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ISSN-L:2958-7794
Volume 1, Issue 2, November 2022

PMJ

Pabna Medical College Journal

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ISSN-L:2958-7794

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Vol. 1 No. 2, November 2022

Editorial

Original Articles

PABNA MEDICAL COLLEGE JOURNAL (PMJ)

Official Journal of Pabna Medical College, Bangladesh

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Published by : Teachers Association, Pabna Medical College, Pabna, Bangladesh
Phone: +88 01717033773, Email: pmc@dghs.gov.bd

Printed at : Asian Colour Printing, 130, DIT Extension Road, Fakirerpool, Dhaka-1000, Bangladesh.
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Pabna Medical College Journal (PMJ)

Official Journal of Pabna Medical College, Bangladesh

ABOUT US

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Pabna Medical College Journal is a biannual, open access, double-blinded peer-reviewed journal. It publishes original articles, editorials and case reports based on Community, Clinical and hospital based laboratory work, field work, clinical trials and various other studies by scientific means related to the disciplines of medical and health sciences. It also accepts review articles, meta-analysis, conference proceedings, news related to medical science and letters to the editor.

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The editor takes the final decision based on the reviewers' comment. The decision may be any one of the followings:

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- When registering an account we ask you to log in and provide certain personal information (such as your name and email address), and there is the option to register using an ORCiD which will pre-fill the registration form.
- Reviewers can also be registered by editors who invite them to review a specific article. This requires the editor to provide the reviewer's First Name, Last Name, and Email address. Normally this will be done as part of the process of inviting you to review the article or book.
- On submitting a review, the reviewer includes a competing interest statement, they may answer questions about the quality of the article, and they will submit their recommendation.

3.2 why we collect the data

- The data entered is used to invite the reviewer to peer review the article or book, and to contact the reviewer during and the review process.
- If you submit a review then the details of your review, including your recommendation, your responses to any review form, your free-form responses, your competing interests statement, and any cover letter are recorded.

3.3 what we do (and don't do) with the data

- This data is not shared publicly and is only accessible by the Editor and system administrators of that journal or press.
- The data will only be used in connection with that journal or press.
- Data that is retained post final decision is kept to conform to publication ethics and best practice, to provide evidence of peer review, and to resolve any disputes relating to the peer review of the article or book.

- For journals or presses that publish the peer reviews, you will be asked to give consent to your review being published, and a subset of the data you have submitted will become part of the published record.

3.4 what to do if you want to get a copy of your data, or want your data to be removed

- If you would no longer like to be registered as a reviewer you can edit your profile and tick the box 'stop being a reviewer'. This will remove you from the reviewer database, however any existing reviews you may have carried out will remain.
- If you have been contacted by an editor to peer review an article this means that you have been registered in the system. If you would not like to be contacted for peer review you can reply to the email requesting that your data be deleted.

4. When being registered as a co-author

4.1 what data we collect

- Co-author data is entered by the submitting author. The submitting author will already have a user account. According to standard publishing practice, the submitting author is responsible for obtaining the consent of their co-authors to be included (including having their personal data included) in the article/book being submitted to the journal/press.
- The requested personal data for co-authors are at the bare minimum; first name, last name, institution, country, email address. This can also include; ORCID ID, Title, Middle Name, Biographical Statement, Department, Twitter Handle, Linkedin Profile Name or ImpactStory ID.

4.2 why we collect the data

- Assuming that it is accepted for publication, this data forms part of the official published record in order for the provenance of the work to be established, and for the work to be correctly attributed.
- Author names, affiliations and emails are required for publication and will become part of the permanent cited record.

4.3 what we do (and don't do) with the data

- The co-author's personal data is stored in the author database. This personal data is only used in relation to the publication of the associated article.
- Any co-author data collected is added to the author database and is only used in association with the article the user is co-author on.

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Editorial

Common Ethical Issues in Medical Research and Publication

Ahmmad Taous

Historical background

Research changes the world, and it changes itself throughout the years. New things, including ethics of research, its implementation process always copes with the changing human behavior.

In the early 1960s, most notably in the United States, instances of unethical medical research was reported over the volunteers, especially those who were vulnerable or terminally sick, were treated with obvious disrespect and exposed to significant risks of harm. Among these were the infamous project conducted at the Brooklyn Jewish Chronic Disease Hospital. Here elderly patients with some disability, live cancer cells were injected which was considered as offensive! It was unclear that required informed consent of patients was sought or not! A study of infectious hepatitis C at the Willowbrook home for children with mental retardation, who were deliberately infected with hepatitis C, not only raised serious concerns in public, but also jeopardized the reputation of noble medical profession. In 1966, Henry Beecher's article, 'Ethics and Clinical Research,' in the New England Journal of Medicine reported 22 examples of medical research that did not follow the standard of ethics in treating the patients. Another incident happened in USA with nearly 40 years (1932–1972) duration; the U.S. National Health Service conducted a research titled the 'Tuskegee Study of Untreated Syphilis in the Negro Male.' About 600 black men were studied for syphilis. Among them, 399 had syphilis. The participants were never informed that they were involved in a research, and no informed consent was taken from them. Such unethical incidents necessitated the dire need of informed consent from participants. It was researchers' responsibility to be satisfied that the adequate information was supplied to the volunteers of research to meet all criteria of performing a research project.

