



Source details

Annals of Medicine and Surgery

Scopus coverage years: from 2012 to Present

Publisher: Elsevier

E-ISSN: 2049-0801

Subject area: [Medicine: Surgery](#)

Source type: Journal

[View all documents >](#)

[Set document alert](#)

[Save to source list](#) [Source Homepage](#)

CiteScore 2022

1.7



SJR 2022

0.387



SNIP 2022

0.765



[CiteScore](#) [CiteScore rank & trend](#) [Scopus content coverage](#)

i Improved CiteScore methodology



CiteScore 2022 counts the citations received in 2019-2022 to articles, reviews, conference papers, book chapters and data papers published in 2019-2022, and divides this by the number of publications published in 2019-2022. [Learn more >](#)

CiteScore 2022

$$1.7 = \frac{5,570 \text{ Citations 2019 - 2022}}{3,335 \text{ Documents 2019 - 2022}}$$

Calculated on 05 May, 2023

CiteScoreTracker 2023

$$2.1 = \frac{6,559 \text{ Citations to date}}{3,168 \text{ Documents to date}}$$

Last updated on 07 June, 2023 • Updated monthly

CiteScore rank 2022

Category	Rank	Percentile
Medicine		
Surgery	#269/495	45th

[View CiteScore methodology >](#) [CiteScore FAQ >](#) [Add CiteScore to your site](#)

About Scopus

[What is Scopus](#)

[Content coverage](#)

[Scopus blog](#)

[Scopus API](#)

[Privacy matters](#)

Language

[日本語版を表示する](#)

[查看简体中文版本](#)

[查看繁體中文版本](#)

[Просмотр версии на русском языке](#)

Customer Service

[Help](#)

[Tutorials](#)

[Contact us](#)

ELSEVIER

[Terms and conditions](#) ↗ [Privacy policy](#) ↗

Copyright © Elsevier B.V ↗. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.

We use cookies to help provide and enhance our service and tailor content. By continuing, you agree to the use of cookies ↗.





Volume 73; 2022 Jan

Quality Improvement Study

[Forced air contamination risk in the OR](#)

Victor R. Lange

Ann Med Surg (Lond) 2022 Jan; 73: 102976. Published online 2021 Nov 6. doi: 10.1016/j.amsu.2021.102976

PMCID: PMC8693408

[Article](#) [PubReader](#) [PDF-434K](#) [Cite](#)

Case Report

[Large lumbosacral schwannoma in a young female- a case report from Afghanistan](#)

Sayed Hanif Monawary, Shafi Ullah Zahid, Kalimullah Wardak, Kiran Shafiq Khan, Irfan Ullah, Zohaib Yousaf

Ann Med Surg (Lond) 2022 Jan; 73: 102986. Published online 2021 Oct 30. doi: 10.1016/j.amsu.2021.102986

PMCID: PMC8692994

[Article](#) [PubReader](#) [PDF-3.1M](#) [Cite](#)

Systematic Review / Meta-analysis

[Vaccine-induced thrombotic thrombocytopenia following coronavirus vaccine: A narrative review](#)

Syed Hassan Ahmed, Taha Gul Shaikh, Summaiyya Waseem, Nashwa Abdul Qadir, Zohaib Yousaf, Irfan Ullah

Ann Med Surg (Lond) 2022 Jan; 73: 102988. Published online 2021 Oct 30. doi: 10.1016/j.amsu.2021.102988

PMCID: PMC8556865

[Article](#) [PubReader](#) [PDF-1.7M](#) [Cite](#)

Case Report

[Intracranial hemorrhage in a patient with severe COVID-19 acute respiratory distress syndrome on Venovenous extra corporeal membrane oxygenation: A case report](#)

Anveshi Sathyavathi, Anand Gupta, Vishnu Mahathi Avadhanam, Siva Kumar Reddy Lakkireddygari

Ann Med Surg (Lond) 2022 Jan; 73: 103033. Published online 2021 Dec 3. doi: 10.1016/j.amsu.2021.103033

PMCID: PMC8639484

[Article](#) [PubReader](#) [PDF-1.1M](#) [Cite](#)

Experimental Research

[Potential benefit of olive leaf extract in cervical spondylotic myelopathy model](#)



Sabri Ibrahim, Iqbal Fahlevi Adeputra Nasution, Mahyu Danil, Wismaji Sadewo, Tri Widyawati, Putri Chairani Eyanoer, Kiking Ritarwan, Wibi Riawan, Ridha Darmajaya

Ann Med Surg (Lond) 2022 Jan; 73: 103040. Published online 2021 Nov 11. doi: 10.1016/j.amsu.2021.103040

PMCID: PMC8717420

[Article](#) [PubReader](#) [PDF-12M](#) [Cite](#)

Case Reports

[Different approach to charcot neuroarthropathy: A case report](#)

Wayan Subawa, Hans K. Nugraha, Richard Afandi, Ignatius A. Rusdianto

Ann Med Surg (Lond) 2022 Jan; 73: 103078. Published online 2021 Nov 27. doi: 10.1016/j.amsu.2021.103078

PMCID: PMC8685996

[Article](#) [PubReader](#) [PDF-8.8M](#) [Cite](#)

[Massive pulmonary embolism complicating mild Covid 19 pneumonia: Successful systemic thrombolysis using rt-PA in an elderly patient: A case report](#)

Saïda Amaqdouf, Zakariae Belarbi, Mustapha Beghi, Chaimae Toutai, Nabila Ismaili, Noha El Ouafi

Ann Med Surg (Lond) 2022 Jan; 73: 103090. Published online 2021 Nov 27. doi: 10.1016/j.amsu.2021.103090

PMCID: PMC8626156

[Article](#) [PubReader](#) [PDF-2.8M](#) [Cite](#)

Case-controlled Study

[microRNA-221 and tamoxifen resistance in luminal-subtype breast cancer patients: A case-control study](#)

Alfiah Amiruddin, Muhammad Nassrum Massi, Andi Asadul Islam, Ilhamjaya Patellongi, Muhammad Yogi Pratama, Noorwati Sutandyo, Rosdiana Natzir, Mochammad Hatta, Nani Harlina Md Latar, Syarifuddin Wahid

Ann Med Surg (Lond) 2022 Jan; 73: 103092. Published online 2021 Nov 22. doi: 10.1016/j.amsu.2021.103092

PMCID: PMC8767262

[Article](#) [PubReader](#) [PDF-1.5M](#) [Cite](#)

Case Series

[A six years' experience with 41 cases of enterovesical fistula in a Tertiary National Hospital in Indonesia: A retrospective study](#)

Fina Widia, Muhammad Firman, Gampo Alam Irdam, Ridho Ardhi Syaiful

Ann Med Surg (Lond) 2022 Jan; 73: 103102. Published online 2021 Nov 23. doi: 10.1016/j.amsu.2021.103102

PMCID: PMC8715043

[Article](#) [PubReader](#) [PDF-352K](#) [Cite](#)

Cross-sectional Study

[Comparison of distally based sural artery and supramalleolar flap for coverage of dorsum of foot and ankle defects; a cross-sectional study of 53 patients](#)

Pervaiz Mehmood Hashmi, Abeer Musaddiq, Alizah Hashmi, Marij Zahid



Ann Med Surg (Lond) 2022 Jan; 73: 103109. Published online 2021 Dec 4. doi: 10.1016/j.amsu.2021.103109

PMCID: PMC8669369

[Article](#) [PubReader](#) [PDF-13M](#) [Cite](#)

[Assessment of the prevalence of congenital heart disease in children with pneumonia in tertiary care hospital: A cross-sectional study](#)

Neeraj Kumar Jat, D.K. Bhagwani, Namita Bhutani, Urvashi Sharma, Ram Sharma, Raju Gupta

Ann Med Surg (Lond) 2022 Jan; 73: 103111. Published online 2021 Nov 23. doi: 10.1016/j.amsu.2021.103111

PMCID: PMC8683668

[Article](#) [PubReader](#) [PDF-875K](#) [Cite](#)

[Awareness about the relation of noise induced hearing loss and use of headphones at Hail region](#)

Abdulaziz S. AlQahtani, Ahmed N. Alshammari, Eyad M. Khalifah, Akram A. Alnabri, Hadi A. Aldarwish, Khaled F. Alshammari, Hamad F. Alshammari, Abdulkarim M. Almudayni

Ann Med Surg (Lond) 2022 Jan; 73: 103113. Published online 2021 Nov 29. doi: 10.1016/j.amsu.2021.103113

PMCID: PMC8685984

[Article](#) [PubReader](#) [PDF-557K](#) [Cite](#)

Short Communication

[Comparison of the integrated organ/systems-based curriculum with the traditional subjects-based medical curriculum: Short communication](#)

Clinton Onyebuchi Obi, Moses Onosogbe, Asemota Gift Ehimen, Omotoye Olamide, Titilola Victor Toluwalase, Ovbiagele Esther, Dawodu Oluwananumi Joshua, Abdullahi Tunde Aborode

Ann Med Surg (Lond) 2022 Jan; 73: 103116. Published online 2021 Nov 25. doi: 10.1016/j.amsu.2021.103116

PMCID: PMC8767261

[Article](#) [PubReader](#) [PDF-297K](#) [Cite](#)

Case Reports

[Facial infiltrating lipomatosis, a rare cause of facial asymmetry to be known: Case report and literature review](#)

M. Siradji Harouna, Hasna Belgadir, Achta Fadoul, Fatiha Aghrib, Aicha Merzem, Omar Amriss, Nadia Moussali, Naima Elbenna

Ann Med Surg (Lond) 2022 Jan; 73: 103118. Published online 2021 Nov 24. doi: 10.1016/j.amsu.2021.103118

PMCID: PMC8683695

[Article](#) [PubReader](#) [PDF-3.2M](#) [Cite](#)

[Transduodenal resection of periampullary neuroendocrine tumor: A case report](#)

Abdullah Abdulaziz AlQatari, Rania Zaki Fallatah, Abdullah Saleh AlQattan, Alaa A. Al Abdrabalnabi, Miral Mashhour, Abdulwahab A. AlShahrni

Ann Med Surg (Lond) 2022 Jan; 73: 103126. Published online 2021 Dec 29. doi: 10.1016/j.amsu.2021.103126

PMCID: PMC8767234

[Article](#) [PubReader](#) [PDF-3.3M](#) [Cite](#)



Cross-sectional Study

[Clinical characteristics and prognostic factors of atrial fibrillation at a tertiary center of Pakistan – From a South-Asian perspective – A cross-sectional study](#)

