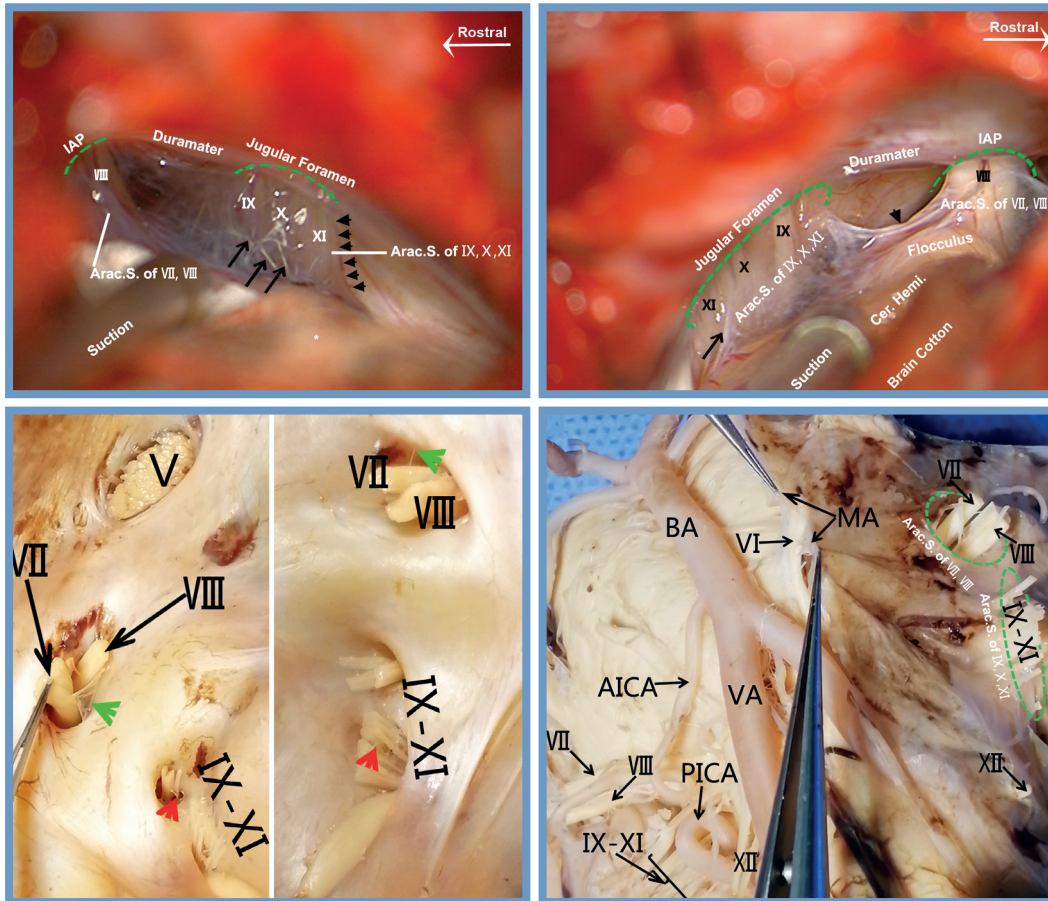




Turkish Neurosurgery

Official Journal of the Turkish Neurosurgical Society





Turkish Neurosurgery

Official Journal of the Turkish Neurosurgical Society

TURKISH NEUROSURGICAL SOCIETY

Volume: 33 Number: 6 Year: 2023

www.turkishneurosurgery.org.tr

PRESIDENTS

Nurhan Avman	1985-1986
Aykut Erbeni	1986-1987
Özdemir Gürçay	1988-1988
Tunçalp Özgen	1988-1989
Yücel Kanpolat	1989-1990
Osman E. Özcan	1990-1992
Ertekin Arasil	1992-1993
Yamaç Taşkın	1993-1995
Yücel Kanpolat	1995-1996
Nur Altınörs	1996-1997
M. Kemali Baykaner	1997-1998
Kaya Aksoy	1998-2000
Necmettin Pamir	2000-2002
Nurcan Özdamar	2002-2004
Selçuk Palaoğlu	2004-2006
Mehmet Zileli	2006-2008
Ethem Beşkonaklı	2008-2010
Murad Bavbek	2010-2012
Uğur Türe	2012-2014
Zeki Şekerci	2014-2016
Talat Kırış	2016-2017
Şükrü Çağlar	2017-2018
Savaş Ceylan	2018-2021
Emel Avci	2021-2023
Ömer Hakan Emmez	2023-

EDITORS

Tunçalp Özgen	1989-1989
Yücel Kanpolat	1989-1990
Osman E. Özcan	1990-1992
Selçuk Palaoğlu	1992-1994
Nur Altınörs	1994-1995
Selçuk Palaoğlu	1995-1996
Zafer Kars	1996-1998
Kaya Aksoy	1998-2000
Murad Bavbek	2000-2003
Erdener Timurkaynak	2003-2004
Kemal Benli	2004-2006
Hakan Caner	2007-2013
Deniz Belen	2014-2015
Talat Kırış	2015-2016
Selçuk Peker	2016-2018
Cem Yılmaz	2018-

Turkish Neurosurgery has been accepted for indexing in: SCIENCE CITATION INDEX EXPANDED, INDEX MEDICUS, MEDLINE, PubMed, Scopus, TR Index, Islamic World Science Citation Center (ISC)

Impact Factor^{*} : 0.8

5yr-Impact Factor^{*} : 1

Journal Citation Indicator™: 0.3

^{*}ISI Web of KnowledgeSM, Journal Citation Reports[®], 2022 JCR Science Edition

