morey TE, Urdaneta F. The Technology of Video Laryngoscopy. *Anesthesia and analgesia*. 2018;126(5):1527-1534.
  28. Rosenblatt WH, Wagner PJ, Ovassapian A, et al. Practice patterns in managing the difficult airway by anesthesiologists in the United States. *Anesthesia and analgesia*. 1998;87(1):153-157.
  29. Ezri T, Szmuk P, Warters RD, et al. Difficult airway management practice patterns among anesthesiologists practicing in the United States: have we made any progress?. *Journal of clinical anesthesia*. 2003;15(6):418-422.
  30. Gu J, Xu K, Ning J, et al. GlideScope-assisted fiberoptic bronchoscope intubation in a patient with severe rheumatoid arthritis. *Acta Anaesthesiologica Taiwanica*. 2014;52(2):85-87.
  31. Vitin AA, Erdman JE. A difficult airway case with GlideScope-assisted fiberoptic intubation. *Journal of clinical anesthesia*. 2007;19(7):564-565.
  32. Joseph TT, Gal JS, DeMaria S Jr, et al. A Retrospective Study of Success, Failure, and Time Needed to Perform Awake Intubation. *Anesthesiology*. 2016;125(1):105-114.
  33. Law JA, Morris IR, Brousseau PA, et al. The incidence, success rate, and complications of awake tracheal intubation in 1,554 patients over 12 years: an historical cohort study. *Can J Anaesth*. 2015;62(7):736-744.
  34. Heidegger T, Gerig HJ, Ulrich B, et al. Structure and process quality illustrated by fiberoptic intubation: analysis of 1612 cases. *Anaesthesia*. 2003;58(8):734-739.
  35. Abdellatif AA, Ali MA. GlideScope videolaryngoscope versus flexible fiberoptic bronchoscope for awake intubation of morbidly obese patient with predicted difficult intubation. *Middle*

- East journal of anaesthesiology*. 2014;22(4):385-392.
36. El-Boghdadly K, Onwochei DN, Cuddihy J, et al. A prospective cohort study of awake fiberoptic intubation practice at a tertiary centre. *Anaesthesia*. 2017;72(6):694-703.
  37. Cattano D, Cavallone L. Airway management and patient positioning: a clinical perspective, *Anesthesiology News* 37:17-23, 2011.
  38. Bekhit MH. Lidocaine for neural blockade. In Sinatra RS, Jahr JS, Watkins-Pitchford JM, editors: *The essence of analgesia and analgesics*, Cambridge; New York, 2011, Cambridge University Press, pp 279-283.
  39. Johnston KD, Rai MR. Conscious sedation for awake fiberoptic intubation: a review of the literature. *Canadian journal of anaesthesia*. 2013;60(6):584-599.
  40. Sitzman BT, Rich GF, Rockwell JJ, et al. Local anesthetic administration for awake direct laryngoscopy. Are glossopharyngeal nerve blocks superior?. *Anesthesiology*. 1997;86(1):34-40.
  41. Semler MW, Janz DR, Lentz RJ, et al. Randomized Trial of Apneic Oxygenation during Endotracheal Intubation of the Critically Ill. *American journal of respiratory and critical care medicine*. 2016;193(3):273-280.
  42. Weingart S. Push-dose pressors for immediate blood pressure control. *Clinical and experimental emergency medicine*. 2015;2(2):131-132.
  43. Merelman AH, Perlmutter MC, Strayer RJ. Alternatives to Rapid Sequence Intubation: Contemporary Airway Management with Ketamine. *The western journal of emergency medicine*. 2019;20(3):466-471.
  44. Butterworth JF, Mackey DC, Wasnick JD. *Morgan & Mikhail's Clinical Anesthesiology*. 6th ed. NY: McGraw Hill; 2018.
  45. Choi GYS, Joynt GM. Airway Management and Acute Airway Obstruction. In: Bersten AD, Handy JM (ed.) *Oh's Intensive Care Manual*. China: Elsevier; 2019. p. 372-387
  46. Schmidbauer W, Bercker S, Volk T, et al. Oesophageal seal of the novel supralaryngeal airway device I-Gel in comparison with the laryngeal mask airways Classic and ProSeal using a cadaver model. *British journal of anaesthesia*. 2009;102(1):135-139.