Intisar Ahmed, Aiysha Nasir, Pirbhat Shams, Hunaina Shahab, Muhammad Hassan, Faryal Subhani, Ghufran Adnan, Awais Farhad, Aamir Hameed Khan, Yawer Saeed

Ann Med Surg (Lond) 2022 Jan; 73: 103128. Published online 2021 Dec 9. doi: 10.1016/j.amsu.2021.103128

PMCID: PMC8718836

[Article](#) [PubReader](#) [PDF-1.3M](#) [Cite](#)

Cohort Study

[Different doses of enoxaparin in the prevention of postoperative abdominal adhesions. Experimental study](#)

Gilberto Guzmán-Valdivia Gómez, Eduardo Tena-Betancourt, Mónica Angulo Trejo

Ann Med Surg (Lond) 2022 Jan; 73: 103132. Published online 2021 Dec 3. doi: 10.1016/j.amsu.2021.103132

PMCID: PMC8666521

[Article](#) [PubReader](#) [PDF-2.3M](#) [Cite](#)

Case Report

[Acute double coronary occlusion and its misleading presentation: An unusual case report](#)

Maryem Assamti, Ilham Benahmed, Nabila Ismaili, Noha El Ouafi

Ann Med Surg (Lond) 2022 Jan; 73: 103133. Published online 2021 Dec 3. doi: 10.1016/j.amsu.2021.103133

PMCID: PMC8683674

[Article](#) [PubReader](#) [PDF-1.6M](#) [Cite](#)

Cross-sectional Study

[Comparison of an ephedrine infusion with lidocaine %5 for prevention of hypotension during spinal anesthesia in cesarean section](#)

Seyyed Mohsen Pouryaghobi, Banafsheh Mashak, Kourosh Kabir, Leila Hajimaghsoudi, Mojtaba Ahmadinejad

Ann Med Surg (Lond) 2022 Jan; 73: 103136. Published online 2021 Dec 7. doi: 10.1016/j.amsu.2021.103136

PMCID: PMC8666525

[Article](#) [PubReader](#) [PDF-633K](#) [Cite](#)

Case Reports

[Pilonidal sinus of breast, a case report with literature review](#)

Abdulwahid M. Salih, Zuhair D. Hammood, Hiwa O. Abdullah, Fahmi H. Kakamad, Bakhan Sharif Ali, Karzan M. Salih, Berwn A. Abdulla

Ann Med Surg (Lond) 2022 Jan; 73: 103138. Published online 2021 Dec 2. doi: 10.1016/j.amsu.2021.103138

PMCID: PMC8669376

[Article](#) [PubReader](#) [PDF-298K](#) [Cite](#)



[Localizing spontaneously hemostatic colonic diverticular bleeding using VISCOCLEAR gel: A case report](#)

Daisuke Suto, Masashi Yoshida, Takaaki Otake, Eiichiro Ichiishi, Kiichi Sato, Yosuke Osawa, Hirotooshi Ebinuma, Hironori Odaira, Yutaka Suzuki, Yutaka Kohgo

Ann Med Surg (Lond) 2022 Jan; 73: 103141. Published online 2021 Dec 4. doi: 10.1016/j.amsu.2021.103141

PMCID: PMC8683678

[Article](#) [PubReader](#) [PDF-1.4M](#) [Cite](#)

[Incidental finding of metastatic prostatic adenocarcinoma of frontotemporal bone presenting as subdual hematoma: A case report and review of literature](#)

Kuang-Ting Liu, Yueh-Ching Chang, Junn-Liang Chang

Ann Med Surg (Lond) 2022 Jan; 73: 103142. Published online 2021 Dec 3. doi: 10.1016/j.amsu.2021.103142

PMCID: PMC8671100

[Article](#) [PubReader](#) [PDF-4.0M](#) [Cite](#)

Review

[Can L-carnitine reduce post-COVID-19 fatigue?](#)

Roya Vaziri-harami, Parisa Delkash

Ann Med Surg (Lond) 2022 Jan; 73: 103145. Published online 2021 Dec 13. doi: 10.1016/j.amsu.2021.103145

PMCID: PMC8667465

[Article](#) [PubReader](#) [PDF-1.8M](#) [Cite](#)

How to Articles

[All roads can lead to surgery](#)

D. Motter, F. Salimi

Ann Med Surg (Lond) 2022 Jan; 73: 103147. Published online 2021 Dec 9. doi: 10.1016/j.amsu.2021.103147

PMCID: PMC8683694

[Article](#) [PubReader](#) [PDF-273K](#) [Cite](#)

Systematic Review / Meta-analysis

[Timing of urinary catheter removal after colorectal surgery with pelvic dissection: A systematic review and meta-analysis](#)

Stuart McIntosh, Ross Hunter, Duncan Scrimgeour, Mohammed Bekheit, Lynn Stevenson, George Ramsay

Ann Med Surg (Lond) 2022 Jan; 73: 103148. Published online 2021 Dec 13. doi: 10.1016/j.amsu.2021.103148

PMCID: PMC8685994

[Article](#) [PubReader](#) [PDF-2.8M](#) [Cite](#)



Case Report

[A new approach of using platelet-rich autologous plasma to increase the ovarian reservoir in a Syrian patient with ovarian insufficiency: A case report](#)

Rami Sabouni, Rand Tarrab, Dania kalaji, Haitham Abbassi

Ann Med Surg (Lond) 2022 Jan; 73: 103149. Published online 2021 Dec 11. doi: 10.1016/j.amsu.2021.103149

PMCID: PMC8683667

[Article](#) [PubReader](#) [PDF-654K](#) [Cite](#)

Experimental Research

[Vitamin D receptor gene polymorphisms and risk of breast cancer in Iranian women](#)

Seyedeh Maryam Kazemi, Aghil Esmaili-bandboni, Ziba Veisi Malekshahi, Mohammad Shahbaz Sardood, Mehrdad Hashemi, Keivan Majidzadeh, Maryam Kadkhodazadeh, Rezvan Esmaili, Babak Negahdari

Ann Med Surg (Lond) 2022 Jan; 73: 103150. Published online 2021 Dec 4. doi: 10.1016/j.amsu.2021.103150

PMCID: PMC8666522

[Article](#) [PubReader](#) [PDF-405K](#) [Cite](#)

Case Reports

[Association of pulmonary embolism and acute coronary syndrome during COVID-19 infection: Case report and a brief review](#)

Abdelaziz boudihi, Charmake Derar, Mosaab Mazouzi, Nabila ismaili, Noha el ouafi

Ann Med Surg (Lond) 2022 Jan; 73: 103152. Published online 2021 Dec 4. doi: 10.1016/j.amsu.2021.103152

PMCID: PMC8642827

[Article](#) [PubReader](#) [PDF-2.2M](#) [Cite](#)

[Severe case of COVID –19 pneumonia complicated by SIADH](#)

Mohamed Fajri, Meryem Essafti, Rachid Aloua, Youssef Mouaffak

Ann Med Surg (Lond) 2022 Jan; 73: 103153. Published online 2021 Dec 4. doi: 10.1016/j.amsu.2021.103153

PMCID: PMC8642826

[Article](#) [PubReader](#) [PDF-890K](#) [Cite](#)

Cross-sectional Study

[Traumatic orthopedic consultations in COVID-19 inpatients – A cross sectional analysis of results and a review of lessons in tele-orthopedics](#)

Ali Jarragh, Ali Lari, Abdullah AL-Shatti, Eissa Alloughani, Khaled Alawadhi

Ann Med Surg (Lond) 2022 Jan; 73: 103155. Published online 2021 Dec 8. doi: 10.1016/j.amsu.2021.103155

PMCID: PMC8653516

[Article](#) [PubReader](#) [PDF-1.3M](#) [Cite](#)

Cohort Study

[A prospective, multicenter trial of a long-term bioabsorbable mesh with Sepra technology in cohort of challenging laparoscopic ventral or incisional hernia repairs \(ATLAS trial\)](#)

William W. Hope, Adel G. El-Ghazzawy, Brad A. Winterstein, Jeffrey A. Blatnik, S. Scott Davis, Jacob A. Greenberg, Noel C. Sanchez, Eric M. Pauli, Daniel M. Tseng, Karl A. LeBlanc, Kurt E. Roberts, Curtis E. Bower, Eduardo Parra-Davila, J. Scott Roth, Corey R. Deeken, Eric F. Smith

Ann Med Surg (Lond) 2022 Jan; 73: 103156. Published online 2021 Dec 6. doi: 10.1016/j.amsu.2021.103156

PMCID: PMC8689054



[Article](#) [PubReader](#) [PDF-1.5M](#) [Cite](#)

Case Reports

[Extra dural hematoma following a high voltage electrocution accident: A case report](#)

Marouane Makhchoune, Othman Benhayoun, Abdelkouddous Laaidi, Mohamed Yassine Haouas, Abdessamad Naja, Abdelhakim Lakhdar

Ann Med Surg (Lond) 2022 Jan; 73: 103157. Published online 2021 Dec 7. doi: 10.1016/j.amsu.2021.103157

PMCID: PMC8671092

[Article](#) [PubReader](#) [PDF-2.2M](#) [Cite](#)

[Metastatic ovarian carcinoma in breast cancer patients during risk-reducing salpingo-oophorectomy: Report of two cases](#)

Prafulla Shakya, Anu Bajracharya, Suraj Shrestha, Sanjeev Kharel, Rubina Maharjan, Aagon Krishna Shrestha

Ann Med Surg (Lond) 2022 Jan; 73: 103158. Published online 2021 Dec 6. doi: 10.1016/j.amsu.2021.103158

PMCID: PMC8685998

[Article](#) [PubReader](#) [PDF-4.1M](#) [Cite](#)

Cross-sectional Study

[Is surgical subspecialization associated with hand grip strength and manual dexterity? A cross-sectional study](#)

Reickly D.N. Constansia, Judith E.K.R. Hentzen, Carlijn I. Buis, Joost M. Klaase, Vincent E. de Meijer, Mark Meerdink

Ann Med Surg (Lond) 2022 Jan; 73: 103159. Published online 2021 Dec 7. doi: 10.1016/j.amsu.2021.103159

PMCID: PMC8689053

[Article](#) [PubReader](#) [PDF-1.0M](#) [Cite](#)

[Analgesic efficacy of posterior and anterior psoas compartment block: Lumbar plexus versus three -in-one nerve block after lower limb orthopedic surgery under spinal anesthesia: A prospective cohort study](#)

Habtu Adane Aytolign, Abraham Tarekegn Mersha, Yonas Admasu Ferede

Ann Med Surg (Lond) 2022 Jan; 73: 103160. Published online 2021 Dec 6. doi: 10.1016/j.amsu.2021.103160