Editor-in-Chief:

Cem Yılmaz : cemerimiyilmaz@gmail.com

Section Editors:

Dattatraya Muzumdar	(Neurooncology)	: dmuzumdar@hotmail.com
Hidekazu Kobayashi	(Cerebrovascular Surgery)	: hidek-fchs@kbh.biglobe.ne.jp
Gianpiero Tamburrini	(Pediatric Neurosurgery)	: gianpiero.tamburrini@rm.unicatt.it
R. Kemal Koç	(Spinal Surgery)	: kocrk@erciyes.edu.tr
Ahmet Bekar	(Functional Neurosurgery)	: dr_ahmet_bekar@hotmail.com
Andreas Unterberg	(Neurotrauma)	: andreas.unterberg@med.uni-heidelberg.de
Uygur Er	(General Neurosurgery)	: uygurer@gmail.com
M. Kemal Hamamcıoğlu	(General Neurosurgery)	: mkemalh@gmail.com

Associate Editors*:

Selim Ayhan	: selim_ayhan@yahoo.com	Emre Özkar	: dremreozkara@gmail.com
Sinan Bahadır	: sinanbahadir@windowslive.com	Pınar Aydın Öztürk	: aydinpinar12@gmail.com
Murat Şakir Ekşi	: muratsakireksi@gmail.com	Fikret Şahintürk	: fikretsahinturk@gmail.com
Tuğba Morali Güler	: tugbamorali@yahoo.com	Salim Şentürk	: senturksalim@gmail.com
Oktay Gürcan	: oktaygurcan@gmail.com	M. Özgür Taşkapılıoğlu	: mozgurt@gmail.com
Şahin Hanalioğlu	: sahinhanalioglu@gmail.com	Cezmi Çağrı Türk	: drcezmiturk@gmail.com
Ferhat Harman	: ferhatharman@hotmail.com	Fatih Yakar	: yakarneurosurgery@gmail.com

Medical Ethics Advisor:

Dr. Nesrin Çobanoğlu

ADVISORY BOARD*

Aviva Abosch, <i>USA</i>	Murat Hancı, <i>Turkey</i>	Concezio Di Rocco, <i>Italy</i>
Feridun Acar, <i>Turkey</i>	Servet İnci, <i>Turkey</i>	James T. Rutka, <i>Canada</i>
Gökhan Akdemir, <i>Turkey</i>	Juha E Jääskeläinen, <i>Finland</i>	Burak Sade, <i>Turkey</i>
Nejat Akalan, <i>Turkey</i>	Serdar Kahraman, <i>Turkey</i>	Madjid Samii, <i>Germany</i>
Ossama Al-Mefty, <i>USA</i>	Erkan Kaptanoğlu, <i>Turkey</i>	Ali Savaş, <i>Turkey</i>
Nur Altınörs, <i>Turkey</i>	Feyza Karagöz Güzey, <i>Turkey</i>	Daniel Sciubba, <i>USA</i>
Nuri Arda, <i>Turkey</i>	Takeshi Kawase, <i>Japan</i>	Laligam Sekhar, <i>USA</i>
Ali Arslantaş, <i>Turkey</i>	Andrew H. Kaye, <i>Australia</i>	Nathan Selden, <i>USA</i>
Emel Avci, <i>Turkey</i>	Memduh Kaymaz, <i>Turkey</i>	Franco Servadei, <i>Italy</i>
Mustafa K. Başkaya, <i>USA</i>	M. Yaşar Kaynar, <i>Turkey</i>	Konstantin V. Slavov, <i>USA</i>
Murad Bavbek, <i>Turkey</i>	Evren Keleş, <i>Turkey</i>	İhsan Soloroğlu, <i>Turkey</i>
Ahmet Bekar, <i>Turkey</i>	Cumhur Kılınçer, <i>Turkey</i>	Robert F. Spetzler, <i>USA</i>
Ahmet Deniz Belen, <i>Turkey</i>	Douglas Kondziolka, <i>USA</i>	Alparslan Şenel, <i>Turkey</i>
Edward C. Benzel, <i>USA</i>	Basant Kumar Misra, <i>India</i>	Sait Şirin, <i>Turkey</i>
Mustafa Berker, <i>Turkey</i>	Boris Krischek, <i>Germany</i>	Necmettin Tanrıöver, <i>Turkey</i>
Ethem Beşkonaklı, <i>Turkey</i>	Ali Krisht, <i>USA</i>	Morcos Tatagiba, <i>Germany</i>
Luis Borba, <i>Brasil</i>	Christer Lindquist, <i>UK</i>	Yasin Temel, <i>The Netherlands</i>
Kim Burchiel, <i>USA</i>	L. Dade Lunsford, <i>USA</i>	Nicolas De Tribolet, <i>Switzerland</i>
Paolo Capabianca, <i>Italy</i>	Jacques Morcos, <i>USA</i>	Uğur Türe, <i>Turkey</i>
Fady Charbel, <i>USA</i>	Melike Mut, <i>Turkey</i>	Tanju Uçar, <i>Turkey</i>
Şükrü Çağlar, <i>Turkey</i>	Sait Naderi, <i>Turkey</i>	Ağahan Ünlü, <i>Turkey</i>
Mehmet Daneyemez, <i>Turkey</i>	Kenji Ohata, <i>Japan</i>	Peter Vajkoczy, <i>Germany</i>
Gilbert Deschambenoit, <i>France</i>	Nezih Oktar, <i>Turkey</i>	M. Gazi Yaşargil, <i>Turkey</i>
İlhan Elmacı, <i>Turkey</i>	Fahir Özer, <i>Turkey</i>	Selçuk Yılmazlar, <i>Turkey</i>
Micheal Fehlings, <i>Canada</i>	Selçuk Palaoğlu, <i>Turkey</i>	Mehmet Zileli, <i>Turkey</i>
Atul Goel, <i>India</i>	Necmettin Pamir, <i>Turkey</i>	İbrahim M. Ziyal, <i>Turkey</i>
Ziya Gökaslan, <i>USA</i>	Lukas Rasulic, <i>Serbia</i>	
Murat Günel, <i>USA</i>	Guilherme Carvalhal Ribas, <i>Brasil</i>	