The passion for success can also result in the coercion of human subjects to participate in the research. Another important aspect is misrepresentation or incomplete information of the medical facts to the patients in getting their consent signed for their participation in the research. In World War II, Nazi physicians performed medical experiments of injections of live viruses on prisoners, forceful immersion of people in ice water and compelling prisoners to ingest poison. In 1946, the War Crimes Tribunal at Nuremberg probed this and pronounced punishment against 16 of such physicians/ administrators, including death sentence to seven of them. There are a number of international ethical codes that act as guiding factors for facilitating an ethical research. The World War-II Nazi episode of prisoners led to emergence of the first international code of research ethics named as Nuremberg Code. This code has acted as a basis for all the subsequent codes of ethics that emerged later on. Under this code, a set of 10 directives were issued in order to satisfy moral, ethical and legal concepts in the conduct of human subject research.

Introduction

Research is the basement of knowledge which makes the building block of human civilization, and this is an integral part of progress. In the fast-expanding field of biomedical research, this has improved the quality and quantity of life. Historically, medical doctors are the privileged part of society who have an easy access to get the confidential and personal information regarding their health, diseases, and disabilities and they can use the information to carry out the research. Moreover, medical researchers have also enjoyed immunity from accountability due to high public involvement for science and medicine. This has resulted in some researchers conducting unethical researches. For instance, in World War II, medical doctors had conducted unethical experiments on human in the name of science,

resulting in harm and even death in some cases.1 More recently, the involvement of pharmaceutical industry in clinical trials have raised issues about how to safeguard patient's care and to ensure the published research findings are objective.

In the light of these ethical controversies, the **Declaration of Helsinki** was established to inform formal statement of ethical principles published by the World Medical Association (WMA) to guide the protection of human participants in medical research. The Declaration of Helsinki was adopted in 1964 by the 18th WMA General Assembly, at Helsinki. Although not without its controversies, it has served as the standard in medical research ethics.

Though this is not legally binding documents, it may govern the biomedical research and has established the research work not to harm the human mentally and physically it has many versions that changes, modifies or improves the terms and principles of ethical research. As the declaration was expanded and made more prescriptive, it became more controversial, which caused some organizations to alter some of its standards or abandon it entirely. Committee on Publication Ethics (COPE) was also founded in 1997 to address the breaches of research and publication ethics.

Ethical issues in research

Ethical issues matters in following fields of research:

- Study design and ethical approval
- Data analysis
- Authorship
- Conflict of interest
- Redundant publication and plagiarism
- Social and clinical value
- Scientific validity
- Fair subject selection

1. Study design and ethics approval

According to COPE, "good research should be well adjusted, well-planned, appropriately designed, and ethically approved. To conduct research to a lower standard may constitute misconduct." This is an important criterion, but it means that a researcher has big responsibly to ensure quality of research. To achieve this, a research protocol should be developed carefully, and agreed to by all contributors and collaborators, and the precise roles of each team member should be defined in initial period, including matters of authorship and publications. Research should seek to answer specific questions, rather than just collect data.

It is essential to obtain approval from the Institutional Review Board, or Ethics Committee, of the respective organizations for studies involving people, medical records, and anonymised human tissues. The research proposal should discuss potential ethical issues pertaining to the research. The researchers should pay special attention to vulnerable subjects to avoid breech of ethical codes (e.g. children, prisoners, pregnant women, mentally challenged, educationally and economically disadvantaged). Patient information sheet should be given to the subjects during recruitment, detailing the objectives, procedures, potential benefits and harms, as well as rights to refuse participation in the research. Consent should be explained and obtained from the subjects or guardians, and steps should be taken to ensure confidentiality of information provided by the subjects.

2. Data analysis

It is the responsibility of the researcher to analyze the data appropriately. Data should be collected with informed consent and protecting the volunteers. Intentional omission of result may cause misinterpretation and mislead the readers. Fabrication and falsification of data do constitute misconduct. For example, in a clinical trial, if a drug is found to be ineffective, this study should be reported. Sometimes researchers hide the negative report and this leads the research to fabricated result or hypothesis. This happens partly by pressure from the pharmaceutical industry which funds the clinical trial. To ensure appropriate data analysis, all sources and methods used to obtain and analyze data should be fully disclosed. The discussion section of a paper should mention any issues of bias, and explain how they have been dealt with in the design and interpretation of the study.

3. Authorship

There is no universally agreed definition of authorship. It is generally agreed that an author should have made substantial contribution to the intellectual content, including conceptualising and designing the study; acquiring, analyzing and interpreting the data. The author should also take

responsibility to certify that the manuscript represents valid work and take public responsibility for the work. Finally, an author is usually involved in drafting or revising the manuscript, as well as approving the submitted manuscript.

The ICMJE recommends that authorship be based on the following 4 criteria:

- Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; and
- Drafting the work or reviewing it critically for important intellectual content; and
- Final approval of the version to be published; and
- Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Contributors who meet fewer than all 4 of the above criteria for authorship should not be listed as authors, but they should be acknowledged. Examples of activities that alone (without other contributions) do not qualify a contributor for authorship is acquisition of funding; general supervision of a research group or general administrative support; and writing assistance, technical editing, language editing, and proofreading. Those whose contributions do not justify authorship may be acknowledged individually or together as a group under a single heading (e.g. "Clinical Investigators" or "Participating Investigators"), and their contributions should be specified (e.g., "served as scientific advisors," "critically reviewed the study proposal," "collected data," "provided and cared for study patients," "participated in writing or technical editing of the manuscript").

4. Conflicts of interest

Actually this is the conflict between science and the researcher. The researcher or the issues they published is not for public interest but he or a specific company or business farm or a group of people become benefitted by this type of research. These conflicts also include political, academic or financial interest. Financial interests may include employment, research funding, stock or share ownership, payment for lecture or travel, consultancies and company support for staff. This issue is especially pertinent in biomedical research where a substantial number of clinical trials are funded by pharmaceutical company.