PMCID: PMC8717444

[Article](#) [PubReader](#) [PDF-415K](#) [Cite](#)

[To determine the sensitivity, specificity, and diagnostic accuracy of diffusion-weighted MRI in localization of non-palpable undescended testes taking laparoscopic findings as the gold standard: cross-sectional study from Pakistan](#)

Kamran Fazal, Shaiq Hussain, Faheemullah Khan, Irfan Ullah, Muhammad Junaid Tahir, Qasim Mehmood, Zohaib Yousaf

Ann Med Surg (Lond) 2022 Jan; 73: 103161. Published online 2021 Dec 18. doi: 10.1016/j.amsu.2021.103161

PMCID: PMC8767264

[Article](#) [PubReader](#) [PDF-365K](#) [Cite](#)

[The prevalence of hypertension and its progression among patients with type 2 diabetes in Jordan](#)



Ahlam Bani Salameh, Dana Hyassat, Ahmad Suhail, Zaina Makahleh, Yousef Khader, Mohammed EL-Khateeb, Kamel Ajlouni

Ann Med Surg (Lond) 2022 Jan; 73: 103162. Published online 2021 Dec 8. doi: 10.1016/j.amsu.2021.103162

PMCID: PMC8666513

[Article](#) [PubReader](#) [PDF-365K](#) [Cite](#)

Case Reports

[An uncommon unilateral primary T cell adrenal lymphoma: A case report](#)

Kiranpreet Gosal, Mitsy Barr, David Moccia, Pooja Patel

Ann Med Surg (Lond) 2022 Jan; 73: 103163. Published online 2021 Dec 8. doi: 10.1016/j.amsu.2021.103163

PMCID: PMC8767247

[Article](#) [PubReader](#) [PDF-1.1M](#) [Cite](#)

[Cerebral venous sinus thrombosis as a complication of primary varicella infection in a child, case report](#)

Maysaa Badour, Eman Shhada, Ali Hammed, Sameer Baqla

Ann Med Surg (Lond) 2022 Jan; 73: 103165. Published online 2021 Dec 11. doi: 10.1016/j.amsu.2021.103165

PMCID: PMC8717460

[Article](#) [PubReader](#) [PDF-1.1M](#) [Cite](#)

Cross-sectional Study

[The relationship between glycine levels in collagen in the anterior rectus sheath tissue and the onset of indirect inguinal hernia: A cross-sectional study](#)

Amir Fajar, Warsingih, Erwin Syarifuddin, Joko Hendarto, Ibrahim Labeda, Ronald Erasio Lusikooy, Mappincara, Muhammad Iwan Dani, Samuel Sampetoding, Muhammad Ihwan Kusuma, Julianus Aboyaman Uwuratuw, Muhammad Faruk

Ann Med Surg (Lond) 2022 Jan; 73: 103166. Published online 2021 Dec 9. doi: 10.1016/j.amsu.2021.103166

PMCID: PMC8683690

[Article](#) [PubReader](#) [PDF-562K](#) [Cite](#)

[Knowledge, attitudes and practices of health professionals towards postoperative pain management at a referral hospital in Ethiopia](#)

Tadese Tamire Negash, Kumilachew Geta Belete, Wolderufael Tilaye, Tamiru Tilahun Ayele, Keder Essa Oumma

Ann Med Surg (Lond) 2022 Jan; 73: 103167. Published online 2021 Dec 14. doi: 10.1016/j.amsu.2021.103167

PMCID: PMC8685983

[Article](#) [PubReader](#) [PDF-892K](#) [Cite](#)

Case Reports

[Capitate fracture nonunion in association with triquetrum avulsion fracture: Rare injury with massive effect on hand function, a case report](#)

Anas AR Altamimi, Mohammed Alisi, Osama Al-Odat, Imad Abushahin, Asaad Ahmad

Ann Med Surg (Lond) 2022 Jan; 73: 103169. Published online 2021 Dec 7. doi: 10.1016/j.amsu.2021.103169

PMCID: PMC8666510

[Article](#) [PubReader](#) [PDF-4.8M](#) [Cite](#)

[The role of whole exome sequencing in the UBE3A point mutation of Angelman Syndrome: A case report](#)
Agung Triono, Kristy Iskandar, Andika Priamas Nugrahanto, Marissa Leviani Hadiyanto, Gunadi, Elisabeth Siti Herini

Ann Med Surg (Lond) 2022 Jan; 73: 103170. Published online 2021 Dec 8. doi: 10.1016/j.amsu.2021.103170

PMCID: PMC8683671

[Article](#) [PubReader](#) [PDF-2.0M](#) [Cite](#)

[A case of an upper anterior abdominal wall extra-skeletal Ewing sarcoma- soft tissue reconstruction with medial intercostal artery perforator flap and free anterolateral thigh fasciocutaneous flap with arteriovenous loop graft](#)

Y. Liu, S. Subramaniam, R. Sasidaran, A.A.H. Ruhana, Z.K.L. Jimeno

Ann Med Surg (Lond) 2022 Jan; 73: 103171. Published online 2021 Dec 7. doi: 10.1016/j.amsu.2021.103171

PMCID: PMC8692991

[Article](#) [PubReader](#) [PDF-7.0M](#) [Cite](#)

[Bilateral spontaneous pneumothorax in critically-ill COVID-19 infants: About two cases](#)

Ilyass Laaribi, Hamza Mimouni, Zakaria Bouayed, Ghizlane El Aidouni, Samia Berrichi, Choukri Bahouh, Houssam Bkiyar, Brahim Housni

Ann Med Surg (Lond) 2022 Jan; 73: 103172. Published online 2021 Dec 6. doi: 10.1016/j.amsu.2021.103172

PMCID: PMC8648378

[Article](#) [PubReader](#) [PDF-1.9M](#) [Cite](#)

[A case report of the transanal lateral lymph node dissection with a combined abdominal assisted approach for the lower rectal cancer](#)

Masatsugu Ishii, Toshikatsu Nitta, Jun Kataoka, Ryo Iida, Yasuhiko Ueda, Sadakatsu Senpuku, Ayumi Matsutani, Masashi Yamamoto, Takashi Ishibashi, Junji Okuda

Ann Med Surg (Lond) 2022 Jan; 73: 103173. Published online 2021 Dec 7. doi: 10.1016/j.amsu.2021.103173

PMCID: PMC8683661

[Article](#) [PubReader](#) [PDF-1.8M](#) [Cite](#)

Cohort Study

[Pattern and type of amputation and mortality rate associated with diabetic foot in Jeddah, Saudi Arabia: A retrospective Cohort Study](#)

Abdullah Abdulaziz Almohammadi, Maryam Mohammed Alnashri, Rawan Abdulrahman T Harun, Sarah Mohammed Alsamiri, Maram Taha Alkhatieb

Ann Med Surg (Lond) 2022 Jan; 73: 103174. Published online 2021 Dec 8. doi: 10.1016/j.amsu.2021.103174

PMCID: PMC8689050

[Article](#) [PubReader](#) [PDF-370K](#) [Cite](#)

Original Research

[History of surgical training in Kalamazoo](#)

Saad Shebrain, Neal Ferrin, Caitlyn Cookenmaster, Earl Norman, Robert Sawyer



Ann Med Surg (Lond) 2022 Jan; 73: 103175. Published online 2021 Dec 18. doi: 10.1016/j.amsu.2021.103175

PMCID: PMC8713055

[Article](#) [PubReader](#) [PDF-6.2M](#) [Cite](#)

Randomised Controlled Trial

[Parathyroid hormone level after total thyroidectomy using conventional versus harmonic focus technique: Prospective randomized study](#)

Hany Abdelfatah Elhady, Rasha Abd Elaziz Abd Elghany, Mohammed Shehata Zarad

Ann Med Surg (Lond) 2022 Jan; 73: 103176. Published online 2021 Dec 14. doi: 10.1016/j.amsu.2021.103176

PMCID: PMC8693406

[Article](#) [PubReader](#) [PDF-1.2M](#) [Cite](#)

Cohort Studies

[Relationship between residual gastric area and weight loss after sleeve gastrectomy: A Cohort study](#)

Nicola Tartaglia, Giovanna Pavone, Mario Pio Germano, Giovanni Russo, Mario Pacilli, Antonio Ambrosi

Ann Med Surg (Lond) 2022 Jan; 73: 103177. Published online 2021 Dec 20. doi: 10.1016/j.amsu.2021.103177

PMCID: PMC8767233

[Article](#) [PubReader](#) [PDF-3.7M](#) [Cite](#)

[Pharmacotherapeutic prophylaxis and post-operative outcomes within an Enhanced Recovery After Surgery \(ERAS®\) program: A randomized retrospective cohort study](#)

Richard H. Parrish, II, Rachele Findley, Kevin M. Elias, Brian Kramer, Eric G. Johnson, Leah Gramlich, Gregg S. Nelson

Ann Med Surg (Lond) 2022 Jan; 73: 103178. Published online 2021 Dec 14. doi: 10.1016/j.amsu.2021.103178

PMCID: PMC8717452

[Article](#) [PubReader](#) [PDF-403K](#) [Cite](#)

Case Report

[Fibroadenoma in axillary accessory breast mimicking carcinoma of unknown primary; a case report with literature review](#)

Lana R.A. Pshtivan, Zuhair D. Hammood, Abdulwahid M. Salih, Sanaa O. Karim, Bakhan Sharif Ali, Fahmi H. kakamad, Razhan K. Ali

Ann Med Surg (Lond) 2022 Jan; 73: 103179. Published online 2021 Dec 14. doi: 10.1016/j.amsu.2021.103179

PMCID: PMC8767229

[Article](#) [PubReader](#) [PDF-804K](#) [Cite](#)



Review

[Clinical review of High Flow Nasal Cannula and Continuous Positive Airway Pressure in pediatric acute respiratory distress](#)

Kurniawan Taufiq Kadafi, Saptadi Yuliarto, Charity Monica, William Prayogo Susanto

Ann Med Surg (Lond) 2022 Jan; 73: 103180. Published online 2021 Dec 14. doi: 10.1016/j.amsu.2021.103180

PMCID: PMC8674456

[Article](#) [PubReader](#) [PDF-364K](#) [Cite](#)

Short Communication

[COVID-19 and random prescription of antibiotics in Syria](#)

Sarya Swed, Hidar Alibrahim, Bisher Sawaf, Maher Ali Hussein Al-Janabi

Ann Med Surg (Lond) 2022 Jan; 73: 103181. Published online 2021 Dec 17. doi: 10.1016/j.amsu.2021.103181

