Call for Editorial Board Members

As you are well aware that we are a medical and health sciences publishers; publishing peer-reviewed journals and books since 2004.

We are always looking for dedicated editorial board members for our journals. If you completed your master's degree and must have at least five years experience in teaching and having good publication records in journals and books.

If you are interested to be an editorial board member of the journal; please provide your complete resume and affiliation through e-mail (i.e. info@rfppl.co.in) or visit our website (i.e.www.rfppl.co.in) to register yourself online.

Call for Publication of Conference Papers/Abstracts

We publish pre-conference or post-conference papers and abstracts in our journals, and deliver hard copy and giving online access in a timely fashion to the authors.

For more information, please contact:

For more information, please contact:
A Lal
Publication-in-charge
Red Flower Publication Pvt. Ltd.
48/41-42, DSIDC, Pocket-II
Mayur Vihar Phase-I
Delhi – 110 091 (India).
Phone: 91-11-79695648
E-mail: info@rfppl.co.in

Free Announcements of your Conferences/Workshops/CMEs

This privilege to all Indian and other countries conferences organizing committee members to publish free announcements of your conferences/ workshops. If you are interested, please send your matter in word formats and images or pictures in JPG/JPEG/Tiff formats through e-mail attachments to sales@rfppl.co.in.

Terms and Conditions to publish free announcements:

1. Only conference organizers are eligible up to one full black and white page, but not applicable for the front, inside front, inside back and back cover, however, these pages are paid.
2. Only five pages in every issue are available for free announcements for different conferences.
3. This announcement will come in the next coming issue and no priority will be given.
4. All legal disputes subject to Delhi jurisdiction only.
5. The executive committee of the Red Flower Publication reserve the right to cancel, revise or modify terms and conditions any time without prior notice.

For more information, please contact:
A Lal
Publication-in-charge
Red Flower Publication Pvt. Ltd.
48/41-42, DSIDC, Pocket-II
Mayur Vihar Phase-I
Delhi – 110 091 (India).
Phone: 91-11-79695648
E-mail: info@rfppl.co.in

Win Free Institutional Subscription!

Simply fill out this form and return scanned copy through e-mail or by post to us.

Name of the Institution_____
Name of the Principal/Chairman_____
Management (Trust/Society/Govt./Company)_____
Address 1_____
Address 2_____
Address 3_____
City_____
Country_____
PIN Code_____
Mobile_____
Email_____

We are regular subscriber of Red Flower Publication journals.

Year of first subscription_____

List of ordered journals (if you subscribed more than 5 titles, please attach separate sheet)

Ordered through

Name of the Vendor	Subscription Year	Direct/subs Yr

Name of the journal for which you wish to be free winner

Terms and Conditions to win free institutional subscription

1. Only institutions can participate in this scheme
2. In group institutions only one institution would be winner
3. Only five institutions will be winner for each journal
4. An institution will be winner only for one journal
5. The free subscription will be valid for one year only (i.e. 1 Jan – 31 Dec)
6. This free subscription is not renewable, however, can be renewed with payment
7. Any institution can again participate after five years
8. All legal disputes subject to Delhi jurisdiction only
9. This scheme will be available to participate throughout year, but draw will be held in last week of August every year
10. The executive committee of the Red Flower Publication reserve the right to cancel, revise or modify terms and conditions any time without prior notice.

I confirm and certify that the above information is true and correct to the best of my knowledge and belief.

Place: Signature with Seal
Date:

Revised Rates for 2022 (Institutional) Title of the Journal	Frequency	India(INR) Print Only	India(INR) Online Only	Outside India(USD) Print Only	Outside India(USD) Online Only
Community and Public Health Nursing	3	6000	5500	469	430
Indian Journal of Agriculture Business	2	6000	5500	469	430
Indian Journal of Anatomy	4	9000	8500	703	664
Indian Journal of Ancient Medicine and Yoga	4	8500	8000	664	625
Indian Journal of Anesthesia and Analgesia	6	8000	7500	625	586
Indian Journal of Biology	2	6000	5500	469	430
Indian Journal of Cancer Education and Research	2	9500	9000	742	703
Indian Journal of Communicable Diseases	2	9000	8500	703	664
Indian Journal of Dental Education	4	6000	5500	469	430
Indian Journal of Diabetes and Endocrinology	2	8500	8000	664	625
Indian Journal of Emergency Medicine	4	13000	12500	1016	977
Indian Journal of Forensic Medicine and Pathology	4	16500	16000	1289	1250
Indian Journal of Forensic Odontology	2	6000	5500	469	430
Indian Journal of Genetics and Molecular Research	2	7500	7000	586	547
Indian Journal of Law and Human Behavior	3	6500	6000	508	469
Indian Journal of Legal Medicine	2	9000	8500	703	664
Indian Journal of Library and Information Science	3	10000	9500	781	742
Indian Journal of Maternal-Fetal & Neonatal Medicine	2	10000	9500	781	742
Indian Journal of Medical and Health Sciences	2	7500	7000	586	547
Indian Journal of Obstetrics and Gynecology	4	10000	9500	781	742
Indian Journal of Pathology: Research and Practice	6	12500	12000	977	938
Indian Journal of Plant and Soil	2	7000	6500	547	508
Indian Journal of Preventive Medicine	2	7500	7000	586	547
Indian Journal of Research in Anthropology	2	13000	12500	1016	977
Indian Journal of Surgical Nursing	3	6000	5500	469	430
Indian Journal of Trauma and Emergency Pediatrics	4	10000	9500	781	742
Indian Journal of Waste Management	2	10000	9500	781	742
International Journal of Food, Nutrition & Dietetics	3	6000	5500	469	430
International Journal of Forensic Science	2	10500	10000	820	781
International Journal of Neurology and Neurosurgery	4	11000	10500	859	820
International Journal of Pediatric Nursing	3	6000	5500	469	430
International Journal of Political Science	2	6500	6000	508	469
International Journal of Practical Nursing	3	6000	5500	469	430
International Physiology	3	8000	7500	625	586
Journal of Animal Feed Science and Technology	2	8300	7800	648	609
Journal of Cardiovascular Medicine and Surgery	4	10500	10000	820	781
Journal of Emergency and Trauma Nursing	2	6000	5500	469	430
Journal of Forensic Chemistry and Toxicology	2	10000	9500	781	742
Journal of Global Medical Education and Research	2	6400	5900	500	461
Journal of Global Public Health	2	12500	12000	977	938
Journal of Microbiology and Related Research	2	9000	8500	703	664
Journal of Nurse Midwifery and Maternal Health	3	6000	5500	469	430
Journal of Orthopedic Education	3	6000	5500	469	430
Journal of Pharmaceutical and Medicinal Chemistry	2	17000	16500	1328	1289
Journal of Plastic Surgery and Transplantation	2	26900	26400	1954	575
Journal of Psychiatric Nursing	3	6000	5500	469	430
Journal of Social Welfare and Management	4	8000	7500	625	586
New Indian Journal of Surgery	6	8500	7500	664	625
Ophthalmology and Allied Sciences	3	6500	6000	508	469
Pediatric Education and Research	4	8000	7500	625	586
Physiotherapy and Occupational Therapy Journal	4	9500	9000	742	703
RFP Indian Journal of Medical Psychiatry	2	8500	8000	664	625
RFP Journal of Biochemistry and Biophysics	2	7500	7000	586	547
RFP Journal of Dermatology (Formerly Dermatology International)	2	6000	5500	469	430
RFP Journal of ENT and Allied Sciences (Formerly Otolaryngology International)	2	6000	5500	469	430
RFP Journal of Hospital Administration	2	7500	7000	586	547
Urology, Nephrology and Andrology International	2	8000	7500	625	586
Coming Soon					
RFP Gastroenterology International	2	–	–	–	–
Journal of Food Additives and Contaminants	2	–	–	–	–
Journal of Food Technology and Engineering	2	–	–	–	–
Journal of Radiology	2	–	–	–	–
Medical Drugs and Devices	3	–	–	–	–
RFP Indian Journal of Hospital Infection	2	–	–	–	–
RFP Journal of Gerontology and Geriatric Nursing	2	–	–	–	–

Terms of Supply:

1. Agency discount 12.5%. Issues will be sent directly to the end user, otherwise foreign rates will be charged.
2. All back volumes of all journals are available at current rates.
3. All journals are available free online with print order within the subscription period.
4. All legal disputes subject to Delhi jurisdiction.
5. Cancellations are not accepted orders once processed.
6. Demand draft/cheque should be issued in favour of "**Red Flower Publication Pvt. Ltd.**" payable at **Delhi.**
7. Full pre-payment is required. It can be done through online (http://rfppl.co.in/subscribe.php?mid=7).
8. No claims will be entertained if not reported within 6 months of the publishing date.
9. Orders and payments are to be sent to our office address as given below.
10. Postage & Handling is included in the subscription rates.
11. Subscription period is accepted on calendar year basis (i.e. Jan to Dec). However orders may be placed any time throughout the year.

Order from

Red Flower Publication Pvt. Ltd., 48/41-42, DSIDC, Pocket-II, Mayur Vihar Phase-I, Delhi - 110 091 (India).
Mobile: 8130750089, Phone: 91-11-79695648, E-mail: info@rfppl.co.in, Website: www.rfppl.co.in

Indian Journal of Anesthesia and Analgesia

Aims and Scope

The Indian Journal of Anesthesia and Analgesia (IJAA) is official peer-reviewed scientific journal addresses all aspects of anesthesia practice, including anesthetic administration, pharmacokinetics, preoperative and postoperative considerations, coexisting disease and other complicating factors, cost issues, and similar concerns anesthesiologists contend with daily. The Journal seeks a balance between outstanding basic scientific reports and definitive clinical and management investigations. The Journal welcomes manuscripts reflecting rigorous analysis, even if unusual in style and focus.

Readership: Anesthesiologists, Critical Care Physicians and Surgeons.

Office of Publication: Red Flower Publication Pvt. Ltd., 48/41-42, DSIDC, Pocket-II
Mayur Vihar Phase-I, Delhi – 110 091(India), Phone: 91-11-79695648
E-mail: info@rfppl.co.in Website: www.rfppl.co.in

Copyright Information

For Authors

As soon as article is accepted for publication, authors will be requested to assign copyright of the article (or to grant exclusive publication and dissemination rights) to the publisher (respective the owner if other than Red Flower Publication Pvt. Ltd.). This will ensure the widest possible protection and dissemination of information under copyright laws.

More information about copyright regulations for this journal is available at www.rfppl.co.in

For Readers

All the advice and information in this journal are believed to be true and accurate at the date of its publication. Neither the editors, nor the publisher can accept any legal responsibility for any errors or omissions that may have been made. The author is totaly resposible for any error or omission in the article. The publisher makes no warranty, express or implied, with respect to the material contained herein.

All articles published in this journal are protected by copyright, which covers the exclusive rights to reproduced and distribute the article (e.g. as offprints), as well as all translation rights. No material published in this journal may be reproduced photographically or stored on microfilm, in electronic databases on video disks, etc, without obtaining written permission from the publisher (respective the copyright owner if other than Red Flower Publication Pvt. Ltd.). The use of general descriptive names, trade names, trademarks, etc., in this publication, even if not specifically identified, does not imply that these names are not protected by the relevant laws and regulations.

Journal Website

http://rfppl.co.in/about_journal.php?jid=24

Subscription Information

The Indian Journal of Anesthesia and Analgesia is published four times a year.

Volume 6 (6 issues) will be published in 2019
pISSN: 2349-8471, eISSN: 2455-6238

For information on subscription rates please contact

Subscription and Marketing Manager
Red Flower Publication Pvt. Ltd.
48/41-42, DSIDC, Pocket-II
Mayur Vihar Phase-I
Delhi - 110 091(India).
Phone: 91-11-79695648
info@rfppl.co.in

The journal is distributed free of cost to members of editorial board. Institutional subscription rates (India) INR 8000 and (other countries) USD586.

All correspondence regarding individual and society subscriptions, subscription rates for 2022 and advertisements should be addressed to: info@rfppl.co.in.

Advertisement

E-mail: info@rfppl.co.in

Disclaimer

Red Flower Publication Pvt. Ltd. publishes advertisement in this journal reliance upon the responsibility of the advertiser to comply with all legal requirements relating to the marketing and sale of products or services advertised. Red Flower Publication Pvt. Ltd. and the editors are not responsible for claims make in the advertisement published in the journal. The appearance of advertisements in Red Flower Publication Pvt. Ltd. publications does not constitute endorsement, implied or intended, of the product advertised or the claims make for it by the advertiser.

The views expressed in this publication do not necessarily reflect those of Red Flower Publication Pvt. Ltd.

Red Flower Publication Pvt. Ltd. do not endorse the quality or the value of the advertised/sponsored products described therein.

INDIAN JOURNAL OF ANESTHESIA AND ANALGESIA

July-August 2022
Volume 9 Number 4

Contents

Red Flower Publication (P) Ltd.

Presents its Book Publications for sale

1. **Beyond Medicine: A to E for Medical Professionals) (2020)**
   Kalidas Chavan **INR390/USD31**
2. **Biostatistical Methods For Medical Research (2019)**
   Sanjeev Sarmukaddam **INR549/USD44**
3. **Breast Cancer: Biology, Prevention And Treatment (2015)**
   Dr. A. Ramesh Rao **INR 395/USD31**
4. **Chhotanagpur A Hinterland of Tribes (2020)**
   Ambrish Gautam **INR250/ USD20**
5. **Child Intelligence (2004)**
   Dr. Rajesh Shukla, Md, Dch. **INR100/ USD50**
6. **Clinical Applied Physiology and Solutions (2020)**
   Varun Malhotra **INR263/USD21**
7. **Comprehensive Medical Pharmacology (2019)**
   Dr. Ahmad Najmi **INR599/USD47**
8. **Critical Care Nursing in Emergency Toxicology (2019)**
   Vivekanshu Verma **INR460/USD34**
9. **Digital Payment (Blue Print For Shining India) (2020)**
   Dr. Bishnu Prasad Patro **INR329/USD26**
10. **Drugs in Anesthesia (2020)**
    R. Varaprasad **INR449/USD35**
11. **Drugs In Anesthesia and Critical Care (2020)**
    Dr. Bhavna Gupta **INR595/USD46**
12. **MCQs in Medical Physiology (2019)**
    Dr. Bharati Mehta **INR300/ USD29**
13. **MCQs in Microbiology, Biotechnology and Genetics (2020)**
    Biswajit Batabyal **INR285/USD22**
14. **MCQs In Minimal Access & Bariatric Surgery (2019)**
    Anshuman Kaushal **INR450/USD35**
15. **MCQs In Minimal Access and Bariatric Surgery (2nd Edition) (2020)**
    Anshuman Kaushal **INR545/USD42**
16. **Patient Care Management (2019)**
    A.K. Mohiuddin **INR999/USD78**
17. **Pediatrics Companion (2001)**
    Rajesh Shukla **INR 250/USD50**
18. **Pharmaceutics-1 (A Comprehensive Hand Book) (2021)**
    V. Sandhiya **INR525/ USD50**
19. **Poultry Eggs of India (2020)**
    Prafulla K. Mohanty **INR390/USD30**
20. **Practical Emergency Trauma Toxicology Cases Workbook (2019)**
    Dr. Vivekanshu Verma, Dr. Shiv Rattan Kochar, Dr. Devendra Richhariya **INR395/USD31**
21. **Practical Record Book of Forensic Medicine & Toxicology (2019)**
    Dr. Akhilesh K. Pathak **INR299/USD23**
22. **Recent Advances in Neonatology (2020)**
    Dr. T.M. Ananda Kesavan **INR 845/USD66**
23. **Shipping Economics (2018)**
    Dr. D. Amutha **INR347/USD45**
24. **Skeletal and Structural Organizations of Human Body (2019)**
    Dr. D.R. Singh **INR659/USD51**
25. **Statistics In Genetic Data Analysis (2020)**
    S.Venkatasubramanian **INR299/USD23**
26. **Synopsis of Anesthesia (2019)**
    Dr. Lalit Gupta **INR1195/USD75**

Order from

Red Flower Publication Pvt. Ltd.
48/41-42, DSIDC, Pocket-II, Mayur Vihar Phase-I, Delhi - 110 091(India)
Mobile: 8130750089, Phone: 91-11-79695648, E-mail: info@rfppl.co.in

Subscription Information

India
Institutional (1 year) (Print+Online): INR 8000

Rest of the World
Institutional (1 year) (Print+Online): $ 607

Payment instructions Online payment link:
http://rfppl.co.in/payment.php?mid=15

Cheque/DD:
Please send the US dollar check from outside India and INR check from India made payable to 'Red Flower Publication Private Limited'. Drawn on Delhi branch

Wire transfer/NEFT/RTGS:
Complete Bank Account No. 604320110000467
Beneficiary Name: Red Flower Publication Pvt. Ltd.
Bank & Branch Name: Bank of India, Mayur Vihar
MICR Code: 110013045
Branch Code: 6043
IFSC Code: BKID0006043 (used for RTGS and NEFT transactions)
Swift Code: BKIDINBBDOS

Send all Orders to: Subscription and Marketing Manager, **Red Flower Publication Pvt. Ltd.**, 48/41-42, DSIDC, Pocket-II, Mayur Vihar Phase-I, Delhi - 110 091(India)
Mobile: 8130750089, Phone: 91-11-79695648.
E-mail: info@rfppl.co.in, Website: www.rfppl.co.in

Original Article

Indian Journal of Anesthesia and Analgesia
Volume 9 Number 4 July-August 2022
DOI: http://dx.doi.org/10.21088/ijaa.2349.8471.9422.17

Preoperative Anxiety Analysis in Patients Undergoing Surgeries: A Comparative Study using Preoperative Counselling, Tablet Diazepam 10 Mg and Non-Counselled Patients

Anju Minj[1], Deepak M Kokane[2], S D Chauhan[3], Surekha More[4]

Author's Affiliation: [1]Junior Resident, [2,4]Associate Professor, [3]Professor & HOD, Department of Anesthesiology, Government Medical College, Latur, Maharashtra 413512, India.