Such interests, where relevant, should be discussed in the early stage of research. The researchers need to take extra effort to ensure that their conflicts of interest do not influence the methodology and outcome of the research. It would be useful to consult an independent researcher, or Ethics Committee, on this issue if in doubt. When publishing, these conflicts of interest should be declared to editors, and readers will judge for themselves whether the research findings are trustworthy.

5. Redundant publication and plagiarism

Redundant publication occurs when two or more papers, without full cross reference, share the same data, discussion points, or conclusions. However, previous publication of an abstract during the proceedings of meetings does not preclude subsequent submission for publication, but full disclosure should be made at the time of submission. This scenario of a research paper is called 'Self-plagiarism'. Actually the fact is hidden that the study was previously done and new one is copy only. Now a day, publication is important criteria for promotion and grant or funding for work. So researchers are under intense pressure to publish their work, which leads them to do such unethical activities; same paper is constructed in different language with new authorship!!

Therefore, it is important to disclose all sources of information, and if large amount of other people's written or illustrative materials is to be used, permission must be sought.

Conclusion

It is the duty of the researcher to ensure that research is conducted in an ethical and responsible manner from planning to publication. Researchers and authors should familiarize themselves with these principles and follows them strictly. Any potential ethical issues in research and publication should be discussed openly within the research team. If in doubt, it is advisable to consult the respective institutional review board (IRB) for their expert opinions.

Pabna Medical College Journal 2022;1(2): 34-36.

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Original Article

Evaluation of Per operative Causes of Taste Distortion after Tonsillectomy

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Article info
Received : 02.12.2022
Accepted : 15.12.2022
No. of Tables : 4
No. of Figure : 0
No. of References : 16

Cite the Article:
Chowdhury NH, Islam MA, Mohammad T, Kazi MM, Khan SR. Evaluation of per operative causes of taste distortion after Tonsillectomy. Pabna Med. Coll. J. 2022;1(2): 38-42.

Keywords: Taste distortion, Methods of Tonsillectomy, Heat injury.
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Abstract

Background: *Tonsillectomy is a relatively safe procedure in expert hand, but it is associated with certain complications. Taste distortion (dysgeusia) is a rare complication of Tonsillectomy that was complained by some patients after operation.*

Methods: *This retrospective study was done searching the medical records of Department of ENT, Bangladesh Medical College, Dhaka. Total 607 patient was studied, from the year 2012 to 2022. All methods of Tonsillectomy were considered for study.*

Result: *Taste distortion was found in 1.15% cases of cold steel tonsillectomy, 0.5% in diathermy coagulation tonsillectomy but no case was found in cases of LASER or coblation method.*

Conclusion: *No dissection of tissues beyond lower pole of tonsil is recommended.*

Pabna Medical College Journal 2022;1(2): 38-42.

Introduction

Taste disturbance is an unusual complication of tonsillectomy of which there are very few reports in the literature. The possible causes of this rare complication are: (1) direct or indirect damage to the glossopharyngeal nerve or its lingual branch (LBGN), (2) microcirculatory jeopardy to tongue due to prolong compression time.[1] We report taste disturbance following tonsillectomy that was performed for chronic tonsillar hypertrophy. During surgery, hypertrophic tonsils were found to be sited deeply into the tonsillar bed, especially at the lower pole of the tonsil. Pathologic examination following tonsillectomy revealed chronic infection at the tonsil, and lymphoid hyperplasia at the lower pole. Qualitative examination of taste function revealed bilateral impairment of the sense of sweet taste on the base of the tongue two months after the surgery, and a taste disturbance of sweet taste persisted 6th month after the surgery. Depending on the literature data and long surgical experience of authors, possible indirect damage to the LBGN was suspected as the cause of the taste disturbance. This symptom may be reversible within two years after tonsillectomy, but it can also be irreversible[2]. Therefore, tonsillectomy should be performed with minimal trauma to the tonsillar bed, especially when there is pathology extends beyond the lower pole. such a patient should be informed about the risk of post-operative taste disturbance after tonsillectomy as being one of the rare & unusual complication of tonsillectomy[3,4].

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Tonsillectomy is one of the most commonly performed procedures in ENT. Like any other operations, head and neck surgeons must be aware of possible complications and their potential effects even it is rare. As many of the surgeons are unaware about such type of complication, long clinical and surgical experience of authors evaluate the exact cause of taste disturbance at per-operative period are the 1. Direct injury to lingual branch of the glossopharyngeal nerve due to over enthusiastic dissection beyond the lower pole of tonsils and 2. microcirculatory compromise to taste receptors as cyanosis occurs due to prolong compression of tongue tissue.

Thus epithelial, neural, and central dysgeusia can be distinguished. Impaired perception of all tastes is called total dysgeusia and of some selected tastes – partial dysgeusia. According to Janczewski, the most common cause of reduced sense of taste is rhinitis and other diseases with nasal blockage or coexisting smell disorders. [5,6]

Before tonsillectomy each patient must be informed about the risk of taste impairment. Transient post-tonsillectomy dysgeusia (PTD) is a common complaint. Long-lasting PTD is less frequent but has significant consequences on patients' quality of life. Transient taste perception changes seem to be relatively frequent after tonsillectomy.[7,8,9,] They are mostly manifested by a metallic or bitter taste and generally maintained from 4 days to 2 weeks after the procedure. Persistent dysgeusia may last for 2 years or longer and retreat spontaneously.[10,11,12] The cause of this complication remains unknown, although there are several theories, which try to explain its occurrence.