PMCID: PMC8679497

[Article](#) [PubReader](#) [PDF-249K](#) [Cite](#)

Cohort Study

[The impact of COVID-19 pandemic on colorectal cancer patients at an NHS Foundation Trust hospital-A retrospective cohort study](#)

Omotara Kafayat Lesi, Ebuwa Igho-Osagie, Sarah-Jane Walton

Ann Med Surg (Lond) 2022 Jan; 73: 103182. Published online 2021 Dec 15. doi: 10.1016/j.amsu.2021.103182

PMCID: PMC8673748

[Article](#) [PubReader](#) [PDF-794K](#) [Cite](#)

Correspondence

[Vaccine inequity and hesitancy: Dual factors in the emergence of novel SARS-CoV-2 variants](#)

Manish Dhawan, Priyanka, Ashima Sahni, Om Prakash Choudhary

Ann Med Surg (Lond) 2022 Jan; 73: 103186. Published online 2021 Dec 23. doi: 10.1016/j.amsu.2021.103186

PMCID: PMC8695513

[Article](#) [PubReader](#) [PDF-282K](#) [Cite](#)

Case Report

[Synchronous colorectal and renal cancers: Case report and literature review](#)

Írian Evelyn Cordeiro Rabelo, Alberto Rubin Figueiredo, Juan Eduardo Rios Rodriguez, Renato da Silva Galvão, José Paulo Guedes Saint'Clair, Carolina Augusta Dorgam Maués, Danielle Alcântara Barbosa, Higino Felipe Figueiredo, Giselle Macedo Souza

Ann Med Surg (Lond) 2022 Jan; 73: 103187. Published online 2021 Dec 21. doi: 10.1016/j.amsu.2021.103187

PMCID: PMC8767268

[Article](#) [PubReader](#) [PDF-3.6M](#) [Cite](#)

Feedback

Cross-sectional Study

[Rod derotation and translation techniques provide comparable functional outcomes for surgical correction of adolescent idiopathic scoliosis – A retrospective, cross-sectional study](#)

Didik Librianto, Ifran Saleh, Fachrisal, Widyastuti Srie Utami, Witantra Dhamar Hutami

Ann Med Surg (Lond) 2022 Jan; 73: 103188. Published online 2021 Dec 26. doi: 10.1016/j.amsu.2021.103188

PMCID: PMC8767236

[Article](#) [PubReader](#) [PDF-797K](#) [Cite](#)

[Characteristics of breast cancer patients at dr. Sardjito Hospital for early anticipation of neutropenia: Cross-sectional study](#)

M. Ivan Ariful Fathoni, Gunardi, Fajar Adi-Kusumo, Susanna Hilda Hutajulu, Ibnu Purwanto

Ann Med Surg (Lond) 2022 Jan; 73: 103189. Published online 2021 Dec 23. doi: 10.1016/j.amsu.2021.103189

PMCID: PMC8767265

[Article](#) [PubReader](#) [PDF-1020K](#) [Cite](#)

Cohort Studies

[Effect of preoperative anxiety on postoperative pain on patients undergoing elective surgery: Prospective cohort study](#)

Muhiddin Tadesse, Siraj Ahmed, Teshome Regassa, Timsel Girma, Seyoum Hailu, Ayub Mohammed, Salih Mohammed

Ann Med Surg (Lond) 2022 Jan; 73: 103190. Published online 2021 Dec 22. doi: 10.1016/j.amsu.2021.103190

PMCID: PMC8767241

[Article](#) [PubReader](#) [PDF-1.5M](#) [Cite](#)

[Neutrophil lymphocyte ratio as predictor of mortality in pediatric patients with bacterial meningitis: A retrospective cohort study](#)

Hardiman Widjaja, Desy Rusmawatingtyas, Firdian Makrufardi, Eggi Arguni

Ann Med Surg (Lond) 2022 Jan; 73: 103191. Published online 2021 Dec 21. doi: 10.1016/j.amsu.2021.103191

PMCID: PMC8717454

[Article](#) [PubReader](#) [PDF-780K](#) [Cite](#)

Case Report

[Cerebral thrombophlebitis revealing SARS-CoV-2 infection: About one case](#)

Ilyass Laaribi, Abdeliliah El Rhalete, Hamza Mimouni, Safaa Kachmar, Safaa Bekkaoui, Amine El Mouhib, Houssam Bkiyar, Brahim Housni

Ann Med Surg (Lond) 2022 Jan; 73: 103192. Published online 2021 Dec 21. doi: 10.1016/j.amsu.2021.103192

PMCID: PMC8687716

[Article](#) [PubReader](#) [PDF-2.3M](#) [Cite](#)

Cross-sectional Study

[Relationship of serum copper and HLADR4 tissue typing to disease activity and severity in patients with rheumatoid arthritis: A cross sectional study](#)

Khalid Ahmad Omer Aldabbagh, Dashty Abbas Al-Bustany

Ann Med Surg (Lond) 2022 Jan; 73: 103193. Published online 2021 Dec 24. doi: 10.1016/j.amsu.2021.103193

PMCID: PMC8767240

[Article](#) [PubReader](#) [PDF-683K](#) [Cite](#)



Case Report

[Covid-19 responsible for acute limb ischemia twice at 2 different stages in a patient on anticoagulation: A case report](#)

Youssef Banana, Ouahiba Hafhaf, Sara Boukabous, Hammam Rasras, Zakariae Bazid, Noha El Ouafi, Abdellah Rezziki, Adnane Benzirar, Omar El Mahi

Ann Med Surg (Lond) 2022 Jan; 73: 103194. Published online 2021 Dec 21. doi: 10.1016/j.amsu.2021.103194

PMCID: PMC8693672

[Article](#) [PubReader](#) [PDF-2.4M](#) [Cite](#)

Cross-sectional Study

[Perceptions and practices regarding the process of obtaining informed consent from surgical patients at a tertiary care hospital](#)

Muhammad Asharib Arshad, Naureen Omar, Zaid Amjad, Khalid Bashir, Muhammad Irfan, Irfan Ullah

Ann Med Surg (Lond) 2022 Jan; 73: 103195. Published online 2021 Dec 22. doi: 10.1016/j.amsu.2021.103195

PMCID: PMC8767235

[Article](#) [PubReader](#) [PDF-379K](#) [Cite](#)

Case Report

[A rare presentation of peripheral edema and ascites in a 10-year-old child with brucellosis: A case report](#)

Baraa Shebli, Rand Batal, Mtanyous Chihab, Leen Zammar, Bayan Warrak, Sana Allouzi, Manar Abdullah

Ann Med Surg (Lond) 2022 Jan; 73: 103196. Published online 2021 Dec 21. doi: 10.1016/j.amsu.2021.103196

PMCID: PMC8718825

[Article](#) [PubReader](#) [PDF-304K](#) [Cite](#)

Review

[Lessons learnt from emergency medicine services during the COVID-19 pandemic: A case study of India and the United States](#)

Zouina Sarfraz, Azza Sarfraz, Muzna Sarfraz, Farah A. Chohan, Claire Stringfellow, Esha Jain, Namrata Hang Hanyou Loh, Miguel Felix, Ivan Cherrez-Ojeda

Ann Med Surg (Lond) 2022 Jan; 73: 103197. Published online 2021 Dec 21. doi: 10.1016/j.amsu.2021.103197

PMCID: PMC8690280

[Article](#) [PubReader](#) [PDF-1.2M](#) [Cite](#)



Cohort Study

[Does severe hyperlactatemia during cardiopulmonary bypass predict a worse outcome?](#)

Aniss Seghrouchni, Nouredine Atmani, Younes Moutakiallah, Abdelkader Belmekki, Youssef El Bekkali, Mahdi Ait Houssa

Ann Med Surg (Lond) 2022 Jan; 73: 103198. Published online 2021 Dec 21. doi: 10.1016/j.amsu.2021.103198

PMCID: PMC8767239

[Article](#) [PubReader](#) [PDF-746K](#) [Cite](#)

Case Series

[A retrospective case series study for acute abdomen in general surgery ward of Aliabad Teaching Hospital](#)

Ahmadullah Danish

Ann Med Surg (Lond) 2022 Jan; 73: 103199. Published online 2021 Dec 22. doi: 10.1016/j.amsu.2021.103199

PMCID: PMC8717441

[Article](#) [PubReader](#) [PDF-303K](#) [Cite](#)

Review

[Surgical treatment of spondylolisthesis using long arm screw: A literature review](#)

Ifran Saleh, Didik Librianto

Ann Med Surg (Lond) 2022 Jan; 73: 103200. Published online 2021 Dec 21. doi: 10.1016/j.amsu.2021.103200

PMCID: PMC8767266

[Article](#) [PubReader](#) [PDF-2.2M](#) [Cite](#)

Case-controlled Study

[Prevalence of upper limb musculoskeletal disorders and its associated risk factors among janitorial workers: A cross-sectional study](#)

Mei Ching Lim, Khamisah Awang Lukman, Nelbon Giloi, Jac Fang Lim, Richard Avoi, Syed Sharizman Syed Abdul Rahim, Mohammad Saffree Jeffree

Ann Med Surg (Lond) 2022 Jan; 73: 103201. Published online 2021 Dec 22. doi: 10.1016/j.amsu.2021.103201

PMCID: PMC8767232

[Article](#) [PubReader](#) [PDF-421K](#) [Cite](#)

Case Reports

[Combination of simple advancement flap and fistulectomy to treat complex anal fistula as a complication of hemorrhoidectomy: Case report](#)

Imam Sofii, Irianiwati, Gunadi, Adeodatus Yuda Handaya, Aditya Rifqi Fauzi

Ann Med Surg (Lond) 2022 Jan; 73: 103203. Published online 2021 Dec 21. doi: 10.1016/j.amsu.2021.103203

PMCID: PMC8715064

[Article](#) [PubReader](#) [PDF-3.7M](#) [Cite](#)

[Bilateral open lip schizencephaly](#)

Turyalai Hakimi, Khalid Mohammad Qasem

Ann Med Surg (Lond) 2022 Jan; 73: 103204. Published online 2021 Dec 23. doi: 10.1016/j.amsu.2021.103204

Correction in: [Ann Med Surg \(Lond\). 2023 Jun; 85\(6\): 3253.](#)

PMCID: PMC8767271

[Article](#) [PubReader](#) [PDF-4.6M](#) [Cite](#)



[Endovascular reconstruction of aortoiliac occlusive disease in a case with claudication and an ectopic pelvic kidney](#)