How to cite this article:
Anju Minj, Deepak M. Kokane, S.D. Chauhan, et al./Preoperative Anxiety Analysis In Patients Undergoing Surgeries: A Comparative Study using Preoperative Counselling, Tablet Diazepam 10 Mg and Non-Counselled Patients/Indian J Anesth Analg. 2022;9(4)167-177.

Corresponding Author: Deepak M. Kokane, Associate Professor, Department of Anesthesiology, Government Medical College, Latur, Maharashtra 413512, India.
E-mail: kdrdeepak@gmail.com
Received on: 24.06.2022, **Accepted on:** 02.07.2022

Abstract

Objectives: To compare the anxiety level of patients who have received pre-operative counselling, tablet Diazepam 10 mg previous night of surgery and patients who have neither received any anxiolytic medication nor pre-operative counselling, To monitor preoperative, intraoperative and post-operative pulse rate, blood pressure of study groups, to note the length of hospital, stay of the patient post operatively.

Methods: Three hundred ASA 1/2 patients admitted for elective surgical procedure requiring anesthesia were assigned into one of the three groups. •Group C =Pre-Operative counselling done, •Group D =Tab. Diazepam 10mg HS 1day prior to Surgery. •Group NC= Non-counselled patients.The study group C patients are counselled in respects of the type of anesthesia, operative procedure. The study group D is given tab. Diazepam 10 mg a night prior to surgery. The study group NC is neither given pre-operative counselling nor given tab Diazepam. They are non-counselled group.Data is collected by means of a questionnaire given to the patients in the form of Spielberger' state – Trait Anxiety Inventory scale (STAIS). The patients anxiety levels were measured.

Result: In our study the three groups had high STAIS score before surgery with normal baseline haemodynamic values. Patients who received counselling and tab. Diazepam pre operatively were haemodynamically stable during intra and post operative period and had a low to moderate anxiety score during post operative visit as compared to group NC which neither received pre operative counselling nor tab. Diazepam and had unstable pulse rate, systolic blood pressure, diastolic blood pressureduring intra and post operative period. Their STAIS score after surgery remained high as compared to their pre operative score. Group C and D had mean hospital stay of 4.04 ± 0.65 to 4.75 ± 0.97 days which is less than group NC with mean hospital stay was 6.55 ± 0.67 days.

Conclusion: Lack of information related to possible pre-operation and post-operation conditions increases the anxiety level of patients. This causes intra operative instability in haemodynamic, post-operative emotional problems and thus increase hospital stay. Personal interview and previous night anxiolytic (Tab. Diazepam) are good at alleviating the anxiety throughout the perioperative period. Transfer of knowledge and information through counselling to be more effective in decreasing the anxiety and apprehension. It is more helpful in patients who are illiterate and who do not actively participate in the interview. Hence, a personal interview along with an anxiolytic previous night of surgery is a good option in allaying the anxiety.

This study has critically examined and found that preoperative patient education significantly reduces intra operative haemodynamic instability, postoperative anxiety and length of hospital stay. This study strongly recommends preoperative patient education so as to have better outcome, less morbidity and less healthcare cost.

Keywords: Pre operative anxiety analysis, Pre-operative counselling.

Introduction

Being healthy is defined not only at the absence of disease and disability, but also as a complete wellbeing in terms of physical, social and mental state. The continuity of the inner environment of the human organism is dependent on the individual's physiological and psychological balance. The main objective of health care is to provide maintenance of the state of health, by preserving the continuity of the inner environment and to help in restoring the balance lost in the state of illness.[11] People sometimes have to be hospitalized for the maintenance and continuity of their health.[13,14] The process of hospitalization, regardless of the reason causes different reactions in different people, including adverse reaction such as anxiety, fear and depression.[13,15]

The unfamiliar operating theatre makes surgery a potentially unpleasant experience causing high level of anxiety in patients.[16] The prevalence of anxiety preoperatively in patients ranges from 11% to 80%.[17] The patient feels anxiety as a result of the physical effects imposed by the disease as well by the change of environment imposed by hospitalization. These factors, which may cause anxiety in the hospitalized individual, include the anxiety of receiving painful treatment, being away from his/her family, losing his/her job, being in an alien environment and encountering unknown devices and procedures. The anxiety of undergoing an operation also feeds into the list of factors and constitutes a significant source of anxiety.[2]

Anxiety is defined as a state that emerges as a result of a response against threats that may disrupt bodily balance, or a failure in restoring the lost balance.[2]

Increased anxiety before surgery is associated with pathophysiological responses such as hypertension, dysrhythmias, increased requirements for post-operative analgesia and may cause patients to refuse planned surgery. By providing information about anesthesia patients feel more reassured.[3]

My objective is to determine whether the pre-operative visit by the anesthesiologist alleviates anxiety. I am comparing the efficacy of preoperative counselling v/s tab. Diazepam 10 mg previous night prior to surgery v/s non counselled patients.

Materials and Methodology

After Institutional Ethics Committee approval, valid informed and written consent is taken from all the patient. Three hundred ASA grade I and II patients grouped into group C, D and NC.

Inclusion Criteria:Adults aged 18-60 years. Considering the age group to which the inventory scale could be applied and their ability to understand, have good comprehension skills and accepted under American Society of Anesthesiologists (ASA) grade I and II.

Exclusion Criteria

We excluded patients with a previous experience of Anesthesia and surgery, mentally challenged, deaf, mute and blind patients, paediatrics and geriatric age group and patients posted for emergency surgery.The patients were explained regarding the study and assigned into one of the three groups:

- Group C = Pre-Operative counselling done.
- Group D = Tab. Diazepam 10mg HS 1day prior to Surgery.
- Group NC = Non-counselled patients.

The pre anesthetic evaluation is performed one day before the surgery. The study group C patients are counselled in respects of the type of anesthesia, operative procedure. The study group D is given tab. Diazepam 10 mg a night prior to surgery. The study group is neither given pre-operative counselling nor given tab Diazepam. They are non-counselled group. Data is collected by means of a questionnaire given to the patients in the form of Spielberger' state – Trait Anxiety Inventory scale (STAIS). The patients anxiety levels were measured.

Instrument

The STAI is a validated and widely used instrument to measure patient's anxiety. The STAI – state (STAI-S) form consist of 01-20 statements and the answers to these are used to determine a patient's current anxiety level. The STAI –Trait (STAI – T) form consists of a different set of 20 statements, and the answers to these are used to determine a patient's undergoing (Ongoing/Personality) anxiety level. Each statement in the STAI – S is rated on a four point scale for the subject's agreements with that statement (not at all, somewhat, moderately so, and very much so). This form is used at all time points of the study for both groups. This form used for each patient on entering the study. The overall score for STAI ranges from a minimum of 20 to maximum of 80. STAI scores are commonly classified as" no or low anxiety (20-37)", "moderate anxiety (38-44) and high anxiety (45-80).[5]

Self-evaluation questionnaire	STAI Form Y-1			
	1	2	3	4
1. I feel calm	□	□	□	□
2. I feel secure	□	□	□	□
3. I am tense	□	□	□	□
4. I feel strained	□	□	□	□
5. I feel at ease	□	□	□	□
6. I feel upset	□	□	□	□
7. I am presently worrying over possible misfortunes	□	□	□	□
8. I feel satisfied	□	□	□	□
9. I feel frightened	□	□	□	□
10. I feel comfortable	□	□	□	□
11. I feel self-confident	□	□	□	□
12. 1 feel nervous	□	□	□	□
13. 1 am jittery	□	□	□	□
14. 1 feel indecisive	□	□	□	□
15. I am relaxed	□	□	□	□
16. I feel content	□	□	□	□
17. I am worried	□	□	□	□
18. I feel confused	□	□	□	□
19. I feel steady	□	□	□	□
20. 1 feel pleasant	□	□	□	□

1: Not at all, 2: Somewhat, 3: Moderately so, 4: Very much so

Table. 1: Distribution of study population according to groups.

Group	Label	No. of patients
Group – C	Pre-operative Counselling	100
Group – D	Tab. Diazepam 10 mg HS 1 day prior to surgery	100
Group - NC	Non Counselled Patients	100

Table. 2: Comparison of mean STAIS score pre-operatively and post operatively between and within groups.

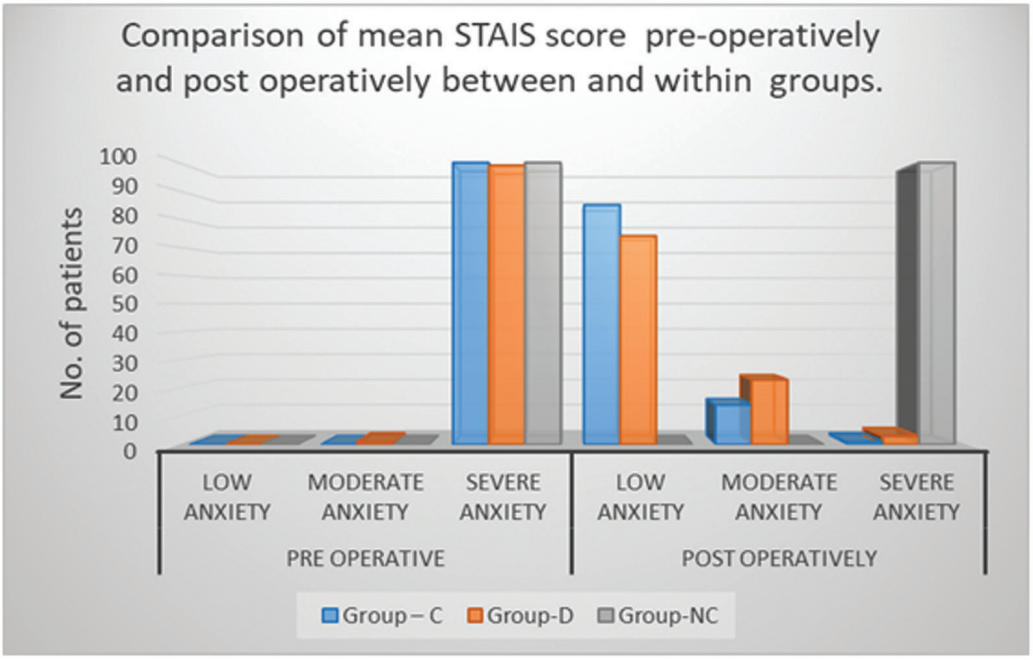
	STAIS	Group – C		Group – D		Group - NC		p-value
		N	%	N	%	N	%	
Pre operative	Low anxiety	0	0	0	0	0	0	
	Moderate anxiety	0	0	1	1.00	0	0	p=0.367,NS
	Severe anxiety	100	100	99	99.00	100	100	
Post operatively	Low anxiety	85	85.00	74	74.00	0	0	
	Moderate anxiety	14	14.00	23	23.00	0	0	p<0.0001,HS
	Severe anxiety	1	1.00	3	3.00	100	100	

Self-evaluation questionnaire	STAI Form Y-2			
	1	2	3	4
21. I feel pleasant	□	□	□	□
22. I feel nervous and restless	□	□	□	□
23. I feel satisfied with myself	□	□	□	□
24. I wish I could be as happy as others seem to be	□	□	□	□
25. I feel like a failure	□	□	□	□
26. I feel rested	□	□	□	□
27. I am "calm, cool, and collected"	□	□	□	□
28. I feel that difficulties are piling up so that I cannot overcome them	□	□	□	□
29. I worry too much over something that really doesn't matter	□	□	□	□
30. I am happy	□	□	□	□
31. I have disturbing thoughts	□	□	□	□
32. I lack self-confidence	□	□	□	□
33. I feel secure	□	□	□	□
34. I make decisions easily	□	□	□	□
35. I feel inadequate	□	□	□	□
36. I am content	□	□	□	□
37. Some unimportant thought runs through my mind and bothers me	□	□	□	□
38. I take disappointments so keenly that I can't put them out of my mind	□	□	□	□
39. I am a steady person	□	□	□	□
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	□	□	□	□

1: Almost never, 2: Sometimes, 3: Often, 4: Almost always

Table. 3: Comparison of mean STAIS score pre-operatively and post operatively between and within groups.

STAIS	Group – C		Group – D		Group - NC		F-value	p-value
	Mean	SD	Mean	SD	Mean	SD		
Pre operative	54.96	6.52	57.79	10.26	56.44	6.20	6.01	0.0028,HS
Post operatively	33.64	4.61	34.76	5.47	60.33	5.09	884.42	<0.0001,HS
t-value	29.62		21.7459		12.9175			
p-value	<0.0001,HS		<0.0001,HS		<0.0001,HS			



Result

We found that all the three groups had high STAIS score before surgery with normal baseline haemodynamic values. Patients who received counselling and tab. Diazepam pre operatively were haemodynamically stable during intra and post operative period and had a low to moderate anxiety score during post operative visit as compared to group NC which neither received pre-operative counselling nor tab. Diazepam and had unstable pulse rate, systolic blood pressure, diastolic blood pressure during intra and post operative period. Their STAIS score after surgery remained high as compared to their pre operative score. Group C and D had mean hospital stay of 4.04 ± 0.65 to 4.75 ± 0.97 days which is less than group NC with mean hospital stay was 6.55 ± 0.67 days.

Statistical Analysis

Pre operatively in group C all subjects have severe anxiety, group D ninety-nine subjects have severe anxiety and one subject has moderate anxiety, group NC all subjects have severe anxiety. As compared to post operatively, group C has 85 subjects with low anxiety, 14 with moderate anxiety and 01 with severe anxiety. Group D has 74 subjects with low

Table. 4: Comparison of mean STAIS sore after surgery among 3 groups.

STAIS	Group – C		Group – D		Group - NC		F-value	p-value
	Mean	SD	Mean	SD	Mean	SD		
Change in STAIS score after surgery	21.32	7.19	24.03	11.05	-3.89	3.01	388.69	<0.0001,HS

Table. 5: Comparison of mean hospital stay in days among 3 groups.

