

# Difficult intubation

see [Intubation Difficulty Score](#).

GlideScope-assisted [nasotracheal intubation](#) (NTI) has been proposed as an alternative to difficult [orotracheal intubation](#) for critical patients or those under cervical immobilization. A study demonstrated that GlideScope achieved NTI in patients with or without cervical immobilization equivalently with respect to intubation time and ease <sup>1)</sup>.

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[C-MAC D-blade](#) and [King Vision](#) could be relatively successful than Macintosh [laryngoscope](#) and other [videolaryngoscopes](#) for tracheal [intubation](#) under [general anesthesia](#). The comparisons of intubation success between [videolaryngoscopes](#) and Macintosh laryngoscope showed moderate certainty of [evidence level](#), whereas the intercomparisons of [videolaryngoscopes](#) showed low certainty [evidence](#).  
<sup>2)</sup>.

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The results indicate that a curved prototype and large monitor visualization may provide a cost-effective minimally invasive alternative for difficult laryngeal exposure. Its special advantages include avoiding the need for a straight line of sight and a simple and cost-effective construction. The system could be further improved through advances in camera chip technology and smaller instruments <sup>3)</sup>.

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3: Abe T, Sakata H, Ezura M, Endo H, Tominaga T. Direct carotid puncture for endovascular surgery of intracranial aneurysms: Technical note for avoiding complications. *Surg Neurol Int.* 2022 Feb 25;13:69. doi: 10.25259/SNI\_1147\_2021. PMID: 35242435; PMCID: PMC8888314.

4: Agnoletto GJ, Couldwell S, Halpern LR, Adams DR, Couldwell WT. Surgical Reduction of Chronic Bilateral Traumatic Dislocation of the Mandibular Condyles With Erosion of the Middle Fossa Floor: Case Report With Surgical Video. *Oper Neurosurg (Hagerstown)*. 2022 Mar 1;22(3):144-149. doi: 10.1227/ONS.0000000000000048. PMID: 35166716.

5: Furlan D, Deana C, Orso D, Licari M, Cappelletto B, DE Monte A, Vetrugno L, Bove T. Perioperative management of spinal cord injury: the anesthesiologist's point of view. *Minerva Anestesiol.* 2021 Dec;87(12):1347-1358. doi: 10.23736/S0375-9393.21.15753-0. PMID: 34874136.

6: Theroux MC, Campbell JW. Anesthetic Concerns of Children With Skeletal Dysplasia. *Neurosurg Clin N Am.* 2022 Jan;33(1):37-47. doi: 10.1016/j.nec.2021.09.004. PMID: 34801140.

7: Stetefeld HR, Schaal A, Scheibe F, Nichtweiß J, Lehmann F, Müller M, Gerner ST, Huttner HB, Luger S, Fuhrer H, Bösel J, Schönenberger S, Dimitriadis K, Neumann B, Fuchs K, Fink GR, Malter MP; IGNITE Study Group, with support from the German Neurocritical Care Society (DGNI). Isoflurane in (Super-) Refractory Status Epilepticus: A Multicenter Evaluation. *Neurocrit Care.* 2021 Dec;35(3):631-639. doi: 10.1007/s12028-021-01250-z. Epub 2021 Jul 20. PMID: 34286464; PMCID: PMC8692280.

8: Wang H, Huang X, Wu A, Li Q. Management of anesthesia in a patient with osteogenesis imperfecta and multiple fractures: a case report and review of the literature. *J Int Med Res.* 2021

Jun;49(6):3000605211028420. doi: 10.1177/03000605211028420. PMID: 34190615; PMCID: PMC8258760.

9: Mochizuki T, Ryu B, Sato S, Shima S, Inoue T, Kuwamoto K, Niimi Y, Okada Y. [A Case of Bilateral Carotid Injury Caused by Vinyl Umbrella Penetration Successfully Treated with Endovascular Therapy]. No Shinkei Geka. 2021 May;49(3):677-682. Japanese. doi: 10.11477/mf.1436204442. PMID: 34092574.

10: Chavan G, Chavan AU, Patel S, Anjankar V, Gaikwad P. Airway Blocks Vs LA Nebulization- An interventional trial for Awake Fiberoptic Bronchoscope assisted Nasotracheal Intubation in Oral Malignancies. Asian Pac J Cancer Prev. 2020 Dec 1;21(12):3613-3617. doi: 10.31557/APJCP.2020.21.12.3613. PMID: 33369459; PMCID: PMC8046320.

11: Zhipeng L, Meiyi H, Meirong W, Qunmeng J, Zhenhua J, Yuezhen H, Jinfang Z, Chuiliang L. Ultrasound-guided internal branch of superior laryngeal nerve block on postoperative sore throat: A randomized controlled trial. PLoS One. 2020 Nov 20;15(11):e0241834. doi: 10.1371/journal.pone.0241834. PMID: 33216782; PMCID: PMC7679017.

12: Iida A, Nishida A, Yoshitomi S, Nojima T, Naito H, Nakao A. Retropharyngeal hematoma presenting airway obstruction: A case report. Int J Surg Case Rep. 2020;77:321-324. doi: 10.1016/j.ijscr.2020.11.007. Epub 2020 Nov 4. PMID: 33197777; PMCID: PMC7677656.

13: Masaki S, Yamada C, Kawamoto T. Endotracheal intubation in patients with COVID-19 using an ultrathin flexible gastrointestinal endoscope. World J Gastrointest Endosc. 2020 Oct 16;12(10):404-407. doi: 10.4253/wjge.v12.i10.404. PMID: 33133377; PMCID: PMC7579527.

14: Viderman D, Nurpeisov A, Balabayev O, Urubayev Y, de Almeida G, Bilotto F. Cisto hidático na medula cervical complicada por via aérea difícil com potencial risco de vida: relato de caso [Hydatid cyst in the cervical spinal cord complicated by potentially life-threatening difficult airway: a case report]. Braz J Anesthesiol. 2020 Sep-Oct;70(5):553-555. Portuguese. doi: 10.1016/j.bjan.2020.08.004. Epub 2020 Sep 11. PMID: 33004207.

15: Ababneh O, Alghanem S, Al-Shudifat A, Khreesha L, Obeidat S, Bsisu I. Acute Macroglossia Post Craniotomy in Sitting Position: A Case Report and Proposed Management Guideline. Int Med Case Rep J. 2020 Aug 31;13:391-397. doi: 10.2147/IMCRJ.S265206. PMID: 32943946; PMCID: PMC7473987.

16: Kaminski A, Dike NO, Bachista K, Boniface M, Dove C, Simon LV. Differences Between Esophageal and Tracheal Intubation Ultrasound View Proficiency: An Educational Study of Novice Prehospital Providers. Cureus. 2020 Jun 18;12(6):e8686. doi: 10.7759/cureus.8686. PMID: 32699685; PMCID: PMC7370683.

17: Alessandri F, Bellucci R, Tellan G, Pinchera P, Buonopane C, Ralli M, Greco A, de Vincentiis M, Pugliese F, Bilotto F. Awake fiberoptic intubation in patients with stenosis of the upper airways: Utility of the laryngeal nerve block. Clin Ter. 2020 Jul-Aug;171(4):e335-e339. doi: 10.7417/CT.2020.2236. PMID: 32614368.