Javad Salimi, Mahta Mirhashemi, Seyed Amir Miratashi Yazdi

Ann Med Surg (Lond) 2022 Jan; 73: 103205. Published online 2021 Dec 21. doi: 10.1016/j.amsu.2021.103205

PMCID: PMC8715058

[Article](#) [PubReader](#) [PDF-3.0M](#) [Cite](#)

Short Communication

[COVID-19 vaccine hesitancy among indigenous people in Yemen: An incipient crisis](#)

Aisha Abdulaziz Almoughales, Sarya Swed, Bisher Sawaf, Hidar Alibrahim

Ann Med Surg (Lond) 2022 Jan; 73: 103206. Published online 2021 Dec 24. doi: 10.1016/j.amsu.2021.103206

PMCID: PMC8702593

[Article](#) [PubReader](#) [PDF-1009K](#) [Cite](#)

Experimental Research

[Assigning green hospitals during the COVID-19 pandemic assure continuous and safe resumption of surgical services](#)

Yasir AlShareef, Sami Ayed AlShammery, Yacoub Abuzied, Yahya AlAsseri, Khalid I. AlQumaizi

Ann Med Surg (Lond) 2022 Jan; 73: 103207. Published online 2021 Dec 21. doi: 10.1016/j.amsu.2021.103207

PMCID: PMC8690220

[Article](#) [PubReader](#) [PDF-321K](#) [Cite](#)

Case Reports

[Mini-invasive endoscopic approach to tracheal inflammatory myofibroblastic tumor in a young woman: A case report](#)

Sara Zarrouki, Rachid Marouf

Ann Med Surg (Lond) 2022 Jan; 73: 103208. Published online 2021 Dec 22. doi: 10.1016/j.amsu.2021.103208

PMCID: PMC8767228

[Article](#) [PubReader](#) [PDF-1.3M](#) [Cite](#)

[Disseminated tuberculosis with symptoms of decreased consciousness: A rare case in Indonesian m](#)

Alvian Fauzi, Ariani Permatasari

Ann Med Surg (Lond) 2022 Jan; 73: 103209. Published online 2021 Dec 22. doi: 10.1016/j.amsu.2021.103209

PMCID: PMC8767272

[Article](#) [PubReader](#) [PDF-12M](#) [Cite](#)

[Ischaemic gastritis and perforation](#)

Douglas Chung

Ann Med Surg (Lond) 2022 Jan; 73: 103212. Published online 2021 Dec 25. doi: 10.1016/j.amsu.2021.103212

PMCID: PMC8767231

[Article](#) [PubReader](#) [PDF-1.4M](#) [Cite](#)

[An unusual case of spermatocytic seminoma in 80 year-old-patient: A case report](#)

Moez Rahoui, Boulma Rami, hassen Khouni

Ann Med Surg (Lond) 2022 Jan; 73: 103213. Published online 2021 Dec 25. doi: 10.1016/j.amsu.2021.103213

PMCID: PMC8767238

[Article](#) [PubReader](#) [PDF-2.3M](#) [Cite](#)

Experimental Research

[Developing, conducting and evaluating the internship preparatory program \(Ipp\)](#)

Abeer S. Al Shahrani, Samah F. Ibrahim, Norah M. AlZamil, Eman S. Soliman, Lamy A. Almusharraf, Amel A. Fayed, Noreen Mirza

Ann Med Surg (Lond) 2022 Jan; 73: 103215. Published online 2022 Jan 1. doi: 10.1016/j.amsu.2021.103215

PMCID: PMC8767267

[Article](#) [PubReader](#) [PDF-372K](#) [Cite](#)

Case Report

[Purpura as a late complication of covid-19 infection that should not be ignored: Case report and brief review](#)

Meryem Jabri, Nour El Houda Lamaasab, Chaimae Daoudi, Fadoua Jabrouni, Hajar Benzekri, Amine Bouchlarhem, Nourinne Oulali

Ann Med Surg (Lond) 2022 Jan; 73: 103216. Published online 2022 Jan 1. doi: 10.1016/j.amsu.2021.103216

PMCID: PMC8719914

[Article](#) [PubReader](#) [PDF-1.6M](#) [Cite](#)

Experimental Research

[The effect of allogenic freeze-dried platelet-rich plasma in increasing the number of fibroblasts and neovascularization in wound healing](#)

Iswinarno Doso Saputro, Sitti Rizaliyana, Dhitta Aliefia Noverta

Ann Med Surg (Lond) 2022 Jan; 73: 103217. Published online 2022 Jan 3. doi: 10.1016/j.amsu.2021.103217

PMCID: PMC8767283

[Article](#) [PubReader](#) [PDF-1.0M](#) [Cite](#)

Case Report

[Misdiagnosis of Budd Chiari syndrome, a case report from Afghanistan](#)

Fardeen Baray, Mohammad Behroz Noori, Mohammad Maroof Aram, Hidayatullah Hamidi

Ann Med Surg (Lond) 2022 Jan; 73: 103218. Published online 2022 Jan 1. doi: 10.1016/j.amsu.2021.103218

PMCID: PMC8767293

[Article](#) [PubReader](#) [PDF-2.1M](#) [Cite](#)

Case Series

[Sensitivity and specificity of the Alvarado Score for the timely differential diagnosis of acute appendicitis for a case series in Samoa](#)

Sione Pifeleti, Dyxon Hansell, Annette Kaspar

Ann Med Surg (Lond) 2022 Jan; 73: 103219. Published online 2022 Jan 1. doi: 10.1016/j.amsu.2021.103219

PMCID: PMC8767311

[Article](#) [PubReader](#) [PDF-663K](#) [Cite](#)

Systematic Review / Meta-analysis

[Pulmonary barotrauma in COVID-19: A systematic review and meta-analysis](#)

Dhan Bahadur Shrestha, Yub Raj Sedhai, Pravash Budhathoki, Ayush Adhikari, Nisheem Pokharel, Richa Dhakal, Satyasuna Kafle, Wasey Ali Yadullahi Mir, Roshan Acharya, Markos G. Kashiouris, Mark S. Parker

Ann Med Surg (Lond) 2022 Jan; 73: 103221. Published online 2022 Jan 3. doi: 10.1016/j.amsu.2021.103221

PMCID: PMC8721930

[Article](#) [PubReader](#) [PDF-2.9M](#) [Cite](#)

Case-controlled Study

[A case-control study on the severity postpartum depression among COVID19 positive mother](#)

Shideh Araiana, Maryam sadat Hosseini, Mojgan Khademi, Seyedeh Neda Kazemi, Elnaz Ghaffari, Masoome Falahatie, Sedigeh Asadi Shahmirzadi, Afsaneh Hosseini

Ann Med Surg (Lond) 2022 Jan; 73: 103223. Published online 2022 Jan 1. doi: 10.1016/j.amsu.2021.103223

PMCID: PMC8719917

[Article](#) [PubReader](#) [PDF-345K](#) [Cite](#)

[Residual deformity versus recurrence following Dupuytren's palmar fasciectomy-a long term follow-up of 142 cases](#)

Niranj Ganeshan Radhamony, Rajiv Ramachandran Nair, Sachith Sreenivasan, Sriganesh Walkay, Aditya Soni, Rahul Kakkar

Ann Med Surg (Lond) 2022 Jan; 73: 103224. Published online 2022 Jan 1. doi: 10.1016/j.amsu.2021.103224

PMCID: PMC8767281

[Article](#) [PubReader](#) [PDF-355K](#) [Cite](#)

Case Report

[Sepsis and disseminated intravascular coagulation are rare complications of typhoid fever: A case report](#)

Nurnaningsih, Vincencius William, Desy Rusmawatingtyas, Firdian Makrufardi, Intan Fatah Kumara

Ann Med Surg (Lond) 2022 Jan; 73: 103226. Published online 2022 Jan 3. doi: 10.1016/j.amsu.2021.103226

PMCID: PMC8767294

[Article](#) [PubReader](#) [PDF-324K](#) [Cite](#)

Cross-sectional Study

[Practices of vitamin D supplementation leading to vitamin D toxicity: Experience from a Low-Middle](#)



[Income Country](#)

Siraj Muneer, Imran Siddiqui, Hafsa Majid, Nawazish Zehra, Lena Jafri, Aysha Habib Khan

Ann Med Surg (Lond) 2022 Jan; 73: 103227. Published online 2022 Jan 5. doi: 10.1016/j.amsu.2021.103227

PMCID: PMC8767303

[Article](#) [PubReader](#) [PDF-1.1M](#) [Cite](#)

[Best Evidence Topic](#)

[Efficacy of intraperitoneal bupivacaine in laparoscopic bariatric surgery](#)

Tamer Saafan, Sabry Abounozha, Munzir Obaid, Mohamed Said Ghali

Ann Med Surg (Lond) 2022 Jan; 73: 103229. Published online 2022 Jan 7. doi: 10.1016/j.amsu.2021.103229

PMCID: PMC8767298

[Article](#) [PubReader](#) [PDF-341K](#) [Cite](#)

[Comparison between Endoloop ligature and Hem-o-lok clip \(Polymer ligation\) for appendiceal stump closure during laparoscopic appendicectomy](#)

Sabry Abounozha, Tamer Saafan, Munzir Obaid, Rashid Ibrahim

Ann Med Surg (Lond) 2022 Jan; 73: 103232. Published online 2022 Jan 7. doi: 10.1016/j.amsu.2021.103232

PMCID: PMC8767279

[Article](#) [PubReader](#) [PDF-315K](#) [Cite](#)

[Cohort Study](#)

[Effect of laparoscopic sleeve gastrectomy vs laparoscopic Roux-en-Y gastric bypass on weight loss in Egyptian patients with morbid obesity](#)

Mohamad Baheeg, Saed A. Elgohary, Mohamed Tag-Eldin, Ahmed M.E. Hegab, Mahmoud S. Shehata, Esam M. Osman, Mohammed Eid, Yunus Abdurakhmanov, Mohamed Lamloom, Hazem A. Ali, Ahmed Elhawary, Momen Mahmoud, Mostafa Basiony, Yasien Mohammed, Abdulkarim Hasan

Ann Med Surg (Lond) 2022 Jan; 73: 103235. Published online 2022 Jan 4. doi: 10.1016/j.amsu.2021.103235

PMCID: PMC8767301

[Article](#) [PubReader](#) [PDF-1.4M](#) [Cite](#)

[Case Report](#)

[Ovarian ectopic pregnancy misdiagnosed as gestational choriocarcinoma: A case report](#)

Seyyedeh Neda Kazemi, Masoomeh Raoufi, Noushin Afshar Moghaddam, Morteza Tabatabaeefar, Tahereh Ashraf Ganjooei

