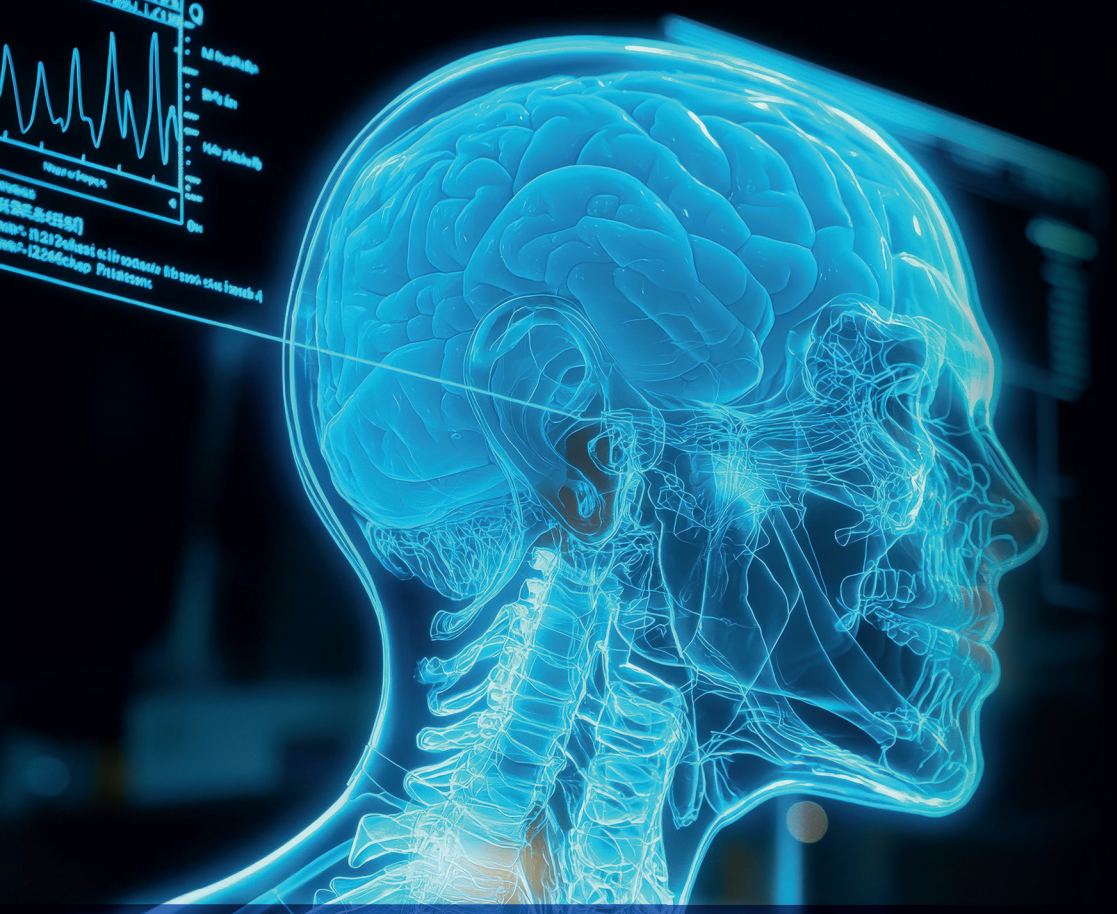
Sunarto Reksoprawiro



Komplikasi Operasi Bedah Kepala Leher

Penanganan dan Pencegahan

Komplikasi Operasi Bedah Kepala Leher

Penanganan dan Pencegahan

Pasal 113 Undang-Undang Nomor 28 Tahun 2014 tentang Hak Cipta:

(1) Setiap Orang yang dengan tanpa hak melakukan pelanggaran hak ekonomi sebagaimana dimaksud dalam Pasal 9 ayat (1) huruf i untuk Penggunaan Secara Komersial dipidana dengan pidana penjara paling lama 1 (satu) tahun dan/atau pidana denda paling banyak Rp100.000.000 (seratus juta rupiah).

(2) Setiap Orang yang dengan tanpa hak dan/atau tanpa izin Pencipta atau pemegang Hak Cipta melakukan pelanggaran hak ekonomi Pencipta sebagaimana dimaksud dalam Pasal 9 ayat (1) huruf c, huruf d, huruf f, dan/atau huruf h untuk Penggunaan Secara Komersial dipidana dengan pidana penjara paling lama 3 (tiga) tahun dan/atau pidana denda paling banyak Rp500.000.000,00 (lima ratus juta rupiah).

(3) Setiap Orang yang dengan tanpa hak dan/atau tanpa izin Pencipta atau pemegang Hak Cipta melakukan pelanggaran hak ekonomi Pencipta sebagaimana dimaksud dalam Pasal 9 ayat (1) huruf a, huruf b, huruf e, dan/atau huruf g untuk Penggunaan Secara Komersial dipidana dengan pidana penjara paling lama 4 (empat) tahun dan/atau pidana denda paling banyak Rp1.000.000.000,00 (satu miliar rupiah).

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Komplikasi Operasi Bedah Kepala Leher

Penanganan dan Pencegahan

Sunarto Reksoprawiro

Airlangga University Press

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Penanganan dan Pencegahan

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Prakata

Assalamualaikum Wr.Wb.

Alhamdulillah Buku Komplikasi Operasi Bedah Kepala Leher: Penanganan dan Pencegahan ini atas pertolongan serta karunia Allah Swt. telah selesai disusun dan dapat diterbitkan.

Tujuan penulisan buku ini ialah untuk mengingatkan kembali bahwa dalam penanganan kasus bedah kepala leher tidak cukup hanya mengetahui tentang indikasi, kontra indikasi, dan teknik operasi; tetapi yang tidak kalah pentingnya ialah seorang dokter spesialis bedah wajib mengetahui dan mengantisipasi kemungkinan terjadinya komplikasi operasi serta cara mencegahnya, serta cara mengatasi komplikasi tersebut jikalau memang terjadi.

Di dalam buku ini diuraikan macam-macam tindakan pembedahan kelainan bedah kepala leher yang sering dilakukan, kemungkinan komplikasi-komplikasi yang sering terjadi, serta cara penanganan dan cara pencegahan komplikasi tersebut.

Buku ini ditujukan untuk bisa dibaca dan dipelajari oleh para dokter spesialis bedah maupun peserta pendidikan dokter spesialis bedah agar

lebih hati-hati serta waspada dalam melakukan tindakan pembedahan pada kasus-kasus bedah kepala leher yang ditanganinya.

Semoga buku ini bermanfaat bagi para pembacanya. Kritik dan saran selalu kami terima demi kelengkapan dan perbaikan buku ini pada edisi berikutnya.

Wassalamualaikum Wr.Wb.

Surabaya, 5 Maret 2025

Prof. Sunarto Reksoprawiro, dr. Sp.B. Subsp.Onk; KL (K)



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3D	: *3 dimension*
5-ALA	: *5-amino levulinic acid*
a	: Arteri
BoNT-A	: *Botulinum neurotoxin type A*
CENLS	: Cabang eksterna n. laringikus superior
CT	: *Computerized tomography*
EMG	: Elektromiografi
Gld	: Glandula
m	: Muskulus
MRI	: *Magnetic resonance imaging*
n	: Nervus
NOE	: *Naso orbito ethmoid*
NSAID	: *Non-steroid anti inflammation drug*
PRP	: *Platelet rich plasma*
r	: Ramus
RND	: *Radical neck dissection*
sub-SMA	: *sub-superficial musculoaponeurotic*

T	: Tumor
TENS	: *Transcutaneous Electrical Nerve Stimulation*
TPT	: Trakeomalasia post tiroidektomi
USG	: Untrasonografi
v	: Vena



Daftar Pustaka

1. Reksoprawiro S. Dokumentasi pribadi.
2. Canu GL, Medas F, Cappellacci F, Giordano ABF, Gurrado A, Gambardella C, et al. Risk of complications in patients undergoing completion thyroidectomy after hemithyroidectomy for thyroid nodule with indeterminate cytology: An Italian multicentre retrospective study. *Cancers*. 2022; 14(10):2472.
3. Joliat GR, Guarnero V, Demartines N, Schweizer V, Matter M. Recurrent laryngeal nerve injury after thyroid and parathyroid surgery: Incidence and postoperative evolution assessment. Medicine (Baltimore). 2017;96(17): e6674.
4. Shamim F, Khan MN, Ikram M. Video laryngoscope aids in the assessment of vocal cord paralysis due to recurrent laryngeal nerve injury after thyroid surgery. J Anaesthesiol Clin Pharmacol 2016;32(4):544-545.
5. Crumley RL. Unilateral recurrent laryngeal nerve paralysis. J Voice. 1994;8(1):79–83.
6. Tobias S, Stephan K, Claus-Dieter H, Stefan M. Late manifestation of bilateral laryngeal nerve palsy after thyroidectomy. Signe Vitae. 2013; 8:56–57.
7. Korean Society of Laryngology, Phoniatrics and Logopedics Guideline Task Force, Care and Management of Voice Change in Thyroid Surgery: Korean Society of Laryngology, Phoniatrics and Logopedics Clinical Practice Guideline. Clin Exp Otorhinolaryngol. 2022;15 (1): 24-48.

8. Jiang Y, Gao B, Zhang X, Zhao J, Chen J, Zhang S, Luo D. Prevention and treatment of recurrent laryngeal nerve injury in thyroid surgery. Int J Clin Exp Med. 2014;7(1):101-107.
9. Wang W, Chen D, Chen S, Li D, Li M, Xia S, Zheng H. Laryngeal reinnervation using ansa cervicalis for thyroid surgery-related unilateral vocal fold paralysis: A long-term outcome analysis of 237 cases. PLoS One. 2011; 6: e19128.
10. Yumoto E, Sanuki T, Toya Y, Kodama N, Kumai Y. Nerve-muscle pedicle flap implantation combined with arytenoids adduction. Arch Otolaryngol Head Neck Surg. 2010; 136:965– 969.
11. Chiang FY, Wang LF, Huang YF, Lee KW, Kuo WR. Recurrent laryngeal nerve palsy after thyroidectomy with routine identification of the recurrent laryngeal nerve. Surgery. 2005;137: 342– 347.
12. Tucker HM. Vocal cord paralysis: Etiology and management. Laryngoscope. 1980; 90:585–590.
13. Babu RD, Paul D. Laryngeal nerves and voice change in thyroid surgery. Indian J Surg Oncol. 2022 Mar;13(1):99-108.
14. Youn, YK., Lee, K.E., Choi, J.Y. Surgical Anatomy of the Thyroid Gland. In: Color Atlas of Thyroid Surgery. Springer, Berlin, Heidelberg. 2014. https://doi.org/10.1007/978-3-642-37262-9_1
15. Kakava K, Tournis S, Papadakis G, Karelas I, Stampouloglou P, Kassi E, et al. Postsurgical hypoparathyroidism: A systematic review. In Vivo. 2016;30(3):171–179.
16. Asari R, Passler C, Kaczirek K, Scheuba C, Niederle B. Hypoparathyroidism after total thyroidectomy: A prospective study. Arch Surg. 2008 ;143(2):132-137
17. Edafe O, Antakia R, Laskar N, Uttley L, Balasubramanian SP. Systematic review and meta-analysis of predictors of post-thyroidectomy hypocalcaemia. Br J Surg. 2014;101(4):307-320.
18. Fong J, Khan A. Hypocalcemia: Updates in diagnosis and management for primary care. Can Fam Physician. 2012;58(2):158–162
19. Khan MI, Waguespack SG, Hu M. Medical management of postsurgical hypoparathyroidism. Endocr Pract. 2011;17(Suppl 1):18–25.
20. Underbjerg L, Sikjaer T, Mosekilde L, Rejnmark L. Cardiovascular and renal complications to postsurgical hypoparathyroidism: A Danish nationwide controlled historic follow-up study. J Bone Miner Res. 2013;28(11):2277–2285.
21. Ballane GT, Sfeir JG, Dakik HA, Brown EM, El-Hajj Fuleihan G. Use of recombinant human parathyroid hormone in hypocalcemic cardiomyopathy. Eur J Endocrinol. 2012;166(6):1113–1120

22. Mohebbi MR, Rosenkrans KA, Jung MJ. Chvostek's and Trousseau's signs in a case of hypoparathyroidism. J Clin Diagn Res. 2013;7(5):970.
23. Kamath SD, Rao BS. Delayed post-surgical hypoparathyroidism: The forgotten chameleon! J Clin Diagn Res. 2017;11(2): OD07–OD09
24. Bilezikian JP, Khan A, Potts JT Jr., Brandi ML, Clarke BL, Shoback D, et al. Hypoparathyroidism in the adult: Epidemiology, diagnosis, pathophysiology, target-organ involvement, treatment, and challenges for future research. J Bone Miner Res. 2011;26(10):2317–2337
25. Orloff LA. et al. American Thyroid Association statement on postoperative hypoparathyroidism: Diagnosis, prevention, and management in adults. Thyroid. 2018 28:7, 830-841
26. Bilezikian JP, Brandi ML, Cusano NE, Mannstadt M, Rejnmark L, Rizzoli R, et al. Management of hypoparathyroidism: Present and future. J Clin Endocrinol Metab. 2016;101(6):2313–2324.
27. Mitchell DM, Regan S, Cooley MR, Lauter KB, Vrla MC, Becker CB. Long-term follow-up of patients with hypoparathyroidism. J Clin Endocrinol Metab. 2012;97(12):4507–4514.
28. Balasubramanian SP. Iatrogenic/post-surgical hypoparathyroidism: Where do we go from here? Endocrine. 2014;47(2):357–359.
29. Krausz MM, Ashkenazi I, Alfici R. Parathyroid autotransplantaion in adults and children. Harefuah. 2017;156(3):167–170.
30. Famà F, Cicciù M, Polito F, Cascio A, Gioffré-Florio M, Piquard A. Parathyroid autotransplantation during thyroid surgery: A novel technique using a cell culture nutrient solution. World J Surg. 2017;41(2):457–463.
31. Kuriloff DB, Sanborn KV. Rapid intraoperative lokalization of parathyroid glands utilizing methylene blue infusion. Otolaryngol Head Neck Surg. 2004;131(5):616–622.
32. Akasu H, Igarashi T, Tanaka K, Shimizu K. Photodynamic identification of human parathyroid glands with 5-aminolevulinic acid. J Nippon Med Sch. 2006;73(5):246–247.
33. McWade MA, Paras C, White LM, Phay JE, Mahadevan-Jansen A, Broome JT. A novel optical approach to intraoperative detection of parathyroid glands. Surgery. 2013;154(6):1371–1377.
34. Jansson S, Tisell LE, Hagne I, et al. Partial superior laryngeal nerve (SLN) lesions before and after thyroid surgery. World J Surg. 1988; 12:522-527.
35. Benninger MS, Ahuja AS, Gardner G, et al. Assessing outcomes for dysphonic patients. J Voice 1998;12: 540-550.