Reference Check: Betül Kartal

Secretary : Nurhan Şen

Plagiarism Report: Hüseyin Körpeoğlu

Web Site Design: Pleksus Information Technology

*Alphabetized by Last Name

Turkish Neurosurgery

Volume: 33 Number: 6 Year: 2023

Official Journal of the Turkish Neurosurgical Society

Turkish Neurosurgery is published six times per year (bimonthly) by the Turkish Neurosurgical Society (January, March, May, July, September, and November)

Owned and controlled by the Turkish Neurosurgical Society

Copyright owner on behalf of the Turkish Neurosurgical Society:
Ömer Hakan EMMEZ

Publishing Manager:
Ilker SOLMAZ

Key title: Turkish Neurosurgery
Abbreviated key title: Turk Neurosurg
www.turkishneurosurgery.org.tr

ISSN: 1019-5149, **E-ISSN:** 2651-5032
NLM ID: 9423821

Turkish Neurosurgery is an open access and totally free journal.

All electronic materials can be found on internet without any charge. Please visit: <http://www.turkishneurosurgery.org.tr/>

2023 Subscription Rates for Printed Materials:

Within Turkey 2500 TL (shipping costs not included); Outside Turkey 100 € (shipping costs not included)

For further information and questions; please contact: bulus@bulustasarim.com.tr

Page layout and publishing services

BULUŞ DESIGN AND PRINTING SERVICES COMPANY
Bahriye Üçok Caddesi 9/1 Beşevler, 06500 Ankara, Turkey
Phone: +90 312 222 44 06 Fax: +90 312 222 44 07
E-mail: bulus@bulustasarim.com.tr

Advertisement: editor@turkishneurosurgery.org.tr

Publishing Date: 23.10.2023

Cover picture: Zhou, p. 923, 924, 926

Turkish Neurosurgical Society
Taşkent Caddesi 13/4 06500 Bahçelievler, Ankara/TURKEY
Phone: +90 312 212 64 08 Fax : +90 312 215 46 26
E-mail: info@turknorosirurji.org.tr
www.turknorosirurji.org.tr www.turkishneurosurgery.org.tr

Yayın Türü: Yaygın süreli yayın

Yayın Sahibi: Türk Nöroşirürji Derneği adına Ömer Hakan EMMEZ

Sorumlu Yazı İşleri Müdürü: Ilker SOLMAZ

5187 Sayılı Basın Yasasının 7. maddesi uyarınca dergi künyesinin Türkçesi belirtilmiştir.

Review of the articles in the journal to make sure they conform to publishing standards, typesetting, getting the journal ready for publication and finally the publishing process has been the responsibility of Buluş Design and Printing Services Company.

The paper used to print this journal conforms to ISO 9706: 1994 standard (Requirements for Permanence).

The National Library of Medicine suggests that biomedical publications be printed on acid-free paper (alkaline paper).



ENVIRONMENTAL INFORMATION

The company that manufactures the paper used in this journal has an ISO 14001 environmental management certificate. The company obtains all wood fiber in a sustainable manner. The forests and plantations of the company are certified. The water used in production is purified and used after recovery.

Heavy metals or film are not used for the publication of this journal. The fluids used for developing the aluminum printing templates are purified. The templates are recycled. The inks used for printing do not contain toxic heavy metals.

This journal can be recycled. Please dispose of it in recycling containers.

INSTRUCTION TO THE AUTHORS

Journal Description

Turkish Neurosurgery is a peer-reviewed, multidisciplinary, open access journal directed at an audience of neurosurgery physicians and scientists. The official language of the journal is *English*. The journal publishes original articles in the form of clinical and basic research. *Turkish Neurosurgery* will only publish studies that have institutional review board (IRB) approval and have strictly observed an acceptable follow-up period. With the exception of reference presentation, *Turkish Neurosurgery* requires that all manuscripts be prepared in accordance with the *Uniform Requirements for Manuscripts Submitted to Biomedical Journals*.

Turkish Neurosurgery periodically publishes the following papers: Research (Original Investigation, Clinical and Experimental Studies), Review Article, Case Report, Letter to Editor, Technical Note and Turkish Neuro-Excursion.

Our mission is providing a scientific forum relevant to neurosurgeons and health care providers.

Open Access Policy

As the Turkish Neurosurgery Journal, we believe science is a common denominator of the humanity which should be publicly available and free. Since its establishment in 1989, all our effort and workforce were based on volunteers and their efforts.