We describe the per operative surgical technique to avoid such a unusual complication that seriously hamper the quality of life of the patients. Our center is a tertiary level hospital in Bangladesh. A study of last 10 years since 2012 to 2022, 600 adult patients underwent tonsillectomy, among them 9 patient complaints for taste disturbance after 30 days of operation. These patients were under surveillance and monitoring for a period of 6 months. Taste distortion after tonsillectomy documented by clinical and subjective evaluation.[13]

Methods

The clinical course of a patient with taste distortion after tonsillectomy, the gustatory function was investigated by spatial taste testing. Threshold measurements were determined at three left- and three right-side tongue regions: 1) the tongue tip region (innervated by the chorda tympani branch of the facial nerve), 2) the lateral margin of the tongue (anterior to the foliate papillae), and 3) the posterior tongue region (innervated by the lingual branch of the glosso-pharyngeal nerve).

This prospective study carried out in Bangladesh Medical College hospital over a period of 10 years since 2012 to 2022. Operation, follow up and assessment of patient done in dept. of ENT Bangladesh Medical College hospital. Total 607 operated patients were assessed under this study. Study population was young adults. Follow up period was 1 month to 6 months after operation. Sampling type: Randomized sampling technique applied for patient selection. Patient who were complaining for taste disturbance after tonsillectomy were evaluated in following manner:

Taste distortion persisted upto 1 month post operatively- Transient taste distortion

Taste sensation regained within 6 month - Temporary taste distortion.

Taste distortion persisted after 6 month – Permanent taste distortion.

Inclusion criteria:

1) Patient complaining of post-operative taste distortion after 1 month of operation.

Exclusion criteria:

1. Pediatric age group (below 16 years).
2. Patient having history of chronic rhinitis.
3. Patient history of habitual drug intake.
4. Patient having history of diabetes mellitus.

Results

Table-I. *Methods of operations (n=607)*

Methods	No. of patient operated	No. of patient with temporary taste distortion	Percentage
Cold steel dissection	345	4	1.15%
Coagulation Diathermy	196	2	0.51%
Coblation	60	0	0
LASER surgery	6	0	0

Rate of neural injury to lingual br. higher in dissection method.

Table-II. *Duration of operation*

Operating time	No. of patient with taste distortion	Bilateral loss	Unilateral loss
20 - 30 minutes	0	0	0
30- 45 minutes	1	1	0
45 -60 minutes	3	3	0

Incidence is higher if Operating time takes more than 30 minutes.

Table III. *Method of hemostasis applied*

Hemostatic method	No. of patient with taste distortion	Bilateral loss	Unilateral loss
Coblator	0	0	0
Uni-polar diathermy	2	0	2
Bipolar diathermy	0	0	0

Use of unipolar diathermy at lower pole for hemostasis may cause neural injury.

Table- IV. Evaluated causes of taste distortion

Method	Bilateral loss	Unilateral loss
Cold dissection method	1	3
Uni-polar diathermy	1	1
Operating time >30 minutes	3	0

Among 9 patients 4 developed taste distortion due to surgical injury by serrated tonsillar dissector, 2 patient due to heat eviction neural injury by unipolar diathermy and 3 patient due to massive cyanosis by tongue compression > 30 minutes.

Discussion

Gustatory dysfunction is an uncommon complication following tonsillectomy with a potential impact on the quality of life. This prospective study was undertaken to evaluate the incidence of posttonsillectomy dysgeusia and its relationship toextension of surgical wound, surgical technique and operating time. A prospective chart review of 600 patients who hadundergone tonsillectomy between 2012 to 2022 at a single tertiary care research based institute was.Among them 371 patient reported in OPD with the complaints of post operative loss of taste perception. Clinical examination include - evaluation of thepatient's history and psychophysical testing with cottons soaked in chinin sulfate (bitter), glucose (sweet), citric acid (sour) and sodium chloride (salt) after 30 days of operation to 6 months following tonsillectomy at a tertiary care research based hospital. Operation time, methods to achieve hemostasis and period of wound healing were also included. Subjective taste dysfunction was registered in 9patientsafter30 days of surgery. In all patients this dysgeusia regressed within 6months. Routine postoperative follow up at 7th and 14th POD revealed transient taste changes in more than 50% of patient but > 95% recovered within 30th POD probably due to complete wound healing and resolution of surgical edema. Investigated factor such as operating time, or hemostatic technique with unipolar diathermy, time for wound healing were also associated with the occurrence of transient taste disturbance. Transient taste perception changes seem to be relatively frequent after tonsillectomy. Gustatory symptoms can occur even after uneventful tonsillectomy. Informed consent should include post-tonsillectomy gustatory dysfunction.[4]

Depending on what study you look at, this complaint occurs anywhere from 0.3% to as high as 9% of tonsillectomy cases according to world literatures. Dysgeusia after tonsillectomy is felt to be due to a number of different causes including.[5]

1) Massive tongue compression > 30 minutes
2) Injury to lingual branch of glossopharyngeal nerve.

Regardless of the etiology, most cases of post-tonsillectomy taste distortion spontaneously resolves

within a few months without any specific intervention[6].

post-tonsillectomy taste dysgeusia may result from surgical injury, tongue compression, inflammatory processes or side effects of local anesthetics[7].