36. Friedman M, Wilson MN, Ibrahim H. Operative Techniques in Otolaryngology-Head and Neck Surgery. 2009; 20(2): 145 - 151
37. Cernea CR, Ferraz AR, Furlani J, Monteiro S, Nishio S, Hojaij FC, et al. Identification of the external branch of the superior laryngeal nerve during thyroidectomy. Am J Surg. 1992;164(6):634–639.
38. Sulica L. The superior laryngeal nerve: function and dysfunction. Otolaryngol Clin North Am. 2004; 37:183–201.
39. Simpson CB, Cheung EJ, Jackson CJ. Vocal fold paresis: Clinical and electrophysiologic features in a tertiary laryngology practice. J Voice. 2009;23: 396–398.
40. Nam IC, Bae JS, Chae BJ, Shim MR, Hwang YS, Sun DI. Therapeutic approach to patients with a lower-pitched voice after thyroidectomy. World J Surg. 2013 ;37(8):1940-1950.
41. Orestes MI, Chhetri DK. Superior laryngeal nerve injury: Effects, clinical findings, prognosis, and management options. Curr Opin Otolaryngol Head Neck Surg. 2014;22(6):439-443.
42. El-Kashlan HK, Carroll WR, Hogikyan MD, et al. Selective cricothyroid muscle reinnervation by muscle-nerve-muscle neurotization. Arch Otolaryngol Head Neck Surg. 2001;127: 1211–1215.
43. Cernea CR, Ferraz AR, Nishio S, et al. Surgical anatomy of the external branch of the superior laryngeal nerve. Head Neck. 1992;14: 380-383
44. Cernea CR, Nishio S, Hojaij FC. Identification of the external branch of the superior laryngeal nerve (EBSLN) in large goiters. Am J Otolaryngol 1995;16: 307-311.
45. Bellantone R, Boscherini M, Lombardi CP, et al. Is the identification of the external branch of the superior laryngeal nerve mandatory in thyroid operation? Results of a prospective randomized study. Surgery 2001;130: 1055-1059.
46. Aina EN, Hisham AN. External laryngeal nerve in thyroid surgery: Recognition and surgical implications. ANZ J Surg. 2001;71: 212-214.
47. Barczynski M, Konturek A, Stopa M, et al. Randomized controlled trial of visualization versus neuromonitoring of the external branch of the superior laryngeal nerve during thyroidectomy. World J Surg. 2012;36: 1340-1347.
48. Del Rio P, Bonati E, Loderer T, Rossini M, Cozzani F. Can we routinely identify the external branch of the superior laryngeal nerves with neural monitoring? : A prospective report on 176 consecutive nerves at risk. Updates Surg. 2021;73(6) : 2275-2281.

49. Melamed H, Harris M, Awasthi D. Anatomic considerations of superior laryngeal nerve during anterior cervical spine procedures. Spine (Phila Pa 1976). 2002;27: E83-E86.
50. Monfared A, Kim D, Jaikumar S, Gorti G, Kam A. Microsurgical anatomy of the superior and recurrent laryngeal nerves. Neurosurgery. 2001;49: 925-932.
51. Kiray A, Naderi S, Ergur I, Korman E. Surgical anatomy of the internal branch of the superior laryngeal nerve. Eur Spine J. 2006; 15:1320-1325
52. Sanders I, Mu L. Anatomy of the human internal superior laryngeal nerve. Anat Rec. 1998;252: 646-656.
53. Jonas J, Bahr R. Neuromonitoring of the external branch of the superior laryngeal nerve during thyroid surgery. Am J Surg. 2000; 179:234-246
54. Margolick J, Chen W, Wiseman SM. Systematic review and meta-analysis of unplanned reoperations, emergency department visits and hospital readmission after thyroidectomy. Thyroid. 2018;28: 624–638.
55. de Carvalho AY, Gomes CC, Chulam TC, et al. Risk factors and outcomes of postoperative neck hematomas: an analysis of 5,900 thyroidectomies performed at a cancer center. Int Arch Otorhinolaryngol. 2021; 25(3): e421–427. doi: 10.1055/s-0040-1714129
56. Chereau N, Godiris-Petit G, Noullet S, Di Maria S, Tezenas du Montcel S, Menegaux F. Risk score of neck hematoma: how to select patients for ambulatory thyroid surgery? World J Surg. 2021;45: 515–521.
57. Cannizzaro MA, Lo Bianco S, Picardo MC, Provenzano D, Buffone A. How to avoid and to manage post-operative complications in thyroid surgery Updates Surg. 2017;69: 211–215.
58. Weiss A, Lee KC, Brumund KT, Chang DC, Bouvet M. Risk factors for hematoma after thyroidectomy: Results from the nationwide inpatient sample. Surgery. 2014;156: 399–404.
59. Zhang X, Du W. & Fang Q. Risk factors for postoperative haemorrhage after total thyroidectomy: Clinical results based on 2,678 patients. Sci Rep. 2017;7: 70-75
60. Al-Qahtani A, Osman T: Could post-thyroidectomy bleeding be the clue to modify the concept of postoperative. drainage? A prospective randomized controlled study. Asian J Surg. 2018;41(5): 511-516.
61. Moran K, Grigorian A, Elfenbein D, Schubl S, Jutric Z, Lekawa M et al. Energy vessel sealant devices are associated with decreased risk of neck hematoma after thyroid surgery. Updates Surg. 2020;72: 1135–1141.
62. Dixon JL, Snyder SK, Lairmore TC, Jupiter D, Govednik C, Hendricks JC. A novel method for the management of post-thyroidectomy or parathyroidectomy

hematoma: a single-institution experience after over 4,000 central neck operations. World J Surg. 2014;38: 1262–1267.
63. Farooq MS, Nouraei R, Kaddour H, Saharay M. Patterns, timing and consequences of post-thyroidectomy haemorrhage. Ann R Coll Surg Engl. 2017; 99: 60–62.
64. Dehal A, Abbas A, Al-Tememi M, Hussain F, Johna S. Impact of surgeon volume on incidence of neck hematoma after thyroid and parathyroid surgery: Ten years' analysis of nationwide in-patient sample database. Am Surg. 2014; 80: 948– 952.
65. Iliff HA, El-Boghdadly K, Ahmad I, Davis J, Harris A, Khan S. Management of haematoma after thyroid surgery: Systematic review and multidisciplinary consensus guidelines from the Difficult Airway Society, the British Association of Endocrine and Thyroid Surgeons and the British Association of Otorhinolaryngology, Head and Neck Surgery. Anaesth. 2022; 77: 82-95.
66. Parry Z, Macnab R. Thyroid disease and thyroid surgery. Anaesth Intensive Care. 2017;18: 488–495.
67. *Mayilvaganan S, Agarwal A, Anggarwal A. Management of post-thyroidectomy tracheomalacia, World J Endocrine Surg. 2014; 6: 96-98.*
68. Hasegawa I, Boiselle PM, Raptopoulos V, Hatabu H. Tracheomalacia incidentally detected on CT pulmonary angiography of patients with suspected pulmonary embolism. AJR Am J Roentgenol. 2003;181: 1505–1509
69. Findlay JM, Sadler GP, Bridge H, Mihai R. Post-thyroidectomy tracheomalacia: Minimal risk despite significant tracheal compression. Br J Anaesth. 2011;106: 903–906.
70. Ayandipo O, Adigun T, Afuwape O. Airway complications and outcome after thyroidectomy in Ibadan: A 15-year review. Arch Med. 2016; 8: 4.
71. Bennett AMD, Hashmi SM, Premachandra DJ, Wright MM. The myth of tracheomalacia and difficult intubation in cases of retrosternal goitre. Laryngol Otol. 2004; 118: 778-780
72. Kugler C, Stanzel F. Tracheomalacia. *Thorac Surg Clin* 2014; 24: 51– 58.
73. Chi SY, Wu SC, Hsieh KC et al. Noninvasive positive pressure ventilation in the management of post-thyroidectomy tracheomalacia. *World J Surg* 2011; 35: 1977.
74. Ruohoalho J, Makitie AA, Aro K, Atula T, Haapaniemi A, Keski–Santti H, et al. Complications after surgery for benign parotid gland neoplasms: A prospective cohort study. Head Neck. 2017;39(1):170–176.
75. Mistry RK. Facial nerve trauma. Available in: https://www.ncbi.nlm.nih.gov/books/NBK553095/

76. Christensen B. House-Brackmann Classification of facial function. In: Cristensen B (ed.) Medscape, Jan 19, 2023. Available in: https://emedicine.medscape.com/article/2172449-overview
77. Stryjewska-Makuch G, Kolebacz B, Janik MA, Wolnik A. Increase in the incidence of the parotid gland tumors in the years 2005-2014. Otolaryngol Pol. 2017;71(2):29-34.
78. Zheng CY, Cao R, Gao MH, Huang ZQ, Sheng MC, Hu YJ. Comparison of surgical techniques for benign parotid tumours: A multicentre retrospective study. Int J Oral Maxillofac Surg. 2018 Aug 20. pii: S0901-5027(18)30317-5. DOI: 10.1016/j. ijom.2018.07.023.
79. Siddiqui AH, Shakil S, Rahim DU, Shaikh IA. Post parotidectomy facial nerve palsy: A retrospective analysis. Pak J Med Sci. 2020 Jan-Feb;36(2):126-130.
80. Chiesa-Estomba CM, Gonzales-Garcia JA, Larruscain E, Suares JAS, Quer M, Leon X, et al. Facial nerve palsy following parotid gland surgery: A machine learning prediction outcome approach. WJOHNS 2023; 9(4): 271-279.
81. Wong WK, Shetty S. The extent of surgery for benign parotid pathology and its influence on complications: A prospective cohort analysis. Am J Otolaryngol. 2018;39(2):162–6.
82. Borumandi F, George KS, Cascarini L. Parotid surgery for benign tumours. J Oral Maxillofac Surg. 2012;16(3):285–290.
83. Thahim K, Udaipurwala IH, Kaleem M. Clinical manifestations, treatment outcome and post-operative complications of parotid gland tumours - an experience of 20 cases. J Pak Med Assoc. 2013;63(12):1472–1475.
84. Guntinas-Lichius O, Gabriel B, Peter Klussmann J. Risk of facial palsy and severe Frey's syndrome after conservative parotidectomy for benign disease: Analysis of 610 operations. Acta Otolaryngol 2006; 126: 1104–1109.
85. Tseng FY, Chen ZC, Hsu CJ, et al. Malignant parotid tumor and facial palsy. Otolaryngol Head Neck Surg 2007; 136: 778–82.
86. Mashrah MA, Al-dhohrah TA, Al-zubeiry FA, Yan L, Al-Hamed FS, et al. Correction: Antegrade versus retrograde facial nerve dissection in benign parotid surgery: Is there a difference in postoperative outcomes? A meta-analysis. PLOS ONE 2020; 15(11): e0242299. https://doi.org/10.1371/journal.pone.0242299
87. Tung BK, Chu PY, Tai SK, Wang YF, Tsai TL, Lee TL, et al. Predictors and timing of recovery in patients with immediate facial nerve dysfunction after parotidectomy. Head and Neck. 2014;36(2):247–251.
88. Gordin E, Lee TS, Ducic Y, Arnaoutakis D. Facial nerve trauma: evaluation and considerations in management. Craniomaxillofac Trauma Reconstr. 2015 ;8(1):1-13