Definition of Open Access Publication¹

An Open Access Publication [A] is one that meets the following two conditions:

1. The author(s) and copyright holder(s) grant(s) to all users a free, irrevocable, worldwide, perpetual right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship [B], as well as the right to make small numbers of printed copies for their personal use.
2. Complete version of the work and all supplemental materials, including a copy of the permission as stated above, in a suitable standard electronic format is deposited immediately upon initial publication in at least one online repository that is supported by an academic institution, scholarly society, government agency, or other well-established organization that seeks to enable open access, unrestricted distribution, interoperability, and long-term archiving (for the biomedical sciences, PubMed Central is such a repository).

Notes:

A. Open access is a property of individual works, not necessarily journals or publishers.

B. Community standards, rather than copyright law, will continue to provide the mechanism for enforcement of proper attribution and responsible use of the published work, as they do now.

¹ https://dash.harvard.edu/bitstream/handle/1/4725199/Suber_bethesda.htm#note1

Manuscript Submission

Authors are to submit their manuscripts through the web based tracking system at <http://www.turkishneurosurgery.org.tr>. The site contains instructions and advice on how to submit manuscripts, guidance on the creation / scanning and saving of electronic art and supporting documentation. **ORCID** identifier (ID) is required for **ALL** authors during the submission process. **ORCID ID** can be obtained free of charge at <http://orcid.org>. **E-mail address of all authors** should also be provided during the submission process. In addition to allowing authors to submit manuscripts on the web, the site allows authors to follow the progression of their manuscript through the peer review process. Authors who submit their manuscripts through the web-based tracking system are asked **not** to send hard copies of the manuscript to the editorial office. Please address all inquiries regarding manuscripts not yet accepted or published to the Journal's editorial office. The editorial office will acknowledge receipt of your manuscript and will send you a manuscript number for reference.

Before submission please ensure that:

One author has been designated as the correspondent with full contact details including e-mail address, postal address and phone number. In any case of editorial board could not contact with the corresponding author, Turkish Neurosurgery journal have the right to decide what is appropriate.

Submission Checklist;

- 1) Your title page is in .doc or .docx format, includes title of your manuscript, author names, affiliations and ORCID numbers; name and full contact information of corresponding author, running title, keywords, and authorship contribution statements-the latter can be found on the Copyright transfer and authorship contribution statement Form. Please be sure that authorship contribution statements are presented in the form as well as in the title page. Of note, authors should indicate conflicts of interest relating to their research-if any. The Journal is not responsible for published misspelled names due to author error and the title page **must be uploaded as a separate file**. Running Head in the title page should be no more than three to five words from the title, and should NOT include the authors' names.
- 2) Your main document is in .doc or .docx format includes **structured abstract, key words, abbreviation list, structured main text, disclosure and conflicts of**

interest, references and figure legends sections in this order. Structured main text should be organized as **Introduction, Material and Methods, Results, Discussion, and Conclusion**. Do not add any information about institution names. Also do not add figures and tables in the main document. **Be sure your main document is written in Calibri or Times New Roman, line gap set to double spaced and justified on both sides.** Journal's official language is English. Refer to drugs and therapeutic agents by their accepted generic or chemical names, and do not abbreviate them. Use code numbers only when a generic name is not yet available. In that case, supply the chemical name and a figure giving the chemical structure of the drug. Capitalize the trade names of drugs and place them in parentheses after the generic names. To comply with trademark law, include the name and location (city and country) of the manufacturer of any drug, supply, or equipment mentioned in the manuscript. Use the metric system to express the units of measure and degrees Celsius to express temperatures, and SI units rather than conventional units. Define abbreviations at first mention in text and in each table and figure. If a brand name is cited, supply the manufacturer's name and address (city and state/country).

- 3) All your figures are in **TIFF** format. Color figures should have a resolution of at least **300 dpi**, black and white figures should have a resolution of at least **600 dpi**. Turkish Neurosurgery does not demand any color figure fee.
- 4) All your video files are in .mpeg and .mp4 format, not longer than 10 minutes, and not bigger than 40 MB. Video files should include an embedded audio narration and subtitles in English.
- 5) All your tables are in .doc or .docx format, created using the table creating and editing feature of the word processing software. Do not use Excel or comparable software. Upload a single text file which includes **ALL the tables in separate pages**. Cite tables consecutively in the text, and number them in that order. Key each on a separate sheet, include the table title, appropriate column heads, and explanatory legends (including definitions of any **abbreviations** used). Do not embed tables within the main text.

If your manuscript does not meet these requirements, manuscript **WILL BE RETURNED** to the corresponding author for technical revision before undergoing peer review.

Submission Steps

1. Upload signed copyright form by the corresponding author which is available at http://neurosurgery.dergisi.org/submit/Copyright_transfer_form.pdf. Choose your manuscript type and click continue.
2. Add names of institutions of all authors. If one or more author has affiliation with more institutions, specify it in the title page. Then click continue.
3. Write last name and first name of all authors. Add their institution numbers, e-mails and ORCID numbers.

Standard page appears with spaces enough for 8 author names. If your paper has more authors, please fill all the first 8 authors names and affiliations then click add author. Without filling all required fields, you cannot add more authors. Do not use abbreviations in the author names. Then click continue.

4. Write the title of the manuscript. If the title contains special characters use the left below table. You can copy-paste the title from your title page. Then click continue.
5. Write the abstract of your manuscript to the field. Abstracts should be structured including Aim, Material and Methods, Results and Conclusion. **Abstracts should not exceed 300 words. There is no need of Turkish abstract.** Then click continue.
6. Write the keywords separated by commas. Please use keywords from <https://meshb.nlm.nih.gov/search>. Then click continue.
7. Click the appropriate answer stating if your manuscript has not been published and / or is not being considered for publication elsewhere or your manuscript was presented in the congress indicated below and was published in abstract form in the proceedings of the congress. Then write your cover letter to the editor to the field. Then click continue.
8. Upload your manuscript files. Be sure your files are main document (manuscript), figure(s), video(s), title page, and table(s). For every file, write the description of your file and click upload button. The names of the files you have submitted should not resemble the names or institutions of the authors. Be sure all your text files are in .doc or .docx format. When you are sure you uploaded all your files click continue.
9. When you complete all the submission process click approve for all the files you want to submit and click **Submit your Manuscript** button.