Some Researchers like Leong SC et al and Hanna Temporale et al suggested that meticulous cold steel dissection of tonsils and limited use of electrocautery to the lower pole of tonsils limit damage to the throat muscles and consequently reduce the risk of destruction to branches of thenerves responsible for the reception of taste sensations [14,15] These two researcher also recommend careful fixation and release of tongue retractor intermittently that reduce circulatory jeopardy to sensory nerve ending of taste buds.[10]

Regardless of the etiology, most cases of post-tonsillectomy dysgeusia spontaneously resolves within a few months without any specific intervention[15,16] post-tonsillectomy taste dysgeusia may result from surgical injury, tongue compression, inflammatory processes[7] prolonged tongue depression from a mouth gag that's inserted during a tonsillectomy could bring greater potential for a taste disturbance complication post-surgery, especially in adults. Tonsillectomies in adults often take longer duration, because the tonsil tissue tends to be more scarred down, and the operation tends to be bloodier. We tried not to press the tongue for too long period, If the procedure was of longer duration, we took the patient out of the mouth gag and let their tongue rest a little bit, get the blood flow going and then re-suspend them.[7] While many tonsillectomies are still performed by the traditional scalpel method, It's theorized that the residual cuff of tonsil tissue acts like a biological Band-Aid during the healing process, so that smaller caliber vessels affected, and the healing process can occur at a more superficial level to potentially decrease complications of post-operative pain and bleeding. That have the potential to decrease the risk of direct injury to the lingual branch of the glossopharyngeal nerve.[9]

Conclusion

Authors specially recommends not to dissect hypertrophied tissues beyond the lower pole of tonsils to avoid injury of lingual branch of glossopharyngeal nerve as it lies within very close to lower pole tissue (2-3mm). Tonsillar tissue remain in lower pole after cold steel dissection of tonsils should be cauterized superficially with bipolar diathermy. This procedure reduces the incidence of post tonsillectomy taste distortion. Our long surgical experience and observation also recommend to reduce operation time less than 30 minutes or release the pressure of mouth gag over tongue intermittently to prevent circulatory disturbence to sensory nerve ending of taste buds.

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Original Article

A Demographic Search on Epistaxis in a District Level Hospital in Bangladesh

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Article info
Received : 12.03.2022
Accepted : 09.09.2022
No. of Tables : 3
No. of Figure : 1
No. of References : 29

Cite the Article:
Chowdhury NH, Islam MA, Mohammad T, Kazi MM, Khan SR. Evaluation of per operative causes of taste distortion after Tonsillectomy. Pabna Med. Coll. J. 2022;1(2): 43-47.

Keywords: ????

Abstract:

Background: *Epistaxis is a worldwide common otolaryngological emergency. Many of them suffers at least once in their lifetime. This study was conducted to describe demographical distribution of epistaxis among the patient that came for treatment at Pabna medical college hospital.*

Objective: *To evaluate frequency of epistaxis among population of different group of age, sex, habitat and circadian variation.*

Methods: *This cross sectional study was done among the admitted patients with epistaxis at Pabna medical college hospital from 1st November 2020 to31st October 2021. Total 100 patients were included in this research.*

Result: *Male was affected more frequently than female in this study. Among them 75% was male and 25% females with a ratio of 3:1.majority of the patient in this study were 5th to 7th decade(80%). Among the 100 patient with epistaxis 60% were urban habitat and 40% were rural habitat, Regarding aetiology and sex there was no significant difference between rural and urban habitat. Frequency of epistaxis shows circadian variation. Most of the patient of epistaxis were admitted at evening and late night, 20% and 25% accordingly. Frequency of epistaxis is more in November 15%, March 25%, no remarkable variation seen in rest of the time of year.*

Conclusion : *A high incidence in young adults was reported with preponderance of male over female. Occurrence of epistaxis was strongly related with the certain demographic factors like age, sex, and habitat of the patient.*

Pabna Medical College Journal 2022;1(2): 43-47.

Introduction

Epistaxis,active bleeding from nose is a common ear nose and throat emergency and can be severe even fatal. The cause can be local or systemic illness. Epistaxis classified as anterior or posterior on the basis of primary bleeding site. Haemorrhage is most commonly anterior, originating from nasal septum. A common source of anterior epistaxis is the kiesselbach's plexus, an anastomotic network of vessels on the anterior portion of the nasal septum.[1]

Epistaxis occurs in up to 60%ofgeneral population at sometimes in their life time. About 6% of this people seek medical attention.[2] Usually it is spontaneous and stops by itself or may be controlled with home remedies. However at times it could be massive and may be fatal.[3,4]

The aetiology of epistaxis is divided into local and systemic causes. Inflamatory-infectious (rhinitis, rhinosinnusitis), traumatic(digital, fracture, nasal surgeries)anatomic(septal deviation and perforation, foreign body chemical land climatic agent, and nasal tumors(nasopharyngeal angiofibroma ,nasal poliposis ,inverted papilloma ,carcinoma). Systemic causes the arterial hypertention is the most frequently associated clinical factor blood dyscrasis, drugs (acetylsalicylic acid, anticoagulant, nonhormonal