89. Kabat H, Knott M. Proprioceptive facilitation therapy for paralysis. Physiotherapy 1954; 40: 171–176.
90. Varadharajan K, Beegun I, Daly N. Use of steroids for facial nerve paralysis after parotidectomy: A systematic review. World J Clin Cases. 2015 16;3(2):180-185.
91. Siemionow M, Bobkiewicz A, Cwykiel J, et al. Epineural sheath jacket as a new surgical technique for neuroma prevention in the rat sciatic nerve model. Ann Plast Surg. 2017;79: 377–384.
92. Matsumine H, Takeuchi Y, Sasaki R, et al. Adipocyte-derived and dedifferentiated fat cells promoting facial nerve regeneration in a rat model. Plast Reconstr Surg. 2014;134: 686–697.
93. Humphrey CD, Kriet JD. Nerve repair and cable grafting for facial paralysis. Facial Plast Surg. 2008;24: 170–176.
94. Ali, Yasser Helmy, Al Sheikh, Abd El-Fatta. Non-microsurgical grafting for facial nerve branches with permanent sensational functional outcome. Plast Reconstr Surg Glob Open 2019; 7(5): p e2195| DOI: 10.1097/GOX.0000000000002195
95. Özmen OA, Falcioni M, Lauda L, et al. Outcomes of facial nerve grafting in 155 cases: predictive value of history and preoperative function. Otol Neurol. 2011; 32:1341–1346.
96. Vaughan ED, Richardson D. Facial nerve reconstruction following ablative parotid surgery. Brit J Oral Maxillofac Surg. 1993; 31: 274-280
97. Plastic Surgery Key. Techniques of nerve repair. Available in: https://plasticsurgerykey.com/techniques-of-nerve-repair/
98. Cusimano MD, Sekhar LM. Partial hypoglossal to facial nerve anastomosis for reinnervation of the paralyzed face in patients with lower cranial nerve palsies: Technical note. Neurosurgery 1994; 35:532-533
99. Rodríguez-Lorenzo, A., Tzou, CH.J. Principles of Facial Nerve Reconstruction. In: Tzou, CH.J., Rodríguez-Lorenzo, A. (eds) Facial Palsy. Springer: Cham; 2021. https://doi.org/10.1007/978-3-030-50784-8_6
100. Singh VK, Haq A, Tiwari M, Saxena AK. Approach to management of nerve gaps in peripheral nerve injuries. Injury 2022; 53(4): 1308-1318
101. Duque. Facial nerve monitoring in parotid gland surgery: Design and feasibility assessment of a potential standardized technique. WJO HNS. 29 January 2023 Available in: https://doi.org/10.1002/wjo2.90
102. Bree R, van der Waal I, Leemans CR. Management of Frey syndrome. Head Neck. 2007 ;29(8):773-778.
103. Linder TE, Huber A, Schmid S. Frey's syndrome after parotidectomy: A retrospective and prospective analysis. Laryngoscope. 1997;107:1496–1501.

104. Laage-Hellman J. Gustatory sweating and flushing after conservative parotidectomy. Acta Otolaryngol. 1957;48: 234–252.
105. Freni F, Gazia F, Stagno d'Alcontres F, Galletti B, Galletti F. Use of botulinum toxin in Frey's syndrome. Clin Case Rep. 2019;7: 482–485.
106. Mantelakis A, Lafford G, Lee CW, Spencer H, Deval JL, Joshi A. Frey's Syndrome: A review of aetiology and treatment. Cureus. 2021 Dec 2;13(12): e20107. doi: 10.7759/cureus.20107. PMID: 34873562; PMCID: PMC8638782.
107. Zaheer R. Frey syndrome. Available in: https://medizzy.com/feed/27388746
108. Exodontia.info. Frey syndrome/ gustatory sweating. Available in: https://exodontia.info/freys-syndrome-gustatory-sweating/
109. Black MJ, Gunn A. The management of Frey's syndrome with aluminium chloride hexahydrate antiperspirant. Ann R Coll Surg Engl. 1990;72: 49–52.
110. Hays LL. The Frey syndrome: A review and double-blind evaluation of the topical use of a new anticholinergic agent. Laryngoscope. 1978;88: 1796–1824.
111. Xie S, Wang K, Xu T, Guo XS, Shan XF, Cai ZG. Efficacy and safety of botulinum toxin type A for treatment of Frey's syndrome: Evidence from 22 published articles. Cancer Med. 2015;4: 1639–1650.
112. Jansen S, Jerowski M, Ludwig L, Fischer-Krall E, Beutner D, Grosheva M. Botulinum toxin therapy in Frey's syndrome: a retrospective study of 440 treatments in 100 patients. Clin Otolaryngol. 2017;42: 295–300.
113. Mac Kinnon C, Lovie M. An alternative treatment for Frey syndrome. Plast Reconstr Surg. 1999;103: 745–746.
114. Webster K. Early results using a porcine dermal collagen implant as an interpositional barrier to prevent recurrent Frey's syndrome. Br J Oral Maxillofac Surg. 1997;35: 104–106.
115. Rubinstein RY, Rosen A, Leeman D. Frey syndrome: Treatment with temporoparietal fascia flap interposition. Arch Otolaryngol Head Neck Surg. 1999;125: 808–811.
116. Torretta S, Pignataro L, Capaccio P, Brevi A, Mazzola R. Fat injections for the management of post-parotidectomy Frey syndrome: A technical note. J Craniomaxillofac Surg. 2012;40: 173–176.
117. Dai XM, Liu H, He J, Tu MS, Yu LF, Liu L. Treatment of postparotidectomy Frey syndrome with the interposition of temporalis fascia and sternocleidomastoid flaps. Oral Surg Oral Med Oral Pathol Oral Radiol. 2015;119: 514–521.
118. Kornblut AD, Westphal P, Miehlke A. The effectiveness of a sternomastoid muscle flap in preventing post-parotidectomy occurrence of the Frey syndrome. Acta Otolaryngol. 1974;77: 368–373.

119. Ye L, Cao Y, Yang W, Wu F, Lin J, Li L, Li C. Graft interposition for preventing Frey's syndrome in patients undergoing parotidectomy. Cochrane Database Syst Rev. 2019; 10:0.
120. Singleton GT, Cassisi NJ. Frey's syndrome: incidence related to skin flap thickness in parotidectomy. Laryngoscope. 1980;90: 1636–1639.
121. Guntinas-Lichius O, Gabriel B, Klussmann JP. Risk of facial palsy and severe Frey's syndrome after conservative parotidectomy for benign disease: analysis of 610 operations. Acta Otolaryngol. 2006;126: 1104–1109.
122. Casler JD, Conley J. Muscle transfer and superficial musculoaponeurotic system plication in the prevention of Frey's syndrome. Laryngoscope 1991;101: 95-100,
123. Sood S, Quraishi MS, Jennings CR, Bradley PJ. Frey's syndrome following parotidectomy: Prevention using a rotation sternocleidomastoid muscle flap. Clin Otolaryngol Allied Sci. 1999; 24:365-368,
124. Kerawala CJ, McAloney N, Stassen LF, Prospective randomised trial of the benefits of a sternocleidomastoid flap after superficial parotidectomy. Br J Oral Maxillofac Surg 2002;40: 468-472.
125. Fee WE Jr, Tran LE. Functional outcome after total parotidectomy reconstruction. Laryngoscope 2004;114: 223-226,
126. Moulton-Barrett R, Allison G, Rappaport I. Variation's in the use of SMAS (superficial musculoaponeurotic system) to prevent Frey's syndrome after parotidectomy. Int Surg 1996; 81:174-176.
127. Barbera R, Castillo F, D'Oleo C, Benitez S, Cobeta I. Superficial musculoaponeurotic system flap in partial parotidectomy and clinical and subclinical Frey's syndrome. Cosmesis and quality of life. Head Neck 2013;36: 130.
128. Curry JM, Fisher KW, Heffelfinger RN, Rosen MR, Keane WM, Pribitkin EA. Superficial musculoaponeurotic system elevation and fat graft reconstruction after superficial parotidectomy. Laryngoscope, 2008;118:210-215.
129. Chen W, Li J, Yang Z, Yongjie W, Zhiquan W, Wang Y. SMAS fold flap and ADM repair of the parotid bed following removal of parotid haemangiomas via pre- and retroauricular incisions to improve cosmetic outcome and prevent Frey's syndrome. J Plast Reconst Aesth Surg. 2008; 61:894-899.
130. Ambro BT, Goodstein LA, Morales RE, Taylor RJ, Evaluation of superficial musculoaponeurotic system flap and fat graft outcomes for benign and malignant parotid disease. Otolaryngol Head Neck Surg 2013; 148: 949-954.
131. Ahmed OA, Kolhe PS, Prevention of Frey's syndrome and volume deficit after parotidectomy using the superficial temporal artery fascial flap. Br J Plast Surg 1999; 52:256-260.

132. Cesteleyn L, Helman J, King S, Van de Vyvere G. Temporoparietal fascia flaps and superficial musculoaponeurotic system plication in parotid surgery reduces Frey's syndrome. J Oral Maxillofac Surg. 2002; 60:1284-1297.
133. Nosan DK, Ochi JW, Davidson TM, Preservation of facial contour during parotidectomy. Otolaryngol Head Neck Surg. 1991; 104:293-298.
134. Harada T, Inoue T, Harashina T, Hatoko M, Ueda K, Dermis-fat graft after parotidectomy to prevent Frey's syndrome and the concave deformity. Anna Plast Surg 1993; 31:450-452.
135. Chan LS, Barakate MS, Havas TE. Free fat grafting in superficial parotid surgery to prevent Frey's syndrome and improve aesthetic outcome. J Laryngol Otol. 2013; 128: s44-49.
136. Ersek RA. Transplantation of purified autologous fat: A 3-year follow-up is disappointing. Plast Reconst Surg 1991; 87:219-27.
137. Matsudo PK, Toledo LS, Experience of injected fat grafting. Aesthetic Plast Surg 1988; 12:35-38.
138. Sinna R, Delay E, Garson S, Delaporte T, Toussoun G, Breast fat grafting (lipomodelling) after extended latissimus dorsi flap breast reconstruction: A preliminary report of 200 consecutive cases. J Plast Reconst Aesthet Surg 2010; 63:1769-1777.
139. Chandarana S, Fung K, Franklin JH, Kotylak T, Matic DB, Yoo J. Effect of autologous platelet adhesives on dermal fat graft resorption following reconstruction of a superficial parotidectomy defect: A double-blinded prospective trial. Head Neck 2009; 31:521-530.
140. Boyce RG, Nuss DW, Kluka EA. The use of autogenous fat, fascia, and non-vascularized muscle grafts in the head and neck. Otolaryngol Clin North Am 1994; 27:39-68.
141. Rao JK, Gehlot N, Laxmy V, Siwach V. Management of parotid fistula using hypertonic saline. Natl J Maxillofac Surg. 2011;2: 177–180.
142. Ting L, Liew YT. Parotid salivary fistula post superficial parotidectomy. J Case Rep Med Images. MedDocs Publishers LLC, 2018.
143. Liu Y, Yuan W, Sun H, Su M, Kong X, Huang X. Predictors of sialocele or salivary fistula after partial superficial parotidectomy for benign parotid tumor: A Retrospective study. J Oral Maxillofac Surg 2022; 80:327-332
144. Jiang J, Jia MY, Cai Z, Yuan RT, Wang K, Zhang K, et al. The effect evaluation of suction drainage to prevent fistula after superficial parotidectomy. Shanghai J Stomatol. 2014;23(6):759–762.

145. Lu Y, Zhang S, Peng C, Yang W, Zhang C, Ren Z. Drain fluid amylase as a predictor of postoperative salivary fistula in cases with benign parotid tumours. BMC Oral Health. 2020;20(1):184.
146. Wu K, Zhu K, Ye Y, Li S, Wu H, Zhang S. The use of bipolar coagulation forceps prevented salivary fistula in patients with parotidectomy: A retrospective study. BMC Oral Health. 2021;21(1):387.
147. Lambiel S, Nicolas Dulguerov N, Courvoisier DS, Dulguerov P. Minor parotidectomy complications: A Systematic Review. Laryngoscope 2021; 131:571–579.
148. Young L & Eun C. Treatment of an acute salivary fistula after parotid surgery: Botulinum toxin type A injection as primary treatment. Europ Arch Oto-Rhino-Laryngol 2008; 265: 243-245.
149. Marchese-Ragona R, de Filippis C, Staffieri A, Restivo DA, Restino DA. Parotid gland fistula: Treatment with botulinum toxin Plast Reconstr Surg. 2001;107:886–887
150. Laskawi R, Winterhoff J, Köhler S, Kottwitz L, Matthias C. Botulinum toxin treatment of salivary fistulas following parotidectomy: Follow-up results Oral Maxillofac Surg. 2013;17:281–285
151. Lovato A, Restivo DA, Ottaviano G, Marioni G, Marchese-Ragona R. Botulinum toxin therapy: Functional silencing of salivary disorders. Acta Otorhinolaryngol Ital 2017;37: 168–171
152. Ripon C, Dev R, Abhimanyu. Management of parotid fistula and Frey's syndrome with Botulinum neurotoxin type A. Nat J Maxillofac Surg. 2021; 12: 106-108.
153. Yang R, Guo YX, Mao C, Guo CB, Wang DC. Extracapsular dissection via sternocleidomastoid muscle–parotid space approach: a new operative technique for treating clinically benign tumor in the parotid tail. Oral Surg Oral Med Oral Pathol Oral Radiol. 2020;129(2):109-114.
154. Ginsberg LE, Eicher SA. Great auricular nerve: Anatomy and imaging in a case of perineural tumor spread. AJNR Am J Neuroradiol. 2000;21(3):568-571.
155. Cordoni S, Bhattacharya Y, Ah-See KW. Incidence and documentation of ear lobe numbness after parotidectomy: Our 20 years' experience. MedNEXT J Med Health Scie. 2020; 2(1): 42–47.
156. Hui Y, Wong DSY, Wong LY, Ho WK, Wei WI. A prospective controlled double-blind trial of great auricular nerve preservation at parotidectomy. Am J Surg 2003;185: 574-579.
157. Drake, Richard (2010). Gray's Anatomy of students. Churchill Livingstone Elsevier: Philadelphia; pp. 855–866. ISBN 978-0-443-06952-9.