Revised Submission

Author's comments to the reviewers are required for revised submissions. Authors must address all the reviewer's concerns/suggestions and whether the change was made or not. Authors must also highlight the changes made within the text. Do not track the additions or deletions to the manuscript. If the authors do not want to revise the manuscript within a period of **two months**, the manuscript will be declined.

Ethics, patient anonymity and informed consent:

This journal adheres to the ethical standards described by the Committee on Publication Ethics (<https://publicationethics.org/>) and the International Committee of Medical Journal Editors (<https://www.icmje.org/>). Authors are expected to adhere to these standards.

It is the author's responsibility to ensure that a patient's anonymity is carefully protected and to verify that any experimental investigation with human subjects reported in the manuscript was performed with informed consent

and followed all the guidelines for experimental studies with human subjects required by the institution(s) with which all the authors are affiliated. Authors should mask patients' eyes, private parts and remove patients' names from all figures. Editorial board of the Turkish Neurosurgery have the right to demand ethical committee forms or informed consent forms **at any stage of the submission and publication**. All animal experiments should comply with the ARRIVE guidelines <https://www.nc3rs.org.uk/arrive-guidelines>. Also, Editorial board of the Turkish Neurosurgery have the right to withdraw any paper, even it is accepted, if there is any ethical issue.

Authorship should be limited to those who have made a significant contribution to the conception, design, execution, or interpretation of the reported study. The authors should ensure that they have written entirely original works, and if the authors have used the work and/or words of others, that this has been appropriately cited or quoted. Editorial board of the Turkish Neurosurgery have the right to withdraw any paper if there is any plagiarism. All submissions must include disclosure of all relationships that could be viewed as presenting a potential conflict of interest. All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential competing interests include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors must disclose any interests in the disclosure and conflicts of interest section of the main document.

Authorship Change

Authors are expected to consider carefully the list and order of authors before submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list after submitting the paper is **inappropriate and prohibited**. Authors should **withdraw** their paper if there is a need for authorship change.

Types of Manuscripts

Turkish Neuro-Excursion: The editor will invite experts for these special types of papers which may cover a broad spectrum in various fields of medicine, science, art, history, law as well as any important theme on actuality other than core neurosurgery. The number of words, figures, tables and references are not restricted.

Research (Original Investigation, Clinical and Experimental Studies): The main text should not exceed 4500 words **excluding the** references, tables, and figure legends for original articles, including randomized controlled trials, observational (cohort, case-control or cross-sectional) studies, diagnostic accuracy studies, nonrandomized behavioral and public health intervention trials, experimental animal trials and any other retrospective or prospective clinical or experimental studies. The number of figures, tables, videos and references are not restricted. The specifications for figures and video files are given.

Review Article: All review articles should be systematic reviews and meta-analyses. A systematic review protocol describes the rationale, hypothesis, and planned methods of the review. It should be prepared before a review is started and used as a guide to carry out the review. Turkish Neurosurgery no more accept papers as "Case Report and Review of the Literature". All systematic reviews and meta-analyses **SHOULD COMPLY** with **PRISMA** guidelines <http://www.prisma-statement.org/>. Systematic reviews and meta analyses **SHOULD INCLUDE** a **CONSORT** Flow Diagram <http://www.consort-statement.org/consort-statement/flow-diagram>. Any systematic review and meta-analysis without a CONSORT Flow Diagram will be rejected.

Case Report: Turkish Neurosurgery values **demonstrative and unique case reports** with **high quality figures**. A case report should be so clear and easy to understand that the reader could replicate the case in his/her daily practice. Word count must not exceed 1500 (excluding references, tables, and figure legends). Case reports cannot have more than 15 references, and 6 figures or tables. Turkish Neurosurgery **does not accept** papers as "**Case Report and Review of the Literature**" anymore.

Technical Note: Turkish Neurosurgery values **demonstrative technical notes** with **high quality figures**. Technical notes reinforced with high-quality anatomical studies are welcome. A technical note should be so clear and easy to understand that the reader could replicate the technique in the operating room or on cadaveric specimen. The number of words must not exceed 2000, and there should not be more than 20 references. The number of figures and tables are not restricted.

Letter to the Editor: Letters should refer to the title and authors of a recent Turkish Neurosurgery article. The letter should be no longer than 300 words with no more than 3 references. Unpublished data should not be used. Letters to the Editor are sent to the article authors for response. The Editor-in-Chief makes the final decision on whether letters to the editor and the responses are published.

References

The authors are responsible for the accuracy of the references. Key the references (double-spaced) at the end of the manuscript. Cite references in text in alphabetical order within parentheses. Do not link the references to the text. Cite unpublished data, such as papers submitted but not yet accepted for publication or personal communications, in parentheses in the text. **Do not use "et al" in the references**. List all the authors of the reference. Refer to the List of Journals Indexed in Index Medicus for abbreviations of journal names or access the list at "<http://www.nlm.nih.gov/tsd/serials/lji.html>". Also reference styles for Zotero and EndNote are available on the Journal's Home Page.