	Group – C		Group – D		Group - NC		F-value	p-value
	Mean	SD	Mean	SD	Mean	SD		
Hospital stay in days	4.04	0.65	4.75	0.97	6.55	0.67	277.23	<0.0001,HS

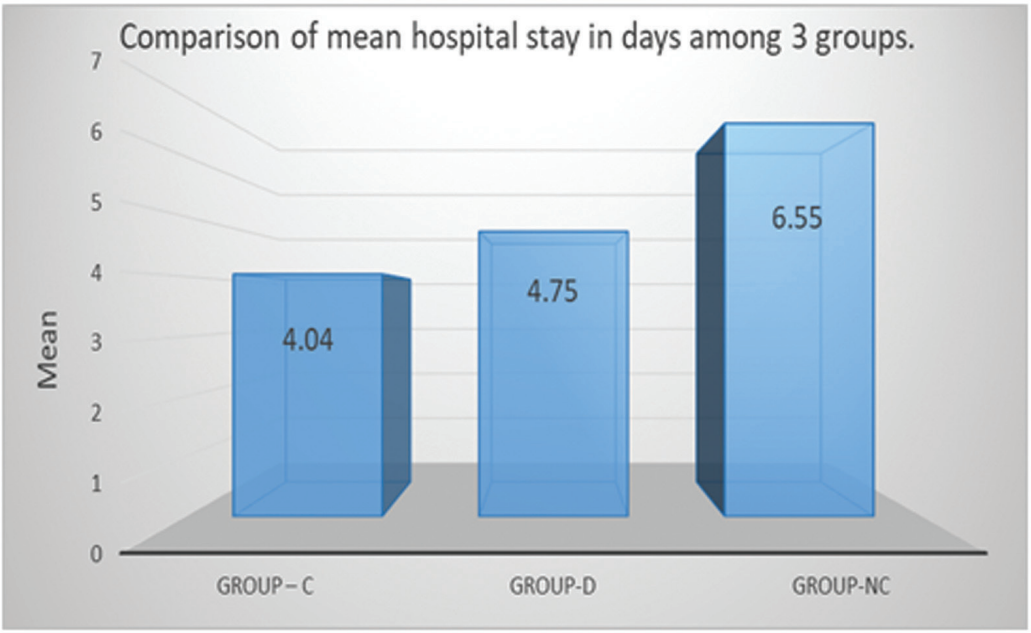
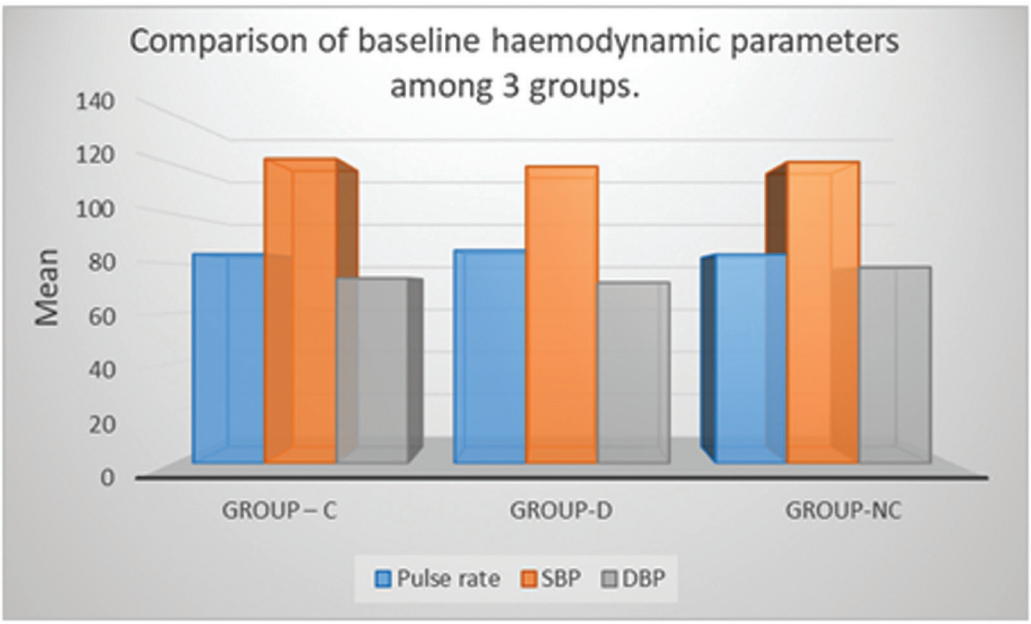


Table. 6: Comparison of baseline haemodynamic parameters among 3 groups.

Parameter	Group – C		Group – D		Group - NC		F-value	p-value
	Mean	SD	Mean	SD	Mean	SD		
Pulse rate	83.68	11.65	85.22	10.94	83.58	10.41	0.70	0.4992, NS
SBP	121.80	7.96	118.70	9.91	120.50	7.96	3.23	0.0409, S
DBP	74.1	6.21	72.30	7.08	78.50	8.08	19.79	<0.0001, HS



anxiety, 23 with moderate anxiety and 03 with severe anxiety. In group NC all (100) the subjects have severe anxiety. Pre operative p value is 0.367 which is not significant, post operative p value is < 0.0001 which is highly significant.

Group C and D showed a significant decrease in anxiety after counselling and taking tab. Diazepam previous night of surgery (p<0.0001) which is highly significant and the group NC had not much change in the STAIS score. Post operatively mean STAIS score of group C = 33.64, group D = 34.76, group NC = 60.33, p<0.0001 which is highly significant.

This graph shows the mean value of hospital stay among the 3 groups i.e. in group C = 4.04 ± 0.65, group D = 4.75 ± 0.97, group NC = 6.55 ± 0.67, p<0.0001 which is highly significant. Inference is group C which received counselling had less days of hospital stay as compared to group D which received tab. Diazepam and group NC which neither received counselling nor tab. Diazepam.

This graph shows the baseline haemodynamic parameters among the 3 groups. The mean pulse rate in group C = 83.68 ± 11.65, group D = 85.22 ± 10.94, group NC = 83.58 ± 10.41 (p = 0.4992, not significant). The mean systolic blood pressure in group C = 121.80 ± 7.96, group D = 118.70 ± 9.91, group NC = 120.50 ± 7.96 (p = 0.0409, significant). The mean diastolic blood pressure in group C = 74.1 ± 6.21, group D = 72.30 ± 7.08, group NC = 78.50 ± 8.08 (p < 0.0001, highly significant). Inference there is not much fluctuation in baseline pulse rate among the 3 groups but there is change in systolic and diastolic blood pressure among the 3 groups which is significant.

Table. 7: Comparison of mean pulse rate among 3 groups at different time periods.

Time	Group – C		Group – D		Group - NC		F-value	p-value
	Mean	SD	Mean	SD	Mean	SD		
Baseline	83.68	11.65	85.22	10.94	83.58	10.41	0.70	0.4992,NS
Before intubation	94.84	11.17	94.46	8.91	97.72	7.81	3.59	0.0287,S
After 2 min intubation	104.08	11.30	91.80	9.95	109.44	7.30	87.46	<0.0001,HS
After 5 min intubation	106.06	8.95	97.96	9.51	114.48	7.21	91.90	<0.0001,HS
After 10 min intubation	106.76	7.57	102.64	8.60	117.64	7.93	92.67	<0.0001,HS
After 20 min intubation	104.16	7.01	100.80	7.84	120.60	7.93	183.39	<0.0001,HS
After 30 min intubation	101.20	7.63	96.84	7.85	123.96	9.70	297.10	<0.0001,HS
Post operatively	120.40	6.01	118.14	7.57	134.54	6.35	176.88	<0.0001,HS

Table. 8: Comparison of mean Systolic Blood Pressure among 3 groups at different time periods.

Time	Group – C		Group – D		Group - NC		F-value	p-value
	Mean	SD	Mean	SD	Mean	SD		
Baseline	121.80	7.96	118.70	9.91	120.50	7.96	3.23	0.0409,S
Before intubation	124.80	8.10	115.90	8.17	130.10	6.88	85.85	<0.0001,HS
After 2 min intubation	129.80	9.42	120.60	7.89	134.30	8.34	65.80	<0.0001,HS
After 5 min intubation	125.56	7.80	122.20	10.00	134.70	8.46	53.93	<0.0001,HS
After 10 min intubation	119.4	7.49	122.50	10.48	133.20	9.41	61.75	<0.0001,HS
After 20 min intubation	116.62	7.93	120.40	8.15	133.50	8.80	113.75	<0.0001,HS
After 30 min intubation	115.50	6.87	115.70	6.23	138	5.86	416.55	<0.0001,HS
Post operatively	130	5.86	130.28	5.90	148.5	7.96	254.19	<0.0001,HS

Mean baseline pulse rate of all the study groups are more or less same. Before intubation the mean pulse rate increases in group NC (97.72 ± 7.81) as compare to group C (94.84 ± 11.17) and group D (94.46 ± 8.91) p = 0.0287 which is significant. After 2 minutes of intubation mean pulse rate increases from its baseline value in group NC (109.44 ± 7.30) as compared to group C and D. After 5 minutes of intubation the mean pulse rate further increases in group NC (114.48 ± 7.21) as compared to group C and D. After 10,20,30 minutes of intubation the mean pulse rate is high in group NC as compared to group C and D, which means there is significant deflection in the mean pulse rate after intubation from its baseline in group NC as compared to group C and D. Post operatively the pulse rate is high in group NC as compared to group C and D, which shows that patients who received counselling in group C and tab. Diazepam in group D has almost stable pulse rate in intra operative period as compared to group NC which has a high margin of fluctuation in pulse rate intra operatively.

In group NC, after intubation to post operative period the blood pressure (systolic) showed significant rise which is highly significant as compared to group C and D.

In group NC, after intubation to post operative period the blood pressure (diastolic) showed significant rise which is highly significant as compared to group C and D.

Discussion

An anesthesiologist has a vital role to play by prescribingan adequate and appropriate premedication to make the patient quiet, restful, calm and mentally prepared for an uneventful surgery. High levels of preoperative fear and anxiety correlate with various unfavourable outcomes, including increases in postoperative analgesic requirements, prolonged post-anesthesia care unit or hospital stays, and delayed negative psychological effects.[24]

In view of the high incidence and associated adverseoutcomes in some patient's groups, pharmacological (i.e., premedication) or psychological (counselling) steps may be considered.[24] Benzodiazepines are extensively used as oral premedication as they present the advantage of avoiding painful intravenous or intramuscular injections. They differ in their ability to relieve primary or secondary (e.g., situational) anxiety, act asanticonvulsants, provide muscle relaxation, and inducesedation.[24]

The value of pre-operative visit by the anesthetist hardly needs monitoring. Benzodiazepines are now used mainly for treating acute anxiety states, behavioural emergencies and during procedures. They are also used as premedication before surgery (both medical and dental). Under these circumstances their anxiolytic, sedative and amnesic properties may be beneficial. Intravenous midazolam can be used to induce anesthesia. The main reasons for using sedative hypnotic premedication were allaying anxietyand providing sedation.[25]

In order to avoid unnecessary anxiety, it is advisable thatthe patient who is to undergo surgery does not fear theupcoming procedure. The anesthesiologist's attention can greatly reduce anxiety even without using medicines.[26] It is important to also consider that there might be some consideration as to how detailed the information

Table. 9: Comparison of mean diastolic Blood Pressure among 3 groups at different time periods.

Time	Group – C		Group – D		Group - NC		F-value	p-value
	Mean	SD	Mean	SD	Mean	SD		
Baseline	71.4	6.21	72.30	7.08	78.5	8.08	19.79	<0.0001,HS
Before intubation	80.6	8.38	70.8	4.85	87.9	5.37	179.83	<0.0001,HS
After 2 min intubation	83.3	7.79	74.10	6.52	88.8	6.07	117.99	<0.0001,HS
After 5 min intubation	77.5	6.87	75.7	8.19	89.3	7.68	94.36	<0.0001,HS
After 10 min intubation	71.4	6.19	75.9	8.29	88.7	6.13	116.69	<0.0001,HS
After 20 min intubation	69.98	4.85	75.2	7.45	89.7	6.58	255.84	<0.0001,HS
After 30 min intubation	71.20	4.98	72.0	5.68	91.6	5.81	440.53	<0.0001,HS
Post operatively	85.4	5.20	83.4	6.69	94.1	4.94	100.68	<0.0001,HS

should be that is given to the patient. In a British study, 82% of patients who underwent surgery had expressed their desire to know more about the surgical procedure prior to surgery. In addition, the most desired piece of information was the estimated length of stay in the hospital.[27] In a Danish study, patients asked more about pain, anesthesia duration, and risk of impairment of daily activities and less about sedatives or complications.[28]

Classic works by Hayward (1975) and Boore (1978)[17] :

Demonstrated the benefits of preoperative patient education in the reduction of postoperative pain, stress, anxiety and infection.[17]

In this study, all the patients of group C were counselled in detail about the operative procedure which was going to be performed, the type of anesthesia to be given with its procedure, the type of pain patient may feel after surgery and about the complications of surgery if occurred.

In this study, the mean state anxiety score after surgery in group C was 33.64 ± 4.61, which was significantly less (P<0.0001 HS) as compare to group NC (non counselled) which had mean state anxiety score of 60.33 ± 5.09 (P<0.0001 HS). And as compare to group D (Tab. Diazepam) which had mean state anxiety score of 34.76 ± 5.47 (P<0.0001 HS).

In research carried out by Akkaş[18], he found that education given to patients in preoperative period was found to reduce their anxiety level.

In another study by Asilioglu and Celik[19] on the effect of pre-operative education on anxiety in open surgery patients, the anxiety level of the educated group was lower than the control group which was in accordance with this study.

Sjoling et al.[20] investigated the "effect of pre-operation information on anxiety level, post-operative pain and pain control satisfaction in patients with total knee arthroplasty". Lower scores of VAS values were recorded in all of the education groups compared to the control group, thus demonstrated that the experiment group reported less pain compared to the control group.

In a study by Karayurt[21], which investigated the"effect of different pre-operative education programs on the anxiety and pain levels of patients", the patients in the group that had received routine care reported the highest level of pain. Pain levels were lowest in the group that had received education which was in accordance with this study.

Giraudet-Le Quintrec et al compared the impact of a collective multidisciplinary standardized information session with that of the usual verbal information on pre-operative and postoperative anxiety of patients scheduled for total hip arthroplasty. The intervention group was significantly less anxious preoperatively (P=0.01), experienced significantly less pain postoperatively (P=0.04) and stood sooner (P=0.07) than the control group. The findings support attending an educational programme, as it reduced preoperative anxiety, and better prepared the patients to cope with postoperative pain.

In this study the mean length of hospital stay in the study group C was 4.04 ± 0.65 as compared to group NC which was 6.55 ± 0.67, group D which was 4.75 ± 0.97, this was found to be statistically highly significant (P<0.0001 HS).

Spalding compared a group of patients who had attended a preoperative education programme with a control group who had not. The results showed that the experimental group had a mean of 4 days less hospitalization than the control group which was in accordance with this study. Engelman RM mentioned the role of preoperative education of the patient on early discharge from the hospital.[22]

Aysegul Bayrak et al. J Coll Physicians Surg Pak. 2019 Sep. did a study on effects of preoperative anxiety on intraoperative hemodynamicand found that preoperative anxiety causes hemodynamic problems in the intraoperative period, increased analgesic needs and lower postoperative satisfaction of the patients in the postoperative period. It would be better to dispel the preoperative anxiety by counselling patient regarding anesthesia and surgery.

In this study the mean baseline pulse rate in group C 83.68 ± 11.65, group D 85.22 ± 10.94, group NC 83.58 ± 10.41 (P = 0.4992 NS), before intubation P value is 0.0287 which is significant, after 2 min. of intubation, 5 min , 10 min, 20 min, 30 min and post operatively P<0.0001 which is highly significant. That means baseline pulse rate is almost same in all the study groups but before intubation the mean pulse rate in group NC is 97.72 ± 7.81 which is higher than group C and D Inference is non counselled patients had higher pulse rate before intubation from their baseline value and after 2 min, 5 min, 10 min, 20 min, 30 min of intubation and post operatively mean pulse rate of group NC is 109.44 ± 7.30, 114.48 ± 7.21, 117.64 ± 7.93, 120.60

± 7.93, 123.96 ± 9.70, 134.54 ± 6.35 which is also higher than group C and D Inference is patients who received pre operative counselling and tab. Diazepam had stable pulse rate intra operative and post operatively as compared to group NC where patients were not counselled before surgery and had unstable pulse rate intra operatively and post operatively. The findings are same with systolic blood pressure and diastolic blood pressure.

Conclusion: Lack of information related to possible pre-operation and post-operation conditions increases the anxiety level of patients. This causes intra operative instability in haemodynamic, post-operative emotional problems and thus increase hospital stay. Personal interview and previous night anxiolytic (Tab. Diazepam) are good at alleviating the anxiety throughout the perioperative period. Transfer of knowledge and information through counselling to be more effective in decreasing the anxiety and apprehension. It is more helpful in patients who are illiterate and who do not actively participate in the interview. Hence, a personal interview along with an anxiolytic previous night of surgery is a good option in allaying the anxiety.