158. Møller MN, Sørensen CH. Risk of marginal mandibular nerve injury in neck dissection. Eur Arch Otorhinolaryngol, 2012; 269(2): 601–605.
159. Berini-Aytes L,Gay-Escoda C. Morbidity associated with removal of the submandibula gland. J Craniomaxillofac Surg 1991; 20*: 216–219.*
160. Ellies M, Laskawi R, Arglebe C, Schott A. Surgical management of nonneoplastic diseases of the submandibula gland. A follow-up study. Int J Oral Maxillofac Surg 1996; 25*: 285–9.*
161. Goh YH, Sethi DS. Submandibula gland excision: A five-year review. J Laryngol Otol 1998*; 11: 2269–2273.*
162. Papaspyrou G, Werner JA, Sesterhenn AM. Transcervical extirpation of the submandibula gland: The University of Marburg experience. Eur Arch Otorhinolaryngol 2014*; 271(7): 2009–2012.*
163. Ziarah HA, Atkinson ME. The surgical anatomy of the mandibular distribution of the facial nerve, Brit J Oral Surg. 1981; 19: 159-170.
164. Zhao J, Zeng W, Qiu C, et al. Protection of the marginal mandibular branches of the facial nerves by different surgical procedures in comprehensive cervical lymphadenectomy for locally advanced oral and oropharyngeal cancer: A multicenter experience. World J Surg Onc 2023; 21:30
165. Estomba CC, Valldeperes-Vilanova A, Gonzales-Garcia J, Larruscain-Sarasola E, Sistiaga-Suarez J, Altuna-Mariezcurrena X. Neurological complications and quality of life after submandibula gland resection. A prospective, non-randomized, single-centre study. Otolaryngol Pol. 2019;73: 32-7.
166. Ozgur A, Semai B, Hidir UU, Fatih OM, Tayfun K, Zeki O. Which electrophysiological measure is appropriate in predicting prognosis of facial paralysis? Clin Neurol Neurosurg 2010;112.
167. Elmadawy A, Hegab A, Alahmady H, Shuman M. Clinical and electromyographic assessment of facial nerve function after temporomandibula joint surgery. Internat J Oral Maxillofac Surg. 2015; 44:
168. Rodel R, Lang J. Peripheral branches of the facial nerve in the cheek and chin area: Anatomy and clinical consequences. HNO. 1996; 44: 572–576.
169. Converse JM. Head and Neck Surgery In: Plastic and Reconstructive Surgery. 2nd. Ed. WB Saunders Co. Philadelphia, London, Toronto: 1979; p. 112.
170. Springborg LK, Møller MN. Submandibula gland excision: Long-term clinical outcome in 139 patients operated in a single institution. Eur Arch Otorhinolaryngol 2013; 270(4): 1441–1446
171. Ducic I, Yoon J. Reconstructive options for inferior alveolar and lingual nerve injuries after dental and oral surgery: An evidence-based review. Ann Plast Surg 2019; 82(6): 653-60.

172. Milton CM, Thomas BM, Bickerton RC. Morbidity study of submandibula gland excision. Ann R Coll Surg Engl. 1986; 68(3): 148–50.
173. Ichimura K, Nibu K, Tanaka T. Nerve paralysis after surgery in the submandibular triangle: Review of University of Tokyo Hospital experience. Head Neck, 1997; 19(1): 48–53.
174. Preuss SF, Klussmann JP, Wittekindt C, Drebber U, Beutner D. et al. Submandibular gland excision: 15 years of experience. J Oral Maxillofac Surg. 2007; 65: 953–937.
175. Kukuckova B, Svec M. Surgical management of submandibulary gland diseases: 10 years of experience. Bratisl Lek Listy, 2011; 112: 264–268.
176. Cumpston E, Chen P. Submandibula excision. [Updated 2023 Feb 6]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available in: https://www.ncbi.nlm.nih.gov/books/NBK568740/
177. Erbek SS, Köycü A, Topal Ö, Erbek HS, Özlüoğlu LN. Submandibula gland surgery: Our clinical experience. Turk Arch Otorhinolaryngol. 2016 ;54(1):16-20.
178. Chossegros C, Guyot L, Cheynet F, Belloni D, Blanc JL. Is lingual nerve protection necessary for lower third molar germectomy? A prospective study of 300 procedures. Int J Oral Maxillofac Surg. 2002; 31(6): 620-4.
179. Shintani Y, Ueda M, Tojyo I. Change in allodynia of patients with post-lingual nerve repair iatrogenic lingual nerve disorder. Oral Maxillofac Surg. 2020; 24(1): 25-29.
180. Bagheri SC, Meyer RA, Khan HA, Kuhmichel A, Steed MB. Retrospective review of microsurgical repair of 222 lingual nerve injuries. J Oral Maxillofac Surg 2010; 68(4): 715-723.
181. Cummings C. Otolaryngology & head neck surgery, Cummings C. (ed.), Salivary gland, Mosby, New York: 1998; pp. 1201-1209
182. Guerrissi JO, Taborda G. Endoscopic excision of the submandibula gland by an intraoral approach J Craniofac Surg. 2001; 12 :299-303
183. Lalwani A. Current Diagnosis and Treatment in Otolaryngology–Head and Neck Surgery. 2nd ed. New York: McGraw-Hill Medical, 2005.
184. Kierner AC, Zelenka I, Heller S, Burian M. Surgical anatomy of the spinal accessory nerve and the trapezius branches of the cervical plexus. Arch Surg. 2000;135(12):1428-1431
185. Nahum AM, Mullally W, Marmor RA. Syndrome resulting from radical neck dissection. Arch Otolaryngol. 1961;74: 424- 428
186. Kuntz AC, Weymuller EA. Impact of neck dissection on quality of life. Laryngoscope. 1999;109: 1334-1338

187. Gordon SC, Graham WP, Black JT, Miller SH. Accessory nerve function after surgical procedures in the posterior triangle. Arch Surg. 1977;112: 264- 268
188. Carenfelt C, Eliasson K. Occurrence, duration and prognosis of unexpected accessory nerve paresis in radical neck dissection. Acta Otolaryngol. 1980;90: 470- 473
189. Blessing R, Mann W, Beck C. Wie sinnvoll ist der Erhalt des Nervus accessorius bei der Halsausräumung? Laryngol Rhinol Otol. 1986;65: 403- 405
190. Yagnik PM, Tick S, Chong P. Spinal accessory nerve injury: A complication of carotid endarterectomy. Muscle Nerve. 1996;19: 907- 909
191. Alonso JL, Reis RG. Neuropatias do nervo acessório espinhal secundárias a cirurgias cervicais: Estudo clínico e eletrofisiológico de sete casos. Arq Neuropsiquiatr. 2000;58(3-A):704–712.
192. Prim MP, De Diego JI, Verdaguer JM et al. Neurological complications following functional neck dissection. Eur Arch Otorhinolaryngol 2006; 263: 473-476.
193. Ewing M, Martin H. Disability following "radical neck dissection." Cancer. 1952;5: 873–883.
194. Nahum A, Mullally W, Marmor L. A syndrome resulting from radical neck dissection. Arch Otolaryngol. 1961;74: 424–428.
195. Norden, A. Peripheral injuries to the spinal accessory nerve. Acta Chir Scand 1946; 94: 515-532.
196. Woodhall, B. Operative injury to the accessory nerve in the posterior cervical triangle. Arch Surg 1957; 74: 122-127
197. Vastamaki M, Solonen KA. Accessory nerve injury. Acta Orthop Scand 1984; 55:296-299.
198. Popovski V, Benedetti A, Popovic-Monevska D, Grcev A, Stamatoski A, Zhivadinovik J. Spinal accessory nerve preservation in modified neck dissections: surgical and functional outcomes. Acta Otolaryngol Italica 2017;37: 368-374
199. Polistena A, Ranalli M, Avenia S, Lucchini R, Sanguinetti A, Galasse S. The Role of IONM in reducing the occurrence of shoulder syndrome following lateral neck dissection for thyroid cancer. J Clin Med. 2021; 10(18):42-6.
200. Timon CI, Brown D, Gullane P. Internal jugular vein blowout complicating head and neck surgery. J Laryngol Otol. 1994;108: 423–425
201. Ota Y, Aoki T, Karakida K, Miyasaka M. A case of ruptur of the internal jugular vein caused by postoperative infection of functional neck dissection. Tokai J Exp Clin Med 2001; 26(4-6):123–125
202. Sulaiman L, Charters P. Survival after massive bleeding into the airway in a patient at risk from "can't intubate, can ventilate.". Anaesthesia. 2005; 60(12):1231–1234.

203. Hudorović N, Vucetic B. Infrequent life-threatening complication of descending necrotizing mediastinitis; vertebral artery, internal jugular and subclavian vein ruptur. Int J Surg 2008; 6(6):48–51.
204. Genden EM, Ferlito A, Shaha AR, et al. Complications of neck dissection. Acta Otolaryngol. 2003; 123(7):795–801.
205. Eltelety AM, Nassar AA, El Batawi AM, et al. Internal jugular vein ruptur after oncologic resections in the head and neck. Egypt J Otolaryngol 2020; 36: 53.
206. Kerawala CJ. Complications of head and neck cancer surgery - prevention and management. Oral Oncol 2010; 46(6): 433–435.
207. Ketcham AS, Hoye RC. Spontaneous carotid artery hemorrhage after head and neck surgery. Am J Surg. 1965;110(4):649–655.
208. Joseph DL, Shumrick DL. Risks of head and neck surgery in previously irradiated patients. Arch Otolaryngol. 1973;97(5):381–384.
209. Powitzky R, Vasan N, Krempl G, Medina J. Carotid blowout in patients with head and neck cancer. Ann Otol Rhinol Laryngol. 2010;119(7):476–484.
210. Lu HJ, Chen KW, Chen MH, Chu PY, Tai SK, Wang LW. Predisposing factors, management, and prognostic evaluation of acute carotid blowout syndrome. J Vasc Surg. 2013;58(5):1226–1235.
211. McDonald S, Gan J, McKay AJ, Edwards RD. Endovascular treatment of acute carotid blow-out syndrome. J Vasc Interv Radiol. 2000;11(9):1184–1188.
212. McCoy G, Barsocchini LM. Experiences in carotid artery occlusion. Laryngoscope. 1968;78(7):1195–1210.
213. Ismail HH, Alhajri I, Ibrahim W. Transarterial embolization of acute carotid blowout syndrome post neck dissection. Radiol Case Rep. 2020;15(10):1968-1972.
214. McDonald MW, Moore MG, Johnstone PA. Risk of carotid blowout after reirradiation of the head and neck: A systematic review. Int. J. Radiat. Oncol. Biol. Phys. 2012; 82: 1083–1089.
215. Suárez C, Fernández-Alvarez V, Hamoir M, Mendenhall WM, Strojan P, Quer M. Carotid blowout syndrome: Modern trends in management. Cancer Manag Res. 2018; 10: 5617–5628.
216. Kim DH, Cho Y, Tiel RL, Kline DG. Outcomes of surgery in 1019 brachial plexus lesions treated at Louisiana State University Health Sciences Center. *J Neurosurg*. 2003; *98*(5): 1005-1016.
217. Monteiro MJ, Altman K. Injury to the brachial plexus in neck dissections. Brit J Oral Maxillofac Surg 2009; 48: 197-198.
218. Lee MK, Kang HT, Kim SY, Lee SW. A Case of brachial plexus neurorrhaphy during revisional modified radical neck dissection, Int J Thyroid 2020; 13 :43-46.

219. Agrawal SM, Anehosur V. Incidence and clinical analysis of complications of neck dissection. Indian J Otolaryngol Head Neck Surg. 2022;74(Suppl 3): 5875-5880.
220. Bhandari PS, Bhatoe HS. Timing for repair in brachial plexus injury. Indian J Neurotrauma 2012;9: 85-86.
221. Hematti H, Mehran RJ. Anatomy of the thoracic duct. Thorac Surg Clin 2011; 21(2):229-238.
222. Delaney SW, Shi H, Shokrani A, Sinha UK. Management of chyle leak after head and neck surgery: Review of current treatment strategies. Int J Otolaryngol. 2017;2017: 8362874. doi: 10.1155/2017/8362874
223. Phang K, Bowman M, Phillips A, Windsor J. Review of thoracic duct anatomical variations and clinical implications. Clin Anat (New York NY) 2014;27(4):637–644.
224. Broughton G, Janis JE, Attinger CE. The basic science of wound healing. *Plast Reconstr Surg*.2006;117: 12S–34S.
225. Rammal A, Zawawi F, Varshney R, Hier MP, Payne RJ, Mlynarek AM. Chyle leak: A rare complication post-hemithyroidectomy. Case report and review of literature. Otolaryngologia Polska. 2014;68(4):204–207.
226. Crumley RL, Smith JD. Postoperative chylous fistula prevention and management. *The Laryngoscope.* 1976;86(6): 804–813.
227. Ilczyszyn A, Ridha H, Durrani AJ. Management of chyle leak post neck dissection: A case report and literature review. *J Plast Reconstr Aesth Surg*. 2011;64(9): e223–230.
228. Kwon SS, Falk A, Mitty HA. Thoracic duct injury associated with left internal jugular vein catheterization: Anatomic considerations. *J Vasc Intervent Radiol*. 2002;13(3):337–339.
229. Polistena A, Monacelli M, Lucchini R, et al. Surgical morbidity of cervical lymphadenectomy for thyroid cancer: A retrospective cohort study over 25 years. *Int J Surg.* 2015;21: 128–134.
230. Swanson MS, Hudson RL, Bhandari N, Sinha UK, Maceri DR, Kokot N. Use of octreotide for the management of chyle fistula following neck dissection. *JAMA Otolaryngol Head Neck Surg*. 2015;141(8):723–727
231. Delaney SW, Shi H, Shokrani A, Sinha UK. Management of chyle leak after head and neck surgery: Review of current treatment strategies. Int J Otolaryngol. 2017;2017: 8362874.
232. Valentine CN, Barresi R, Prinz RA. Somatostatin analog treatment of a cervical thoracic duct fistula. *Head Neck*. 2002;24(8):810–813.