Sample references are given below:

A. Journal article

Guiot BH, Khoo LT, Fessler RG: A minimally invasive technique for decompression of the lumbar spine. *Turk Neurosurg* 27: 432-438, 2002

B. Additional example

Altınörs N, Kars Z, Arda N, Şenveli E, Türker A, Çınar N: Spinal extradural metastasis of medulloblastoma. *Turk Neurosurg Suppl* 1: 144, 1989

C. Book chapter

Sweitzer S, Arruda J, DeLeo J: The cytokine challenge: Methods for the detection of central cytokines in rodent models of persistent pain. In: Kruger L (ed), *Methods in Pain Research*. Boca Raton, FL: CRC Press, 2001: 109-132

D. Entire book

Atlas SW: *Magnetic Resonance Imaging of the Brain and Spine*. Philadelphia: Lippincott Williams & Wilkins, 2001

E. Example of thesis

Kanpolat Y: Experimental percutaneous access to the trigeminal ganglion and the histopathological evaluation of radiofrequency thermic lesion (Unpublished dissertation), Ankara: Ankara University, 1978:1- 52

F. Software

Epi Info [computer program]. Version 6. Atlanta: Centers for Disease Control and Prevention, 1994

G. Online journals

Friedman SA. Preeclampsia: A review of the role of prostaglandins. *Obstet Gynecol* [serial online]. January 1988;71:22-37. Available from: BRS Information Technologies, McLean, VA. Accessed December 15, 1990

H. Database

CANCERNET-PDQ [database online]. Bethesda, MD: National Cancer Institute, 1996. Updated March 29, 1996

I. World Wide Web

Gostin LO. Drug use and HIV/AIDS [JAMA HIV/AIDS web site]. June 1, 1996. Available at: <http://www.ama-assn.org/special/hiv/ethics>. Accessed June 26, 1997

PEER REVIEW PROCESS

This journal uses double-blind review, which means that both the reviewer and author identities are concealed from the reviewers, and vice versa, throughout the review process.

1. Manuscript Submission

The corresponding or submitting author submits the paper to the journal through <http://turkishneurosurgery.org.tr/>.

2. Assessment of the Paper for Journal Requirements

The editorial office checks the paper's composition and arrangement against the journal's Author Guidelines - Instruction to the Authors (<http://turkishneurosurgery.org.tr/static.php?id=7>) - to make sure it includes the required sections and stylizations.

3. Evaluation by the Editor-in-Chief (EIC)

The EIC checks the paper's scientific appropriateness for the journal, its originality and actuality. If not, the paper may be rejected without being reviewed any further.

4. EIC Assigns a Section Editor (SE)

Section Editors handle the peer review process. All manuscripts that reach this step will go through a double-blind peer-review process. In order to ensure an unbiased evaluation process, each submission will be reviewed by at least two external, independent peer reviewers who are experts in the field.

5. Invitation to Reviewers

The SE sends invitations to individuals he or she believes would be appropriate reviewers. As responses are received, further invitations are issued, if necessary, until the required number of acceptances is obtained.

6. Response to Invitations

Potential reviewers consider the invitation against their own expertise, conflicts of interest and availability. They then accept or decline.

7. Review is Conducted

The reviewer sets time aside to read the paper several times. The first read is used to form an initial impression of the work. If major problems are found at this stage, the reviewer may feel comfortable rejecting the paper without further work. Otherwise they will read the paper several more times, taking notes so as to build a detailed point-by-point review. The review is then submitted to the journal, with a recommendation to accept or reject it – or else with a request for revision (either major or minor) before it is reconsidered.

8. Journal Evaluates the Reviews

The SE considers all the returned reviews before making an overall decision. If the reviews differ widely, the editor may invite an additional reviewer so as to get an extra opinion before making a decision.

9. The Decision is Communicated

The EIC is the final authority in the decision-making process for all submissions. He or She sends a decision e-mail to the author including any relevant reviewer comments.

AFTER ACCEPTANCE

Online Proof Correction

Corresponding authors will receive an e-mail including final PDF version of their manuscript. Authors are obligated to proofreading their manuscript in 72 hours.

Turkish Neurosurgery workflow processes to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility. **Authorship change is not accepted during proofreading and is prohibited.**

Rapid Publication Option

In accordance with the Turkish Neurosurgical Society's Board Decision on August 5, 2023, "Turkish Neurosurgery" journal is starting to publish articles with a rapid publication option (RPO). This type of publication choice will have no effect on the peer review process or acceptance of the submission since it will be requested by the authors after acceptance of the article.

What is RPO?: The RPO ensures the accepted article will be immediately prepared in electronic format (e-pdf), and it will be printed in one of the upcoming issues of the journal. This service has a publication fee that needs to be met by the authors, their institutions, or the research funders for each article that is published in a timely manner. The decision for RPO will be made by the authors, and they will only be charged upon their requests and if their paper is accepted. As there is a limited space for such option in each publishable issue, this process will be granted on a first-come, first-served basis, and the Turkish Neurosurgical Society is responsible for organizing the demands and informing the Editorial Board as well as the Publisher.

Why RPO?: There is a waiting list, and the number of articles per issue is constant and limited. It generally takes 6–14 months for a research paper to be published in a printed journal. This service allows immediate publication of the article in both electronic and printed formats. Of note, the printed article will be published in one of the upcoming issues of the journal.

Please be sure to use the RPO service and contact the society, even if you are in early need of an e-pdf manuscript.