This study has critically examined and found that preoperative patient education significantly reduces intra operative haemodynamic instability, postoperative anxiety and length of hospital stay. This study strongly recommends preoperative patient education so as to have better outcome, less morbidity and less healthcare cost.

References

1. Textbook of miller's Anesthesia, 9th edition 2020, page no. 1641 – 42, 2437 – 39, 2259.
2. DrYeola, DrJaipuriya P. Effect of pre-operativecounseling on post operative outcome in Hernia surgery patients. International Journal of Science and Research (IJSR) Volume 5 Issue 7, July 2016.
3. P Akkamahadevi, VV Subramanian, The efficacy of different methods of pre-operative counselling on perioperative anxiety in patients undergoing regional anesthesia. Indian Journal of Anesthesia | Vol. 60 | Issue 1 | Jan 2016. September 28, 2016,IP.41.66.228.183.
4. J. B. Dyck FRCPC, F. Chung, FRCPC, A comparison of propranolol and diazepam for preoperative anxiolysis. 12th April 1991. Canadian Journal Of Anesthesia 1991 / 38:6 / pp704-9.
5. H.A. Jlala, J.L.French,G.L. Foxall, J.G. Hardman and N. M, Bedforth, Effect of preoperative multimedia information on perioperative anxiety in patients undergoing procedures under regional anesthesia. January 4, 2010. British Journal of Anesthesia 104 (3): 369–74 (2010).
6. Arup Dasgupta, SayandevDasgupta, SupratikSen, Sukanta Sen. Girish Kishore Sinha. Benzodiazepinehypnotics as oral pre anesthetic medication: a comparative clinical study. 24 october 2016. International Surgery Journal | January 2017 | Vol 4 | Issue 1.
7. Inna Maranets, MD and Zeev N. Kain MD, Preoperative anxiety and intraoperative anesthetic requirements. AnesthAnalg 1999;89:1346-51. August 27, 1999.
8. P. Forrest, D. C. Galletly and P. Yee, Placebo controlled comparison of Midazolam, Triazolam and Diazepam as oral premedicants for out patientanesthesia, August 1987. Anesthesia and Intensive Care. Vol. 15. No. 3. August. 1987.
9. Michael F. Roizen, MD, P. ALLanKlock, MD, and Jerome Klafta, MD, How much do they really want to know Preoperative patient interviews and the Anesthesiologist. 1996. International Anesthesia research socirty. AnesthAnalg 1996;82:443-4
10. C. F. Swinhoe, MB,BS,MRCGP,FRCA,FFARCSI, Patient's knowledge of Anesthetic practice and the role of anesthetists. South Afr J AnaesthAnalg 2017;23(1).
11. L. Birol, "Period of nursery Izmir," Etki Press, 2005,pp.14-15. "The Impact on the Level of Anxiety and Pain of the Training before Operation Given to Adult Patients," Surgical Science, Vol. 2 No. 6, 2011, pp. 303-311.
12. R. Yardakci and N. Akyolcu, "The effect of the visits made preoperation on the patients' anxiety level," The Turkish Journal of research and Development in nursing, vol.1, No.2, 2004, pp. 7-14.
13. F. Erdil and N. OzhanElbas, "Medical – Surgical Nursing ," DesingOfset, Ankara, 2001,pp.98-136.
14. M. Mitchell, "Anxiety Management : A Distinct Nursing role in day surgery," Ambulatory Surgery, Vol. 8, No. 3, 2000, pp.119-127.
15. Man AK, Yap JC, Kwan SY, Suen KL, Yip HS, Chen PP. The effect of intra-operative vedio on patient anxiety. Anesthesia 2003;58:64-8.
16. Maranets I, Kain ZN. Preoperative anxiety and intraoperative anesthetic requirements. AnesthAnalg 1999;89:1346-51.
17. Boore, J., 1978. Prescription for Recovery. RCN, London) and Hayward, J., 1975. Information-a prescription against Pain, RCN, London) Int J Nurs Stud. 1999 Apr;36(2):171-7.
18. A. Akkaş, "Determinibg the Anxiety Levels of Patients during the Pre-operative Period and the Factors Which May Cause Anxiety," The Turkish Journal of Research and Development in Nursing, No 1, 2001, pp. 23-29.

19. K. Asilioglu and S. S. Celik, "The Effect of Preoperative Education on Anxiety of Open Cardiac Surgery Patients," Patient Education and Counseling, Vol. 53, No. 1, 2004, pp. 65-70.
20. M. Sjöling, G. Nordahl, N. Olofsson and K. Asplund, "The Impact ofPreoperative İnformation on State Anxiety, Postoperative Pain and Satisfaction with Pain Management," Patient Education and Counseling, Vol. 51, No. 2, 2003, pp. 169-176.
21. Ö. Karayurt, "Effects of Different Preoperative Teaching Programmes on the State Anxiety and Pain Level," Journal of Cumhuriyet University NursingSchool, Vol. 2, No. 1, 1998, pp. 20-26.
22. Mechanisms to reduce hospital stays. Engelman RM, Ann Thorac Surg. 1996 Feb;61(2 Suppl):S26-9; discussion S33-4.
23. Kain ZN, Mayes LC, Bell C, Weisman S, HofstadterMB, Rimar S. remedication in the United States: astatus report. AnesthAnalg. 1997;84:427-32.
24. Madej TH, Passuke RT. Anesthesia preme dication: aims, assessment and methods. Can J Anaesth 1987;34:259-73.
25. Roizen MF. Pre-operative evaluation. In: Miller RD, Anesthesia 3rd edition. New York, Churchill Livingstone Inc, 1990.
26. Bunker TD. An information leaflet for surgicalpatients. Ann R CollSurg Engl. 1983;65:242-3.
27. Bugge K, Bertelsen F, Bendtsen A. Patient's desirefor information about anesthesia danishattitudes. ActaAnesthesiol Scand. 1998;42:91-6.
28. Chun-Ling Yang,1 Yan-Hua Tan,1 Xiu-Xia Jiang,1 Feng-Ying Meng,1 Yu-Ling Wu,1 Qiu-Lan Chen,1 Long-Le Ma1 ,2 and Le-Xin Wang 1 ,2 European Journal of Cardiovascular Nursing 11(3) Pg. 284–288 © The European Society of Cardiology 2012
29. Sunil Sadruddin Samnani, 1 Muhammad Farooq Umer, 1 Syed Hussain Mehdi, 1 and Farah Naz Farid2Hindawi. Publishing CorporationInternational Scholarly Research NoticesVolume 2014, Article ID 250536, 5 agesReceived 28 April 2014; Accepted 8 August 2014; Published 29 October 2014.
30. Vittorio Oteri1 & Anna Martinelli2 & Elisa Crivellaro3 & Francesca Gigli3Neurosurgical Review (2021) 44:3047–3057Received: 2 November 2020 / Revised: 18 January 2021 /Accepted: 8 February 2021
31. Achmet Ali • DemetAltun • BahadirHakanOguz •Mehmet Ilhan • Fatma Demircan • Kemalettin KoltkaJAnesth (2014) 28:222–227Received: 21 June 2013 / Accepted: 30 August 2013 / Published online: 29 September 2013.
32. Fateme Dehghan1,2, Rostam Jalali3* and Hasan Bashiri1Dehghan et al. Perioperative Medicine (2019) 8:5Received: 3 March 2019 Accepted: 13 May 2019.
33. Jalali R. PhD1 *Dehghan F. PhD2 Iran Journal of Nursing (IJN)Vol. 30, No. 107, Oct 2017:1- 10.
34. H. O. Osinowo, B. O. Olley and A. O. Adejumo Osinowo H. O. et al WAJM Vol.22 No.4, October – December, 2003.

Case Report

Indian Journal of Anesthesia and Analgesia
Volume 9 Number 4 July-August 2022
DOI: http://dx.doi.org/10.21088/ijaa.2349.8471.9422.18

Anesthetic Management in a Patient with Recurrent Pituitary Macroadenoma

Sundeep Kalimisetty[1], Vishnuvardhan Voleti[2], Kiran N[3], Ravi Madhusudhana[4]

Author's Affiliation: [1]Resident, [2]Associate Professor, [3]Professor, [4]Professor & HOD, Department of Anesthesiology, Sri Devaraj Urs Medical College, SDUAHER, Kolar, Karnataka 563101, India.

How to cite this article:

Sundeep Kalimisetty, Vishnuvardhan Voleti, Kiran N, et al./Anesthetic Management in a Patient with Recurrent Pituitary Macroadenoma/Indian J Anesth Analg. 2022;9(4)178-181.

Corresponding Author: Vishnuvardhan Voleti, Associate Professor, Department of Anesthesiology, Sri Devaraj Urs Medical College, SDUAHER, Kolar, Karnataka 563101, India.
E-mail: voletivishnu@gmail.com
Received on: 28.04.2022, **Accepted on:** 28.05.2022

Abstract

Introduction: Tumours of the pituitary gland and sellar region represent 10-15% of all brain tumours. Pituitary macroadenoma is the most common suprasellar mass in adults and is the commonest indication for transnasal trans-sphenoidal hypophysectomy.

Case Report: A 41-year-old patient presented with right-sided loss of vision and right-sided headache for 3 months and posted for the Transnasal Trans-sphenoidalhypophysectomy. The patient previously underwent a similar surgery for an invasive non-functioning pituitary adenoma 2.5 years back. He is a known hypothyroid, with normal vitals and class III Mallampati. The possibility of a difficult airway was considered because of the enlarged tongue. Other system examinations were normal. The hemogram and biochemistry measurements were normal. MRI brain showed a mass lesion measuring 5.2 x 5.6 x 4.7 cm in the sellar, supra, and parasellar regions. We were prepared for all the intraoperative complications of pituitary macroadenoma that can happen.

Difficult airway cart was made available. 18-gauge IV cannula secured. Pre-oxygenated and premedicated with IV Glycopyrrolate 0.01mg/Kg and IV Fentanyl 2 mcg/Kg. Induced with Propofol 2mg/Kg, checked ventilation and Vecuronium 0.1mg/Kg was administered. Intubated with 8.5 mm cuffed endotracheal tube using Video laryngoscope. Right Subclavian vein cannulated and Invasive BP monitored through Radial artery cannulation. Anesthesia was maintained with Oxygen-Nitrous oxide, Isoflurane, Vecuronium, and Dexmedetomidine infusion. The patient was hemodynamically stable throughout the procedure. At the end of the procedure, reversal was given and extubated after ensuring adequate recovery.

Conclusion: Appropriate assessment before anesthesia and perioperative adequate monitoring and preparation are important in the management of anesthesia of patients with pituitary macroadenoma.

Keywords: Anesthetic concerns in pituitary adenoma, Neurosurgical Anesthesia, Pituitary Tumours, Pituitary Macroadenomas.

Key Messages: Patients coming for recurrent pituitary macroadenoma need appropriate preoperative assessment and perioperative anesthesia management. This surgery requires a multidisciplinary team that includes an anesthesiologist, an endocrinologist, a neurosurgeon and a radiologist for better patient care and outcome. We are presenting a case report of recurrent pituitary macroadenoma and its successful management.

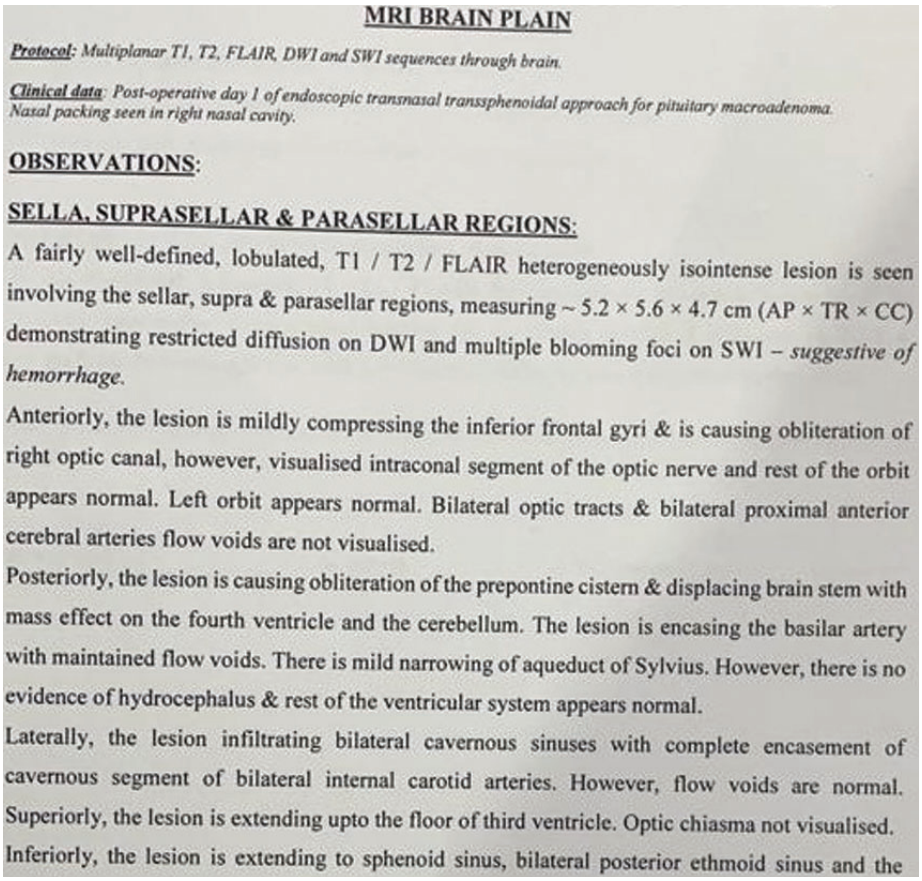
Introduction

The most frequent suprasellar mass in adults is pituitary macroadenomas. Pituitary macroadenomas are twice as common as Pituitary microadenomas and are characterised as Pituitary adenomas larger than 10 mm in size. The most usually done procedure is transnasal transsphenoidal pituitary surgery, which is caused by increased or decreased hormone output. A case of pituitary macroadenoma with subjective visual disturbance and a difficult airway was presented for transnasal transsphenoidal tumour removal.

Case Report

A 41-year-old man presented with a right-sided headache and vision loss on the right side. He has been diagnosed as hypothyroid and is receiving treatment on a regular basis. The vital signs were in the usual range. A check of the airway revealed normal teeth and an enlarged tongue. Mallampati was in the third grade. The results of systemic checks and routine blood tests were normal. Hormonal testing revealed adequate levels of growth hormone and other pituitary hormones. The X-ray of the chest was normal. The ECG showed a sinus rhythm. The ejection fraction on an echocardiogram was normal. In the sellar, suprasellar, and parasellar regions of the brain, an MRI (fig. 1 & 2) revealed a mass lesion measuring 5.2 x 5.6 x 4.7 cm. Opinions were sought from cardiology, pulmonology, endocrinology, and ophthalmology, among other disciplines.