18: Kim YO, Chung CR, Park CM, Suh GY, Ryu JA. Severe pain-related adverse events of percutaneous dilatational tracheostomy performed by a neurointensivist compared with conventional surgical tracheostomy in neurocritically ill patients. BMC Neurol. 2020 Jun 3;20(1):223. doi: 10.1186/s12883-020-01809-x. PMID: 32493239; PMCID: PMC7267757.

19: Yu T, Wu RR, Longhini F, Wang B, Wang MF, Yang FF, Hua FZ, Yao WD, Jin XJ. The “BURP” maneuver improves the glottic view during laryngoscopy but remains a difficult procedure. J Int Med

- Res. 2020 May;48(5):300060520925325. doi: 10.1177/0300060520925325. PMID: 32459108; PMCID: PMC7273868.
- 20: Gupta P, Muthukumar N, Rajshekhar V, Tripathi M, Thomas S, Gupta SK, Lal V, Pal P, Abraham M, Behari S, Paliwal V, Singh D, Pandey S, Narasimhan L, Srinivas D, Panda S, Kale SS, Chandra PS. Neurosurgery and Neurology Practices during the Novel COVID-19 Pandemic: A Consensus Statement from India. Neurol India. 2020 Mar-Apr;68(2):246-254. doi: 10.4103/0028-3886.283130. PMID: 32414996.
- 21: Song JA, Bae HB, Choi JI, Kang J, Jeong S. Difficult intubation and anesthetic management in an adult patient with undiagnosed congenital tracheal stenosis: a case report. J Int Med Res. 2020 Apr;48(4):300060520911267. doi: 10.1177/0300060520911267. PMID: 32321342; PMCID: PMC7180306.
- 22: Schnittker R, Marshall SD, Berecki-Gisolf J. Patient and surgery factors associated with the incidence of failed and difficult intubation. Anaesthesia. 2020 Jun;75(6):756-766. doi: 10.1111/anae.14997. Epub 2020 Mar 31. PMID: 32232991.
- 23: Miossec C, Jacob S, Peipoch L, Brard M, Jolivet E, Hochedez P, Hamlat A, Desbois N. Cerebral phaeohyphomycosis due to Cladophialophora bantiana in a French Guianese child. J Mycol Med. 2020 Apr;30(1):100918. doi: 10.1016/j.mycmed.2019.100918. Epub 2019 Dec 6. PMID: 31926829.
- 24: Singh J , Shakya S , Shrestha B , Subedi B , Singh PB . Awake Fiberoptic Intubation in Cervical Spine Injury: A Comparison between Atomized Local Anesthesia versus Airway Nerve Blocks. Kathmandu Univ Med J (KUMJ). 2018 Oct.-Dec.;16(64):323-327. PMID: 31729347.
- 25: Bonda DJ, Pruitt R, Goldstein T, Varghese A, Mittler M, Schneider S, Shah A, Rodgers S. Robotic Surgical Assistant (ROSA™) Rehearsal: Using 3-Dimensional Printing Technology to Facilitate the Introduction of Stereotactic Robotic Neurosurgical Equipment. Oper Neurosurg (Hagerstown). 2020 Jul 1;19(1):94-97. doi: 10.1093/ons/opz281. PMID: 31586195.
- 26: Rao KS, Nath G, Manohar N, Deora H. Anaesthetic management of a case of Haberland's syndrome (encephalocraniocutaneous lipomatosis). Indian J Anaesth. 2019 Jul;63(7):587-589. doi: 10.4103/ija.IJA\_213\_19. PMID: 31391623; PMCID: PMC6644190.
- 27: Kumar D, Gombar S, Ahuja V, Malhotra A, Gupta S. GlideScope versus D-blade for tracheal intubation in cervical spine patients: A randomised controlled trial. Indian J Anaesth. 2019 Jul;63(7):544-550. doi: 10.4103/ija.IJA\_3\_19. PMID: 31391617; PMCID: PMC6644200.
- 28: Özlü O, Yorulmaz İS, Eşbah AÜ, Er U. An unexpected challenging airway: Urticaria factitia caused difficult mask ventilation and tracheal intubation. J Clin Anesth. 2019 Nov;57:116. doi: 10.1016/j.jclinane.2019.04.002. Epub 2019 Apr 10. PMID: 30981179.
- 29: Wang Y, Wang Y, Zhang J, Du S, Wu J. Cerebral Venous Sinus Incision for Surgical Thrombectomy Combined with Thrombolysis During Decompressive Craniectomy for Malignant Cerebral Venous Sinus Thrombosis Complicated with Cerebral Hernia. J Stroke Cerebrovasc Dis. 2019 Jun;28(6):e60-e63. doi: 10.1016/j.jstrokecerebrovasdis.2019.03.030. Epub 2019 Apr 5. PMID: 30962082.
- 30: Bressan S, Kocher A, Oakley E, Borland M, Phillips N, Dalton S, Lyttle MD, Hearps S, Cheek JA, Furyk J, Neutze J, Dalziel S, Babl FE; Paediatric Research in Emergency Department International Collaborative (PREDICT) group. Traumatic brain injury in young children with isolated scalp haematoma. Arch Dis Child. 2019 Jul;104(7):664-669. doi: 10.1136/archdischild-2018-316066. Epub 2019 Mar 4. PMID: 30833284.