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anti-inflamatory, antibiotics), neoplasm etc. It is important to find the bleeding site and define its aetiology(local or systemic)for indication of the best treatment. The severe epistaxis, massociated to prevailing factor such as systemic arterial hypertention, and coagulopathy may need a surgical approach in the cases refractory to conservative treatment such as cauterization and nasal splint.[5] Traumatic epistaxis is more common in younger individual(under age 35years) and is most often due to digital trauma ,facial injury, or a foreign body in the nasal cavity.[6,7] Non traumatic epistaxisis more characteristic of older patients (over age 50 years) and may be due to organ failure, neoplastic conditions, inflammation or environmental factors (temperature, humidity, altitude).[7] Epistaxis that occurs in children younger than 10 years usually is mild and originates in the anterior nose, whereas epistaxis that occurs in individuals older than 50 years is more likely to be severe and to originate posteriorly.[8] Epistaxis and arterial hypertension are frequent in the population, but an association is still controversial, it occurs in patients with severe epistaxis and the pressure levels are higher when compared to other patients in emergency services.[9] In some studies the arterial hypertension would determine structural alterations of the nasal vessels similar to those verified in the cerebral circulation and retinal examination. The loss of the elastic layer and of contractile properties of the arteries in the elderly would explain a more severe bleeding than that of younger people with arterial hypertension: the dilation of the vessels would represent some degree of degeneration of the vessels wall that would favour bleeding. The association of epistaxis, hypertension and hypertrophy of the left ventricular would be a consequence of the long duration of hypertension.[10] The association with blood dyscrasia is more frequent with the use of non-hormonal anti inflammatory, drugs that alter the metabolism of the arachidonic acid and the function of the platelets which leads to bleeding. In hemophilia, Von willebrand's disease and thrombocytopenia there occurs intermittent nasal bleeding due to the abnormal coagulation function; epistaxis is the most common symptom in approximately 60% of the patient with Von willebrand's disease.[11] The nasal trauma (digital, fractures and cranioencephalic traumatism) may cause epistaxis; the high prevalence in younger. The wide uses of anticoagulants sometimes cause epistaxis in those using them. The initial otorhinolaryngological examination should be very thorough with the aim of finding the bleeding point at any cost.[12]. In after the 50 years in geriatric age no significant deference between sex as reported, the ratio is close to 1:1[13], men probably regards the higher exposure to trauma in sports, traffic and urban violence.[14] The higher prevalence in younger males is most probably related to more exposure to trauma on account of active involvement in out-door activities; sports, traveling and inter- personal violence, whereas, in the older group vascular pathology and hypertension are responsible in the majority. Some authors portray epistaxis as a disease of the young, whereas others have noted epistaxis to be more common in the elderly[15]. In after the 50 years in geriatric age no significant deference between sex as reported, the ratio is close to 1:1.[16]

The results of this study will provide to evaluate the main associated prevailing factors in patients with epistaxis and its treatment.

Objectives:

1. study is carried out with an objective to evaluate on demography of epistaxis.

Materials and Methods:

Study design: This study was a cross- sectional observational study.

Place of study: The study was conducted at the Dept. of Otolaryngology and Head- Neck Surgery, Pabna Medical College Hospital, Pabna

Period of Study: The study was carried out from 1st November 2020 to 31st October 2021.

Patients: All the patients of epistaxis who were admitted in hospital or attended in the out patient department (OPD) of otolaryngology and Head- Neck Surgery, Pabna Medical College Hospital, Pabna during the study period were included. Number of patients were one hundred (100)

Type of study: Cross sectional study

Inclusion criteria: All Patients of epistaxis who will be admitted or attended in the department of otolaryngology and Head- Neck Surgery Pabna medical College Hospital, Pabna.

Exclusion criteria: Patients who are physically or mentally retarded Patients, unwilling to comply with study protocol, epistaxis after surgery.

Instrument: Standard, predetermined data collection sheet.

Data analysis: Data was processed and analyzed using computer software SPSS (Statistical Package for Social Sciences). consent of the subject, data was collected by the investigator through a structured questionnaire to collect the relevant information from the selected patient and clinical examination with certain investigations. In case of children, information were taken from patients/ guardians. One data sheet was used for each respondent for collection of data. The findings were recorded in the data sheet. Ethical consideration: Proper explanation of the study was given to the parents. Written informed consent was taken. The right and

health of the participants were safe guarded. The freedom of the participants was ensured and they were allowed to withdraw themselves from the study anytime they want. The confidentiality of subjects and findings were ensured. The interest and benefits of the study was explained. The adequate facilities to manage any risk or adverse condition developed by the participants during the study were ensured.

Results:

Table-I. Age distribution of patients (n=100)

Age (yrs)	No. of patients	Percentage (%)
5-12	20	20
12-50	25	25
51-above	55	55
Total	100	100.00

Majority of the patients in this study were in bove 5th decade (55%). (Table-I)

In this study among the patients with epistaxis were 71.15% male and 28.85% were female.

Thus male to female ratio was 2.47:1. (Fig-1)

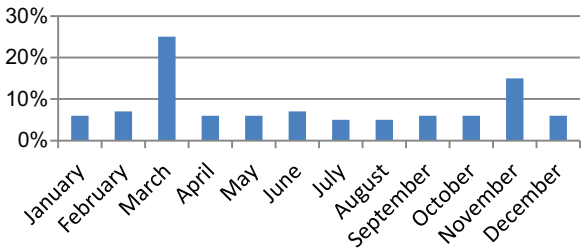

Fig.-2: Distribution of patients according to monthly admission)(n=100)

Table-II. Geographical distribution of admitted patients (n=100).

Sites	Frequency	Percentage (%)
Rural	40	40
Urban	60	60
Total	100	100

Significantly incidence more among urban population.(Table-II)

Table- III. Distribution of patient according to time of admission. (n=100)

Site of bleeding	Frequency	Percentage (%)
Evening	20	20
Night	15	15
Late night	25	25
Morning	10	10
Other times of the day	30	30
Total	100	100

Majority of the patient were admitted in the evening and late night(50.%). (Table-111)

Discussion:

During the period under study, a total 100 patients were studied. Male were affected more frequently than female in this study. There were 75 (75%) male and 25 (25%) females with a male female ratio of 3:1.