Benefits of RPO: Here, it's important to make sure that articles are published as soon as possible, are subject to the proper quality controls, and are extensively read. By using RPO, the authors are able to publish their ideas faster, receive credit for the idea and the manuscript, get ready to strengthen their enrollment for future applications and grants, and last but not least, have increased visibility in a quick-paced setting.¹

¹ <https://www.editage.com/insights/publish-faster-progress-faster-the-basics-of-rapid-publication>

RPO Price and Communication Details: The RPO charge for the journal is EUR 1000/article, including taxes.

This service is carried out by Turkish Neurosurgical Society. Please contact with: Turkish Neurosurgical Society, Taskent Caddesi 13/4 06500 Bahcelievler, Ankara/TURKEY

E-mail: info@turknorosirurji.org.tr

Reprints

Reprint requests should be faxed or e-mailed with the corrected proofs by the corresponding author, if needed. Reprints are normally shipped 6 to 8 weeks after publication of the issue in which the item appears. Contact with the Publisher: Bulus Tasarim, Bahriye Üçok Caddesi 9/1, Beşevler, Ankara, TURKEY.

E-mail: bulus@bulustasarim.com.tr

The price for 2 sets of hardcopy journal:

Within Turkey 500 TL (shipping costs not included);

Outside Turkey 50 € (shipping costs not included)

**Depend on shipping cost. Please contact Bulus Tasarim.*

Manuscript Checklist (before submission. For author reference only)

1. ORCID identifier (ID) is required for all authors during the submission process.
ORCID ID can be obtained free of charge at <http://orcid.org>
2. E-mail address of all authors should be provided during the submission process.
3. Title page
 - Title (brief, definite, didactic)
 - Corresponding author designated, and full mailing address included on title page
 - E-mail address of corresponding author included on title page
 - Running head
 - Approval of Institutional Review Board (Decision No/Date) and/or signed patient consent forms
 - Permission to reproduce copyrighted material
 - Acknowledgements listed for grants, technical support, and corporate support on title page
4. Structured abstract with key words (300 words)
5. Manuscript text with page numbers [Microsoft Word (.doc)] (without author names and affiliations)
6. Figure legends
7. Tables (Word, Wordperfect)
8. Figures (TIFF)
9. Videos (avi, mpeg, mp4) with narration and/or subtitles
10. References double-spaced and cited in alphabetical order

ORIGINAL INVESTIGATIONS

- 921** **Microstructure and Reasonable Management of the Arachnoid Associated with the Intraflocular Approach for Microvascular Decompression of the Facial Nerve**
Le ZHOU, Jianqiang QU, Mengyao SUN, Junjie QUAN, Xianxia YAN, Yanbing MA, Jiehua XU 
- 929** **Endoport-assisted Neuroendoscopic Techniques Used in the Resection of Intraventricular Lesions**
Sungel XIE, Ling XU, Ke WANG, Fei-Ji SUN, Ming-Xiang XIE, Pei WANG, Shun-Wu XIAO
- 936** **Development and Validation of a Nomogram for Predicting Overall Survival in Pediatric Patients with Atypical Teratoid/Rhabdoid Tumors**
Yao LIU, Xiao PENG, Tingting ZENG
- 945** **Effect of Pathogenesis-Based Individualized Thrombectomy on Treatment Result and Prognosis of Acute Intracranial Large-Artery Occlusion Patients**
Yong-Chang LIU, Ming-Ming ZHENG, Yan LI, Song-Wang XIE, Qing-Ran LIU, Jun-Yong WANG
- 951** **Knockdown of the Long Noncoding RNA CRNDE Ameliorates Apoptosis and Inflammation in Ischemia-Reperfusion-Induced Brain Injury via the mir-489-3p/FOXO3 Pathway**
Yinbao HU, Min LI
- 960** **Endoscopic Third Ventriculostomy vs. Ventriculo-peritoneal Shunt for Obstructive Hydrocephalus: A Meta-Analysis of Randomized Controlled Trials**
Wei KONG, Changyou YIN, Yue LV, Wei ZHAO, Guotai TANG, Yanbin WANG
- 967** **Embolization of Cavernous Sinus Dural Arteriovenous Fistula with Liquid Materials Under Transarterial Balloon Protection**
Jia-Nan LI, Cheng-Hao SHANG, Yi XU, Jian-Min LIU, Qiang LI
- 976** **Investigation of Neuroprotective Effect of Shilajit Extract in Experimental Head Trauma Model Created in Rats**
Adil Can KARAOGLU, Ibrahim Burak ATCI, Nail DEMIREL, Okan TURK, Canan HURDAG, Ozgur BARAN, Nuriye Guzin OZDEMIR, Ayhan KOCAK, Muhammet Teoman KARAKURT
- 982** **JNK Inhibition Modulates the Cytoskeleton, Hypoxia, and Neurogenesis on the Protein Level in Glioblastoma Cells and Astrocytes: An Immunofluorescence Study**
Can KOSE, Serap USLU, Duygu CALIK-KOCATURK, Berrin OZDIL, Huseyin AKTUG