- 31: Losa M, Donofrio CA, Gemma M, Barzaghi LR, Mortini P. Pretreatment with somatostatin analogs does not affect the anesthesiologic management of patients with acromegaly. *Pituitary*. 2019 Apr;22(2):187-194. doi: 10.1007/s11102-019-00952-0. PMID: 30826981.
- 32: Morrison C, Avanis MC, Ritchie-McLean S, Woo C, Herod J, Nandi R, Thompson D. Retrospective audit of airway management practices in children with craniocervical pathology. *Paediatr Anaesth*. 2019 Apr;29(4):338-344. doi: 10.1111/pan.13596. Epub 2019 Mar 26. PMID: 30710400.
- 33: Lee JM, Park IS, Lee CH, Lee KH, Chun DH, Kim JY, Lee YS. Tracheal Infection Resulting from High Endotracheal Tube Cuff Pressure in an Unconscious Patient with Brain Trauma. *Korean J Neurotrauma*. 2018 Oct;14(2):155-158. doi: 10.13004/kjnt.2018.14.2.155. Epub 2018 Oct 31. PMID: 30402437; PMCID: PMC6218336.
- 34: Kumar A, Kumar N, Kumar A, Shweta, Kumar D. Laryngoscope bulb & unanticipated difficult tracheal intubation? *J Clin Anesth*. 2019 May;54:6-7. doi: 10.1016/j.jclinane.2018.10.011. Epub 2018 Oct 30. PMID: 30388603.
- 35: Lee KC, Hsu WH, Chou PH, Yiin JJ, Muo CH, Lin YP. Estimating the survival of elderly patients diagnosed with dementia in Taiwan: A longitudinal study. *PLoS One*. 2018 Jul 25;13(7):e0178997. doi: 10.1371/journal.pone.0178997. PMID: 30044781; PMCID: PMC6059383.
- 36: Alsalmi S, Bugdadi A, Alkhayri A, Fichten A, Peltier J. Urgent Anterior Cervical Osteophyectomy for an Asymptomatic Cervical Hyperostosis to Overcome Failed Intubation. *Cureus*. 2018 Mar 31;10(3):e2400. doi: 10.7759/cureus.2400. PMID: 29868301; PMCID: PMC5984258.
- 37: Rubenson Wahlin R, Nelson DW, Bellander BM, Svensson M, Helmy A, Thelin EP. Prehospital Intubation and Outcome in Traumatic Brain Injury-Assessing Intervention Efficacy in a Modern Trauma Cohort. *Front Neurol*. 2018 Apr 10;9:194. doi: 10.3389/fneur.2018.00194. PMID: 29692755; PMCID: PMC5903008.
- 38: Scaravilli V, Zanella A, Ciceri V, Bosatra M, Flandoli C, La Bruna A, Sosio S, Parini R, Gasperini S, Pesenti A, Moretto A. Safety of anesthesia for children with mucopolysaccharidoses: A retrospective analysis of 54 patients. *Paediatr Anaesth*. 2018 May;28(5):436-442. doi: 10.1111/pan.13379. Epub 2018 Apr 23. PMID: 29687523.
- 39: Bensalah M, Donaldson M, Aribi Y, labassen M, Cherfi L, Nebbal M, Medjaher M, Haffaf E, Abdennebi B, Guenane K, Djermane A, Kemali Z, OuldKablia S. Cortisol evaluation during the acute phase of traumatic brain injury-A prospective study. *Clin Endocrinol (Oxf)*. 2018 May;88(5):627-636. doi: 10.1111/cen.13562. Epub 2018 Mar 2. PMID: 29405355.
- 40: Hirakawa M, Nishihara T, Nakanishi K, Kitamura S, Fujii S, Ikemune K, Dote K, Takasaki Y, Yorozuya T. Perioperative management of a patient with Coffin- Lowry syndrome complicated by severe obesity: A case report and literature review. *Medicine (Baltimore)*. 2017 Dec;96(49):e9026. doi: 10.1097/MD.00000000000009026. PMID: 29245289; PMCID: PMC5728904.
- 41: Kutteruf R, Wells D, Stephens L, Posner KL, Lee LA, Domino KB. Injury and Liability Associated With Spine Surgery. *J Neurosurg Anesthesiol*. 2018 Apr;30(2):156-162. doi: 10.1097/ANA.0000000000000448. PMID: 28763433.
- 42: Panikkar S, Tol G, Siddique I. Iatrogenic bilateral hypoglossal palsy following spinal surgery. *Eur Spine J*. 2018 Jul;27(Suppl 3):314-317. doi: 10.1007/s00586-017-5214-4. Epub 2017 Jul 11. PMID: 28698964.

- 43: Daga V, Mendonca C, Choksey F, Elton J, Radhakrishna S. Anaesthetic management of a patient with multiple pterygium syndrome for elective caesarean section. *Int J Obstet Anesth.* 2017 May;31:96-100. doi: 10.1016/j.ijoa.2017.04.005. Epub 2017 Apr 12. PMID: 28684141.
- 44: Samali M, Elkoundi A, Tahri A, Bensghir M, Haimeur C. Anesthetic management of spontaneous cervical epidural hematoma during pregnancy: a case report. *J Med Case Rep.* 2017 Jun 26;11(1):171. doi: 10.1186/s13256-017-1335-y. PMID: 28648141; PMCID: PMC5483838.
- 45: Zhang Y, Guo X, Pei L, Zhang Z, Tan G, Xing B. High levels of IGF-1 predict difficult intubation of patients with acromegaly. *Endocrine.* 2017 Aug;57(2):326-334. doi: 10.1007/s12020-017-1338-x. Epub 2017 Jun 15. PMID: 28620866; PMCID: PMC5511320.
- 46: Karlik JB, Stani T, Nonas S, Dogan A, Brambrink A. Status Asthmaticus and Central Herniation: A Case for Multidisciplinary Critical Care. *A A Case Rep.* 2017 Jun 1;8(11):286-290. doi: 10.1213/XAA.0000000000000491. PMID: 28328592.
- 47: Alderazi YJ, Shastri D, Wessel J, Mathew M, Kass-Hout T, Aziz SR, Prestigiacomo CJ, Gandhi CD. Internal Maxillary Artery Preoperative Embolization Using n-Butyl Cyanoacrylate and Pushable Coils for Temporomandibular Joint Ankylosis Surgery. *World Neurosurg.* 2017 May;101:254-258. doi: 10.1016/j.wneu.2017.01.086. Epub 2017 Jan 31. PMID: 28153614.
- 48: Koumpan Y, Murdoch J, Beyea JA, Kahn M, Colbeck J. A Case Report: Establishing a Definitive Airway in a Trauma Patient With a King Laryngeal Tube In Situ in the Presence of a Closed Head Injury and Difficult Airway: "Between the Devil and the Deep Blue Sea". *A A Case Rep.* 2017 Mar 15;8(6):139-141. doi: 10.1213/XAA.000000000000446. PMID: 28114156.
- 49: Sheshadri V, Moga R, Manninen P, Goldstein CL, Rampersaud YR, Massicotte EM, Fehlings MG, Venkatraghavan L. Airway adverse events following posterior occipito-cervical spinal fusion. *J Clin Neurosci.* 2017 May;39:124-129. doi: 10.1016/j.jocn.2016.12.036. Epub 2017 Jan 16. PMID: 28110925.
- 50: Kurnutala LN, Sandhu G, Bergese SD. Fiberoptic nasopharyngoscopy for evaluating a potentially difficult airway in a patient with elevated intracranial pressure. *J Clin Anesth.* 2016 Nov;34:336-8. doi: 10.1016/j.jclinane.2016.05.023. Epub 2016 Jun 3. PMID: 27687404.
- 51: Krause M, Khatibi B, Sztain JF, Rahman P, Shapiro AB, Sandhu NS. Ultrasound- guided airway blocks using a curvilinear probe. *J Clin Anesth.* 2016 Sep;33:408-12. doi: 10.1016/j.jclinane.2016.04.058. Epub 2016 Jun 3. PMID: 27555201.
- 52: Pintaric TS. UPPER AIRWAY BLOCKS FOR AWAKE DIFFICULT AIRWAY MANAGEMENT. *Acta Clin Croat.* 2016 Mar;55 Suppl 1:85-9. PMID: 27276778.
- 53: Matsuda A, Mizota T, Tanaka T, Segawa H, Fukuda K. [Difficult Ventilation Requiring Emergency Endotracheal Intubation during Awake Craniotomy Managed by Laryngeal Mask Airway]. *Masui.* 2016 Apr;65(4):380-3. Japanese. PMID: 27188111.
- 54: Urbizu A, Ferré A, Poca MA, Rovira A, Sahuquillo J, Martin BA, Macaya A. Cephalometric oropharynx and oral cavity analysis in Chiari malformation Type I: a retrospective case-control study. *J Neurosurg.* 2017 Feb;126(2):626-633. doi: 10.3171/2016.1.JNS151590. Epub 2016 May 6. PMID: 27153161.
- 55: Alimohamadi M, Shirani M, Shariat Moharari R, Pour-Rashidi A, Katabchi M, Khajavi M, Arami M, Amirjamshidi A. Application of Awake Craniotomy and Intraoperative Brain Mapping for Surgical Resection of Insular Gliomas of the Dominant Hemisphere. *World Neurosurg.* 2016 Aug;92:151-158.

doi: 10.1016/j.wneu.2016.04.079. Epub 2016 May 2. PMID: 27150651.