In this study, age distribution vary widely, the youngest patient was 4 years of age and the oldest was 92 years old. Mean age of the patients in this series was 40 years, which is in accordance with other study 35.06 years.[17] .In different studies, it was shown that epistaxis affected more male than female. In some studies where no significant sex difference exists.[18,19.] Majority of the patients in this study were in above 5th decade (55%) followed by 2nd to5th decade (25%) According to another study, the maximum number of patient were in 3rd decade (26.61), followed by 4th and 2nd decade. There is a pronounced bimodal distribution in the age of onset of epistaxis were reported from north America[19], and in this subcontinent.[20],[21] .The study, Shaheen shows an increase frequency between the age of 15-25 years and later from 45 to 65 years with no evidence of sex predilection[22]. It is more common inchildren with

upper respiratory tract allergy.[23] It is rare in children younger than two peak prevalence is in three to eight years age group.[24]

A Varshney in India reported most of their patients to be older than 40 years (63.64%) with a mean age of 47.8 years which correlates with other reports which showed that epitasis is a geriatric problem[12.] The peak presentation is the sixth decade and most large case series reveal a slight male predominance.

Among the 100 patients with epitasis 60 (60%) were urban habitat and 40 (40%) wererural habitat. Significantly more patients were from urban resident.

Regarding etiology and sex distribution there were no significant differences between urban and rural habitat.This may due to the difficulties in transportation in addition to that most patients from rural areas are managed by local health centers and not referred to the hospital especially if one remember that, in general nose bleed in the young person either are easy to treat or stop spontaneously.

The frequency of admission is greater in the autumn and winter month[26].The seasonal variation correlates with fluctuation in environmental temperature and humidity.[27] A chronobiological rhythm is also observed at the circadian level where onset of bleeding and hospitalization show a biphasic pattern with peak in the morning and late evening.

There was no mortality in this study.

Limitation of the study:

Considering significant outcome of the study, it had tried to overcome the limitations as far as possible. Beyond the scope, following limitations were encountered in the study.

1. Proper history was sometimes difficult to take.
2. Limitation of time. and sample. Within this short period of time and small sample does not reflect total scenario.

Conclusion:

Epistaxis is a common otolaryngological emergency and is often due to lesions within or around the nese and systemic conditions A high incidence in young adults was reported with preponderance of males over females. Occurrence of different types of epistaxis was strongly related with the certain demographic factors like age, sex and habitat of the patient and circadian and seasonal variation.This study support management of epistaxis by establishing dgfferent of demographic factor in different population.

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Original Article

Observation of Common Clinical Symptoms and their Duration among Diagnosed TB Patients

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Article info
Received : 13.04.2022
Accepted : 28.08.2022
No. of Tables : 5
No. of Figure : 1
No. of References : 22

Cite the Article:
Habibullah M, Islam MA, Hasan AMM, Alam MM, Islam MS. Observation of Common Clinical Symptoms and their Duration among Diagnosed TB Patients. Pabna Med. Coll. J. 2022;1(2): 48-53.

Keywords: Tuberculosis, Bronchial, Infectious, Cough, Fever

Abstract

Introduction: *Tuberculosis (TB) is a major global health issue, with millions of people affected each year. Timely detection and appropriate management of TB are essential to reduce its spread and associated morbidity and mortality. In this study, the authors aimed to observe the prevalence of common clinical symptoms among diagnosed TB patients and their duration. The study findings can provide valuable insights for healthcare providers in managing TB patients and improving treatment outcomes.*

Methods: *This observational cross-sectional study was conducted at the Department of Mdicine, Pabna Medical College, Pabna. Study was done from January 2021 to December 2021.*

Result: *Most participants were aged 31-50 years, with 37.93% falling into the 41-50 age range. 58.62% were male, while 41.38% were female. Housewives (37.93%), laborers/farmers (34.48%), and students (12.07%) made up the majority of participants. Bronchial asthma (86.21%) was the most prevalent comorbidity, followed by hypertension (36.21%) and diabetes mellitus (17.24%). The majority of participants (63.79%) fell within the normal BMI range of 18.5-24.9. Cough (94.83%) and fever (74.14%) were the most common symptoms. Among the 43 participants with on and off fever, 53.49% had been experiencing fever for more than 2 weeks up to 1 month. Among the 55 participants with continuous cough, 60% had been experiencing cough for more than 2 weeks up to 1 month.*

Conclusion: *The study found that most participants were between the ages of 31-50 years, with a majority being male. Bronchial asthma was the most common comorbidity observed. The majority of participants had a normal BMI, and cough was the most prevalent symptom. The duration of fever and cough among TB patients was found to be prolonged, with a majority experiencing symptoms for more than 2 weeks up to 1 month. Early diagnosis and treatment are essential to prevent the progression of the disease and reduce the duration of symptoms.*

Pabna Medical College Journal 2022;1(2): 48-53.