- 990** **Identification of Radiological and Clinical Factors that Increase the Risk of Chronic Subdural Hematoma Recurrence**
Mehmet Emin AKYUZ, Hakan Hadi KADIOGLU
-
- 996** **Comparison of the Efficacy of an Anchored Cage with Unidirectional and Bidirectional Screw Fixation in Single-Level Cervical Discectomy and Fusion Surgery**
Jung Jae LEE, Hong Kyung SHIN, Byong Gon PARK, Sang Ku JUNG, Su Bum LEE, Jin Hoon PARK
-
- 1005** **Role of the MyD88 Dependent Pathway in Degenerative Disc Disease**
Mehmet Yigit AKGUN, Sibel AKYOL, Fatma OZLEN, Orkhan ALIZADA, Semih Can CETINTAS, Okan TURK, Murat HANCI
-
- 1012** **Effects of Zinc Oxide Nanoparticles on Neural Tube Development in Early Chicken Embryos**
Pinar AYRAN FIDAN, Ekin EFE, Ugur TOPRAK, Julide AYNUR, Yagmur HAMSICI, Beyza Nur COBAN, Sinem CANTA, Reyhan Sena OZER 
-
- 1017** **Cerebrolysin Amelioration of Spinal Cord Ischemia/Reperfusion Injury in Rabbit Model**
Caghan TONGE, Pinar KURU BEKTASOGLU, Ahmet GULMEZ, M. Erhan TURKOGU, Ata Turker ARIKOK, Berrin Imge ERGUDER, Bora GURER, Hayri KERTMEN
-
- 1028** **Anti-Inflammatory, Antioxidant and Neuroprotective Effects of Niacin on Mild Traumatic Brain Injury in Rats**
Dilan OZAYDIN, Pinar KURU BEKTASOGLU, Turkan KOYUNCUOGLU, Seyma COLAKOGLU OZKAYA, Ayca KARAGOZ KOROGLU, Dilek AKAKIN, Can ERZIK, Meral YUKSEL, Berrak C. YEGEN, Bora GURER
-
- 1038** **Comparison of Surgical Techniques for Intracranial Arachnoid Cysts: A Volumetric Analysis**
Sahin KIRMIZIGOZ, Adem DOGAN, Sait KAYHAN, Sezen YILMAZ SARIALTIN, Ozkan TEHLI
-
- 1047** **Impact of Obesity on Anterior Cervical Discectomy and Fusion (ACDF): Postoperative Morbidity and Mortality**
George THOMAS, Puneet GUPTA, Taimur CHAUDHRY, Neil D ALMEIDA, William WOODALL, John THOMAS, Bennett R. LEVY, Nyle C. ALMEIDA, Jonathan H SHERMAN
-
- 1053** **Surgery of Cranial Deformity Following Ventricular Shunting: A Multicenter Study**
Burak GEZER, Mevlut Ozgur TASKAPILIOGLU, Murat ZAIMOGLU, Tuba MORALI GULER, Gokmen KAHIOLOGULLARI, Hakan KARABAGLI
-
- 1058** **Evaluation of Cerebrovascular Events Followed in Pediatric Intensive Care Unit**
Ulkem KOCOGLU BARLAS, Nihal AKCAY, Mehmet Emin MENENTOGLU, Figen BAKIRTAS PALABIYIK, Esra SEVKETOGLU
-
- 1069** **Silent Micro-Infarct in Carotid Artery Stenting: Who Has it and Why?**
Berna ARLI, Gurdal ORHAN, Recep DONMEZ, Umit GORGULU



1078 **Surgery in Intracerebral Arteriovenous Malformations: The Role of Preoperative Embolization**
Mahmut OZDEN, Koral ERDOGAN, Melih BOZKURT

1086 **Determination of *PKD1*, *SLC2A1*, *EGFR*, *PTEN*, *CD276* Gene Expression Levels and *IDH1* Gene R132H Polymorphism in Brain Tumor Tissues**
Serhat KORKMAZ, Evrim Suna ARIKAN SOYLEMEZ, Zafer SOYLEMEZ, Mustafa SOLAK

1093 **COVID-19 Impact on Intraparenchymal Hemorrhage and Surgical Outcomes: A Comprehensive Analysis**
Samil DIKICI, Baris COLLUOGLU

1099 **The Impact of Contrast Spread Patterns to Clinical Outcomes of Cervical Interlaminar Epidural Steroid Injection: An Observational Study**
Ekim Can OZTURK, Rehib SACAKLIDIR, Savas SENCAN, Gulhan ERTAN, Osman Hakan GUNDUZ

1106 **Osteoplastic Pterional Craniotomy: Success Rate of Surgery in Patient Aspect**
Eyup VAROL, Furkan AVCI, Mustafa Umut ETLI, Ali Fatih RAMAZANOGLU, Serdar Onur AYDIN, Abuzer GUNGOR, Mehmet Resit ONEN, Cumhuri Kaan YALTIRIK

1113 **The Synergistic Effect of Theranekron and Cisplatin on the Neuroblastoma (SH-SY5Y) Cell Line**
Numan TASPINAR

1120 **Retrospective Analysis of Paediatric Glial Tumours that Required Modern Molecular Techniques**
Mehmet Arda INAN, Betul OGUT, Meral TOKER, Ozge Nur ARICASOY, Ozge VURAL, Pelin KUZUCU, Aylar POYRAZ

1126 **Comparative Analysis of IDH Wild-Type Multifocal and Unifocal Glioblastomas: Prognostic Factors and Survival Outcomes in Focus**
Rahsan HABIBOGLU, Ilknur KAYALI, Irem SARICANBAZ, Yilmaz TEZCAN

CASE REPORT

1132 **Incidental Ureteral Complication in Single-Center Consecutive Oblique Lateral Interbody Fusion Cases**
Kang Hoon LEE, Dong Wuk SON, Bu Kwang OH, Su Hun LEE, Jun Seok LEE, Young Ha KIM, Soon Ki SUNG, Sang Weon LEE, Geun Sung SONG