56: Heesen M, Klimek M. Nonobstetric anesthesia during pregnancy. *Curr Opin Anaesthesiol*. 2016 Jun;29(3):297-303. doi: 10.1097/ACO.0000000000000311. PMID: 26859466.

57: Münster T, Hoffmann M, Schlaffer S, Ihmsen H, Schmitt H, Tzabazis A. Anatomical location of the vocal cords in relation to cervical vertebrae: A new predictor of difficult laryngoscopy? *Eur J Anaesthesiol*. 2016 Apr;33(4):257-62. doi: 10.1097/EJA.0000000000000430. PMID: 26849245.

58: Mahajan C, Rath GP, Bithal PK, Mahapatra AK. Perioperative Management of Children With Giant Encephalocele: A Clinical Report of 29 Cases. *J Neurosurg Anesthesiol*. 2017 Jul;29(3):322-329. doi: 10.1097/ANA.0000000000000282. PMID: 26841351.

59: Atabaki SM, Hoyle JD Jr, Schunk JE, Monroe DJ, Alpern ER, Quayle KS, Glass TF, Badawy MK, Miskin M, Schalick WO, Dayan PS, Holmes JF, Kuppermann N. Comparison of Prediction Rules and Clinician Suspicion for Identifying Children With Clinically Important Brain Injuries After Blunt Head Trauma. *Acad Emerg Med*. 2016 May;23(5):566-75. doi: 10.1111/acem.12923. Epub 2016 Apr 20. PMID: 26825755.

60: Hurtado P, Fàbregas N, Forero C, Tercero J, Carrero E, de Riva N, Gracia I, Lopez AM, Valero R. Laryngeal Mask Ventilation During Lumbar Spine Neurosurgery in Knee-Chest Position is Feasible. *J Neurosurg Anesthesiol*. 2017 Jul;29(3):317-321. doi: 10.1097/ANA.0000000000000277. PMID: 26807696.

61: Chen L, Liu J, Yang J, Zhang Y, Liu Y. Combined Fascia Iliaca and Sciatic Nerve Block for Hip Surgery in the Presence of Severe Ankylosing Spondylitis: A Case-Based Literature Review. *Reg Anesth Pain Med*. 2016 Mar-Apr;41(2):158-63. doi: 10.1097/AAP.0000000000000350. PMID: 26735155.

62: Foreman PM, Harrigan MR, Griessenauer CJ, Loukas M, Tubbs RS. Access to the carotid artery bifurcation: Cadaveric study with application to nasotracheal intubation as a technique to improve access to a high carotid artery bifurcation. *Br J Neurosurg*. 2015;29(6):865-7. doi: 10.3109/02688697.2015.1071331. Epub 2015 Aug 27. PMID: 26312946.

63: Malcharek MJ, Bartz M, Rogos B, Günther L, Sablotzki A, Gille J, Schneider G. Comparison of Enk Fibreoptic Atomizer with translaryngeal injection for topical anaesthesia for awake fibreoptic intubation in patients at risk of secondary cervical injury: A randomised controlled trial. *Eur J Anaesthesiol*. 2015 Sep;32(9):615-23. doi: 10.1097/EJA.0000000000000285. PMID: 26086284.

64: Sawka A, Tang R, Vaghadia H. Sonographically guided superior laryngeal nerve block during awake fiberoptic intubation. A Case Rep. 2015 Apr 15;4(8):107-10. doi: 10.1213/XAA.000000000000136. PMID: 25867195.

65: Durga P, Sahu BP. Neurological deterioration during intubation in cervical spine disorders. *Indian J Anaesth*. 2014 Nov-Dec;58(6):684-92. doi: 10.4103/0019-5049.147132. PMID: 25624530; PMCID: PMC4296351.

66: Luo LL, Huang W, Zhou LX, Wang J, Xu L, Li P. Optimal dose of succinylcholine for tracheal intubation in patients during inhalation induction with sevoflurane: a randomized controlled trial. *J Clin Anesth*. 2014 Nov;26(7):557-62. doi: 10.1016/j.jclinane.2014.03.014. Epub 2014 Oct 16. PMID: 25439419.

67: Kamata K, Wada K, Kinoshita M, Nomura M, Ozaki M. [Case of respiratory arrest during

- intraoperative magnetic resonance imaging (iMRI) for awake craniotomy]. Masui. 2014 Aug;63(8):907-10. Japanese. PMID: 25199330.
- 68: Matsunami S, Komasawa N, Nakao K, Nakano S, Tatsumi S, Minami T. [Intubation using the Pentax-AWS Airwayscope with an infant-size Intlock in a patient with increased intracranial pressure due to acute hydrocephalus]. Masui. 2014 Apr;63(4):412-4. Japanese. PMID: 24783606.
- 69: Erdoğan MA, Sanli M, Ersoy MO. Anesthesia management in a child with osteogenesis imperfecta and epidural hemorrhage. Braz J Anesthesiol. 2013 Jul- Aug;63(4):366-8. doi: 10.1016/j.bjane.2012.07.008. Epub 2013 Aug 13. PMID: 24565246.
- 70: Malcharek MJ, Rockmann K, Zumpe R, Sorge O, Winter V, Sablotzki A, Schneider G. Comparison of Aintree and Fastrach techniques for low-skill fibreoptic intubation in patients at risk of secondary cervical injury: a randomised controlled trial. Eur J Anaesthesiol. 2014 Mar;31(3):153-8. doi: 10.1097/EJA.0b013e328365ae49. PMID: 24145806.
- 71: Erdoğan MA, Sanli M, Ersoy MO. Anesthesia management in a child with osteogenesis imperfecta and epidural hemorrhage. Braz J Anesthesiol. 2013 Jul- Aug;63(4):366-8. doi: 10.1016/j.bjan.2012.07.007. PMID: 23931253.
- 72: Arulvelan A, Gayatri P, Smita V, Nair SN. A retrospective analysis of stridor after vestibular schwannoma surgery. J Neurosurg Anesthesiol. 2014 Jan;26(1):17-21. doi: 10.1097/ANA.0b013e3182945267. PMID: 23632431.
- 73: Hoshijima H, Takeuchi R, Tsukamoto M, Ogawa S, Iwase Y, Matsumoto N. [Anesthetic management for a pediatric patient of Klippel-Trenaunay syndrome with giant head by hydrocephalus]. Masui. 2012 Dec;61(12):1356-8. Japanese. PMID: 23362775.
- 74: Vinay B, Aravinda HR, Gopala Krishna KN, Gopala Krishna KN, Umamaheswara Rao GS. An unexpected cause of difficult intubation in a patient with poliomyelitis undergoing craniotomy. J Neurosurg Anesthesiol. 2013 Jan;25(1):91-2. doi: 10.1097/ANA.0b013e318277a572. PMID: 23147447.
- 75: Trivedi V, Sharma G. Evaluation of airway blocks versus general anaesthesia for diagnostic direct laryngoscopy and biopsy for carcinoma larynx. J Indian Med Assoc. 2012 Feb;110(2):78-83. PMID: 23029839.
- 76: Niwa Y, Shimada N, Negishi Y, Kai M, Inoue S, Takeuchi M. [Anesthetic management of a morbidly obese patient in prone position for lumbar laminectomy]. Masui. 2012 Aug;61(8):837-9. Japanese. PMID: 22991806.
- 77: Fang Y, Zhang H, Liu W, Li Y. A comparison of three induction regimens using succinylcholine, vecuronium, or no muscle relaxant: impact on the intraoperative monitoring of the lateral spread response in hemifacial spasm surgery: study protocol for a randomised controlled trial. Trials. 2012 Sep 8;13:160. doi: 10.1186/1745-6215-13-160. PMID: 22958580; PMCID: PMC3502586.
- 78: Abukawa Y, Hiroki K, Ozaki M. Initial experience of the i-gel supraglottic airway by the residents in pediatric patients. J Anesth. 2012 Jun;26(3):357-61. doi: 10.1007/s00540-011-1322-1. Epub 2012 Feb 7. PMID: 22310833.
- 79: Brockmeyer DL, Ragel BT, Kestle JR. The pediatric cervical spine instability study. A pilot study assessing the prognostic value of four imaging modalities in clearing the cervical spine for children with severe traumatic injuries. Childs Nerv Syst. 2012 May;28(5):699-705. doi: 10.1007/s00381-012-1696-x. PMID: 22290498.