The patient was scheduled for elective transnasal transsphenoidal tumour excision under American Society of Anesthesiologists (ASA) physical status 3 after a preoperative workup. General anesthesia with controlled breathing and intensive monitoring was the anesthetic plan. Informed consent, as well as consent for invasive lines and postoperative ventilation, was obtained. Fasting recommendations, as well as anti-aspiration and anticonvulsant prophylaxis, were followed prior to surgical procedure. A big bore 18G intravenous line was secured in the pre-operative room on the day of operation. Intravascular (IV) Glycopyrrolate 0.01 mg/kg was used to premedicate the patient. The patient was moved into the operating room and pre-induction monitors such as ECG, Non-Invasive Blood Pressure, and SpO_2 were connected. 100% oxygen was administered. Analgesia was augmented with 2 mcg/kg IV Fentany.[1]



MRI BRAIN PLAIN

***Protocol**: Multiplanar T1, T2, FLAIR, DWI and SWI sequences through brain.*

***Clinical data**: Post-operative day 1 of endoscopic transnasal transsphenoidal approach for pituitary macroadenoma. Nasal packing seen in right nasal cavity.*

OBSERVATIONS:

SELLA, SUPRASELLAR & PARASELLAR REGIONS:

A fairly well-defined, lobulated, T1 / T2 / FLAIR heterogeneously isointense lesion is seen involving the sellar, supra & parasellar regions, measuring ~ 5.2 × 5.6 × 4.7 cm (AP × TR × CC) demonstrating restricted diffusion on DWI and multiple blooming foci on SWI – *suggestive of hemorrhage.*

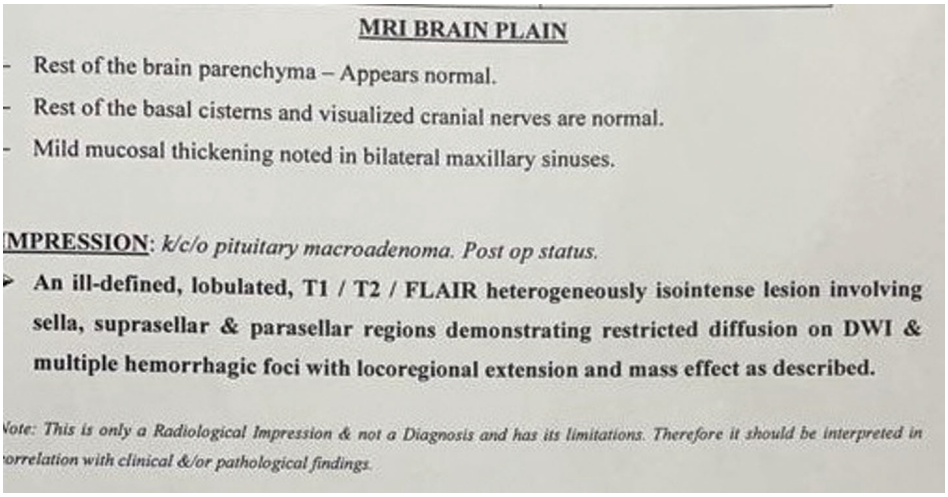
Anteriorly, the lesion is mildly compressing the inferior frontal gyri & is causing obliteration of right optic canal, however, visualised intraconal segment of the optic nerve and rest of the orbit appears normal. Left orbit appears normal. Bilateral optic tracts & bilateral proximal anterior cerebral arteries flow voids are not visualised.

Posteriorly, the lesion is causing obliteration of the prepontine cistern & displacing brain stem with mass effect on the fourth ventricle and the cerebellum. The lesion is encasing the basilar artery with maintained flow voids. There is mild narrowing of aqueduct of Sylvius. However, there is no evidence of hydrocephalus & rest of the ventricular system appears normal.

Laterally, the lesion infiltrating bilateral cavernous sinuses with complete encasement of cavernous segment of bilateral internal carotid arteries. However, flow voids are normal.

Superiorly, the lesion is extending upto the floor of third ventricle. Optic chiasma not visualised.

Inferiorly, the lesion is extending to sphenoid sinus, bilateral posterior ethmoid sinus and the



MRI BRAIN PLAIN

- Rest of the brain parenchyma – Appears normal.
- Rest of the basal cisterns and visualized cranial nerves are normal.
- Mild mucosal thickening noted in bilateral maxillary sinuses.

MPRESSION: *k/c/o pituitary macroadenoma. Post op status.*

- **An ill-defined, lobulated, T1 / T2 / FLAIR heterogeneously isointense lesion involving sella, suprasellar & parasellar regions demonstrating restricted diffusion on DWI & multiple hemorrhagic foci with locoregional extension and mass effect as described.**

Note: This is only a Radiological Impression & not a Diagnosis and has its limitations. Therefore it should be interpreted in correlation with clinical &/or pathological findings.

Fig. 1: MRI Brain Plan

Propofol 2 mg/kg was used for induction and Vecuronium 0.1 mg/kg was administered. Intubation was performed using Video Laryngoscopy and an 8.5 mm cuffed endotracheal tube (ETT) that was secured. Capnography was used to confirm ETT's position. Packing of the throat was completed. Cannulation of the left radial artery was performed, and invasive blood pressure was measured. Oxygen-nitrous oxide, isoflurane, vecuronium, and dexmedetomidine infusions were used to maintain anesthesia. After intubation, the right subclavian vein was cannulated and the CVP was monitored. Urinary bladder catheterization was performed, and urine production was monitored. Analgesia was augmented with IV paracetamol intraoperatively, the anticonvulsant dose was repeated, and Hydrocortisone 100mg IV injection was given. Throughout the surgery, the patient's hemodynamics remained stable. The throat pack was removed at the end of the surgery, and reversal was administered. After confirming appropriate recovery, the patient was extubated. The patient was observed in the intensive care unit for 48 hours after surgery. On the 12th day, the patient was discharged.

Discussion

Pituitary tumours account for 10% of all intracranial tumors.The pituitary gland is 15 × 10 mm in size and weighs 0.5 to 0.9 grams.[1] The gland is located in the sella turcica, which is located near the base of the skull. The pituitary tumor's clinical appearance can be related to either decreased hormone secretion or bulk effects.

An understanding of neurosurgical elements of anesthesia in general, and pituitary illness in particular, is required for anesthetic management. The pathophysiology of hormonal changes caused by pituitary dysfunction may have a substantial impact on the surgical result. Ananesthesiologist's biggest challenges are peripheral venous access and invasive monitoring.

The goal of anesthesia should be to provide hemodynamic stability, appropriate cerebral oxygenation, and a normal intracranial pressure.[2] Due to their huge tongues, anesthesiologists have trouble with mask breathing, laryngoscopy, and intubation. In acromegaly patients, a comprehensive examination of the airway is required[3]. Prognathism can be caused by coarse facial characteristics and bone enlargement.[4] As a result, fiberoptic intubation is the gold standard for airway securing. Nasal blockage caused by post-procedure nasal packing must be explained to the patient.[5] Persistent CSF rhinorrhea and the possibility of postoperative meningitis, panhypopituitarism, temporary DI, vascular damage, cranial nerve injury, cerebral ischemia, and stroke as a result of vasospasm or thrombosis are all risks associated with the trans sphenoidal technique.[6] Anticonvulsant prophylaxis is required.

Positioning during surgery is crucial, as sitting postures increase the risk of air embolism. Blood pressure must be measured intra-arterially[7]. Permissive hypercapnia with a PaCO2 of 60 mmHg is useful for increasing ICP and allowing the suprasellar component of the tumour to shift into the sella for easier surgical removal[8]. It's also important to keep track of your glucose levels throughout surgery. Unless there is an injury to a major arterial, such as the carotid artery, there is very little blood loss during trans sphenoidal surgery. The cranial nerves II through VI, the optic nerve or chiasma, and the venous sinuses are all

likely to be injured intraoperatively. Anosmia is caused by impairment to the olfactory nerves.

After the tumour removal, the sella is packed with autologous fat to prevent CSF leak and the Valsalva manoeuvre is performed to check for any CSF leak[9]. Intraoperatively and postoperatively, enough analgesia should be supplied. The throat pack must be removed with caution near the end of the surgery. The transition from anesthesia should be painless, with no coughing or bucking. Due to the restricted airway, there is an increased risk of airway compromise after surgery[10]. Consciousness, eye movements, and visual fields must all be evaluated on a regular basis[11]. Neuroendocrine disorders are very prevalent. In all patients, hormone replacement treatment is required. Steroids will be gradually reduced. Endocrinologists must be contacted about the patient's hormonal status, and regular follow-up is required.[12]

Conclusion

Pituitary surgery is performed by a multidisciplinary team that includes an endocrinologist, a neurosurgeon, a radiologist, and an anesthesiologist for better patient care and outcomes. It is necessary to optimise the patient's preoperative condition based on comorbid illnesses. Early neurological examination can reveal major surgical problems, thus a quick recovery from anesthetic is critical. Patients must have long-term follow-up with endocrinologists to assess their hormonal condition.

Conflict of Interest: Nil

References

1. Nussey SS, Whitehead SA. The pituitary gland. In: Nussey SS, Whitehead SA (Eds). Endocrinology: An integrated approach. London: Bios Scientific Publishers Ltd 2001;283-331.
2. Ana H, Juranko K, Aleksandar G, et al. Anesthetic management of patients undergoing pituitary surgery. Acta Clin Croat 2011;50:209-16.
3. Hirsch N, Jewkes D. Anesthesia for pituitary surgery. In: Powell M, Lightman SL (Eds). The management of pituitary tumours: A handbook. Edinburgh: Churchill Livingstone 1996;141-44.
4. Seidman PA, Kofke WA, Policare R, et al. Anesthetic complications of acromegaly. Br J Anaesth 2000;84:179- 82.
5. Nemergut EC, Dumont AS, Barry UT, et al. Perioperative management of patients undergoing transsphenoidal pituitary surgery. Anesth Analg 2005;101:1170-81.
6. Lim M, Williams D, Maartens N. Anesthesia for pituitary surgery. J Clin Neurosci 2006; 13: 413– 8.
7. Laws ER Jr, Sheehan JP. Pituitary surgery—a modern approach. Basel: Karger 2006;185-205.
8. Korula GT, George SP, Rajshekhar V, et al. Effect of controlled hypercapnia on cerebrospinal fluid pressure and operating conditions during transsphenoidal, operations for pituitary macroadenoma. J Neurosurg Anesthesiol 2001;13:255-59.
9. Jane JA Jr, Thapar K, Kaptain GJ, et al. Pituitary surgery: Transsphenoidal approach. Neurosurgery 2002;51:435-42.
10. Melmed S. Acromegaly pathogenesis and treatment. J Clin Invest 2009; 119:3189-202.
11. Vance ML. Perioperative management of patients undergoing pituitary surgery. Endocrinol Metab N Am 2003;32:355-65
12. Menon R, Murphy PG, Lindley AM. Anesthesia and pituitary disease. Cont Educ Anaesth Crit Care Pain 2011;11:133-37.

Case Report

Indian Journal of Anesthesia and Analgesia
Volume 9 Number 4 July-August 2022
DOI: http://dx.doi.org/10.21088/ijaa.2349.8471.9322.19

Continuous Spinal is Safe in a Patient with Wolff-Parkinson-White syndrome for Hysterectomy

Monisha B[1], Ravi Madhusudhana[2], Nagaseshu Kumari Vasantha[3], Sinchana Bhagavan[4]

Author's Affiliation: [1]Resident, [2]Professor & HOD, [3]Assistant Professor, [4]Senior Resident, Department of Anesthesiology, Sri Devaraj Urs Medical College, SDUAHER, Kolar, Karnataka 563101, India.

How to cite this article:

Monisha B, Ravi Madhusudhana, Nagaseshu Kumari Vasantha, et al./Continuous Spinal is Safe in a Patient with Wolff-Parkinson-White Syndrome for Hysterectomy/Indian J Anesth Analg. 2022;9(4):183-186.

Corresponding Author: Ravi Madhusudhana, Professor & HOD, Department of Anesthesiology, Sri Devaraj Urs Medical College, SDUAHER, Kolar, Karnataka 563101, India.
E-mail: ravijaggu@gmail.com
Received on: 19.04.2022, **Accepted on:** 25.05.2022

Abstract

Introduction: Wolff–Parkinson-White syndrome (WPW) is an uncommon cardiac disorder where there is an abnormal band of atrial tissue that connects atria and ventricles. Continuous spinal anesthesia is preferred to avoid multidrug administration and stimulus due to laryngoscopy.

Case Report: A 47 yrs old female, known case of WPW syndrome was posted for hysterectomy. Pre-anesthetic evaluation was done. A 12 lead ECG was done which showed left axis deviation, short PR interval and delta waves. The 2D – Echo showed thickened MV leaflets with grade-1 MR with normal LV systolic function and EF of 60%.

The case was planned to be taken under continuous spinal anesthesia. The Anti-Arrhythmic drugs and Defibrillator were kept ready. Intermittent boluses of Inj. Bupivacaine (H) 0.5% was given through catheter to achieve sensory and motor blockade. Inj. Fentanyl 25mcg was given at the end of the procedure as analgesic dose. Intra operative vitals were stable. Postoperative period was uneventful.

Conclusion: Patient with WPW Syndrome can be managed successfully by continuous spinal anesthesia technique which uses low dose of anesthetic helps in maintaining cardiovascular stability intraoperatively and duration can be extended if surgery is prolonged.

Keywords: Continuous Spinal Anesthesia, WPW Syndrome, Ventricular Tachycardia.

Key Messages: Hemodynamic changes can occur with WPW syndrome with arrhythmias. This can be avoided with definitive treatment like Radiofrequency ablation. Our patient came with WPW Syndrome with stable hemodynamics so continuous spinal anesthesia can offer stable hemodynamics with minimum use of local anesthetics. We are reporting a case of WPW Syndrome with successful anesthetic management.

Introduction

Wolff–Parkinson–White syndrome (WPW) is an uncommon cardiac disorder where there is an abnormal band of atrial tissue that connects atria and ventricles which can electrically bypass the atrioventricular node. The anesthetic management in these patients is challenging because of complications such as paroxysmal supraventricular tachycardia and atrial fibrillation. Continuous spinal anesthesia is preferred compared to general anesthesia to avoid multidrug administration and stimuli due to laryngoscopy. We report successful anesthetic management of Wolff-Parkinson-white syndrome in patient posted for hysterectomy.

Case Report

A 47-year-old female who is a known case of WPW syndrome came with a history of abnormal uterine bleeding for 5 months, was scheduled for vaginal hysterectomy. The patient had breathlessness and sweating 6 years back for which she had taken treatment for one and half years and stopped. Presently, the patient was asymptomatic and with good effort tolerance. There is no history of breathlessness, syncope, dizziness and chest pain on pre-anesthetic evaluation. The patient was newly diagnosed hypertensive and was started on *Tab. Metoprolol* Extended Release 12.5 mg OD and *Tab. Telmisartan* 20mg OD from the past 15 days before surgery. Her blood pressure was 140/90mmhg and her pulse rate was 72bpm. Her physical examination was normal. All laboratory investigations were in the normal range. A 12 lead Electrocardiogram was done which showed a rate of 88/min, left axis deviation, short PR interval (0.08 sec), delta waves (slurred upstroke of QRS), indicative of WPW pattern with an accessory pathway in coronary sinus as per Arruda classification. The 2D – Echocardiography showed thickened MV leaflets with grade-1 MR with normal LV systolic function and an Ejection fraction of 60%.

The patient was explained about spinal anesthesia and consent was taken. Tab Alprazolam 0.5mg and Tab Ranitidine 150mg was given on the previous night and morning on the day of surgery. Nil per oral maintained. The case was planned to be taken under continuous spinal anesthesia.18g IV cannula was secured and preloading was done with Ringer lactate. The anti-arrhythmic drugs (Inj. Amiodarone, Inj. Adenosine, Inj. Lignocaine) and defibrillator were kept ready. Electrocardiogram (lead II), Pulse oximeter (SpO_2), and non-invasive blood pressure (NIBP) monitoring were done. L1 – L2 intervertebral space was identified. Under aseptic precautions, Lumbar puncture was done with 18G Tuohy's needle in L1 – L2 space and after looking for backflow of CSF, the catheter was inserted and fixed at 9cm. Inj. Bupivacaine(H) 0.5% was given through catheter after confirming backflow of CSF and sensory and motor blockade was achieved till T8. At hourly intervals 1cc and 0.4cc dosage of drug was given to achieve sensory and motor blockade. Vaginal hysterectomy was converted to total abdominal hysterectomy. Inj. Fentanyl 25mcg was given at the end of the surgery as analgesic dose. Surgery lasted for almost 3 hours and intraoperative vitals were stable. Patient was then shifted to recovery room and was under observation for half an hour. Patient was then shifted to post-operative ward. Inj. Paracetamol 1g sos was given as analgesia in 1st 24 hours. Postoperative period was uneventful.