Ann Med Surg (Lond) 2022 Jan; 73: 103236. Published online 2022 Jan 7. doi: 10.1016/j.amsu.2021.103236

PMCID: PMC8767310

[Article](#) [PubReader](#) [PDF-4.0M](#) [Cite](#)

[Cross-sectional Study](#)

[Relation between expression of hMLH1 and p53 mRNA genes, in the feces of patients with colorectal carcinoma. Cross-sectional study](#)



Ryanto Karobuana Sitepu, Rosdiana Natzir, Warsinggih, Mochammad Hatta, Reno Rudiman, Ibrahim Labeda, Ronald E. Lusikooy, Agussalim Bukhari, Upik A. Miskad, Burhanuddin Bahar

Ann Med Surg (Lond) 2022 Jan; 73: 103237. Published online 2022 Jan 6. doi: 10.1016/j.amsu.2021.103237

PMCID: PMC8767297

[Article](#) [PubReader](#) [PDF-1.3M](#) [Cite](#)

Case-controlled Study

[Evaluation of exposure to secondhand smoke and serum level of interleukin 18 in non-smokers](#)

Alireza Azargoon, Ali Kharazmkia, Nazanin Kordalivand, Mehdi Birjandi, Samareh Mir

Ann Med Surg (Lond) 2022 Jan; 73: 103238. Published online 2022 Jan 3. doi: 10.1016/j.amsu.2021.103238

PMCID: PMC8767295

[Article](#) [PubReader](#) [PDF-369K](#) [Cite](#)

Experimental Research

[Evaluating the effect of Alantolactone on the expression of N-cadherin and Vimentin genes effective in epithelial-mesenchymal transition \(EMT\) in breast cancer cell line \(MDA-MB-231\)](#)

Roya Naderi, Shiva Gholizadeh-Ghaleh Aziz, Amir Salar Haghigi-Asl

Ann Med Surg (Lond) 2022 Jan; 73: 103240. Published online 2022 Jan 4. doi: 10.1016/j.amsu.2021.103240

PMCID: PMC8767280

[Article](#) [PubReader](#) [PDF-1.4M](#) [Cite](#)

Randomised Controlled Trial

[Comparison of a virtual reality compression-only Cardiopulmonary Resuscitation \(CPR\) course to the traditional course with content validation of the VR course – A randomized control pilot study](#)

Dalal Hubail, Ankita Mondal, Ahmed Al Jabir, Bijendra Patel

Ann Med Surg (Lond) 2022 Jan; 73: 103241. Published online 2022 Jan 5. doi: 10.1016/j.amsu.2022.103241

PMCID: PMC8767287

[Article](#) [PubReader](#) [PDF-1.3M](#) [Cite](#)

Case Report

[Olfactory neuroblastoma resection through endoscopic endonasal approach: A rare case report](#)

Yogi Putra Adhi Pradana, Budi Sutikno

Ann Med Surg (Lond) 2022 Jan; 73: 103242. Published online 2022 Jan 4. doi: 10.1016/j.amsu.2022.103242


PMCID: PMC8767289

[Article](#) [PubReader](#) [PDF-3.8M](#) [Cite](#)



Editorial Board : Annals of Medicine and Surgery

Advertisement



lww.com - the latest content
at your fingertips.

Wolters Kluwer

Take A Look →

Editorial Board

Editor-In-Chief

Riaz Agha, London, UK

Statistical Editor

L. C. See, Taoyuan, Taiwan

Editorial Board

X-P. Chen, Wuhan, China

M. Cohen, Newark, USA

D. Green, London, UK

S. Hamid, Karachi, Pakistan

P. Hutchinson, Cambridge, UK

P. Littlejohns, London, UK

A. Mahapatra, Bhubaneswar, India

J. McKimm, Swansea, UK

D. Muzumdar, Mumbai, India

F. Nicoli, London, UK

J. Norcini, Philadelphia, USA

D. Sokol, London, UK

J. Talati, Karachi, Pakistan

J. V. Thomas, Birmingham, USA

M. C. Warlé, Nijmegen, Netherlands

T. G. Williams, Tunbridge Wells, UK

Assistant Editors

J. Kleef, Liverpool, UK

P. Schemmer, Graz, Austria

Associate Staff Editors

S. Acuna, Toronto, Canada

S. Al-Hakkak, Najaf, Iraq

G. Alsfasser, Rostock, Germany

A. Angarita, Houston, USA

F. C. Campanile, Civita Castellana, Italy

O. P. Choudhary, Punjab, India

D. Chowdhury, Manchester, UK

J. Clark, London, UK

A. Coppola, Rome, Italy

F. G. Del Ángel, Tampico, Mexico

T. J. Evans, London, UK

A. Frampton, London, UK

T. Golden, Rockville, USA

A. Hasan, Cairo, Egypt

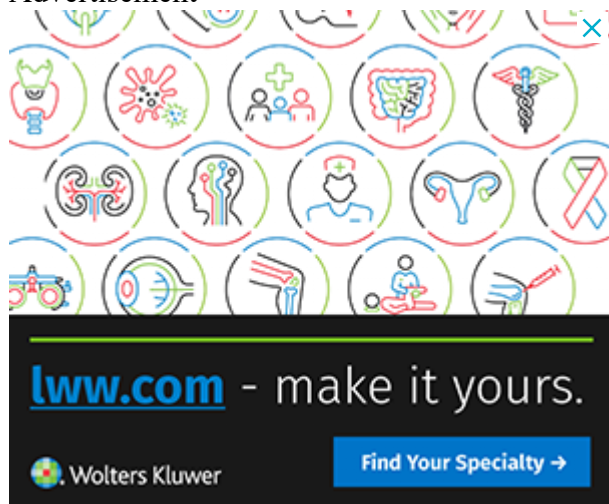
R. Moshref, Jeddah, Saudi Arabia

M. Oley, Manado, Indonesia

E. Ntouvali, Athens, Greece

R. Rosyidi, Mataram, Indonesia

Advertisement



lww.com - make it yours.

Wolters Kluwer [Find Your Specialty →](#)

[^Back to Top](#)



Never Miss an Issue

Get new journal Tables of Contents sent right to your email inbox

[Get New Issue Alerts](#)

Browse Journal Content

- [Register on the website](#)

Customer Service

- Contact us at:
 - Support:
[Submit a Service Request](#)
 - TEL:
800-638-3030 (within the USA)
301-223-2300 (outside of the USA)

- [Manage Cookie Preferences](#)

- [Privacy Policy \(Updated December 15, 2022\)](#)
- [Legal Disclaimer](#)
- [Terms of Use](#)
- [Open Access Policy](#)
- Copyright © 2023
- [Wolters Kluwer Health, Inc. and/or its subsidiaries. All rights reserved.](#)



Case Report

Olfactory neuroblastoma resection through endoscopic endonasal approach: A rare case report

Yogi Putra Adhi Pradana, Budi Sutikno *

Department of Otorhinolaryngology-Head and Neck Surgery, Faculty of Medicine, Universitas Airlangga – Dr. Soetomo General Academic Hospital, Surabaya, Indonesia

ARTICLE INFO

Keywords:

Endoscopic endonasal
Human and disease
Nose bleed
Olfactory neuroblastoma

ABSTRACT

Background: Olfactory neuroblastoma (ON) is a rare malignant tumor originating from the nasal cavity and/or skull base.

Case presentation: A 53-year-old female complained of a runny nose mixed with blood on the left nasal cavity since 1 year ago. Histopathology result showed malignancy and immunohistochemistry showed ON supported by CT-Scan result. The patient underwent endoscopic endonasal approach resection with anterior septectomy followed by debulking with cautery and cutting instruments. The patient received 35 times of radiotherapy combined with 6 times chemotherapy subsequently.

Discussion: Firstly, reported successful management of ON in Indonesia.

Conclusion: An ON case of an Indonesian female was successfully resected without complication through a join operation of endoscopic endonasal approach four-hand technique with a neurosurgeon.

1. Introduction

Olfactory neuroblastoma (ON) is a rare malignant tumor originating from the nose and/or skull base, 3–6% of sinonasal tumors. The standard surgical management for years is an anterior craniofacial approach including bifrontal craniotomy and lateral rhinotomy (LR) or Weber-Ferguson incision to get tumor resection. In this decade, therapeutic modalities have changed. The endoscopic endonasal approach is an alternative standard for the surgical management of ON [1,2]. The advantages of endoscopic procedures compared to transfacial and transcranial approaches are shorter surgery time and hospitalization, no external incision, minimal brain parenchymal injury, no neurovascular structural manipulation, and no oncologic outcome difference even if piecemeal resection is needed [3]. Based on the reports, we are interested in reporting cases of ON in Indonesian women who have successfully carried out the endoscopic endonasal approach reported using the SCARE 2020 Guideline [4].

2. Case presentation

A 53-year-old Indonesian female complaint of blood-stained discharge from her left nasal cavity since 1 year along, almost every

day, and could stop spontaneously, with left nasal obstruction since 2 months ago and left side headache. There was no complaint of the eye, ear, and throat area and no lump in the neck. There was no numbness in the facial area and no anosmia was found. Nasal examination revealed a spacious nasal cavity, no visible mass, and secretion on both sides. No enlarged lymph node was found in the neck. The patient was a housewife. Patient had undergone biopsy surgery in the same area one year ago. Histopathology result of left nasal cavity mass biopsy revealed a malignant round cell tumor differential diagnosed with ON, neuroendocrine, and undifferentiated carcinoma. Immunohistochemistry examination concluded an ON.

Computerized tomography scan (CT-scan) with contrast showed enhanced solid lesion with the size of $1.8 \times 1.2 \times 2.1$ cm olfactory region with left side predominant, extended to the anterior part of both nasal cavities (Fig. 1). Preoperative nasoendoscopy (NE) showed a mass on the olfactory region in both nasal cavities (Fig. 2). Magnetic resonance imaging (MRI) examination with contrast showed an image ON with other descriptions that corresponded with CT scan result. It was found a dura metastasis on vertex convexity (Fig. 3). Diagnosis ON stage 3C based on Kadish criteria [5].

Tumor resection was performed through a join operation of endonasal endoscopic approach four-hand technique with a neurosurgeon,

* Corresponding author. Department of Otorhinolaryngology-Head and Neck Surgery, Faculty of Medicine, Universitas Airlangga – Dr. Soetomo General Academic Hospital, Jl. Mayjend Prof. Dr. Moestopo No. 6-8, Airlangga, Gubeng, Surabaya, East Java, 60286, Indonesia.