- 80: Gitman M, Mueller M. The use of an airway exchange catheter during a difficult tracheostomy. *J Neurosurg Anesthesiol.* 2012 Jan;24(1):78-9. doi: 10.1097/ANA.0b013e318237fa57. PMID: 22015430.
- 81: Kamath S, Reddy M, Shukla D. Missing but important! Dislodgment of a loose tooth and its recovery during difficult intubation. *J Anaesthet Clin Pharmacol.* 2011 Jan;27(1):137-8. PMID: 21804736; PMCID: PMC3146143.
- 82: Hurtado P, Valero R, Tercero J, Carrero E, de Riva N, López AM, Enseñat J, Ubré M, Lushchenkov D, Fàbregas N. Experiencia con el uso de la mascarilla laríngea Proseal en pacientes sometidos a cirugía de derivación ventrículo peritoneal [Experience with the proseal laryngeal mask in ventriculoperitoneal shunting]. *Rev Esp Anestesiol Reanim.* 2011 Jun-Jul;58(6):362-4. Spanish. doi: 10.1016/s0034-9356(11)70085-8. PMID: 21797086.
- 83: Ho AM, Karmakar MK, Critchley LA. Acute pain management of patients with multiple fractured ribs: a focus on regional techniques. *Curr Opin Crit Care.* 2011 Aug;17(4):323-7. doi: 10.1097/MCC.0b013e328348bf6f. PMID: 21716105.
- 84: Niwa Y, Hirabayashi Y, Seo N, Inoue H, Seichi A. [Use of Parker Flex-Tip tracheal tube in a patient with Kniest dysplasia]. *Masui.* 2011 May;60(5):631-4. Japanese. PMID: 21626871.
- 85: Caldironi D, Cortellazzi P. A new difficult airway management algorithm based upon the El Ganzouri Risk Index and GlideScope® videolaryngoscope. A new look for intubation? *Minerva Anestesiol.* 2011 Oct;77(10):1011-7. Epub 2011 May 24. PMID: 21610665.
- 86: Witte W, Nobel C, Hilpert J. Anästhesie beim Angelman-Syndrom [Anesthesia and Angelman syndrome]. *Anaesthesist.* 2011 Jul;60(7):633-40. German. doi: 10.1007/s00101-011-1873-4. Epub 2011 Mar 16. PMID: 21424308.
- 87: Sasano N, Shimazu N. [Case of pseudoankylosis of the mandible after craniotomy]. *Masui.* 2010 Apr;59(4):477-9. Japanese. PMID: 20420138.
- 88: Leung KH, Chiu KY, Wong YW, Lawmin JC. Case report: Spinal anesthesia by mini-laminotomy for a patient with ankylosing spondylitis who was difficult to anesthetize. *Clin Orthop Relat Res.* 2010 Dec;468(12):3415-8. doi: 10.1007/s11999-010-1317-5. Epub 2010 Mar 19. PMID: 20300899; PMCID: PMC2974874.
- 89: Bindra A, Prabhakar H, Singh GP, Ali Z, Singhal V. Is the modified Mallampati test performed in supine position a reliable predictor of difficult tracheal intubation? *J Anesth.* 2010 Jun;24(3):482-5. doi: 10.1007/s00540-010-0905-6. Epub 2010 Mar 10. Erratum in: *J Anesth.* 2011 Feb;25(1):137. PMID: 20217151.
- 90: Anderson RC, Kan P, Vanaman M, Rubsam J, Hansen KW, Scaife ER, Brockmeyer DL. Utility of a cervical spine clearance protocol after trauma in children between 0 and 3 years of age. *J Neurosurg Pediatr.* 2010 Mar;5(3):292-6. doi: 10.3171/2009.10.PEDS09159. PMID: 20192648.
- 91: Barua E, Johnston J, Fujii J, Dzwonczyk R, Chiocca E, Bergese S. Anesthesia for brain tumor resection using intraoperative magnetic resonance imaging (iMRI) with the Polestar N-20 system: experience and challenges. *J Clin Anesth.* 2009 Aug;21(5):371-6. doi: 10.1016/j.jclinane.2008.09.004. Epub 2009 Aug 22. PMID: 19700282.
- 92: Tordiglione P, Magni G, Imperiale C, Baisi F, De Blasiis N, Manganozzi V, Rosa G. Dedicated endotracheal tube for percutaneous tracheostomy. *Eur J Anaesthetol.* 2009 Nov;26(11):936-9. doi: 10.1097/EJA.0b013e32832c6042. PMID: 19550339.