Discussion

Wolff-Parkinson-White syndrome is ventricular pre-excitation syndrome which results from an aberrant conduction pathway. The incidence is 0.9–3%. The risk of sudden death in these patients due to malignant arrhythmia is estimated to be around 0.4%/ year. Pre excitation can be due to associated mitral valve prolapse, congenital heart diseases and cardiomyopathies. Diagnosis will be done by history of anxiety, palpitations, angina, anxiety, fatigue and characteristic ECG changes.[1] Common life-threatening arrhythmias can occur that is atrial fibrillation which can lead to Ventricular fibrillation and Ventricular tachycardia or Paroxysmal supraventricular tachycardia.[2]

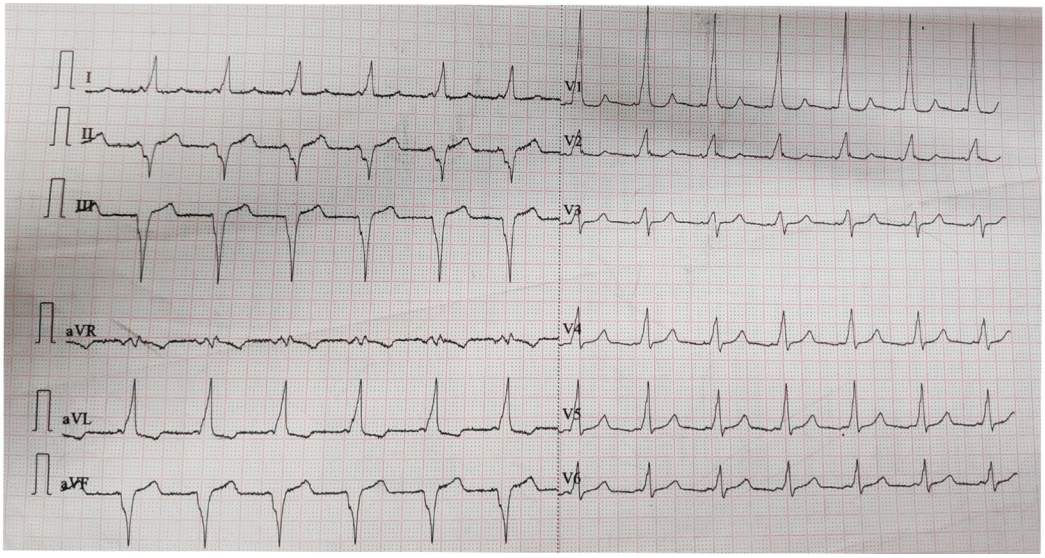
In this regional anesthesia is preferred because it prevents use of multiple drugs and sympathetic stimulation will be less. Sympathetic blockade in spinal anesthesia can cause bradycardia and sudden hypotension.[2]

Continuous spinal anesthesia was preferred in this patient because of chances of blockade of cardio accelerator fibers and suppression of AV conduction in a high subarachnoid block. High subarachnoid block can also cause relative excitement of parasympathetic nerves that facilitate conduction through the accessory pathway. Hence, the dosage of the drug given for subarachnoid block should be titrated cautiously to achieve the level required for the surgery.[1] The continuous spinal anesthesia technique (CSA) facilitates slow titration of local anesthetic compared to single-shot spinal. This technique allows maintenance of cardiovascular stability. This CSA technique also provides intraoperative dosing of drug to maintain surgical anesthesia during prolonged surgeries.[3]

In general anesthesia, it is very important to avoid light planes of anesthesia and drugs that precipitate tachycardia i.e., Glycopyrrolate, Atropine, Ketamine which result in atrial fibrillation or PSVT. Opioids like Fentanyl, Midazolam and Benzodiazepines do not affect extrapyramidal effects of the accessory pathway.[4] Thiopentone is safe but Propofol can be preferred because it has no effect on refractory period of accessory pathway.[5]

Phenylephrine is effective in treatment of hypotension without causing increase in heart rate, which might be a better choice in patients with WPW syndrome.[1] when Supraventricular Tachycardia occurs with normal QRS complex, propranolol can be used because it depresses the AV node conduction. Digitalis is contraindicated because it accelerates conduction through accessory pathway.[5]

CSA is associated with many complications such as post dural puncture headache, neurological complications like Cauda Equina syndrome and infection at catheter site. CSA potentially has a higher risk of post-dural puncture headache due to cerebrospinal fluid leakage through the dural puncture and the use of larger bore needle. The development of microcatheters has significantly reduced the incidence of PDPH.



Diagnosis wpw pattern with accessory pathway in coronary sinus (as per arruda classification)

Fig.: Legends

This is a 12 lead ecg with correctly placed leads

With standardization 1mv =10mm with a speed of 25mm/ sec

Rate of 88 /min

Regular rhytm

Axis left axis -70

Pr interval short 0.08 sec

Qrs duration 0.08sec

Qtc 440msec

Delta wave noted

No st t changes

No lvh rvh changes

No bundle blocks

R/s ratio in v1 to v2 >1

Conclusion

Patient with WPW syndrome can be managed successfully by continuous spinal anesthesia technique which helps in maintaining cardiovascular stability intraoperatively and duration of anesthesia can be extended if surgery is prolonged.

Conflict of Interest: Nil

References

1. Devisetti P, Pujari VS. Spinal anesthesia is safe in patient with Wolff-Parkinson-White syndrome undergoing evacuation of molar pregnancy. J Clin Diagn Res. 2016;(10): 1-2.
2. Kabade SD, Sheikh S, Periyadka B. Anesthestic management of a case of Wolff-Parkinson-White Syndrome. Indian J Anaesth. 2011;(10): 381-383.

3. Sultan P, Hilton G, Butwick A, Carvalho B. Continuous spinal anesthesia for caesarean hysterectomy and massive haemorrhage in parturient with placenta increta. Can J Anaesth. 2012;(59): 473-477.
4. Sahu S, Karna ST, Karna A, Lata I, Kapoor D. Anesthetic management of Wolff-Parkinson-White Syndrome for hysterectomy. Indian J Anaesth. 2011;(55): 378-380.
5. Gupta A, Sharma J, Banarjee N, Sood R. Anesthetic management in a patient with Wolff-Parkinson-White syndrome for laparoscopic cholecystectomy. Anesth Essays Res. 2013;(7): 270-272.
6. Parthasarathy S, Annie Sheeba J. Continuous spinal anesthesia: A need for re-emergence? Asian J Pharm Clin Res. 2015;(8): 50-53.
7. Beh ZY, Yong PSA, Lye S, Eapen SE, Yoong CS, Woon KL, Lim JGC. Continuous spinal anesthesia: A retrospective analysis of 318 cases. Indian J Anaesth. 2018; 62;(10): 765-772.

SUBSCRIPTION FORM

I want to renew/subscribe international class journal "**Indian Journal of Anesthesia and Analgesia**" of Red Flower Publication Pvt. Ltd.

Subscription Rates:
• Institutional: **INR 8000 / USD 625**

Name and complete address (in capitals):_____
_____

Payment detail:
Online payment link: http://rfppl.co.in/payment.php?mid=15

Cheque/DD: Please send the US dollar check from outside India and INR check from India made payable to 'Red Flower Publication Private Limited'. Drawn on Delhi branch.

Wire transfer/NEFT/RTGS:
Complete Bank Account No. 604320110000467
Beneficiary Name: Red Flower Publication Pvt. Ltd.
Bank & Branch Name: Bank of India; Mayur Vihar
MICR Code: 110013045
Branch Code: 6043
IFSC Code: BKID0006043 (used for RTGS and NEFT transactions)
Swift Code: BKIDINBBDOS

Term and condition for supply of journals
1. Advance payment required by Demand Draft payable to **Red Flower Publication Pvt. Ltd**. payable at **Delhi.**
2. Cancellation not allowed except for duplicate payment.
3. Agents allowed 12.5% discount.
4. Claim must be made within six months from issue date.

Mail all orders to
Subscription and Marketing Manager
Red Flower Publication Pvt. Ltd.
48/41-42, DSIDC, Pocket-II
Mayur Vihar Phase-I
Delhi - 110 091(India)
Phone: 91-11-79695648, Cell: +91-9821671871
E-mail: info@rfppl.co.in

Case Report

Indian Journal of Anesthesia and Analgesia
Volume 9 Number 3 July-Aug 2022
DOI: http://dx.doi.org/10.21088/ijaa.2349.8471.9422.20

Anesthetic Management of Patient with Mediastinal Tumor Posted for Thoracotomy and Tumor Excision

Padmasree Mk[1], Lavanya Kaparthi[2], Ravi Madhusudhana[3], Preethi R[4]

Author's Affiliation: [1,4]Postgraduate Resident, [2]Associate Professor, [3]Professor & HOD, Department of Anesthesiology, Sri Devaraj Urs Medical College, SDUAHER, Kolar, Karnataka 563101, India.

How to cite this article:

Padmasree Mk, Lavanya Kaparthi, Ravi Madhusudhana, et al./Anesthetic Management of Patient with Mediastinal Tumor Posted for Thoracotomy and Tumor Excision/Indian J Anesth Analg. 2022;9(4):190-192.

Corresponding Author: Lavanya Kaparthi, Associate Professor, Department of Anesthesiology, Sri Devaraj Urs Medical College, SDUAHER, Kolar, Karnataka 563101, India.
E-mail: drlavanyakaparti@yahoo.com
Received on: 20.04.2022, **Accepted on:** 26.05.2022

Abstract

Introduction: Mediastinal tumor are uncommon entity they present a major anesthetic challenges due to major airway and vascular compression.

Case Report: A 60yr, old diagnosed with posterior mediastinum tumour at C7 level. Airway assessment revealed mallampatti class IV. Blood investigations were within normal limit. Pulmonary function test revealed mild obstructive disease. CT shows lesion in posterior mediastinum extending to right IJV with complete thrombosis displacing trachea and thyroid. Triple lumen CVP line was secured. Difficult intubation trolley with tracheostomy set was kept ready. Routine monitoring, left radial artery cannulation done. Patient was Preoxygenated, Premedicated and Induced. 37F Left Double lumen tube was inserted and tube position confirmed with paediatric fiberoptic bronchoscope. Patient was hemodynamically stable in the intraoperative period. Patient was reversed and extubated uneventfully.

Conclusion: Mediastinal tumor resection surgery is a very complicated and requires a team effect anesthesiologists, surgeon and intensivist. A thorough pre-operative assessment of the patient should be done before the conduct of anesthesia to avoid the complications due to posterior mediastinal mass.

Keywords: Thoracotomy, One-Lung Ventilation, Mediastinal Tumor.

Key Messages: Anesthetic management of patient with mediastinal tumor posted for thoracotomy and tumor excision requires a double lumen ET tube for lung isolation and decrease in lung atelectasis. In this case a 60 year old male presented with mild symptoms and we highlight the usage of one lung ventilation in patient with posterior mediastinal tumor.

Introduction

Mediastinal tumors are though, an uncommon entity are now a days increasingly being recognized and scheduled for tumor excision. The perioperative care of these patients possess many challenges to the anesthesiologists. These are related to many concerns including mediastinal masses, related to adjoining structures, airway management and peri-operative analgesic.

Here we report the successful anesthetic management in patient with posterior mediastinum posted for thoracotomy and neck dissection.

Case Report

A 60 year old male with complaints of cough and dysphagia to the OPD. He was diagnosed to have tumor in posterior mediastinum probably malignant. The patient had no history of dyspnea, chest discomfort, headache, visual disturbances and altered mentation. On examination, patient was not tachypnic, RS and CVS examination was normal. All the hematological and biochemical examination results were within normal limits. Contrast enchased CT of thorax showed a 3x3x5 lesion in the superior aspect of posterior mediastinum on the right side which was abetting the oesophagus right IJV thrombosis were noted. Pulmonary functions tests were done and spirometry and no compression on trachea noted. On day of surgery.

18G IV access was secured on the left upper limb. Under aseptic precautions triple lumen central line was placed in right femoral vein. For management of intra and post operative analgesic 18G epidural catheter was inserted at T7-T8 intervertebral space. A correct placement was confirmed by giving test dose of 2% Inj. lignocaine with adrenaline 3cc. All standard monitors were connected pulse oximeter, NIBP, ECG-5 lead and Capnograph. A 20G catheter was placed in left radial artery for IBP monitoring and ABG analysis.

The patient had no signs and symptoms of tracheobronchial obstruction. Patient was premedicated with Inj. glycopyrrolate 0.2mg, and Inj.fentanyl 100 mcg. Preoxygenated with 100% oxygen. Pt was induced with Inj. Propofol 120 mg. After confirming the easiness of bag mask ventilation neuromuscular blockade was achieved with 100 mg Inj. succinylcholine 100 mg. Patient was intubated with left sided 37F double lumen tube using a Macintosh laryngoscope and correct placement of tube was confirmed with pediatric fibreoptic bronchoscope and fixed in place.

Initially patients both lungs were ventilated with O2:N2O-40:60 and Isoflurane 0.4%. After the patient was put to position, 1 lung ventilation was initiated. The left lung was ventilated with o2:n20-50:50, neuromuscular blockade was maintained with 1mg inj.vecuronium. Epidural analgesia was initiated with 0.125% 8m of Inj. Bupivacaine.

The surgery lasted for 7 hours and no intra-operative complications were noted. A frozen section biopsy was done and reported as malignancy of epithelial origin. Tumour was debulked and right ICD was placed. At the end of surgery double lumen was exchanged with 8.5mm ID cuffed portex ET tube. ABG analysis was done during one lung ventilation and after resumption of bilateral ventilation and report was normal. The patient was extubated after confirming complete reversal from neuromuscular blockade.

The patient was shifted to ICU for post-operative care and management. Epidural analgesia was continued. The patient did not require any assisted ventilation. Patient was discharged 2 weeks after the surgery.

Discussion

Mediastinal masses are known to be a nightmare for anesthesiologists.[2] Its clinical presentations and associated problems depend on the size, location, and pathology of the mass and the thoracic structures affected by the mass. Posterior mediastinal masses predominantly produce effects on the spinal cord and rarely cause airway problem and neuromuscular blockade.[1] Compression of airway or cardiovascular structures in patients with mediastinal masses may be due to mass effect dependent on patient position and there may be dramatic improvement or deterioration after repositioning, therefore it is important to know pre-operatively the position in which the patient is most comfortable and experiences least symptoms of airway obstruction. This may occur following decrease in chest wall tone associated with neuromuscular blockade.[2]

Decreased cardiac output and blood pressure even with effective ventilation is a risk in mediastinal mass due to the compression of the great vessels and right atrium. Others have suggested that, with positive pressure ventilation blood volume shifts from intrathoracic to the extra thoracic space leading to hypotension[3]

Lung isolation is commonly used because of the ease of surgical exposure, good access to the target, and prevention of contamination caused by hemorrhage or infection. The most common

method of adult one lung ventilation features the use of a double lumen ET tube.

DLTs provide the anesthesiologist with the capability to suction either lung independently while maintaining isolation, as well as the advantage of maintaining a cuff inflated for sustained protection. A Ultimately, a DLT optimizes the management of a patient on OLV, allowing troubleshooting of challenges such as oxygenation, ventilation, and contamination without compromising the protection of the non-diseased lung.[5]

Conclusion

Mediastinal tumor resection surgery is a very complicated and requires a team effect-anesthesiologists, surgeon and intensivist. A thorough pre-operative assessment of the patient should be done before the conduct of anesthesia to avoid the complications due to posterior mediastinal mass.

Conflict of Interest: NIL

References

1. Lalwani P, Chawla R, Kumar M, Tomar AS, Raman P. Posterior mediastinal mass: do we need to worry much? Ann Card Anaesth. 2013
2. Saiyed A, Meena R, Ambesh B, Verma I. Anesthetic management of posterior mediastinal mass: a case report. Egypt J Cardiothorac Anesth 2014;8:104-7
3. Tewari S, Goyal P, Rastogi A, Agarwal A, Singh PK.Ann Card Anaesth. 2017 Jul-Sep;20(3):359-361
4. David M. Anderson, Galina T. Dimitrova, Hamdy Awad; Patient with Posterior Mediastinal Mass Requiring Urgent Cardiopulmonary Bypass. Anesthesiology 2011; 114:1488–1493
5. John F. Zaki, Stephanie F. Tran, Travis Markham, Warren Choi, Rodolfo E. Perez, et al. (2017), Does the Patient Need Lung Protection or Lung Isolation? A Case Report and Literature Review of One-Lung Ventilation Guidelines. Int J Ane & Rel. 1:1, 13-15

Subscription Information

India
Institutional (1 year) (Print+Online): INR 8000

Rest of the World
Institutional (1 year) (Print+Online): $ 607

Payment instructions Online payment link:
http://rfppl.co.in/payment.php?mid=15

Cheque/DD:
Please send the US dollar check from outside India and INR check from India made payable to 'Red Flower Publication Private Limited'. Drawn on Delhi branch

Wire transfer/NEFT/RTGS:
Complete Bank Account No. 604320110000467
Beneficiary Name: Red Flower Publication Pvt. Ltd.
Bank & Branch Name: Bank of India, Mayur Vihar
MICR Code: 110013045
Branch Code: 6043
IFSC Code: BKID0006043 (used for RTGS and NEFT transactions)
Swift Code: BKIDINBBDOS

Send all Orders to: Subscription and Marketing Manager, **Red Flower Publication Pvt. Ltd.**, 48/41-42, DSIDC, Pocket-II, Mayur Vihar Phase-I, Delhi - 110 091(India)
Mobile: 8130750089, Phone: 91-11-79695648.
E-mail: info@rfppl.co.in, Website: www.rfppl.co.in

Indian Journal of Anesthesia and Analgesia

Library Recommendation Form

If you would like to recommend this journal to your library, simply complete the form given below and return it to us. Please type or print the information clearly. We will forward a sample copy to your library, along with this recommendation card.