E-mail addresses: budisutikno104@gmail.com, budi-s@fk.unair.ac.id (B. Sutikno).

<https://doi.org/10.1016/j.amsu.2022.103242>

Received 26 December 2021; Accepted 2 January 2022

Available online 4 January 2022

2049-0801/© 2022 The Authors. Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

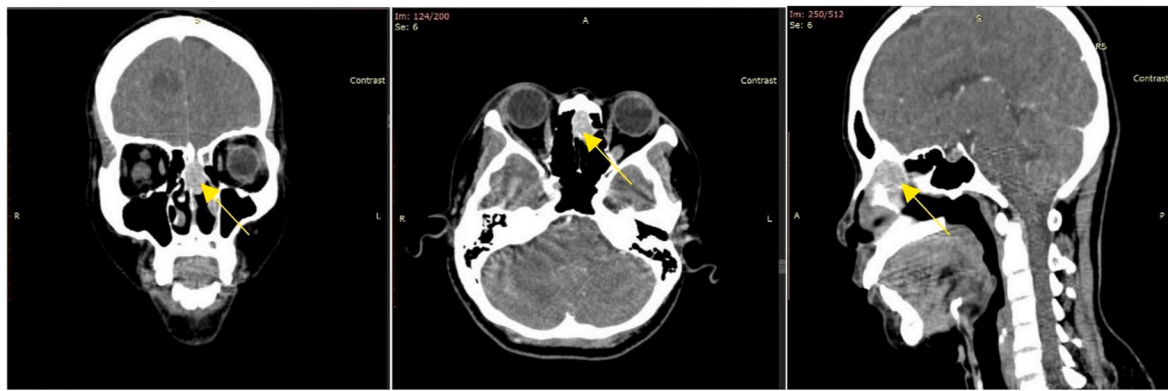


Fig. 1. CT-scan paranasal sinuses of coronal, axial, and sagittal views. Mass in the olfactory region left side dominant that destructed nasal cavity and extended to the left and right nasal cavity anterior side (yellow arrow). (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

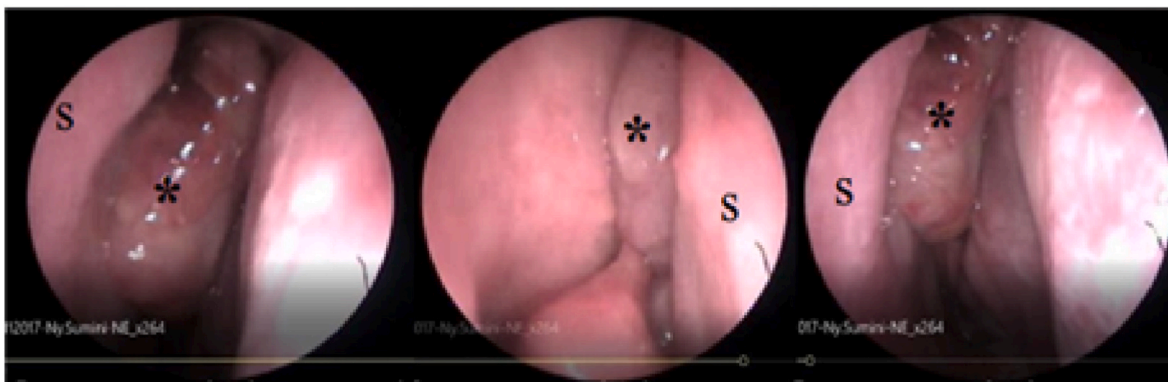


Fig. 2. Nasoendoscopy found the mass in the upper right and left nasal cavity (*), septum nasal (S).

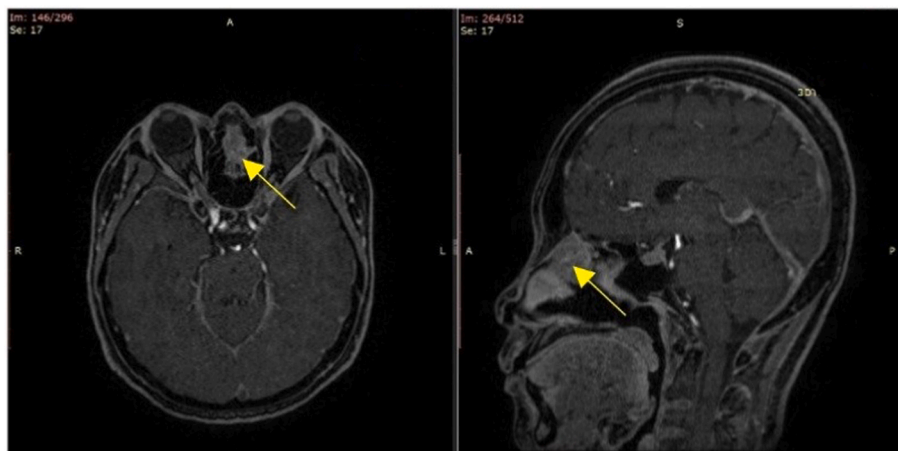


Fig. 3. Head MRI with contrast axial, sagittal, and coronal views. Mass in the olfactory region with left side dominant destructed left-right nasal cavities anterior side and extended to left ethmoidal sinus (yellow arrow). (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

began with anterior septectomy, and continued with tumor debulking until it reached the cribriform plate. The bone of the cribriform plate was intact. Bleeding was controlled with suction and cauterization. Blood stop® was applied to the surgical area. Blood loss was about 100 ml and tumor specimens were sent for the histopathology examination. Postoperative histopathology result concluded an ON (Fig. 4).

Postoperative management included supine position 20° head elevation, nose-blowing, leaning forward, and straining were not

allowed. The patient was advised to open her mouth whilst sneezing or coughing. The patient was discharged on the following day. Nasal saline irrigation was administered for a month postoperatively. One week postoperative showed nasal crusting on the surgical site. Optimal and safe debulking was performed (Fig. 5a). Fifteen months postoperatively showed no recurrence. Smell ability was permanently lost (Fig. 5b). The patient had received chemotherapy six times and radiotherapy 35 times.

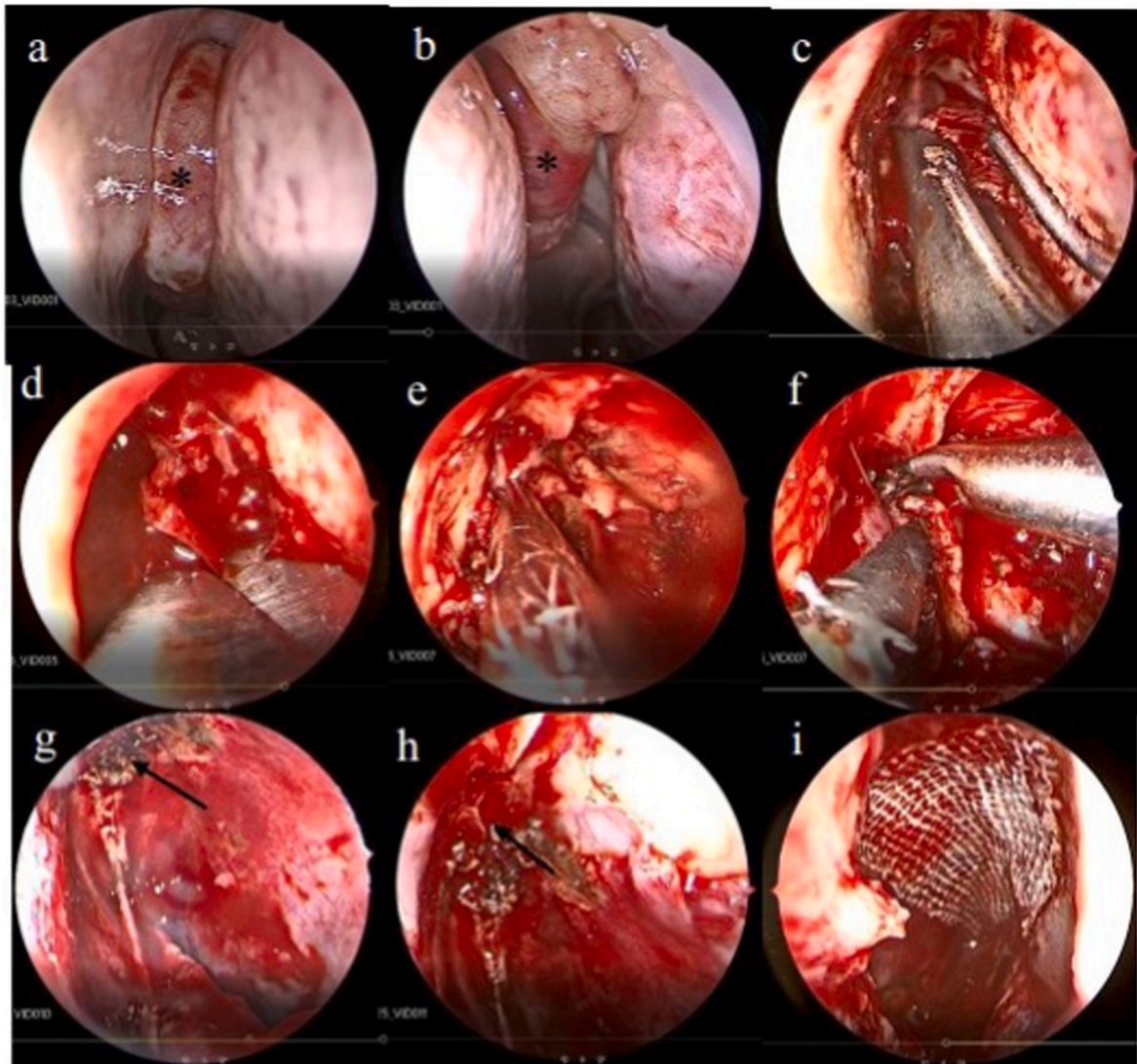


Fig. 4. Tumor resection with the endoscopic showed endonasal approach. (a–b) Tumor in the superior intranasal (*). (c–d) Septectomy. (e–f) Tumor was covered resection processing. (g–h) Condition after tumor removal. It shows the cribriform plate area (arrow). Most of the septum was removed. (i) Cribriform plate was covered with Blood Stop®.