233. Delaney A, Bagshaw SM, Nalos M. Percutaneous dilatational tracheostomy versus surgical tracheostomy in critically ill patients: A systematic review and meta-analysis. Crit Care. 2006;10: R55
234. Mehta C, Mehta Y. Percutaneous tracheostomy. Ann Card Anaesth. 2017;20: S19-25.
235. Praveen CV, Martin A. A rare case of fatal haemorrhage after tracheostomy. Ann R Coll Surg Engl. 2007; 89(8): W6-8.
236. Lee M, Wilson H. Complications of tracheostomy. Shanghai Chest. 2021; 5:
237. Arola MK, Inberg M, Sotarauta M, Vanttinen E. Tracheo-arterial erosion complicating tracheostomy. Ann Chir Gynaecol. 1979; 68:9–17.
238. Dyer RK, Fisher SR. Tracheal-innominate and tracheal-esophageal fistula. In. Wolfe WG, (ed). Complications in thoracic surgery. Mosby-Year Book; St.Louis (MO); 1992.
239. Riley, Christine M. Continuous capnography in pediatric intensive care. *Crit Care Nur Clin North Am* 2017; 29 (2): 251-258.
240. Raimonde AJ, Westhoven N, Winters R. Tracheostomy. [Updated 2023 Jul 24]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available in: https://www.ncbi.nlm.nih.gov/books/NBK559124/
241. Browning S, Summers C. https://www.enteducationswansea.org/contact-us
242. Deutsch ES. Early tracheostomy tube change in children. *Arch Otolaryngol Head Neck Surg.* 1998;124: 1237-1238.
243. Lee M, Wilson H. Complications of tracheostomy. Shanghai Chest 2021; 5:
244. Burke A. The advantages of stay sutures with tracheostomy. Ann R Coll Surg Engl. 1981 ;63(6):426-428.
245. Marini CP, McMurdo E, McNelis J, Lewis E. A prospective comparative study of the functional results associated with the use of Björk flap tracheostomy versus standard tracheostomy. Eur J Trauma Emerg Surg. 2023; 49(3)
246. Schmidt U, Hess D, Kwo J, et al. Tracheostomy tube malposition in patients admitted to a respiratory acute care unit following prolonged ventilation. *Chest.* 2008; 134: 288–294.
247. Browning S, Summers C. https://www.enteducationswansea.org/contact-us
248. Bodenham AR, Bell D, Bonner S, et al. Standards for the care of adult patients with a temporary tracheostomy; Standards and guidelines. *Intensive Care Soc* 2014; 2014: 29–32.
249. Moorhouse J, Ali T, Moorhouse T, et al. Poorly placed tracheostomy tubes: Effects on flow and resistance. *J Intensive Care Soc.* 2015; 16: 282–286.
250. Panajaroen P, Tangjaturonrasme N. Pneumothorax after tracheostomy: A prospective study. Otolaryngologia Polska. Pol Otolaryngol. 2015; 69(3):24-29.

251. Barlow DW, Weymuller EA Jr, Wood DE. Tracheotomy and the role of postoperative chest radiography in adult patients. Ann Otol Rhinol Laryngol 1994; 103(9): 665-668.
252. Tarnoff M, Moncure M, Jones F, Ross S, Goodman M. The value of routine post-tracheostomy chest radiography. Chest. 1998; 113(6): 1647-9.
253. Smith DK, Grillone GA, Fuleihan N. Use of postoperative chest X-ray after elective adult tracheotomy. Otolaryngol Head Neck Surg. 1999; 120(6): 848-851.
254. Shraddha J, Sunil K, Prasad D, Sagar G. Bilateral pneumothorax: Perils of emergency tracheostomy. J Laryngol Voice 2014; 4(1): 36-38.
255. Chiaravalli J, Lufesi N, Shawa E, Nkhoma V, Sigalet E, Dubrowski A. Management of an obstructed tracheostomy in a limited-resource setting. Cureus. 2017; 9(5): e1246.
256. Mehta AK, Chamyal PC. Tracheostomy complications and their management. Med J Armed Forces India. 1999 ;55(3):197-200.
257. Miyata J, Dateoka K, Yoshioka T. Acute airway obstruction by a mucus plug in a patient with a 12-year history of inserting a double cannula tracheostomy tube: A case report. SAGE Open Med Case Rep. 2022;10.
258. Lazzarotto A, Tel A, Vetrugno L, et al. Pneumomediastinum, pneumothorax and subcutaneous emphysema after tracheostomy closure. When less is more. Acta Biomed. 2022;92(S1): e2021368.
259. Lewith H, Athanassoglou V. Update on management of tracheostomy. BJA Educ. 2019;19(11):370–6.
260. Alshoubi A, Mathew A. Subcutaneous emphysema following open tracheostomy during tracheostomy mask ventilation. Am J Case Rep. 2022; 6(23): e937102
261. Kukuruza K, Aboeed A. StatPearls [Internet] Treasure Island (FL): StatPearls Publishing; 2022. Jan, Subcutaneous emphysema. 2022 May 2. Available in: https://pubmed.ncbi.nlm.nih.gov/31194349/ [PubMed] [Google Scholar]
262. Tran Q, Mizumoto R, Mehanna D. Management of extensive surgical emphysema with subcutaneous drain: A case report. Int J Surg Case Rep. 2018;44: 126–130.
263. Mohamad I. When air is the complication: Emphysema following tracheostomy. Oman Med J 2020; 35 (3): e139.
264. Panajaroen P, Tangjaturonrasme. Pneumothorax after tracheostomy: A prospective study. DOI: 10.5604/00306657.1156334. 2015. Available in: file:///C:/Users/ASUS/Downloads/Pneumothorax_after_tracheostomy_A_prospective_stud-1.pdf
265. Barlow DW, Weymuller EA. Jr, Wood DE. Tracheotomy and the role of postoperative chest radiography in adult patients. Ann Otol Rhinol Laringol 1994; 103(9): 665-668.

266. Tarnoff M, Moncure M, Jones F, Ross S, Goodman M. The value of routine post-tracheostomy chest radiography, Chest. 1998; 113(6): 1647-1649.
267. Smith DK, Grillone GA, Fuleihan N. Use of postoperative chest X-ray after elective adult tracheotomy, J Otolaryngol Head Neck Surg: 1999; 120(6): 848-851.
268. Lee JH, Nuthall G, Ikeyama T, et al. Tracheal intubationp and safety across International PICUs: A report from National Emergency Airway Registry for Children. Pediatr Crit Care Med. 2019;20: 1-8.
269. Caceres M, Braud RL, Maekawa R, Weiman DS, Garrett HE. Secondary pneumomediastinum: A retrospective comparative analysis. Lung. 2009;187: 341-346.
270. Macia I, Moya J, Ramos R, et al. Spontaneous pneumomediastinum: 41 cases. Eur J Cardiothorac Surg. 2007;31: 1110-1114.
271. Gorrochategui M, Sharma R, Nassar I, et al. Pneumomediastinum. Reference article, Radiopaedia.org (Accessed on 14 Jul 2024) https://doi.org/10.53347/rID-4653 **DOI:** https://doi.org/10.53347/rID-4653
272. Ganessane E, Devendiran A, Ramesh S, Uthayakumar A, Chandrasekar V, Sadasivam AS, et al. Pneumomediastinum in COVID-19 disease: Clinical review with emphasis on emergency management. J Am Coll Emerg Physicians Open. 2023 ;4(2): e12935.
273. Shaikh N, Al Ameri G, Shaheen M et al. Tension Pneumomediastinum: A life-threatening condition in patients with COVID-19. Qatar Med J. 2021;2021(3):55.
274. Mehta C, Mehta Y. Percutaneous tracheostomy. Ann Card Anaesth. 2017;2 S19-25.
275. White AC, Purcell E, Urquhart MB, Joseph B, O'Connor HH. Accidental decannulation following placement of a tracheostomy tube. Respir Care. 2012; 57 (12): 2019-2025.
276. Black TL, Fernandes ET, Carr MG. Preventing accidental decannulations following tracheostomy. *J Pediatr Surg* 1988;23*(2)*:143.
277. Tibballs J, Henning R, Robertson CF, Massie J, Hochmann M, Carter B, et al. A home respiratory support programmed for children by parents and layperson carers. *J Paediatr Child Health* 2010;46*(*1-2*)*:57–62.
278. Li Z, Zhang W, Li ZB, Li JR. Abnormal union of mandibular fractures: A review of 84 cases. J Oral Maxillofac Surg. 2006;64: 1225–31.
279. Bicsák Á, Bonitz1 DA, Bonitz L. Complications after osteosynthesis of craniofacial fractures — an analysis from the years 2015–2017, Oral Maxillofac Surg 2021;25(2):199-206

280. Kim S, Choi Y, and Kim Y. Postoperative malocclusion after maxillofacial fracture management: A retrospective case study, Maxillofac Plast Reconstr Surg 2018; 40(27): 2–8.
281. Dodson TB. Complication rates associated with different treatments of mandibular fractures, J Oral Maxillofac Surg. 2000; 58(3): 280–281.
282. Mathog RH, Toma V, Clayman L, Wolf S. Nonunion of the mandible: An analysis of contributing factors. J Oral Maxillofac Surg 2000; 58(7): 743–746.
283. Pramana I GAASC, Adnyana IMS, Niryana IW, Sanjaya IGPH, Hamid ARRH, Martadiani ED. Risk faktors for malocclusion in patients with mandibular fractures within 3 months post open reduction and internal fixation surgery at Prof. Dr. IGNG Ngorah General Hospital Denpasar. Int J Health Scie 2022; 6(S8), 5250–5261.
284. Punjabi AP, Thaller SR. Late complications of mandibular fractures. Oper Tech Plast Reconstr Surg. 1998;5: 266–274.
285. Lee UK, Rojhani A, Herford AS, Thakker JS. Immediate versus delayed treatment of mandibular fractures: A stratified analysis of complications. J. Oral Maxillofac. Surg. 2016;74: 1186–1196.
286. Malanchuk VO, Kopchak AV. Risk factors for development of infection in patients with mandibular fractures located in the tooth-bearing area. J. Craniomaxillofac. Surg. 2007;35: 57–62.
287. Gutta R, et al. Outcomes of mandible fracture treatment at an academic tertiary hospital: A 5-year analysis. J. Oral Maxillofac Surg. 2014;72: 550–558.
288. Elizabeth BO. Alison KSW. Mandible fracture complications and infection: The influence of demographics and modifiable factors. Plast Reconstr Surg. 2016; 138(2): 282e-289e.
289. Perez D, Ellis E 3rd. Complications of mandibular fracture repair and secondary reconstruction. Semin Plast Surg. 2020; 34(4):225-231.
290. Hsieh TY, et al. Risk factors associated with complications after treatment of mandible fractures. Jama Facial Plast Surg. 2019;21: 213–220.
291. Furr AM, Schweinfurth JM, May WL. Factors associated with long-term complications after repair of mandibular fractures. Laryngoscope. 2006;116: 427–430.
292. Gordon PE, Lawler ME, Kaban LB, Dodson TB. Mandibular fracture severity and patient health status are associated with postoperative inflammatory complications. J. Oral Maxillofac Surg. 2011;69: 2191–2197.
293. Voss JO, Heiland M, Preissner R, Preissner S. The risk of osteomyelitis after mandibular fracture is doubled in men versus women: Analysis of 300,000 patients. Sci Rep. 2023; 13(1): 20871.

294. Ellis E rd. Complications of rigid internal fixation for mandibular fractures. J Craniomaxillofac Trauma. 1996;2(2):32–39.
295. Chen CL, Zenga J, Patel R, Branham G. Complications and reoperations in mandibular angle fractures. Jama Facial Plast. Surg. 2018; 20:238–243.
296. Lamphier J, Ziccardi V, Ruvo A, Janel M. Complications of mandibular fractures in an urban teaching center. J Oral Maxillofac Surg. 2003 ;61(7):745-749.
297. Koury M, Ellis E 3rd. Rigid internal fixation for the treatment of infected mandibular fractures. J Oral Maxillofac Surg. 1992; 50(5): 434-443
298. Klotch D. Application of reconstruction plates to the mandible. Oper Tech Otolaryngol Head Neck Surg. 1995;6(2):89-96.
299. Mathog RH, Toma V, Clayman L, Wolf S. Nonunion of the mandible: An analysis of contributing factors. J Oral Maxillofac Surg. 2000;58: 746-752.
300. Kato H, Matsuoka K, Kato N, Ohkubo T. Mandibular osteomyelitis and fracture successfully treated with vascularised iliac bone graft in a patient with pycnodysostosis. Br J Plast Surg 2005;58: 263-266.
301. Alpert B, Kushner GM, Tiwana PS. Contemporary management of infected mandibular fractures. Craniomaxillofac Trauma Reconstr. 2008 ;1(1):25-29.
302. Abdelfadil E, Salem AS, Mourad SI, and Al-Belasy FA. Infected mandibular fractures: Risk factors and management. Oral Hyg Health. 2013; 1:1
303. Lander DP, et al. The impact of treatment delay on malunion and nonunion after open reduction of mandible fractures. Facial Plast Surg Aesthet Med. 2021;23: 460–466.
304. Hermund NU, Hillerup S, Kofod T, Schwartz O, Andreasen JO. Effect of early or delayed treatment upon healing of mandibular fractures: A systematic literature review. Dent Traumatol. 2008;24(1):22–26.
305. Chrcanovic BR. Teeth in the line of mandibular fractures. Oral Maxillofac Surg. 2014;18(1):7–24.
306. Pullinger AG, Seligman DA: Trauma history in diagnostic groups of temporomandibula disorders. Oral Surg Oral Med Oral Pathol 1991; 71:529
307. Al-Moraissi EA, Perez D, Ellis E rd. Do patients with malocclusion have a higher prevalence of temporomandibula disorders than controls both before and after orthognathic surgery? A systematic review and meta-analysis. J Craniomaxillofac Surg. 2017;45(10):1716–1723.
308. Stelea CG, Agop-Forna D, Dragomir R, Ancuţa C, Török R, Forna NC, Iordache C. Recovery of Post-Traumatic Temporomandibular Joint after Mandibular Fracture Immobilization: A Literature Review. Applied Sciences. 2021; 11(21):10239.