  47. Joo HS, Kapoor S, Rose DK, et al. The intubating laryngeal mask airway after induction of general anesthesia versus awake fiberoptic intubation in patients with difficult airways. *Anesthesia and analgesia*. 2001;92(5):1342-1346.
  48. Dhar P, Osborn I, Brimacombe J, et al. Blind orotracheal intubation with the intubating laryngeal mask versus fiberoptic guided orotracheal intubation with the Ovassapian airway. A pilot study of awake patients. *Anaesthesia and intensive care*. 2001;29(3):252-254.
  49. Sidhu VS, Whitehead EM, Ainsworth QP, et al. A technique of awake fiberoptic intubation. Experience in patients with cervical spine disease. *Anaesthesia*. 1993;48(10):910-913.
  50. Lallo A, Billard V, Bourgain JL. A comparison of propofol and remifentanyl target-controlled infusions to facilitate fiberoptic nasotracheal intubation. *Anesthesia and analgesia*. 2009;108(3):852-857.
  51. Tsai CJ, Chu KS, Chen TI, et al. A comparison of the effectiveness of dexmedetomidine versus propofol target-controlled infusion for sedation during fiberoptic nasotracheal intubation. *Anaesthesia*. 2010;65(3):254-259.
  52. Lee JH, Han SW, Kim YY, et al. Sedation and hemodynamic stability during fiberoptic awake nasotracheal intubation: comparison between propofol infusion and intravenous boluses of fentanyl and midazolam. *Korean Journal of Anesthesiology*. 1997; 33: 741-749.
  53. Belda I, Cubas MG, Rivas E, et al. Remifentanyl target controlled infusion (TCI) vs ketamine or ketamine in combination with remifentanyl TCI for conscious sedation in awake fiberoptic intubation: a randomized controlled trial: 19AP1-5. *European Journal of Anaesthesiology*. 2011; 28: 226.
  54. Bergese SD, Patrick Bender S, McSweeney TD, et al. A comparative study of dexmedetomidine with midazolam and midazolam alone for sedation during elective awake fiberoptic

- intubation. *Journal of clinical anesthesia*. 2010;22(1):35-40.
55. Chu KS, Wang FY, Hsu HT, et al. The effectiveness of dexmedetomidine infusion for sedating oral cancer patients undergoing awake fiberoptic nasal intubation. *European Journal of Anaesthesiology*. 2010;27(1):36-40.
  56. Kristensen MS, McGuire B. Managing and securing the bleeding upper airway: a narrative review. La prise en charge et la protection des voies aériennes supérieures lors de saignements: un compte rendu narratif. *Canadian journal of anaesthesia*. 2020;67(1):128-140.
  57. Hwang HD, Kim JW, Kim YS, et al. Angiographic embolization for hemorrhage control after dental implantation *Journal of the Korean Association of Oral and Maxillofacial Surgeons*. 2013;39(1):27-30.
  58. Jain U, McCunn M, Smith CE, et al. Management of the Traumatized Airway. *Anesthesiology*. 2016;124(1):199-206. doi:10.1097/ALN.0000000000000903
  59. Weingart SD, Trueger NS, Wong N, et al. Delayed sequence intubation: a prospective observational study. *Annals of emergency medicine*. 2015;65(4):349-355.
  60. Sparrow K, Hung OR. Ankylosing spondylitis: intubation using a lightwand. In: Doyle DJ, Abdelmalak B, editors. *Clinical Airway Management An Illustrated Case-Based Approach*. Cambridge: Cambridge Medicine; 2017. p. 108-11.
  61. Fichtner A, Vrtny P, Schaarschmidt F. Ultraschallgestützte retrograde Notfallintubation: Lebensrettendes Management des blutenden Atemwegsnotfalls mit unklarer anatomischer Situation [Ultrasound-guided retrograde emergency intubation: Life-saving management of a bleeding airway emergency with unclear anatomical situation]. *Anaesthesist*. 2015;64(12):948-952.
  62. Chao TN, Atkins JH, Qasim Z, et al. Airway management of angioedema patients during the COVID-19 pandemic. *World journal of otorhinolaryngology - head and neck surgery*. 2020;6(Suppl 1):S36-S39.
  63. You-Ten KE, Desai D, Postonogova T, et al. Accuracy of conventional digital palpation and ultrasound of the cricothyroid membrane in obese women in labour. *Anaesthesia*. 2015;70(11):1230-1234.