Please send a sample copy to:

Name of Librarian

Name of Library

Address of Library

Recommended by:

Your Name/ Title

Department

Address

Dear Librarian,

I would like to recommend that your library subscribe to the Indian Journal of Anesthesia and Analgesia. I believe the major future uses of the journal for your library would provide:

1. Useful information for members of my specialty.
2. An excellent research aid.
3. An invaluable student resource.

I have a personal subscription and understand and appreciate the value an institutional subscription would mean to our staff.

Should the journal you're reading right now be a part of your University or institution's library? To have a free sample sent to your librarian, simply fill out and mail this today!

Red Flower Publication Pvt. Ltd.
48/41-42, DSIDC, Pocket-II
Mayur Vihar Phase-I
Delhi - 110 091(India)
Phone: 91-11-79695648, Cell: +91-9821671871
E-mail: info@rfppl.co.in

Case Report

Indian Journal of Anesthesia and Analgesia
Volume 9 Number 4 July-August 2022
DOI: http://dx.doi.org/10.21088/ijaa.2349.8471.9422.22

Ultrasound Guided Pericapsular Nerve Group and Lateral Femoral Cutaneous Nerve Block for Perioperative Analgesia in a Patient with Ischemic Heart Disease on Anticoagulants Posted for Corrective Hip Surgery

Dhanalakshmi M[1], Ravi Madhusudhana[2], Sumanth T[3]

Author's Affiliation: [1]Postgraduate, [2]Professor & HOD, [3]Assistant Professor, Department of Anesthesiology, Sri Devaraj Urs Medical College, SDUAHER, Kolar, Karnataka 563101, India.

How to cite this article:

Dhanalakshmi. M, Ravi Madhusudhana, Sumanth T/Ultrasound Guided Pericapsular Nerve Group and Lateral Femoral Cutaneous Nerve Block for Perioperative Analgesia in a Patient with Ischemic Heart Disease on Anticoagulants Posted for Corrective Hip Surgery/Indian J Anesth Analg. 2022;9(4):196-198.

Corresponding Author: Ravi Madhusudhana, Professor & HOD, Department of Anesthesiology, Sri Devaraj Urs Medical College, SDUAHER, Tamaka, Kolar, Karnataka 563101, India.
E-mail: ravijaggu@gmail.com
Received on: 25.04.2022, **Accepted on:** 26.05.2022

Abstract

Introduction : Ultrasound guided pericapsular nerve group block is an approach to block the articular branches of femoral, obturator and accessory obturator nerves that supply the anterior hip capsule and has been found to provide good perioperative analgesia.

Case Report: An 86 year old male, who suffered fracture neck of femur after an alleged slip and fall, was posted for emergency corrective surgery. Perioperative evaluation revealed ischemic heart disease, status post PTCA with preserved LV systolic function and on oral anticoagulant rivaroxaban and antiplatelet medication clopidogrel. Coagulation profile was within acceptable range. Cardiac Troponins and Brain Natriuretic peptide (BNP) were measured. General anesthesia was planned to this patient in view of relative contraindication to central neuraxial block i.e. patient being on anticoagulants. Perioperative analgesia was provided with ultrasound guided pericapsular nerve group block for fracture site pain and lateral femoral cutaneous nerve block for surgical incision pain. Patient had stable hemodynamic with improved pain score (VAS & lt; 3) in the immediate postoperative period. There was no evidence of post-operative delirium and perioperative myocardial injury.

Conclusion : Ultrasound guided superficial regional nerve group block such as Pericapsular nerve group block, lateral femoral cutaneous nerve block can provide effective postoperative analgesia in patients where central neuraxial blocks are contraindicated.

Keywords : Anticoagulants, Hip fracture, Regional anesthesia.

Key Messages: Acute pain management in elderly patients is quite challenging to anesthesiologists due to medical comorbidities such as ischemic heart disease patients who experience greater pain are at increase risk in post operative period and patients on anticoagulants where central neuraxial blockade are contraindicated. Perioperative analgesia helps in intraoperative hemodynamic stability and post operative analgesia.

Introduction

Acute pain management of displaced femoral neck fractures in elderly patients is quite challenging to anesthesiologists due to physiological frailty, medical comorbidities, and cognitive impairment. Patients who experience greater pain are at increase risk of postoperative delirium, prolonged hospital stay and poorer health related quality of life. Ultrasound guided Pericapsular nerve group block is an approach to block the articular branches of femoral, obturator and accessory obturator nerves that supply the anterior hip capsule and has been found to provide good perioperative analgesia.[1]

Case Report

An 86 year old male, who suffered fracture neck of femur after an alleged slip and fall, was posted for emergency corrective surgery. Perioperative evaluation revealed ischemic heart disease, status post PTCA with preserved LV systolic function and on oral anticoagulant rivaroxaban and antiplatelet medication clopidogrel. Coagulation profile was within acceptable range. Cardiac Troponins and Brain Natriuretic peptide (BNP) were measured. General anesthesia was planned to this patient in view of relative contraindication to central neuraxial block i.e. patient being on anticoagulants. After informing the risks involved in the peri-operative period that include peri-operative myocardial injury, bleeding and hemodynamic instability, written informed consent was obtained from the patient. Intraoperative monitoring included ECG, SpO_2, Invasive blood pressure (IBP) and capnography. Careful induction of general anesthesia was done with graded doses of propofol and fentanyl, monitoring IBP all the time. Response to laryngoscopy was blunted with preservative free lignocaine i.v and succinylcholine was used for facilitating intubation. Perioperative analgesia was provided with ultrasound guided pericapsular nerve group block for fracture site pain and lateral femoral cutaneous nerve block for surgical incision pain. A local anesthetic mixture was prepared with 30 ml of 0.25% bupivacaine and 8 mg of dexamethasone. 20 ml of this mixture was used for PENG block and remaining 12 ml was used for lateral femoral cutaneous nerve block. Intraoperatively, hemodynamic variables were stable. Extubation was performed at the end of surgery following a smooth recovery from neuromuscular blockade. Visual analogue scale for pain was < 3 in the immediate postoperative period. There was no evidence of post-operative delirium. Trop T and BNP repeated 48 hours after surgery were comparable to preanesthetic values indicating no evidence of perioperative myocardial injury.

Discussion

Hip joint innervation is complex with nociceptors predominantly found in the anterior hip capsule and mechanoreceptors found in posterior capsule. Articular branches of femoral, obturator and accessory obturator nerve (AON) supply the hip joint.[1] Post-operative pain management for hip fracture surgery has always been a challenging goal. Multiple regional techniques have been used in the past, but there is no "best proven intervention" for hip analgesia. The main regional techniques include lumbar plexus block, lumbar epidural, femoral nerve block, sciatic nerve block, Fascia iliaca compartment block (FiCB), pericapsular injection, or obturator nerve block. Patients on anticoagulants are not ideal for deeper blocks that include epidural and lumbar plexus blocks. FiCB and femoral nerve blocks, though easier to perform, have been associated with quadriceps weakness. Also there is an ambiguity in nerve supply to hip capsule, with high articular branches arising from femoral and accessory obturator nerves in more than 40% of the population. A recent study has demonstrated evidence supporting the efficacy of FiCB and PENG blocks for producing a significant reduction in pain within 30 minutes of block placement.[2] The benefits of the PENG block include comfortable patient positioning for the procedure, no significant motor weakness, potential motor sparing effect, and superior analgesic efficacy.

The disadvantage is that it cannot be used as a sole anesthetic block for hip surgery and it can be used in combination with other nerve blocks like FICB for more extensive analgesia for hip surgery.[3] This reveals that PENG blocks may be a useful regional anesthetic technique for postoperative analgesia for primary hip surgery. PENG blocks in combination with lateral femoral cutaneous (LFCN) nerve block or local infiltration analgesia (LIA) may be needed for surgical incision pain. Myocardial Injury after Non cardiac surgery (MINS) is a potential peri-operative complication that is not commonly looked into. MINS is more likely to occur in patients who have increased risk factors. Monitoring such high risk patients with Cardiac biomarkers especially NT-Pro BNP has been used for early detection of MINS.[4] In our patient, who had IHD with PTCA status, BNP levels were not elevated more than pre-surgical level in the post-operative period.

Conclusion

PENG block is an effective regional analgesic

technique for surgeries involving hip fracture. PENG block together with Lateral femoral cutaneous nerve block can provide stable intraoperative hemodynamics with good postoperative analgesia, especially in elderly high risk patients undergoing corrective surgery. BNP can be used for monitoring MINS, in such high risk patients.

Conflict of Interest: Nil

References

1. Kukreja P, Avila A, Northern T, Dangle J, Kolli S, Kalagara H. A Retrospective Case Series of Pericapsular Nerve Group (PENG) Block for Primary Versus Revision Total Hip Arthroplasty Analgesia. Cureus 2020:19;1-8.
2. Allard C, Pardo E, de la Jonquière C, Wyniecki A, Soulier A, Faddoul A, Tsai ES, Bonnet F, Verdonk F. Comparison between femoral block and PENG block in femoral neck fractures: A cohort study. PLoS One. 2021: 4;1-11.
3. Kukreja P, Schuster B, Northern T, Sipe S, Naranje S, Kalagara H. Pericapsular Nerve Group (PENG) Block in Combination With the Quadratus Lumborum Block Analgesia for Revision Total Hip Arthroplasty: A Retrospective Case Series. Cureus. 2020:23;1-7.
4. Sessler DI, Khanna AK. Perioperative myocardial injury and the contribution of hypotension. Intensive Care Med. 2018:44;811-822.

Instructions to Authors

Submission to the journal must comply with the Guidelines for Authors.
Non-compliant submission will be returned to the author for correction.

To access the online submission system and for the most up-to-date version of the Guide for Authors please visit:

http://www.rfppl.co.in

Technical problems or general questions on publishing with **IJAA** are supported by Red Flower Publication Pvt. Ltd.'s Author Support team (http://rfppl.co.in/article_submission_system.php?mid=5#)

Alternatively, please contact the Journal's Editorial Office for further assistance.

Editorial Manager
Red Flower Publication Pvt. Ltd.
48/41-42, DSIDC, Pocket-II
Mayur Vihar Phase-I
Delhi - 110 091(India).
Mobile: 9821671871, Phone: 91-11-79695648
E-mail: author@rfppl.co.in

Case Report

Indian Journal of Anesthesia and Analgesia
Volume 9 Number 4 July-August 2022
DOI: http://dx.doi.org/10.21088/ijaa.2349.8471.9422.23

Anesthetic Management of Achondroplastic Dwarf with Bronchial Asthma and Hypothyroidism Posted for Abdominal Hysterectomy

Vidya Shree C[1], Ravi Madhusudhana[2], Nagaseshu Kumari Vasantha[3], Sinchana B[4]

Author's Affiliation: [1]Junior Resident, [2]Professor & HOD, [3]Assistant Professor, [4]Senior Resident, Department of Anesthesiology, Sri Devaraj URS Medical College, SDUAHER, Kolar, Karnataka 563101, India.

How to cite this article:

Vidya Shree C, Ravi Madhusudhana, Nagaseshu Kumari Vasantha, et al. / Anesthetic Management of Achondroplastic Dwarf with Bronchial Asthma and Hypothyroidism Posted for Abdominal Hysterectomy/Indian J Anesth Analg. 2022;9(4):200-202.

Corresponding Author: Ravi Madhusudhana, Professor & HOD, Department of Anesthesiology, Sri Devaraj URS Medical College, SDUAHER, Kolar, Karnataka 563101, India.

E-mail: ravijaggu@gmail.com
Received on: 20.04.2022, **Accepted on:** 25.05.2022

Abstract

Introduction: Achondroplasia is most common cause of dwarfism caused by FGFR-3 gene mutation. It possess anesthetic challenges due to multiorgan system involvement, spine abnormality, difficulty in mask ventilation and endotracheal intubation.

Case Report: A 38yr old, female, case of achondroplastic dwarfism with history of bronchial asthma and hypothyroidism was posted for abdominal hysterectomy. She weighed 30 kgs and 43 cm in height.

Spine examination showed thoracolumbar kyphoscoliosis. Airway assessment revealed large tongue, receding mandible, Mallampatti class IV. Pulmonary function test suggested mild restrictive disease.

Difficult intubation trolley was kept ready. Routine monitoring, radial artery cannulation done for invasive blood pressure monitoring. Patient was given general anesthesia. On laryngoscopy, CL grade III view was obtained, with the aid of bougie endotracheal tube was placed. Delayed recovery time from general anesthesia was encountered, neuromuscular monitoring was doneandreversed and extubated uneventfully.

Conclusion: we present a successful anesthetic management of a dwarf patient with bronchial asthma and hypothyroidism who underwent hysterectomy. We emphasize the risk of neurological injury while extending the neck during laryngoscopy for tracheal intubation due to anatomical abnormalities in these patients. A detailed pre anesthetic evaluation evaluation and planning is utmost important and the anesthetic technique has to be individualized based on the patients anatomical characterstics and associated co-morbidities.

Keywords: Dwarf, Asthma, Hypothyroidism.

Key Messages: A 38 yrs old female patient with achondroplastic dwarfism (43cm tall) with associated comorbidities like bronchial asthma and hypothyroidism, thoracolumbar kyphoscoliosis and mild restrictive lung disease posted for abdominal hysterectomy possesses various anesthetic challenges. Since multiple systems are involved preanesthetic evaluation, preoperative optimization of the patient and planning of anesthesia is important. As the spread of drug in regional anesthesia is unpredictable, we planned general anesthesia. A successful management of major abdominal surgery in such patients, with anesthetic challenges and implications in these patients are reviewed in this case report.

Introduction

Dwarfism is defined as failure to achieve a height of 148cm by adulthood.[2] Achondroplasia is the most common cause of dwarfism with a autosomal dominant trait and caused by mutation in Fibroblast Growth Factor Receptor 3 (FGFR-3) gene.[1] It possess multiple anesthetic challenges due to multiorgan system involvement, spine abnormality, difficulty in mask ventilation and endotracheal intubation.[3] We report a successful anesthetic management in a patient with achondroplastic dwarfism with hypothyroidism and bronchial asthma posted for abdominal hysterectomy.

Case Report

A 38 year old, female patient, case of achondroplastic dwarfism came with complaints of mass per abdomen posted for total abdominal hysterectomy. She was a known case of bronchial asthma and hypothyroidism on medication since 3 years. She was 43cm in height and weighed 30kgs. On general physical examination, she was afebrile with pulse of 96/min, blood pressure of 130/90mm Hg and respiratory rate of 16/min. She had normal intelligence. Examination of spine showed a gross thoracolumbar kyphoscoliosis (Fig. 1). Airway assessment revealed large tongue with receding mandible, buck teeth. Mouth opening was adequate with Mallampatti class IV. Her blood investigations were within normal limit. Pulmonary function test suggestive of mild restrictive disease. Electrocardiography was normal and transthoracic echocardiography showed Mitral valve prolapse with mild MR, normal chamber dimensions and ventricular ejection fraction of 60%. MRI pelvis showed a large pelvico-abdominal heterogeneous lobulated mass connected with uterine fundus. Patient was advised to continue Tab. Thyronorm 50mcg and salbutamol and theophylline, nebulization with duolin and budecort on the day of surgery.