309. Rajantie H, Snäll J, Thoren H. Temporomandibula dysfunction after surgery of mandibular fractures not involving the mandibular condyle: A prospective follow-up study. J Oral Maxillofac Surg. 2019; 77 (8) :1657-1662
310. Liu F, Steinkeler A. Epidemiology, diagnosis, and treatment of temporomandibula disorders. Dent. Clin. N. Am. 2013; 57: 465–479.
311. Dimitroulis G. Management of temporomandibula joint disorders: A surgeon's perspective. Aust. Dent. J. 2018; 63 (Suppl. 1): 79–90.
312. Cobo JL, Cabrera-Freitag M, Cobo T, Muriel JD, Junquera LM, Cobo J. Nonsurgical strategies for the treatment of temporomandibula joint disorders. 2018. Available in: https://www.intechopen.com/chapters/66186 (accessed on 20 September 2021).
313. Johnson M. Transcutaneous electrical nerve stimulation: Mechanisms, clinical application and evidence. Rev. Pain. 2007; 1: 7–11.
314. Ba S, Zhou P, Yu M. Ultrasound is effective to treat temporomandibula joint disorder. J Pain Res. 2021; 14: 1667–1673.
315. Zhang L, Xu L, Wu D, Yu C, Fan S, Cai B. Effectiveness of exercise therapy versus occlusal splint therapy for the treatment of painful temporomandibula disorders: A systematic review and meta-analysis. Ann. Palliat. Med. 2021; 10: 6122–6132.
316. Machado E, Bonotto D, Afonso Cunali P. Intra-articular injections with corticosteroids and sodium hyaluronate for treating temporomandibula joint disorders: A systematic review. Dent. Press J. Orthod. 2013; 18: 128–133.
317. Gauer RL, Semidey MJ. Diagnosis and treatment of temporomandibula disorders. Am. Fam. Physician. 2015; 91: 378–386.
318. Upadya VH, Bhat HK, Rao BS, Reddy SG. Classification and surgical management of temporomandibula joint ankylosis: A review**.** JKAOMS 2021;47: 239-248.
319. Nguyen VS, Kofod T, Nisja E, Hosseini M, Worsaae N. Interpositional arthroplasty using cartilage allografts for treating temporomandibula joint arthrosis: A 3 and 5-year retrospective clinical follow-up study. OSOMOPOR 2024; 137: 573-579
320. Madhu K, Deepika S, Monica S, Venugopalan V, Sathyanarayanan R. Management of temporomandibula joint ankylosis gap vs interpositional arthroplasty. J Sci Dent. 2015; 5(1): 25-29
321. Yoda T, Ogi N, Yoshitake H, Kawakami T, Takagi R, Murakami K, Yuasa H, Kondoh T, Tei K, Kurita K. Clinical guidelines for total temporomandibula joint replacement. Jpn Dent Sci Rev. 2020 ;56(1):77-83.

322. Yuen, HW, Mazzoni T. Mandible fracture. StatPearls 2019, 2019, 1–4.
323. Bobamuratova DT, Boymuradov SHA. Complex rehabilitation of patients with jaw fractures. J Dent Oral Disord Ther. 2018;8: 2–8.
324. Anyanechi C. Temporomandibula joint ankylosis caused by condylar fractures: A retrospective analysis of cases at an urban teaching hospital in Nigeria. Int J Oral Maxillofac Surg 2015; 44(8): 1027-1033.
325. Chandan SN, Shetty SK, Shetty SK, Shah AK. Inferior alveolar nerve dysfunction in mandibular fractures: A prospective cohort study. J Korean Assoc Oral Maxillofac Surg. 2021; 47(3):183-189.
326. Paolo B, Fabio R, Cesare G, Karagozoglu K, Tymour F. Inferior Alveolar nerve injuries associated with mandibular fractures at risk: A two-center retrospective study. Craniomaxillofac Trauma Reconstr. 2014;7 (3):280-283.
327. Iizuka T, Lindqvist C. Sensory disturbances associated with rigid internal fixation of mandibular fractures. J Oral Maxillofac Surg. 1991;49: 1264–1268.
328. Schultze-Mosgau S, Erbe M, Rudolph D, Ott R, Neukam FW. Prospective study on post-traumatic and postoperative sensory disturbances of the inferior alveolar nerve and infraorbital nerve in mandibular and midfacial fractures. J Craniomaxillofac Surg. 1999;27: 86–93.
329. Zuniga JR, Essick GK. A contemporary approach to the clinical evaluation of trigeminal nerve injuries. Oral Maxillofac Surg Clin N Am. 1992;4: 353–367.
330. Perez D, Ellis E 3rd. Complications of mandibular fracture repair and secondary reconstruction. Semin Plast Surg. 2020;34(4):225-231.
331. Fabien DM, Haréfétéguéna B, Mathieu M, Motandi I, Bertrand E, Tarcissus K Epidemiology and management of Lefort fractures at the Sylvanus Olympio University Hospital of Lomé (Togo). Adv Oral Maxillofac Surg. 2022; 8: 100376
332. Phillips BJ, Turco LM. Le Fort Fractures: A collective review. Bull Emerg Trauma. 2017; 5(4): 221-230
333. Moe KS. Maxillary and Le Fort fractures treatment & management. Available in: https://emedicine.medscape.com/article/1283568-treatment#d15
334. Roselló EG, Granado AM, Garcia MA, Marti SJ, Sala GL, Marmo BB, et al. Facial fractures: Classification and highlights for a useful report. Insights Imaging. 2020;11: 49.
335. Chole RA, Yee J. Antibiotic prophylaxis for facial fractures: A prospective, randomized clinical trial. Arch Otolaryngol Head Neck Surg. 1987;113: 1055–1057.
336. Jiang M, Wu L, Li H, Liang J. Risk factors for maxillary sinus pathology after surgery for midfacial fracture: A multivariate analysis. J Clin Med 2022;11(21):6299

337. Shokri T, Sokoya M, Cohn JE, Bahrami A, Inman J, Ducic Y. Single-point fixation for noncomminuted zigomaticomaxillary complex fractures - A 20-year experience. J Oral Maxillofac Surg. 2020;78(5):778-781.
338. Ebenezer V, Ramalingam B, Sivakumar M. Treatment of zigomatic complex fractures using two-point fixation under general anaesthesia. World J Med Sci. 2014;10: 179–183.
339. Raghoebar II, Rozma FR, de Lange J, Dubois L. Surgical treatment of fractures of the zigomaticomaxillary complex: Effect of fixation on repositioning and stability. A systematic review. Brit J Oral Maxillofac Surg. 2022;60: 397-411.
340. Punjabi SK, Channar KA, Kumar N, Banglani MA et al. Isolated zygomatic bone fracture; management by three point fixation. Prof Med J. 2016; 23: 526-530
341. Degala S, Radhakrishna S, Dharmarajan S. Zigomaticomaxillary fracture fixation: A prospective comparative evaluation of two-point versus three-point fixation. Oral Maxillofac Surg. 2021; 25: 41-48
342. Starch-Jensen T, Linnebjerg LB, Jensen J.D. Treatment of zigomatic complex fractures with surgical or nonsurgical intervention: A retrospective study. Open Dent J. 2018; 12: 377-387.
343. Mittal G, Garg R, Sharma S, et al. Efficacy of two-point fixation in the management of zigomatic complex fractures - a prospective clinical study. Natl J Maxillofac Surg. 2019; 10: 223-227.
344. Aman HM, Alenezi A, Ducic Y, Reddy LV. Secondary reconstruction of the zigomaticomaxillary complex. Semin Plast Surg. 2020 ;34(4):254-259.
345. Dorafshar A. Facial Trauma Surgery- From Primary Repair to Reconstruction. Elsevier - Health Sciences Division: Philadelphia, PA: 2019
346. Manson PN, Grivas A, Rosenbaum A, Vannier M, Zinreich J, Iliff N. Studies on enophthalmos: II. The measurement of orbital injuries and their treatment by quantitative computed tomography. Plast Reconstr Surg. 1986;77(2):203–214.
347. Jansen, J., Maal, T.J.J., Sabelis, J.F., Schreurs, R., Dubois, L. Diagnosis and Clinical Presentation, Workup and Decision-Making of Orbital Fractures. In: Gooris, P.J., Mourits, M.P., Bergsma, J. (eds) Surgery in and around the Orbit. Springer: Cham; 2023. https://doi.org/10.1007/978-3-031-40697-3_9
348. Panneerselvam E, Ravi P, Sasikala B. Fractures of the zigomaticomaxillary complex. In: Bonanthaya K, Panneerselvam E, Manuel S, Kumar VV, Rai A. (eds) Oral and Maxillofacial Surgery for the Clinician. Springer: Singapore; 2021. https://doi.org/10.1007/978-981-15-1346-6_56
349. Aman HM, Alenezi A, Ducic Y, Reddy LV. Secondary reconstruction of the zigomaticomaxillary complex. Semin Plast Surg. 2020 ;34(4):254-259.

350. Complications and treatment of delayed or inadequately treated nasoorbitoethmoid fractures. Sem Plast Surg 2019;33(2):138-142.
351. Bedrossian EH: Surgical anatomy of the eyelids. In: Della Rocca RC, Bedrossian EH, Arthurs BP (eds), Ophthalmic plastic surgery: Decision making and techniques. New York: McGrew Hill; 2002. Pp.23-41.
352. Converse JM, Smith B. Naso-orbital fractures and traumatic deformities of the medial canthus. Plast Reconstr Surg. 1966; 38:147–162.
353. Hammer B. Orbital fractures – diagnosis, operative treatment, secondary corrections. 1st. ed. Cambridge: Hogrefe & Huber; 1995. p. 112.
354. Elbarbary AS, Ali A. Medial canthopexy of old unrepaired naso-orbito-ethmoidal (noe) traumatic telecanthus. 2014; 42(2):106-112.
355. Medra AM, Ashour EM, Shelata EA. Medial canthopexy using mini-screws &/or micro plates for the surgical treatment of post traumatic telecanthus associated with naso-orbito-ethmoidal fractures. Adv Oral Maxillofac Surg. 2021;2:100051
356. Nguyen M, Koshy JC, Hollier LH Jr. Pearls of nasoorbitoethmoid trauma management. Semin Plast Surg. 2010;24: 383–388.
357. Doerr TD. Evidence-based facial fracture management. Facial Plast Surg Clin North Am. 2015;23: 335–345.
358. Pati D, Mishra N, Kar I, Meher B, Samal D, Rath KC. Nasoorbitoethmoid fractures in a tertiary care hospital of eastern India: A prospective study. Natl J Maxillofac Surg. 2021;12(1):42-49.
359. Ellis E, 3rd. Sequencing treatment for naso-orbito-ethmoid fractures. J Oral Maxillofac Surg. 1993;51: 543–558.
360. Markowitz BL, Manson PN, Sargent L, Vander Kolk CA, Yaremchuk M, Glassman D, et al. Management of the medial canthal tendon in nasoethmoid orbital fractures: The importance of the central fragment in classification and treatment. Plast Reconstr Surg. 1991;87: 843–853.
361. Na Y, Seo C, Kwon Y, Kim J, Choi H, Shin D, Lee M. Treatment of a naso-orbito-ethmoid fracture using open reduction and suspension sutures: A case report. Arch Craniofac Surg. 2022 ;23(6):269-273.
362. Patel J, Levin A, Patel BC. Epiphora Clinical Testing. [Updated 2023 Jul 25]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available in: https://www.ncbi.nlm.nih.gov/books/NBK557424/
363. Tomita K, Matsuyama H, Akimoto M. Two cases of nasolacrimal duct obstruction operated by endoscopic dacryocystorhinostomy after orbital fracture reconstruction with an implant. Am J Ophthalmol Case Reports 2023;30: 101853.
364. Servat JJ, Stewart K, Yen MT, Burkat CN . Conjunctivodacryocystorhinostomy with glass tube (endoscopic). Am Acad Ophthalmol. Eye Wiki, May 7, 2024