- 93: Langford RA, Leslie K. Awake fibreoptic intubation in neurosurgery. *J Clin Neurosci.* 2009 Mar;16(3):366-72. doi: 10.1016/j.jocn.2008.05.020. Epub 2009 Jan 17. PMID: 19150599.
- 94: Yatabe T, Yokoyama T, Tokoroyama H, Imoto A, Yokoyama R, Yamashita K, Manabe M. [Pulmonary aspiration during anesthetic induction in a patient with a history of distal gastrectomy]. *Masui.* 2008 Nov;57(11):1431-4. Japanese. PMID: 19039971.
- 95: Alici HA, Cesur M, Ors R, Tastekin A, Tuzun Y. A new technique for laryngeal mask airway insertion in a newborn with pierre-robin syndrome: a case report. *Eurasian J Med.* 2008 Dec;40(3):140-3. PMID: 25610049; PMCID: PMC4261663.
- 96: Asai T, Shingu K. [Use of the Pentax-AWS videolaryngoscope and an exchange catheter for tube exchange]. *Masui.* 2008 Aug;57(8):990-2. Japanese. PMID: 18710006.
- 97: Peiris K, Frerk C. Awake intubation. *J Perioper Pract.* 2008 Mar;18(3):96-104. doi: 10.1177/175045890801800302. PMID: 18426128.
- 98: Rozet I, Domino KB. Respiratory care. *Best Pract Res Clin Anaesthesiol.* 2007 Dec;21(4):465-82. doi: 10.1016/j.bpa.2007.07.001. PMID: 18286832.
- 99: Leelanukrom R, Wacharasint P, Kaewanuchit A. Perioperative management for surgical correction of frontoethmoidal encephalomeningocele in children: a review of 102 cases. *Paediatr Anaesth.* 2007 Sep;17(9):856-62. doi: 10.1111/j.1460-9592.2007.02216.x. PMID: 17683404.
- 100: Osborn IP, Behringer EC, Kramer DC. Difficult airway management following supratentorial craniotomy: a useful maneuver with a new device. *Anesth Analg.* 2007 Aug;105(2):552-3. doi: 10.1213/01.ane.0000268139.62137.f6. PMID: 17646543.
- 101: Moiyadi AV, Praharaj SS, Pillai VS, Chandramouli BA. Hydrocephalus in Paget's disease. *Acta Neurochir (Wien).* 2006 Dec;148(12):1297-300; discussion 1300. doi: 10.1007/s00701-006-1048-2. Epub 2006 Nov 9. PMID: 17086474.
- 102: Conroy JP. Airway management: a patient with Madelung disease. *AANA J.* 2006 Aug;74(4):281-4. PMID: 16918119.
- 103: Erol DD, Eser O. The expected difficult intubation of a patient with Beare- Stevenson syndrome. *Paediatr Anaesth.* 2006 Jul;16(7):801. doi: 10.1111/j.1460-9592.2006.01880.x. PMID: 16879527.
- 104: Wallet F, Chatain G, Ceruse P, Marcotte G, Gueugniaud PY, Piriou V. Intubation transorbitaire: une intubation difficile prévisible en chirurgie céphalique [Transorbital fiberoptic intubation: a predictable difficult intubation in cephalic surgery]. *Ann Fr Anesth Reanim.* 2006 Jul;25(7):773-6. French. doi: 10.1016/j.annfar.2006.03.006. Epub 2006 May 16. PMID: 16707242.
- 105: Govindarajan R, Babalola O, Gad-EI-Kareem M, Kodali NS, Aronson J, Abadir A. Intraoperative wake-up test in neonatal neurosurgery. *Paediatr Anaesth.* 2006 Apr;16(4):451-3. doi: 10.1111/j.1460-9592.2005.01713.x. PMID: 16618301.
- 106: Nemergut EC, Zuo Z. Airway management in patients with pituitary disease: a review of 746 patients. *J Neurosurg Anesthesiol.* 2006 Jan;18(1):73-7. doi: 10.1097/01.ana.0000183044.54608.50. PMID: 16369144.
- 107: Manikandan S, Neema PK, Rathod RC. Airway problems caused by hypogonadism in male patients undergoing neurosurgery. *Anesth Analg.* 2005 Dec;101(6):1812-1815. doi:

10.1213/01.ANE.0000184195.28728.CD. PMID: 16301264.

108: Ali MI, Brunson CD, Mayhew JF. Failed intubation secondary to complete tracheal rings: a case report and literature review. *Paediatr Anaesth*. 2005 Oct;15(10):890-2. doi: 10.1111/j.1460-9592.2004.01543.x. PMID: 16176319.

109: Petit JS, Boulonnais C, Graftieaux JP, Malinovsky JM. Difficult intubation related to ankylosis of temporomandibular joint after craniotomy. *J Neurosurg Anesthesiol*. 2005 Jul;17(3):174-5. doi: 10.1097/01.ana.0000171731.41008.93. PMID: 16037743.

110: Ion T, Cook-Sather SD, Finkel RS, Cucchiaro G. Fascia iliaca block for an infant with arthrogryposis multiplex congenita undergoing muscle biopsy. *Anesth Analg*. 2005 Jan;100(1):82-84. doi: 10.1213/01.ANE.0000138036.83973.9A. PMID: 15616056.

111: Tajima K, Kita T, Nakano S, Sasaki S. [Preoperative evaluation, anesthetic management and postoperative complications of athetotic type cerebral palsy patients undergoing laminoplasty]. Masui. 2004 Sep;53(9):1003-7. Japanese. PMID: 15500100.

112: Niu HH, Ho CT, Tsai PS. Successful detection and management of unexpected endotracheal tube kinking during neurosurgery-a case report. *Acta Anaesthesiol Taiwan*. 2004 Jun;42(2):119-23. PMID: 15346710.

113: Sánchez-Etayo G, Valero R, Carrero E, Salvador L, Rumià J, Fàbregas N. Complicaciones en la cirugía de la epilepsia. Experiencia tras 102 intervenciones entre 1997 y 2001 [Complications during epilepsy surgery. Experience after 102 interventions between 1997 and 2001]. *Rev Esp Anestesiol Reanim*. 2003 Jun-Jul;50(6):267-73. Spanish. PMID: 12940216.

114: Mbajorgu EF, Ekanem AU. The mandibular angles of dry adult human mandibles from north eastern arid zone of Nigeria. *Cent Afr J Med*. 2002 Jan- Feb;48(1-2):9-13. doi: 10.4314/cajm.v48i1.8417. PMID: 12808782.

115: Takigawa T, Yanaka K, Yasuda M, Asakawa H, Matsumaru Y, Nose T. Head and neck extension-fixation with a head frame for exposure of the distal internal carotid artery in carotid endarterectomy-technical note. *Neurol Med Chir (Tokyo)*. 2003 May;43(5):271-3; discussion 273. doi: 10.2176/nmc.43.271. PMID: 12790290.

116: Behari S, Bhargava V, Nayak S, Kiran Kumar MV, Banerji D, Chhabra DK, Jain VK. Congenital reducible atlantoaxial dislocation: classification and surgical considerations. *Acta Neurochir (Wien)*. 2002 Nov;144(11):1165-77. doi: 10.1007/s00701-002-1009-3. PMID: 12434173.

117: De Beer DA, Williams DG, Mackersie A. An unexpected difficult laryngoscopy. *Paediatr Anaesth*. 2002 Sep;12(7):645-8. doi: 10.1046/j.1460-9592.2002.00857.x. PMID: 12358665.

118: Delgado Tapia JA, García Sánchez MJ, Prieto Cuéllar M, Jiménez Ayala I, García Rescalvo MA, López-Andrade Jurado A. Bloqueo infraclavicular del plexo braquial con técnica de inyección múltiple y abordaje en sentido craneal en paciente con dificultad prevista de intubación traqueal [Intraclavicular brachial plexus block using a multiple injection technique and an approach in the cranial direction in a patient with anticipated difficulties in tracheal intubation]. *Rev Esp Anestesiol Reanim*. 2002 Feb;49(2):105-7. Spanish. PMID: 12025239.