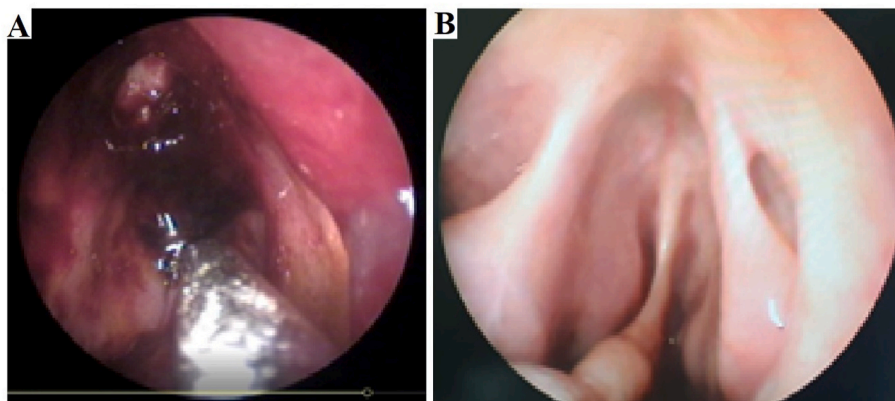


Fig. 5. Nasoendoscopy (a) One week after surgery. (b) Fifteen months after surgery. Mucosa was healed, no recurrent tumor was seen.

3. Discussion

ON is a rare malignant neoplasm derived from the superior portion of

the nasal cavity [6,7]. Imaging is crucial for the diagnosis and staging. A combination of CT-scan and MRI is usually required. A fine-cut CT scan (1.5 mm thick cut) is the best initial imaging for ON shows a

homogeneous soft mass of the nasal cavity with moderate and uniform enhancement. The primary advantage of CT scans is to determine bone involvement superior to MRI. CT scan help to evaluate bone erosion of the cribriform plate, fovea ethmoidalis, and lamina papyracea. MRI on ON is the gold standard for evaluating detailed extensions and staging. Dumbbell shape tumor extending into the cribriform plate is a rare finding [6,8].

Over the past two decades, endoscopic approaches have been popular as a treatment approach for ON [6]. Stammberger et al. first published in the English literature their experience with endoscopic treatment of nasal malignancies, including ON [9]. Surgeries were carried out under the dual supervision of a rhinologist and a neurosurgeon [1]. The advantages of endoscopic procedures, compared with transfacial and transcranial approaches, are the shorter duration of operation time, no external incision, minimal brain parenchymal injury, no manipulation of neurovascular structures, no need for blood transfusions, and no difference in oncological results even if piecemeal resection is necessary [3,10]. The operation time required for the endoscopic technique is shorter than those in patients treated with traditional craniofacial resection (CFR) techniques with craniotomy [8]. Complete endoscopic resection can be achieved in Kadish A, B. Kadish C resection with intracranial extension can be performed with endoscopic approach plus bifrontal craniotomy [11].

Transethmoid and transcribriform approaches can be done unilaterally and bilaterally dependent on lesions [12]. In general, septectomy was performed to facilitate a binostril 3-handed to 4-handed approach. Wide paranasal sinus dissection was performed involving the maxillary, ethmoid, sphenoid, and frontal sinuses. An endoscopic modified Lothrop procedure and wide sphenoid drill-out were performed to obtain anterior and posterior boundaries, respectively, for the skull base resection [1].

Surgical resection followed by postoperative radiation provides the best end-stage results in the life level and decreases the incidence of local recurrence. Most of the institutions adopt surgical resection followed by postoperative radiotherapy as a standard therapy approach. Postoperative radiation showed improved local control of the disease. Adjuvant radiotherapy (ART) is given in all cases in the form of intensity-modulated radiotherapy (IMRT). The radiation dose used is usually in the range 55–65 Gy given in 2 Gy per dose, which is divided into 30–33 doses [11,13,14]. The use of chemotherapy in ON is still controversial regarding the optimal indication and best drugs to be used. Chemotherapeutic agents were cisplatin or cisplatin plus etoposide [1, 14].

ON has a good survival outcome, with an average of 5-year survival rates reported between 57 and 93%. According to the staging system by Kadish, there is a decrease in life expectancy along with an increase in clinical staging. ON has a high recurrence rate and requires long-term follow-up. The highest risk is locoregional recurrence with most frequently occurring between 5 and 10 years. Long-term follow-up to 10–15 years is recommended. The risk of recurrence is higher in those with poor prognostic factors such as high Hyams degrees, advanced Kadish stage, intracranial extension, positive resection limits, presence of cervical lymph node metastases (35%), and distant metastases (10%). Additional negative prognostic indicators include female gender, age <20 or > 50 years at early diagnosis, extensive intracranial involvement, and high proliferation index [1,6,14].

Recurrence of diseases involving the dura layers is common [8,15]. Uncommonly, ON may present as an intracranial mass in the frontal lobe with involvement of the cribriform plate, even more rarely, it may appear as an intracranial tumor without an intranasal component [14].

4. Conclusion

A 53-year-old Indonesian female was diagnosed with ON successfully performed a join operation of endoscopic endonasal approach four-hand technique with the neurosurgeon. Fifteen months follow-up showed no

recurrence. A surgical resection followed by chemoradiation would become the standard of management for ON.

Ethical approval

Not applicable.

Sources of funding

None.

Author contribution

All authors contributed toward data analysis, drafting and revising the paper, gave final approval of the version to be published and agree to be accountable for all aspects of the work.

Registration of research studies

Name of the registry:

Unique identifying number or registration ID:

Hyperlink to your specific registration (must be publicly accessible and will be checked):

Guarantor

Budi Sutikno.

Patient consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Provenance and peer-review

Not commissioned, externally peer reviewed.

Consent

We have requested the patient's consent to publish this case report for educational purposes.

Declaration of competing interest

The author declare that they have no conflict of interest.

Acknowledgment

We would like to thank Fis Citra Ariyanto for taking the time to assist us in compiling our draft case report.

References

- [1] C. Manthuruthil, J. Lewis, C. McLean, P.S. Batra, S.L. Barnett, Endoscopic endonasal management of olfactory neuroblastoma: a retrospective analysis of 10 patients with quality-of-life measures, *World Neurosurg* 90 (2016) 1–5, <https://doi.org/10.1016/j.wneu.2016.02.035>.
- [2] T. Nakagawa, S. Kodama, M. Kobayashi, T. Sanuki, S. Tanaka, N. Hanai, et al., Endoscopic endonasal management of esthesioneuroblastoma: a retrospective multicenter study, *Auris Nasus Larynx* 45 (2) (2018) 281–285, <https://doi.org/10.1016/j.anl.2017.05.001>.
- [3] T. Radulesco, M. Penicaud, P. Dessi, J. Michel, Endoscopic surgery for sinonasal tumors: the transcribriform approach, *J. Stomatol. Oral Maxillofac. Surg.* 118 (4) (2017) 248–250, <https://doi.org/10.1016/j.jormas.2017.06.015>.
- [4] R.A. Agha, T. Franchi, C. Sohrabi, G. Mathew, A. Kerwan, The SCARE 2020 guideline: updating consensus surgical CAse REport (SCARE) guidelines, *Int. J.*

- Surg.(London, England) 84 (2020) 226–230, <https://doi.org/10.1016/j.ijso.2020.10.034>.
- [5] M.A. Arnold, S. Farnoosh, M.R. Gore, Comparing Kadish and modified Dulguerov staging systems for olfactory neuroblastoma: an individual participant data meta-analysis, *Otolaryngol–Head Neck Surg. Off. J. Am. Acad. Otolaryngol. Head Neck Surg.* 163 (3) (2020) 418–427, <https://doi.org/10.1177/0194599820915487>.
- [6] H.R. Olmo, S.M. Stokes, R.D. Foss, Olfactory neuroblastoma: a case report, *Head Neck Pathol.* 10 (2) (2016) 256–260, <https://doi.org/10.1007/s12105-015-0649-6>.
- [7] L. Zhang, K. Niu, K. Zhu, C. Xia, J. Yan, W. Zhao, et al., Long-term prognostic analysis after endoscopic endonasal surgery for olfactory neuroblastoma: a retrospective study of 13 cases, *PLoS One* 11 (11) (2016), e0166046, <https://doi.org/10.1371/journal.pone.0166046>.
- [8] Y. Yu, I.H. El-Sayed, M.W. McDermott, P.V. Theodosopoulos, A. van Zante, N. Kased, et al., Dural recurrence among esthesioneuroblastoma patients presenting with intracranial extension, *Laryngoscope* 128 (10) (2018) 2226–2233, <https://doi.org/10.1002/lary.27126>.
- [9] G. Maggiore, M.S. Lazio, O. Gallo, Treatment of pediatric esthesioneuroblastoma with smell preservation, *Auris Nasus Larynx* 45 (5) (2018) 1107–1112, <https://doi.org/10.1016/j.anl.2018.02.003>.
- [10] C. Walch, H. Stammberger, W. Anderhuber, F. Unger, W. Köle, K. Feichtinger, The minimally invasive approach to olfactory neuroblastoma: combined endoscopic and stereotactic treatment, *Laryngoscope* 110 (4) (2000) 635–640, <https://doi.org/10.1097/00005537-200004000-00018>.
- [11] R. Bartel, X. Gonzalez-Compta, E. Cisa, F. Cruellas, A. Torres, A. Rovira, et al., Importance of neoadjuvant chemotherapy in olfactory neuroblastoma treatment: series report and literature review, *Acta Otorrinolaringol. Esp.* 69 (4) (2018) 208–213, <https://doi.org/10.1016/j.otorri.2017.07.001>.
- [12] J.P. Greenfield, V.K. Anand, A. Kacker, M.J. Seibert, A. Singh, S.M. Brown, et al., Endoscopic endonasal transthemoidal transcribriform transfovea ethmoidalis approach to the anterior cranial fossa and skull base, *Neurosurgery* 66 (5) (2010) 883–892, <https://doi.org/10.1227/01.neu.0000368395.82329.c4>, discussion 92.
- [13] Y.S. Kim, S. Jung, W.Y. Jang, K.H. Lee, K.S. Moon, I.Y. Kim, Recurrent olfactory neuroblastoma in remote leptomeninges, mimicking intracranial meningioma, *World Neurosurg* 96 (2016), <https://doi.org/10.1016/j.wneu.2016.08.126>, 612.e9–e14.
- [14] A.S. Abdelmeguid, Olfactory neuroblastoma, *Curr. Oncol. Rep.* 20 (1) (2018) 7, <https://doi.org/10.1007/s11912-018-0661-6>.
- [15] H.J. Kim, C.H. Kim, B.J. Lee, Y.S. Chung, J.K. Kim, Y.S. Choi, et al., Surgical treatment versus concurrent chemoradiotherapy as an initial treatment modality in advanced olfactory neuroblastoma, *Auris Nasus Larynx* 34 (4) (2007) 493–498, <https://doi.org/10.1016/j.anl.2007.02.005>.