365. Ali MJ, Gupta H, Honavar S, Naik MN. Acquired nasolacrimal duct obstructions secondary to naso-orbito-ethmoidal fractures: Patterns and outcomes. Ophthal Plast Reconst Surg. 2012;28(4):242-245.
366. Iwai T, Yasumura K, Yabuki Y, Omura S, Matsui Y, Kobayashi S, et al. Intraoperative lacrimal intubation to prevent epiphora as a result of injury to the nasolacrimal system after fracture of the naso-orbitoethmoid complex. Br J Oral Maxillofac Surg. 2013;51(7): e165-168.
367. Kang CM, Han DG. Correlation between operation result and patient satisfaction of nasal bone fracture. Arch Craniofac Surg. 2017; 18:25–29.
368. Hung T, Chang W, Vlantis AC, Tong MC, van Hasselt CA. Patient satisfaction after closed reduction of nasal fractures. Arch Facial Plast Surg. 2007; 9:40–43.
369. Yilmaz MS, Guven M, Varli AF. Nasal fractures: Is closed reduction satisfying? J Craniofac Surg. 2013;24: e36.
370. Choi MH, Cheon JS, Son KM, Choi WY. Long-term postoperative satisfaction and complications in nasal bone fracture patients according to fracture type, site, and severity. Arch Craniofac Surg. 2020 ;21(1):7-14.
371. Murray JA, Maran AG. The treatment of nasal injuries by manipulation. J Laryngol Otol. 1980;94(12):1405–1410.
372. *Sirirak K. Silastic nasal septal splint: A key success in the treatment of acute nasal bone fractures. 2017. Available in:* https://api.semanticscholar.org/CorpusID:58394180
373. Wang W, Lee T, Kohlert S, Kadakia S, Ducic Y. Nasal Fractures: The role of primary reduction and secondary revision. Facial Plast Surg 2019;35: 590–601
374. Puricelli MD, Zitsch RP, 3rd. Septal hematoma following nasal trauma. J Emerg Med. 2016;50(1):121–122.
375. Chan J. Surgical treatment of nasal fractures may benefit from intraoperative 3D imaging. Available in: https://doi.org/10.1016/j.jcms.2024.04.011
376. Wolbert TT, Barry R, Ray PD, Mozaffari F. Abstract: The Impact of Age on Late Complications after Nasal Bone Fractures from Blunt Trauma: A 10-Year Retrospective Review. Plast Reconstr Surg Glob Open. 2018 Sep 26;6(9 Suppl):48-49.
377. Schultz RC. One thousand consecutive cases of major facial injury. Rev Surg. 1970;27: 394–410
378. de Villers YT. Nasal fractures. J Trauma 1975;15: 319–27
379. Kim JH, Lee JH, Hong SM, Park CH. Open reduction of nasal bone fractures through an intercartilaginous incision. Acta Oto-Laryngologica, 2013; 133: 77–81
380. Kim SW, Park B, Lee TG, Kim JY. Olfactory dysfunction in nasal bone fracture. Arch Craniofac Surg. 2017;18(2):92-96.

381. Haug RH, Prather JL. The closed reduction of nasal fractures: An evaluation of two techniques. J Oral Maxillofac Surg. 1991;49: 1288–1292.
382. Murray JA, Maran AG, Mackenzie IJ, Raab G. Open vs closed reduction of the fractured nose. Arch Otolaryngol. 1984;110: 797–802.
383. Park HK, Lee JY, Song JM, Kim TS, Shin SH. The retrospective study of closed reduction of nasal bone fracture. Maxillofac Plast Recons Surg. 2014;36: 266–272.
384. Howell J, Costanzo RM, Reiter ER. Head trauma and olfactory function. World J Otorhinolaryngol - Head Neck Surg. 2018; 4: 39-45.
385. Fujii M, Fukazawa K, Takayasu S, Sakagami M. Olfactory dysfunction in patients with head trauma. Auris Nasus Larynx. 2002;29(1):35–40.
386. Huang T, Wei Y, Wu D. Effects of olfactory training on posttraumatic olfactory dysfunction: a systematic review and meta-analysis. Int Forum Allergy Rhinol. 2021;11(7):1102–1112.
387. Konstantinidis I. Managing post-traumatic olfactory disorders. Curr Otorhinolaryngol Rep. 2022; 10:411–420
388. Grabosky A, Mackers P, Langdon C, Alobid I. Change in olfactory function after septoplasty. A systematic review and meta-analysis. Rhinology. 2021;59(2):144–150.
389. Leopold DA, Hornung DE. Olfactory cocainization is not an effective long-term treatment for phantosmia. Chem Senses. 2013;38(9):803–806.
390. Raghvi A, Priya K, Rajasekaran S, Prabakaran S, Namasivaya RB, Navin D. Evaluating the outcomes of closed reduction of different types of nasal bone fractures. Indian J Otolaryngol Head Neck Surg. 2023; 75(1): 2998–3006
391. Wikipedia. Olfactory system. Available in: https://en.wikipedia.org/wiki/Olfaktory_system
392. Rafenomanjato MM, Andriamanantena RH, Rakotondranaivo MJ, d'Assise Rakotoarimanana FV, Razafindrabe JAB. Evaluation of surgical complications of mandibulectomy. Surg Scie. 2022; 13(9): 410-418.
393. Dawson C, Gadiwalla Y, Martin T, Praveen P, Parmar S. Factors affecting orocutaneous fistula formation following head and neck reconstructive surgery. Br J Oral Maxillofac Surg. 2017; 55:132–135.
394. Girkar F, Thiagarajan S, Malik A, Sawhney S, Deshmukh A, Chaukar D, et al. Factors predisposing to the development of orocutaneous fistula following surgery for oral cancer: Experience from a tertiary cancer center. Head Neck. 2019; 41:4121–4127.
395. Hyman J, Disa JJ, Cordiero PG, Mehrara BJ. Management of salivary fistulas after microvascular head and neck reconstruction. Ann Plast Surg. 2006; 57(3):270-273.

396. Khoo MJW, Ooi ASH. Management of post reconstructive head and neck salivary fistulae: A review of current practices. J Plast Recons Aesthet Surg. 2021; 74:2120–2132.
397. Tian B, Khoo D, Tay AC, Soo KC, Tan NC, Tan HK, et al. Management of orocutaneous fistulas using a vacuum-assisted closure system. Head Neck. 2014; 36:873–881.
398. Sanchez A, Frank E, Inman J, Wang W, Namin A, Ducic Y. Fistula management in head and neck cancer. Semin Plast Surg. 2020; 34:299–304.
399. George B, Jeffrey EJ, Christopher EA. The basic science of wound healing. Plast Recons Surg. 2006;117(SUPPLEMENT):12S–34S.
400. Quinn JV, Wells GA. An assessment of clinical wound evaluation scales. Acad Emerg Med. 1998;5(6):583–586.
401. Zabaglo M, Leslie SW, Sharman T. Postoperative wound infections. [Updated 2024 Mar 5]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available in: https://www.ncbi.nlm.nih.gov/books/NBK560533/
402. Ekaniyere BE, Saheeb BD, and Egbor P. The pattern of mandibular resections in a Nigerian tertiary hospital: A 10year experience. Available in: file:///C:/Users/ASUS/Downloads/ajol-file
403. Anyanechi CE, Shetty SS. Ameloblastoma of the jaws in adult: A retrospective review of lokal recurrent lesions based on the resection margin in the adjacent apparent healthy tissues. Heliyon. 2023;9(5): e16243.
404. Hong J, Yun PY, Chung IH, Myoung H, Suh JD, Seo BM, Lee JH, Chuong PH. Long-term follow up on recurrence of 305 ameloblastoma cases. Int J Oral Maxillofac Surg. 2007;36: 283-288
405. MacDonald-Jankowski DS, Yeung R, Lee KM, Li TK. Ameloblastoma in the Hong Kong Chinese. Part 1: Systematic review and clinical presentation. Dentomaxillofac Radiol. 2004;33: 71–82.
406. Hendra FN, Van Cann EM, Helder MN, Ruslin M, de Visscher JG, Forouzanfar T. Global incidence and profile of ameloblastoma: A systematic review and meta-analysis. Oral Dis. 2019;26: 12–21.
407. Netter FH, Liem IK. Atlas of human anatomy.7th ed. Elsevier Pte Ltd: Singapore; 2020.
408. Lee J, Feng B, Park JS, Foo M, Kruger E. Incidence of lingual nerve damage following surgical extraction of mandibular third molars with lingual flap retraction: A systematic review and meta-analysis. PLoS One. 2023; 2718(2): e0282185.
409. Kämmerer PW, Heimes D, Hartmann A, Kesting M, Khoury F, Schiegnitz E, et al. Clinical insights into traumatic injury of the inferior alveolar and lingual

nerves: A comprehensive approach from diagnosis to therapeutic interventions. Clin Oral Investig. 2024; 28(4):216.
410. Selvi F, Yildirimyan N, Zuniga JR. Inferior alveolar and lingual nerve injuries: An overview of diagnosis and management. Frontiers Oral Maxillofac Med. 2021; 4: 27-40
411. Liu X, Daugherty R, Konofaos P. Sensory restoration of the facial region. Ann Plast Surg. 2019;82: 700-707.
412. Suhaym O, Miloro M. Does early repair of trigeminal nerve injuries influence neurosensory recovery? A systematic review and meta-analysis. Int J Oral Maxillofac Surg. 2021;50: 820-829.
413. Han SR, Yeo SP, Lee MK, et al. Early dexamethasone relieves trigeminal neuropathic pain. J Dent Res. 2010;89: 915-920.
414. Atkins S, Kyriakidou E. Clinical outcomes of lingual nerve repair. Br J Oral Maxillofac Surg. 2021;59: 39-45.
415. Kraut RA, Chahal O. Management of patients with trigeminal nerve injuries after mandibular implant placement. J Am Dent Assoc. 2002;133: 1351-1354.
416. Kawaguchi M, Kato H, Tomita H, et al. Imaging characteristics of malignant sinonasal tumors. J Clin Med. 2017; 6(12): E116.
417. Lloyd G, Lund VJ, Howard D, Savy L. Optimum imaging for sinonasal malignancy. J Laryngol Otol. 2000; 114(7): 557-562.
418. Yang JY, Jang H, Ryu MH, Hwang DS, Kim UK. External carotid artery ligation for perioperative bleeding control on maxillectomy of a squamous cell carcinoma patient. Korean J Oral Maxillofac Pathol. 2020; 44 (4): 127-33
419. Tegegne SS, Gebregzi AH, Arefayne NR. Deliberate hypotension as a mechanism to decrease intraoperative surgical site blood loss in resource limited setting: A systematic review and guideline. Int J Surg Open. 2021; 29 : 55e65
420. Lee DH, Lim HR, Lee JK, Lim SC. Infrastructure maxillectomy for maxillary sinus and hard palate neoplasms. Mol Clin Oncol. 2021;15(3):180.
421. Ansa B, Goodman M, Ward K, et al. Paranasal sinus squamous cell carcinoma incidence and survival based on surveillance, epidemiology, and end results data, 1973 to 2009. Cancer. 2013;119: 2602–2610.
422. Cohen N, Fedewa S, Chen AY. Epidemiology and demographics of the head and neck cancer population. Oral Maxillofac Surg Clin North Am. 2018;30: 381–395.
423. Farrell NF, Mace JC, Detwiller KY, et al. Predictors of survival outcomes in sinonasal squamous cell carcinoma: An analysis of the National Cancer Database. Int Forum Allergy Rhinol. 2021;11: 1001–1011.

424. Keerio AA, Qayyum MU, Kashif A, Dhanani R, Rashid A, Faisal M, et al. Treatment outcomes of maxillary sinus squamous cell carcinoma at a Dedicated Cancer Institute: A retrospective study. Cureus. 2022;14(6): e25644
425. Jafari A, Shen SA, Qualliotine JR, Orosco RK, Califano JA, DeConde AS. Impact of margin status on survival after surgery for sinonasal squamous cell carcinoma. Int Forum Allergy Rhinol. 2019;9: 1205–1211.
426. Anjum W, Maken RN, Nisar H, Fatima I, Masood M, Shahid AB. Epidemiology and treatment outcomes of sinonasal tumors: A single institute's experience in Pakistan. J Coll Physicians Surg Pak. 2019;29: 356–360.
427. Dhanani R, Faisal M, Shahid H, Malik KI, Jamshed A, Hussain R. Outcomes of management of sinonasal malignancies at a dedicated cancer institution: A retrospective study. Ann Maxillofac Surg. 2021;11: 115–120.
428. Park JH, Nam W, Kim HJ, Cha IH. Is elective neck dissection needed in squamous cell carcinoma of maxilla? J Korean Assoc Oral Maxillofac Surg. 2017;43: 166–170.
429. Sayles M, Koonce SL, Harrison L, Beasley N, McRae AR, Grant DG. Pharyngocutaneous fistula complicating laryngectomy in the chemo-radiotherapy organ-preservation. Epoch Eur Arch Otorhinolaryngol. 2014; 271: 1765–1769.
430. Rao KN, Arora RD, Singh A, Nagarkar NM, Aggarwal A. Pharyngocutaneous fistula following primary total laryngectomy: A meta-analysis. Indian J. Surg. Oncol. 2022;13: 797–808.
431. Chotipanich A, Wongmanee S. Incidence of pharyngocutaneous fistula after total laryngectomy and its relationship with the shapes of mucosa closure: A meta-analysis. Cureus. 2022;14: e28822.
432. Dedivitis RA, Aires FT, Cernea CR, Brandão LG. Pharyngocutaneous fistula after total laryngectomy: Systematic review of risk factors. Head Neck. 2015;37: 1691–1697.
433. Kim DH, Kim SW, Hwang SH. Predictive value of risk factors for pharyngocutaneous fistula after total laryngectomy. Laryngoscope. 2022;133: 742–754.
434. Wang M, Xun Y, Wang K, Lu L, Yu A, Guan B, Yu C. Risk factors of pharyngocutaneous fistula after total laryngectomy: A systematic review and meta-analysis. Eur. Arch. Otorhinolaryngol. 2020;277: 585–599.
435. Šifrer R, Strojan P, Tancer I, Dolenc M, Fugina S, Zore SB, Aničin A. The incidence and the risk factors for pharyngocutaneous fistula following primary and salvage total laryngectomy. Cancers (Basel). 2023;15(8):2246.