119: Sesay M, Tentillier M, Mehser M, Marguinaud E, Stöckle M, Crozat P, Dubicq J, Boulard G, Maurette P. Les dérivations du liquide céphalorachidien: particularités anesthésiques [Cerebrospinal fluid shunting: anesthetic particularities]. *Ann Fr Anesth Reanim*. 2002 Feb;21(2):78-83. French. doi:

- 10.1016/s0750-7658(01)00499-3. PMID: 11915480.
- 120: Maurer K, Ekatodramis G, Rentsch K, Borgeat A. Interscalene and infraclavicular block for bilateral distal radius fracture. *Anesth Analg*. 2002 Feb;94(2):450-2, table of contents. doi: 10.1097/00000539-200202000-00042. PMID: 11812717.
- 121: Carré P, Mollet J, Le Poultel S, Costey G, Ecoffey C. Bloc des nerfs ilio- inguinal et ilio-hypogastrique en une seule ponction: une alternative utile pour l'anesthésie des urgences chirurgicales inguinales [Ilio-inguinal Ilio- hypogastric nerve block with a single puncture: an alterantive for anesthesia in emergency inguinal surgery]. *Ann Fr Anesth Reanim*. 2001 Aug;20(7):643-6. French. doi: 10.1016/s0750-7658(01)00425-7. PMID: 11530753.
- 122: Kundra P, Kutralam S, Ravishankar M. Local anaesthesia for awake fibreoptic nasotracheal intubation. *Acta Anaesthesiol Scand*. 2000 May;44(5):511-6. doi: 10.1034/j.1399-6576.2000.00503.x. PMID: 10786733.
- 123: Asai T, Hirose T, Shingu K. Failed tracheal intubation using a laryngoscope and intubating laryngeal mask. *Can J Anaesth*. 2000 Apr;47(4):325-8. doi: 10.1007/BF03020946. PMID: 10764176.
- 124: Sun JC, Yakimov M, al-Badawi I, Honey CR. Hemorrhagic moyamoya disease during pregnancy. *Can J Neurol Sci*. 2000 Feb;27(1):73-6. doi: 10.1017/s0317167100052021. PMID: 10676593.
- 125: D'Alise MD, Benzel EC, Hart BL. Magnetic resonance imaging evaluation of the cervical spine in the comatose or obtunded trauma patient. *J Neurosurg*. 1999 Jul;91(1 Suppl):54-9. doi: 10.3171/spi.1999.91.1.0054. PMID: 10419369.
- 126: Watson NC, Hokanson M, Maltby JR, Todesco JM. The intubating laryngeal mask airway in failed fibreoptic intubation. *Can J Anaesth*. 1999 Apr;46(4):376-8. doi: 10.1007/BF03013232. PMID: 10232724.
- 127: Mitchell V, Adams T, Calder I. Choice of cuff inflation medium during nitrous oxide anaesthesia. *Anaesthesia*. 1999 Jan;54(1):32-6. doi: 10.1046/j.1365-2044.1999.00646.x. PMID: 10209367.
- 128: Fuchs G, Schwarz G, Baumgartner A, Kaltenböck F, Voit-Augustin H, Planinz W. Fiberoptic intubation in 327 neurosurgical patients with lesions of the cervical spine. *J Neurosurg Anesthesiol*. 1999 Jan;11(1):11-6. doi: 10.1097/00008506-199901000-00003. PMID: 9890380.
- 129: Hoshi T, Matsumiya N, Satsumae T, Takahashi S, Sato K, Tanaka M. [A case of the CHARGE association with failed tracheal intubation]. *Masui*. 1998 Apr;47(4):487-9. Japanese. PMID: 9594525.
- 130: Noppen M, Meysman M, D'Haese J, Vincken W. Thoracoscopic splanchnicolysis for the relief of chronic pancreatitis pain: experience of a group of pneumologists. *Chest*. 1998 Feb;113(2):528-31. doi: 10.1378/chest.113.2.528. PMID: 9498977.
- 131: Chisholm DG, Calder I. Experience with the McCoy laryngoscope in difficult laryngoscopy. *Anaesthesia*. 1997 Sep;52(9):906-8. doi: 10.1111/j.1365-2044.1997.196-az0329.x. PMID: 9349078.
- 132: Saino M, Akasaka M, Nakajima M, Kayama T, Kondoh R, Nagahata M, Hosoya T, Yamaguchi K. [A case of a ruptured lingual artery aneurysm treated with endovascular surgery]. *No Shinkei Geka*. 1997 Sep;25(9):835-9. Japanese. PMID: 9300454.
- 133: Ittichaikulthol W, Pausawasdi S, Srichintai P, Sarnvivad P. Propofol vs isoflurane for neurosurgical anesthesia in Thai patients. *J Med Assoc Thai*. 1997 Jul;80(7):454-60. PMID: 9277075.

- 134: Ananthanarayan C, Cole AF, Kazdan M. Difficult intubation and brain-stem anaesthesia. *Can J Anaesth.* 1997 Jun;44(6):658-61. doi: 10.1007/BF03015451. Erratum in: *Can J Anaesth* 1997 Aug;44(8):902. PMID: 9187787.
- 135: Berg K, Grundmann U, Wilhelm W, Krier C, Mertzlufft F. Kraniosynostose- Operationen im Kindesalter [Craniosynostosis operations in childhood]. *Anasthesiol Intensivmed Notfallmed Schmerzther.* 1997 Mar;32(3):138-50. German. doi: 10.1055/s-2007-995028. PMID: 9190161.
- 136: Williamson S, Weaver M. Difficult intubation in a neurosurgical patient. *Anaesthesia.* 1997 Jan;52(1):92. PMID: 9014568.
- 137: Kawaguchi M, Sakamoto T, Furuya H, Ohnishi H, Karasawa J. Pseudoankylosis of the mandible after supratentorial craniotomy. *Anesth Analg.* 1996 Oct;83(4):731-4. doi: 10.1097/00000539-199610000-00012. PMID: 8831311.
- 138: Ho CS, Wong NP. [Clinical experience in interscalene brachial plexus block combined with Ho's method of C3-4 block for shoulder and proximal upper extremity surgeries]. *Acta Anaesthesiol Sin.* 1996 Sep;34(3):135-40. Chinese. PMID: 9084537.
- 139: Nilsson P, Gazelius B, Carlson H, Hillered L. Continuous measurement of changes in regional cerebral blood flow following cortical compression contusion trauma in the rat. *J Neurotrauma.* 1996 Apr;13(4):201-7. doi: 10.1089/neu.1996.13.201. PMID: 8860200.
- 140: Calder I, Calder J, Crockard HA. Difficult direct laryngoscopy in patients with cervical spine disease. *Anaesthesia.* 1995 Sep;50(9):756-63. doi: 10.1111/j.1365-2044.1995.tb06135.x. PMID: 7573863.
- 141: Dalkara T, Irikura K, Huang Z, Panahian N, Moskowitz MA. Cerebrovascular responses under controlled and monitored physiological conditions in the anesthetized mouse. *J Cereb Blood Flow Metab.* 1995 Jul;15(4):631-8. doi: 10.1038/jcbfm.1995.78. PMID: 7790412.
- 142: Kawaguchi M, Sakamoto T, Ohnishi H, Karasawa J, Furuya H. Do recently developed techniques for skull base surgery increase the risk of difficult airway management? Assessment of pseudoankylosis of the mandible following surgical manipulation of the temporalis muscle. *J Neurosurg Anesthesiol.* 1995 Jul;7(3):183-6. doi: 10.1097/00008506-199507000-00005. PMID: 7549370.
- 143: Geldner GF, Schweiger S, Hetz W, Rügheimer E. Intubationsbedingungen und Kreislaufverhalten 90 s nach einer geteilten Mivacuriumdosis bei drei unterschiedlichen TIVA-Einleitungsformen [Intubation conditions and circulatory effects 90 seconds after a divided mivacurium dose with three different TIVA induction methods]. *Anaesthetist.* 1995 May;44(5):334-8. German. doi: 10.1007/s001010050161. PMID: 7611580.
- 144: Cavaliere F, Masieri S, Arcangeli A, Carducci P, Proietti R. Risultati di uno screening audiologico a distanza su pazienti critici ricoverati in Rianimazione [Long-term results of a hearing screening in critically ill patients dismissed from an intensive care unit]. *Minerva Anestesiol.* 1995 Mar;61(3):71-5. Italian. PMID: 7675264.
- 145: Moskopp D, Stähle C, Wassmann H. Problems of the Glasgow Coma Scale with early intubated patients. *Neurosurg Rev.* 1995;18(4):253-7. doi: 10.1007/BF00383876. PMID: 8927241.
- 146: Kumar CM, Mehta M. Ankylosing spondylitis: lateral approach to spinal anaesthesia for lower limb surgery. *Can J Anaesth.* 1995 Jan;42(1):73-6. doi: 10.1007/BF03010575. PMID: 7889588.