Fig. 1: Kyphoscoliosis

Written informed consent with high risk explained was obtained. 18G IV access was secured. Difficult intubation trolley including bougie, video laryngoscope was kept ready. Emergency resuscitation drugs, equipment and defibrillator were kept ready. After applying routine monitoring, left radial artery cannulation was done for invasive blood pressure monitoring because non-invasive blood pressure measurements were inconsistent due to shortness of the limbs. Preoxygenation done with 100% oxygen for 3 mins. Patient was premedicated and anesthesia was induced with Inj. Ketamine 60mg IV. On laryngoscopy, a Cornmack and Lehane grade III view was obtained using bougie a 6.5mm cuffed endotracheal tube was successfully placed and fixed at 17cm after confirming bilateral air entry equal. Anesthesia was maintained with oxygen, nitrous oxide and isoflurane. Muscle relaxant Inj. Atracurium was given. Blood loss was significant, 1 unit of PRBC was transfused and patient was hemodynamically stable in the intraoperative period. Delayed recovery time from general anesthesia was seen and neuromuscular monitoring was done using train of four (TOF) stimulation when TOF ratio was > 0.7

patient was reversed with Inj. Neostigmine 1.5mg IV and Inj. Glycopyrolate 0.2mg IV and extubated uneventfully. She was shifted to post operative care unit. Postoperative analgesia was maintained with inj. Paracetamol 15mg/kg IV TID.

Discussion

Achondroplasia is the most common cause of dwarfism caused by gain of function mutation in fibroblast growth factor receptor 3 (FGFR3) gene. 80% mutations are the result of sporadic mutation while 20% are autosomal dominant. Incidence is approximately 0.5-1.5 in 10,000 newborns. Females are more affected than the male.[1,4] A general

recommendation regarding the ideal anesthetic technique cannot be given, as both general and regional anesthesia present potential problems.[1] Short stature, enlarged head, saddle nose, maxillary hypoplasia, macroglossia, megalocephaly with protrubent forehead and narrow nasal passages and nasopharynx are some features that contribute to difficult airway in these patients.[2,4] These patients have respiratory problems that may complicate general anesthesia, particularly restrictive lung disease due to thoracic kyphoscoliosis. There is ventilation perfusion mismatch due to decreased FRC and increased closing volume leading to atelectasis.[3] Kyphoscoliosis associated with narrowing of the vertebral canal, reduced distance between the pedicels and osteophyte formation can produce technical difficulty for spinal anesthesia.[3] A narrow epidural space increases the difficulty in epidural catheter insertion and also limits the spread of local anesthetics.[2] The consensus among anesthesiologists thus remains to avoid neuraxial anesthesia in patients with skeletal dysplasia.[6] There are no definite recommendations regarding anesthetic procedures, the decision has to be taken on individual basis after a detailed risk-benefit analysis.[5]

Conclusion

In our case report, we present a successful anesthetic management of a dwarf patient with bronchial asthma and hypothyroidism who underwent hysterectomy. We emphasize the risk of neurological injury while extending the neck during laryngoscopy for tracheal intubation due to anatomical abnormalities in these patients. A detailed pre anesthetic evaluation evaluation and planning is utmost important and the anesthetic technique has to be individualized based on the patients anatomical characteristics and associated co-morbidities. It provides instructive significance for anesthesia management in this rare condition.

Conflict of Interest: NIL

References

1. Deshpande JP, Kale JH, Godbole MR, Phalke TL. Anesthetic management of an achondroplastic dwarf with difficult airway and kyphoscoliosis for total abdominal hysterectomy. Indian J ClinAnaesth 2021;8:475-478.
2. A Jain, K Jain, JK Makkar& K Mangal. Case study: Anesthetic management of an achondroplastic dwarf undergoing radical nephrectomy. Southern African Journal of Anesthesia and Analgesia 2010;16:2, 77-79.
3. Karnalkar AP, Deshpande A. Anesthesia management of patient with achondroplasia for abdominal hysterectomy. Int J Sci Rep 2015;1:264-6.
4. NeisevilieNisa, Puneet Khanna, Dhruv Jain. Anesthetic Management of an Achondroplastic Dwarf with Difficult Airway and Spine for Total Hip Replacement: A Case Report. Gen Med (Los Angeles) 2016;4:227.
5. TasnimN, Ghani M, Kumar S, Naeem S, Luqman S. Successful pregnancy and delivery in a women with achondroplasia. J Pak Med Assoc. 2021;71:146- 149.
6. Tyagi A, Dass C, Rao NT, Soni KD. Emergency anesthetic management of an achondroplastic elderly gravida with polytrauma. Int J CritIlln Inj Sci. 2019;9:191-193.

Guidelines for Authors

Manuscripts must be prepared in accordance with "Uniform requirements for Manuscripts submitted to Biomedical Journal" developed by international committee of medical Journal Editors

Types of Manuscripts and Limits

Original articles: Up to 3000 words excluding references and abstract and up to 10 references.

Review articles: Up to 2500 words excluding references and abstract and up to 10 references.

Case reports: Up to 1000 words excluding references and abstract and up to 10 references.

Online Submission of the Manuscripts

Articles can also be submitted online from http://rfppl.co.in/customer_index.php.

I) First Page File: Prepare the title page, covering letter, acknowledgement, etc. using a word processor program. All information which can reveal your identity should be here. use text/rtf/doc/PDF files. Do not zip the files.

2) Article file: The main text of the article, beginning from Abstract till References (including tables) should be in this file. Do not include any information (such as acknowledgement, your name in page headers, etc.) in this file. Use text/rtf/doc/PDF files. Do not zip the files. Limit the file size to 400 Kb. Do not incorporate images in the file. If file size is large, graphs can be submitted as images separately without incorporating them in the article file to reduce the size of the file.

3) Images: Submit good quality color images. Each image should be less than 100 Kb in size. Size of the image can be reduced by decreasing the actual height and width of the images (keep up to 400 pixels or 3 inches). All image formats (jpeg, tiff, gif, bmp, png, eps etc.) are acceptable; jpeg is most suitable.

Legends: Legends for the figures/images should be included at the end of the article file.

If the manuscript is submitted online, the contributors' form and copyright transfer form has to be submitted in original with the signatures of all the contributors within two weeks from submission. Hard copies of the images (3 sets), for articles submitted online, should be sent to the journal office at the time of submission of a revised manuscript. Editorial office: Red Flower Publication Pvt. Ltd., 48/41-42, DSIDC, Pocket-II, Mayur Vihar Phase-I, Delhi – 110 091, India, Phone: 91-11-79695648, Cell: +91-9821671871. E-mail: author@rfppl.co.in. Submission page: http://rfppl.co.in/article_submission_system.php?mid=5.

Preparation of the Manuscript

The text of observational and experimental articles should be divided into sections with the headings: Introduction, Methods, Results, Discussion, References, Tables, Figures, Figure legends, and Acknowledgment. Do not make subheadings in these sections.

Title Page

The title page should carry

1) Type of manuscript (e.g. Original article, Review article, Case Report)

2) The title of the article, should be concise and informative;

3) Running title or short title not more than 50 characters;

4) The name by which each contributor is known (Last name, First name and initials of middle name), with his or her highest academic degree(s) and institutional affiliation;

5) The name of the department(s) and institution(s) to which the work should be attributed;

6) The name, address, phone numbers, facsimile numbers and e-mail address of the contributor responsible for correspondence about the manuscript; should be mentoined.

7) The total number of pages, total number of photographs and word counts separately for abstract and for the text (excluding the references and abstract);

8) Source(s) of support in the form of grants, equipment, drugs, or all of these;

9) Acknowledgement, if any; and

l0) If the manuscript was presented as part at a meeting, the organization, place, and exact date on which it was read.

Abstract Page

The second page should carry the full title of the manuscript and an abstract (of no more than 150 words for case reports, brief reports and 250 words for original articles). The abstract should be structured and state the Context (Background), Aims, Settings and Design, Methods and Materials, Statistical analysis used, Results and Conclusions. Below the abstract should provide 3 to 10 keywords.

Introduction

State the background of the study and purpose of the study and summarize the rationale for the study or observation.

Methods

The methods section should include only information that was available at the time the plan or protocol for the study was written such as study approach, design, type of sample, sample size, sampling technique, setting of the study, description of data collection tools and methods; all information obtained during the conduct of the study belongs in the Results section.

Reports of randomized clinical trials should be based on the CONSORT Statement (http:// www. consort-statement. org). When reporting experiments on human subjects, indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional or regional) and with the Helsinki Declaration of 1975, as revised in 2000 (available at http://www.wma. net/e/policy/l7-c_e.html).

Results

Present your results in logical sequence in the text, tables, and illustrations, giving the main or most important findings first. Do not repeat in the text all the data in the tables or illustrations; emphasize or summarize only important observations. Extra or supplementary materials and technical details can be placed in an appendix where it will be accessible but will not interrupt the flow of the text; alternatively, it can be published only in the electronic version of the journal.

Discussion

Include summary of key findings (primary outcome measures, secondary outcome measures, results as they relate to a prior hypothesis); Strengths and limitations of the study (study question, study design, data collection, analysis and interpretation); Interpretation and implications in the context of the totality of evidence (is there a systematic review to refer to, if not, could one be reasonably done here and now?, What this study adds to the available evidence, effects on patient care and health policy, possible mechanisms)? Controversies raised by this study; and Future research directions (for this particular research collaboration, underlying mechanisms, clinical research). Do not repeat in detail data or other material given in the Introduction or the Results section.

References

List references in alphabetical order. Each listed reference should be cited in text (not in alphabetic order), and each text citation should be listed in the References section. Identify references in text, tables, and legends by Arabic numerals in square bracket (e.g. [10]). Please refer to ICMJE Guidelines (http://www.nlm.nih.gov/bsd/uniform_ requirements.html) for more examples.

Standard journal article

[1] Flink H, Tegelberg Å, Thörn M, Lagerlöf F. Effect of oral iron supplementation on unstimulated salivary flow rate: A randomized, double-blind, placebo-controlled trial. J Oral Pathol Med 2006; 35: 540–7.

[2] Twetman S, Axelsson S, Dahlgren H, Holm AK, Källestål C, Lagerlöf F, et al. Caries-preventive effect of fluoride toothpaste: A systematic review. Acta Odontol Scand 2003; 61: 347–55.

Article in supplement or special issue

[3] Fleischer W, Reimer K. Povidone-iodine antisepsis. State of the art. Dermatology 1997; 195 Suppl 2: 3–9.

Corporate (collective) author

[4] American Academy of Periodontology. Sonic and ultrasonic scalers in periodontics. J Periodontol 2000; 71: 1792–801.

Unpublished article

[5] Garoushi S, Lassila LV, Tezvergil A, Vallittu PK. Static and fatigue compression test for particulate filler composite resin with fiber-reinforced composite substructure. Dent Mater 2006.

Personal author(s)

[6] Hosmer D, Lemeshow S. Applied logistic regression, 2nd edn. New York: Wiley-Interscience; 2000.

Chapter in book

[7] Nauntofte B, Tenovuo J, Lagerlöf F. Secretion and composition of saliva. In: Fejerskov O,

Kidd EAM, editors. Dental caries: The disease and its clinical management. Oxford: Blackwell Munksgaard; 2003. pp 7–27.

No author given

[8] World Health Organization. Oral health surveys - basic methods, 4th edn. Geneva: World Health Organization; 1997.

Reference from electronic media

[9] National Statistics Online—Trends in suicide by method in England and Wales, 1979–2001. www.statistics.gov.uk/downloads/theme_health/HSQ20.pdf (accessed Jan 24, 2005): 7–18. Only verified references against the original documents should be cited. Authors are responsible for the accuracy and completeness of their references and for correct text citation. The number of reference should be kept limited to 20 in case of major communications and 10 for short communications.

More information about other reference types is available at www.nlm.nih.gov/bsd/uniform_requirements.html, but observes some minor deviations (no full stop after journal title, no issue or date after volume, etc.).

Tables

Tables should be self-explanatory and should not duplicate textual material.

Tables with more than 10 columns and 25 rows are not acceptable.

Table numbers should be in Arabic numerals, consecutively in the order of their first citation in the text and supply a brief title for each.

Explain in footnotes all non-standard abbreviations that are used in each table.

For footnotes use the following symbols, in this sequence: *, ¶, †, ‡‡,

Illustrations (Figures)

Graphics files are welcome if supplied as Tiff, EPS, or PowerPoint files of minimum 1200x1600 pixel size. The minimum line weight for line art is 0.5 point for optimal printing.

When possible, please place symbol legends below the figure instead of the side.

Original color figures can be printed in color at the editor's and publisher's discretion provided the author agrees to pay.

Type or print out legends (maximum 40 words, excluding the credit line) for illustrations using double spacing, with Arabic numerals corresponding to the illustrations.

Sending a revised manuscript

While submitting a revised manuscript, contributors are requested to include, along with single copy of the final revised manuscript, a photocopy of the revised manuscript with the changes underlined in red and copy of the comments with the point-to-point clarification to each comment. The manuscript number should be written on each of these documents. If the manuscript is submitted online, the contributors' form and copyright transfer form has to be submitted in original with the signatures of all the contributors within two weeks of submission. Hard copies of images should be sent to the office of the journal. There is no need to send printed manuscript for articles submitted online.

Reprints

Journal provides no free printed, reprints, however a author copy is sent to the main author and additional copies are available on payment (ask to the journal office).

Copyrights

The whole of the literary matter in the journal is copyright and cannot be reproduced without the written permission.

Declaration

A declaration should be submitted stating that the manuscript represents valid work and that neither this manuscript nor one with substantially similar content under the present authorship has been published or is being considered for publication elsewhere and the authorship of this article will not be contested by any one whose name(s) is/are not listed here, and that the order of authorship as placed in the manuscript is final and accepted by the co-authors. Declarations should be signed by all the authors in the order in which they are mentioned in the original manuscript. Matters appearing in the Journal are covered by copyright but no objection will be made to their reproduction provided permission is obtained from the Editor prior to publication and due acknowledgment of the source is made.

Approval of Ethics Committee

We need the Ethics committee approval letter from an Institutional ethical committee (IEC) or an institutional review board (IRB) to publish your Research article or author should submit a statement that the study does not require ethics approval along with evidence. The evidence could either be consent from patients is available and there are no ethics issues in the paper or a letter from an IRB stating that the study in question does not require ethics approval.

Abbreviations

Standard abbreviations should be used and be spelt out when first used in the text. Abbreviations should not be used in the title or abstract.

Checklist

- Manuscript Title
- Covering letter: Signed by all contributors
- Previous publication/ presentations mentioned, Source of funding mentioned
- Conflicts of interest disclosed

Authors

- Middle name initials provided.
- Author for correspondence, with e-mail address provided.
- Number of contributors restricted as per the instructions.
- Identity not revealed in paper except title page (e.g. name of the institute in Methods, citing previous study as 'our study')

Presentation and Format

- Double spacing
- Margins 2.5 cm from all four sides
- Title page contains all the desired information. Running title provided (not more than 50 characters)
- Abstract page contains the full title of the manuscript
- Abstract provided: Structured abstract provided for an original article.
- Keywords provided (three or more)
- Introduction of 75–100 words
- Headings in title case (not ALL CAPITALS). References cited in square brackets
- References according to the journal's instructions

Language and grammar

- Uniformly American English
- Abbreviations spelt out in full for the first time. Numerals from 1 to l0 spelt out
- Numerals at the beginning of the sentence spelt out

Tables and figures

- No repetition of data in tables and graphs and in text.
- Actual numbers from which graphs drawn, provided.
- Figures necessary and of good quality (color)
- Table and figure numbers in Arabic letters (not Roman).
- Labels pasted on back of the photographs (no names written)
- Figure legends provided (not more than 40 words)
- Patients' privacy maintained, (if not permission taken)
- Credit note for borrowed figures/tables provided
- Manuscript provided on a CDROM (with double spacing)

Submitting the Manuscript

- Is the journal editor's contact information current?
- Is the cover letter included with the manuscript? Does the letter:

1. Include the author's postal address, e-mail address, telephone number, and fax number for future correspondence?
2. State that the manuscript is original, not previously published, and not under concurrent consideration elsewhere?
3. Inform the journal editor of the existence of any similar published manuscripts written by the author?
4. Mention any supplemental material you are submitting for the online version of your article. Contributors' Form (to be modified as applicable and one signed copy attached with the manuscript)