436. Busoni M, Deganello A, Gallo O. Pharyngocutaneous fistula following total laryngectomy: Analysis of risk factors, prognosis and treatment modalities. Acta Otorhinolaryngol Ital. 2015;35(6):400-405.
437. Bajaj Y, Shayah A, Loke D, Sethi N, Gunasekaran S, Woodhead CJ. Long-term results with a simple technique of stoma creation after laryngectomy. Eur Arch Otorhinolaryngol 2009; 266 (6): 879-882.
438. Kuo M, Ho CM, Wei WI, Lam KH. Tracheostomal stenosis after total laryngectomy: An analysis of predisposing clinical factors. Laryngoscope. 1994; 104 (1 Pt 1): 59-63.
439. Vlantis AC, Marres HA, van den Hoogen FJ. A surgical technique to prevent tracheostomal stenosis after laryngectomy. Laryngoscope 1998, 108; (1 Pt 1): 134-137.
440. Montgomery WW. Stenosis of tracheostoma. Arch Otolaryngol, 1962; 75: 62-65.
441. Myers EN, Gallia LJ. Tracheostomal stenosis following total laryngectomy. Ann Otol Rhinol Laryngol .1982; 91 (4 Pt 1) :450-453.
442. Koizumi M, Ishimaru M, Matsui H, Fushimi K, Yamasoba T, Yasunaga H. Factors associated with the occurrence of stomal stenosis after tracheostomy in adults. Auris Nasus Larynx. 2021: 48 (5): 973-977.
443. Balle VH, Bretlau P. Tracheostomal stenosis following total laryngectomy. J Laryngol Otol. 1985; 99; (6): 577-580.
444. Kim YH, Kim NH, Seong SY, Hyun DW, Choi HS. Double reversing Z-plasty with inferiorly widening stomaplasty for the management of tracheostomal stenosis. Auris Nasus Larynx 2010;37: 361–364.
445. Karabulut B, Avcı H. Double reversing Z plasty for tracheastomal stenosis after total laryngectomy. South. Clin. Ist. Euras. 2020;31(3):261-264.
446. Reddy A, Valika T, & Maddalozzo J. Definitif surgical management for second branchial cleft fistula: A case series. J Otolaryngol - Head & Neck Surg. 2020; 49:55.
447. Kelley-Quon LI. Excision of branchial cleft cyst/sinus. In: Papandria D, Besner G, Moss R, Diefenbach K. (eds) Operative Dictations in Pediatric Surgery. Springer: Cham; 2019.
448. O'Rahily, Muller: Human Embryology & Teratology, 2nd ed. New York: Wiley-Liss, 1996.
449. Kaushik V, Kelly G, Richards SD, Saeed SR. Isolated unilateral hypoglossal nerve palsy after minor head trauma. Clin Neurol Neurosurg. 2002; 105 (1):42-47.
450. Seladi-Schulman J. What is the vagus nerve?. Health 2023. Available in https://www.healthline.com/human-body-maps/vagus-nerve

451. Shibata A, Kimura M, Ishibashi K, Umemura M. Idiopathic isolated unilateral hypoglossal nerve palsy: A report of 2 cases and review of the literature. J. Oral. Maxillofac. Surg. 2018; 76: 1454–1459.
452. Stino AM, Smith BE. Electrophysiology of cranial nerve testing: Spinal accessory and hypoglossal nerves. J. Clin. Neurophysiol. 2018; 35: 59–64.
453. Lee SH, Kim DH, Chun SM, Choi YH. Irreversible hypoglossal nerve injury and concomitant trigeminal system dysfunction after anterior surgery to the cervical spine: Case report and literature review. World Neurosurg. 2020;136: 187–192.
454. Avitia S, Osborne RF. Surgical management of iatrogenic hypoglossal nerve injury. ENT J. 2008; 672-676.
455. Agaton-Bonilla FC, Gay-Escoda C. Diagnosis and treatment of branchial cleft cysts and fistulae. A retrospective study of 183 patients, Int J Oral Maxillofac Surg 1996; 25 (6): 449-452.
456. Paul I, Mohiyuddin SMA, Sagarayaj A, Mohammadi K, Babu P. The outcome of treatment in second branchial cleft anomalies: A case series. Cureus. 2023;15(6): e40164.
457. Bajaj Y, Ifeacho S, Tweedie D, et al. Branchial anomalies in children. Int J Pediatr Otorhinolaryngol. 2011;75: 1020–3.
458. Reddy A, Valika T, & Maddalozzo J. Definitif surgical management for second branchial cleft fistula: A case series. J Otolaryngol - Head & Neck Surg. 2020; 49: 55.
459. Kelley-Quon LI. Excision of branchial cleft cyst/sinus. In: Papandria D, Besner G, Moss R, Diefenbach K. (eds) Operative Dictations in Pediatric Surgery. Springer: Cham: 2019
460. Garcia E, Osterbauer B, Parham D, Koempel J. The incidence of microscopic thyroglossal duct tissue superior to the hyoid bone. Laryngoscope. 2019;129(5):1215-1217.
461. Gisela Wagner G, Jesus E. Medina JE. Excision of thyroglossal duct cyst: The Sistrunk procedure. Operative Techniques in Otolaryngology. 2004; 15: 220-223
462. Amos J, Shermetaro C. Thyroglossal Duct Cyst. [Updated 2023 Jun 26]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available in: https://www.ncbi.nlm.nih.gov/books/NBK519057/
463. Hammed S, Al Assaf A, Hammed A, Saker Z, Dway A. A rare case report of giant de novo cervical cystic hygroma in an elderly patient: Case report. *Ann Med Surg (Lond).* 2021; 64:102210.
464. Suk S, Sheridan M, Saenger JS. Adult lymphangioma: A case report. *Ear Nose Throat J.* 1997;76(12):881–883.

465. Sanchez-Teran AI, Fuertes-Munoz AN, Gutierrez-Brambila ME, Luna-Garcia JC, Cervantes-Ruiz LA, Zuniga-Vazquez LA, Chavez-Perez G. Radial forearm free flap for tongue reconstruction. Int J Innov Res Med Sci. 2023;8 (8):340-345
466. Reza-UL-Haq KM, et al., J Otolaryng Head Neck Surg. 2024, 10: 092
467. Simon C, Bulut C, Federspil PA, et al. Assessment of peri- and postoperative complications and Karnofsky-performance status in head and neck cancer patients after radiation or chemoradiation that underwent surgery with regional or free-flap reconstruction for salvage, palliation, or to improve function. *Radiat Oncol* 2011; 6:109
468. Bianchi B, Copelli C, Ferrari S, et al. Free flaps: Outcomes and complications in head and neck reconstructions. *J Craniomaxillofac Surg*. 2009; 37:438–442
469. Khouri RK, Cooley BC, Kunselman AR, et al. A prospective study of microvascular free-flap surgery and outcome. *Plast Reconstr Surg*. 1998;102: 711–721
470. Lin PC, Kuo PJ, Kuo SCH, et al. Risk factors associated with postoperative complications of free anterolateral thigh flap placement in patients with head and neck cancer: analysis of propensity score-matched cohorts. *Microsurgery* 2020; 40:538–544
471. Furuta Y, Homma A, Oridate N, et al. Surgical complications of salvage total laryngectomy following concurrent chemoradiotherapy. *Int J Clin Oncol* 2008;13: 521–527.
472. Sanati-Mehrizy P, Massenburg BB, Rozehnal JM, et al. Risk factors leading to free flap failure: analysis from the national surgical quality improvement program database. *J Craniofac Surg*. 2016; 27:1956–1964
473. Mahieu R, Colletti G, Bonomo P, Parrinello G, Iavarone A, Dolivet G, Livi L, Deganello A. Head and neck reconstruction with pedicled flaps in the free flap era. Acta Otorhinolaryngol Ital. 2016 ;36(6):459-468.
474. Benatar MJ, Dassonville O, Chamorey E. Impact of preoperative radiotherapy on head and neck free flap reconstruction: A report on 429 cases. J. Plast. Reconstr Aesthet Surg. 2013; 66:478–482.
475. Yoshimoto S, Kawabata K, Mitani H. Factors involved in free flap thrombosis after reconstructive surgery for head and neck cancer. Auris Nasus Larynx. 2010; 37:212–216.
476. Ferrari S, Copelli C, Bianchi B, et al. Free flaps in elderly patients: outcomes and complications in head and neck reconstruction after oncological resection. J Craniomaxillofac Surg. 2013; 41:167–171.

477. Alam DS, Khariwala SS. Technical considerations in patients requiring a second microvascular free flap in the head and neck. Arch Otolaryngol Head Neck Surg. 2009;135:268–273.
478. Copelli C, Tewfik K, Cassano L, Pederneschi N, Catanzaro S, Manfuso A, Cocchi R. Management of free flap failure in head and neck surgery. Acta Otorhinolaryngol Ital. 2017;37(5):387-392.
479. Wei F C, Demirkan F, Chen H C, et al. The outcome of failed free flaps in head and neck and extremity reconstruction: what is next in the reconstructive ladder? Plast Reconstr Surg. 2001; 108:1154–1160.
480. Lee KJ, Park I, Roh SJ, Koh SH, Kim JS, Lee DC, Koo JH. Usefulness of Color Doppler Ultrasonography for the Preoperative Evaluation of Thin Anterolateral Thigh Flap Perforators. Published online: October 1, 2021. DOI: https://doi.org/10.12790/ahm.21.0105
481. Suzuki M, Suko T, Watanabe T, Mogi G. Failure of free flap reconstruction and its prevention. J Japan Soc Heas Neck Surg. 2000;10(1):15-21.
482. Chen KT, Mardini S, Chuang DC, Lin CH, Cheng MH, Lin YT, et al. Timing of presentation of the first signs of vascular compromise dictates the salvage outcome of free flap transfers. Plast Reconstr Surg. 2007; 120(1):187–195.
483. Smit JM, Zeebregts CJ, Acosta R, Werker PMN. Advancements in free flap monitoring in the last decade: a critical review. Plast Reconstr Surg. 2010; 125(1):177–185.
484. Chae MP, Rozen WM, Whitaker IS, Chubb D, Grinsell D, Ashton MW, et al. Current evidence for postoperative monitoring of microvascular free flaps: a systematic review. Ann Plast Surg. 2015; 74(5):621–632
485. Knoedler S, Hoch CC, Huelsboemer L, Knoedler L, Stögner VA, Pomahac B, Kauke-Navarro M, Colen D. Postoperative free flap monitoring in reconstructive surgery-man or machine? Front Surg. 2023; 10:1130566.
486. Salgado CJ, Moran SL, Mardini S. Flap monitoring and patient management. Plast Reconstr Surg. 2009; 124(6 Suppl): e295–302.
487. Khatri N, Zhang S, Kale SS. Current techniques for postoperative monitoring of microvascular free flaps. J Wound Ostomy Continence Nurs. 2017; 44(2):148–152.
488. Chao AH, Meyerson J, Povoski SP, Kocak E. A review of devices used in the monitoring of microvascular free tissue transfers. Expert Rev Med Devices. 2013; 10(5):649–660.
489. Sahoo NK, Thakral A, Pandey S. et al. Incidence of mortality and its relation to comorbidity in Ludwig's angina: A retrospective study. J Maxillofac Oral Surg. 2024; 23: 581–588.

490. An J, Madeo J, Singhal M. Ludwig Angina. [Updated 2023 May 24]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available in: https://www.ncbi.nlm.nih.gov/books/NBK482354/
491. Bridwell R, Gottlieb M, Koyfman A, Long B. Diagnosis and management of Ludwig's angina: An evidence-based review. Am J Emerg Med. 2021; 41:1-5.
492. Raj MPRP et al. A case of recurrent Ludwig angina. Int J Otorhinolaryngol Head Neck Surg. 2020;6(6):1201-1202.
493. Parhiscar A, Har-El G. Deep neck abscess: A retrospective review of 210 cases. Ann Otol Rhinol Laryngol. 2001; 110(11): 1051-1054.
494. Pak S, Cha D, Meyer C, Dee C, Fershko A. Ludwig's Angina. Cureus. 2017;9(8): e1588.
495. Almirall J, Boixeda R, de la Torre MC, Torres A. Aspiration pneumonia: A renewed perspective and practical approach. Respir Med. 2021;185: 106485.
496. Košutova P, Mikolka P. Aspiration syndromes and associated lung injury: Incidence, pathophysiology and management. Physiol Res. 2021;70(Suppl4): S567-S583.
497. Simpson AJ, Allen JL, Chatwin M, Crawford H, Elverson J, Ewan V, et al. BTS clinical statement on aspiration pneumonia. Thorax. 2023;78(Suppl 1): s3-s21.
498. Metlay JP, Waterer GW, Long AC, Anzueto A, Brozek J, Crothers K, et al. Diagnosis and treatment of adults with community-acquired pneumonia. An Official Clinical Practice Guideline of the American Thoracic Society and Infectious Diseases Society of America. Am J Respir Crit Care Med. 2019;200(7): e45-e67.

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