- 147: Baxter MA. Acromegaly and transsphenoidal hypophysectomy: a case report. *AANA J.* 1994 Apr;62(2):182-5. PMID: 8085420.
- 148: Ho CS, Kao MC. [Alternative one lung ventilation anesthesia for bilateral thoracoscopic sympathectomy]. *Acta Anaesthesiol Sin.* 1994 Mar;32(1):1-6. Chinese. PMID: 8199806.
- 149: Bannister CM, Kashab M, Dagestani H, Placzek M. Nasal endotracheal intubation in a premature infant with a nasal encephalocele. *Arch Dis Child.* 1993 Jul;69(1 Spec No):81-2. doi: 10.1136/adc.69.1\_spec\_no.81. PMID: 8346963; PMCID: PMC1029408.
- 150: McCall WG. The use of fiberoptic laryngoscopy for difficult intubation of the trachea. *CRNA.* 1993 Feb;4(1):21-30. PMID: 8448521.
- 151: Yamamoto T, Katoh H, Wakamatsu M, Kondo U. [Anesthetic problems in patients with Forestier's disease]. *Masui.* 1992 Jun;41(6):1008-10. Japanese. PMID: 1613944.
- 152: Izumi J, Hirose Y, Yazaki T. Percutaneous trigeminal rhizotomy and percutaneous cordotomy under general anesthesia. *Stereotact Funct Neurosurg.* 1992;59(1-4):62-8. doi: 10.1159/000098919. PMID: 1295049.
- 153: Silk JM, Hill HM, Calder I. Difficult intubation and the Laryngeal Mask. *Eur J Anaesthesiol Suppl.* 1991;4:47-51. PMID: 1879413.
- 154: Lee LS, Chau SW, Yu KL, Hong JT, Ooi SJ, Chu KS, Tang CS, Tseng CK. [Clinical study of awake fiberoptic nasotracheal intubation for difficult opening mouth patients]. *Ma Zui Xue Za Zhi.* 1990 Sep;28(3):343-9. Chinese. PMID: 2277577.
- 155: Halbach VV, Higashida RT, Dowd CF, Barnwell SL, Hieshima GB. Treatment of carotid-cavernous fistulas associated with Ehlers-Danlos syndrome. *Neurosurgery.* 1990 Jun;26(6):1021-7. doi: 10.1097/00006123-199006000-00017. PMID: 2362658.
- 156: Senders CW, Eisele P. Independent effects of denervating the cricothyroid muscle and stenting on the anterior cricoid split: canine model. *Int J Pediatr Otorhinolaryngol.* 1989 Jul;17(3):213-24. doi: 10.1016/0165-5876(89)90048-7. PMID: 2767894.
- 157: Vannier JL, Vilette M, Bouaziz H, Ibrahim H, Marty J, Desmonts JM. Le bloc du nerf laryngé supérieur pour les endoscopies ORL. Description d'une technique simplifiée [Block of the superior laryngeal nerve for ORL endoscopy. Description of a simplified technique]. *Ann Fr Anesth Reanim.* 1989;8(4):379-81. French. doi: 10.1016/s0750-7658(89)80085-1. PMID: 2817552.
- 158: Starmark JE, Holmgren E, Stålhammar D. Current reporting of responsiveness in acute cerebral disorders. A survey of the neurosurgical literature. *J Neurosurg.* 1988 Nov;69(5):692-8. doi: 10.3171/jns.1988.69.5.0692. PMID: 3054012.
- 159: Weiss MR, Smith HP, Patterson AK, Weiss RM. Patient positioning and nasal intubation for carotid endarterectomy. *Neurosurgery.* 1986 Aug;19(2):256-7. doi: 10.1227/00006123-198608000-00013. PMID: 3748355.
- 160: Washer GF, Gear MW, Dowling BL, Gillison EW, Royston CM, Spencer J. Duodenal diversion with vagotomy and antrectomy for severe or recurrent reflux oesophagitis and stricture: an alternative to operation at the hiatus. *Ann R Coll Surg Engl.* 1986 Jul;68(4):222-6. PMID: 3789611; PMCID: PMC2498392.

- 161: Mayhew JF, Katz J, Miner M, Leiman BC, Hall ID. Anaesthesia for the achondroplastic dwarf. *Can Anaesth Soc J.* 1986 Mar;33(2):216-21. doi: 10.1007/BF03010834. PMID: 3697817.
- 162: Coonan TJ, Hope CE, Howes WJ, Holness RO, MacInnis EL. Ankylosis of the temporo-mandibular joint after temporal craniotomy: a cause of difficult intubation. *Can Anaesth Soc J.* 1985 Mar;32(2):158-60. doi: 10.1007/BF03010042. PMID: 3986653.

- 163: Jay BS, Burrell M. Iatrogenic problems following gastric surgery. *Gastrointest Radiol.* 1977 Dec 20;2(3):239-57. doi: 10.1007/BF02256501. PMID: 355046.

1)

Kuo YM, Lai HY, Tan EC, Li YS, Chiang TY, Huang SS, Huang WC, Chu YC. Cervical spine immobilization does not interfere with nasotracheal intubation performed using GlideScope videolaryngoscopy: a randomized equivalence trial. *Sci Rep.* 2022 Mar 8;12(1):4041. doi: 10.1038/s41598-022-08035-0. PMID: 35260735; PMCID: PMC8904815.

2)

Lee J, Cho Y, Kim W, Choi KS, Jang BH, Shin H, Ahn C, Kim JG, Na MK, Lim TH, Kim DW. Comparisons of Videolaryngoscopes for Intubation Undergoing General Anesthesia: Systematic Review and Network Meta-Analysis of Randomized Controlled Trials. *J Pers Med.* 2022 Feb 26;12(3):363. doi: 10.3390/jpm12030363. PMID: 35330362; PMCID: PMC8954588.

3)

Schild LR, Böhm F, Boos M, Kahrs LA, Coburger J, Greve J, Dürselen L, Hoffmann TK, Schuler PJ. Adding Flexible Instrumentation to a Curved Videolaryngoscope: A Novel Tool for Laryngeal Surgery. *Laryngoscope.* 2021 Feb;131(2):E561-E568. doi: 10.1002/lary.28868. Epub 2020 Jun 25. PMID: 32585046.

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