Introduction

Tuberculosis (TB) is a communicable disease caused by the bacterium Mycobacterium tuberculosis, which primarily affects the lungs.[1] According to the World Health Organization (WHO), TB remains one of the top 15 causes of death worldwide and is the leading cause of death from a single infectious agent.[1] In 2019, an estimated 10 million people worldwide fell ill with TB, with 1.2 million deaths recorded among HIV-negative individuals and an additional 208,000 deaths among people living with HIV.[2] The clinical presentation of TB can vary widely, with symptoms ranging from mild to severe and depending on the extent and location of the infection. Common symptoms of TB include cough, fever, weight loss, night sweats, and fatigue.[3,4] The commonality of these

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symptoms have been observed in various studies, both new and old. These symptoms can persist for weeks or months, leading to a significant impact on the quality of life of affected individuals.[5,6] Moreover, TB can be difficult to diagnose, particularly in resource-limited settings, where healthcare access may be limited, and diagnostic tools are often scarce.[7] As a result, timely and accurate diagnosis is critical to prevent the spread of TB and to initiate appropriate treatment. The duration of clinical symptoms among TB patients is an important aspect of the disease that can have significant implications for patient outcomes, disease progression, and healthcare utilization. Patients with prolonged symptoms may be at increased risk of disease complications and may require more intensive treatment and follow-up Care.[8] Furthermore, the duration of symptoms can impact the accuracy of diagnostic tests and the potential for transmission of the disease to others. Observing the common clinical symptoms and their duration among diagnosed TB patients can provide valuable insights into the natural history of the disease and inform clinical practice, research, and public health interventions. The identification of the most common symptoms and their duration can help healthcare providers and public health officials recognize the need for TB screening and follow-up care among individuals who may be at increased risk of infection.[9] Moreover, understanding the duration of clinical symptoms can help healthcare providers monitor patient progress and identify potential complications or treatment failures. However, despite the necessity of such studies, very few studies have focused on the duration of clinical symptoms among TB patients, with varying results. Some studies have reported a prolonged duration of symptoms among TB patients, with cough persisting for several weeks or months, while other studies have reported shorter durations of symptoms. However, many of these studies have been conducted in specific populations or geographical regions and may not be representative of the global burden of TB. The aim of the present study was to observe the common clinical symptoms and their duration among diagnosed TB patients in the Bangladeshi population. By analyzing the duration of symptoms among TB patients, we hope to identify trends and patterns that may inform clinical practice and public health interventions.

Materials and Methods

This prospective observational cross-sectional study was conducted at the Department of Medicine, Pabna Medical College Pabna, Bangladesh. The study duration was 1 year, from January 2021 to December 2021. During this period, 58 patients were diagnosed as TB while visiting the hospital for extreme cough, fever or both. Data was collected using a structured questionnaire supplied to the TB patients by the researchers themselves. Informed consent was taken prior to data collection of each participant, and ethical approval of the study was obtained from the ethical review committee of the Pabna Medical College. Any patients presenting with TB symptoms who were clinically diagnosed with TB (pulmonary / extra pulmonary), and patients older than 10 years of age were included in the study following approval from the patient themselves or their legal guardian. However, any patients who had a previous history of tuberculosis treatment, had other chronic respiratory diseases, such as asthma or chronic obstructive pulmonary disease (COPD), had chronic disease that could have affected the immune system, such as HIV infection or cancer, were excluded from the study. After data collection was completed, all data was organized in an SPSS database, and analyzed using the SPSS V.25 software. Data was presented as frequency tables and Mean values where necessary.

Results

Table I. *Distribution of participants by Socio-Demographic characteristics (n=58)*

Sociodemographic Characteristics	Frequency	Percentage
Age Distribution		
d”20 years	7	12.07%
21-30 years	8	13.79%
31-40 years	18	31.03%
41-50 years	22	37.93%
>50 years	3	5.17%
Mean Age	38.43 ± 11.58 years	
Age range	13-65 years	
Gender		
Male	34	58.62%
Female	24	41.38%
Occupation		
Labour/Farmer	20	34.48%
Student	7	12.07%
House wife	22	37.93%
No job	2	3.45%
Other job	7	12.07%

The majority of the participants were between the ages of 31-50 years, with 37.93% falling into the 41-50 age range. The mean age of the sample was 38.43 years with a range of 13-65 years. More than half of the participants (58.62%) were male, while 41.38% were female. In terms of occupation, the highest proportion of participants were housewives (37.93%), followed by laborers/farmers (34.48%) and students (12.07%). Interestingly, a small percentage (3.45%) reported having no job, while another 12.07% reported having other types of jobs.

Table II. *Distribution of participants by existing comorbidities (n=58).*

Comorbidities	Frequency	Percentage
Diabetes Mellitus	10	17.24%
Hypertension	21	36.21%
Chronic obstructive pulmonary disease	1	1.72%
Bronchial Asthma	50	86.21%
Chronic Kidney Disease	0	0.00%

Out of the comorbidities listed, bronchial asthma was the most prevalent, affecting 86.21% of the participants. Hypertension was also relatively common, with 36.21% of the sample population reporting this condition. Diabetes mellitus was present in 17.24% of participants, while chronic obstructive pulmonary disease was reported by only 1.72% of the sample. Chronic kidney disease was not present in any of the participants.

Table III. *Distribution of participants by BMI distribution (n=58)*

BMI	Frequency	Percentage
Underweight (<18.5)	10	17.24%
Normal Range (18.5-24.9)	37	63.79%
Overweight (25.0-29.9)	9	15.52%
Obese (e"30)	2	3.45%
Mean BMI	22.32 ± 3.77	
BMI Range	15.05-33.60	

The data shows that the majority of participants (63.79%) fell within the normal BMI range of 18.5-24.9. 17.24% of the sample population were underweight, while 15.52% were overweight, and only 3.45% were obese. The mean BMI of the sample was 22.32 ± 3.77, with a range of 15.05-33.60.

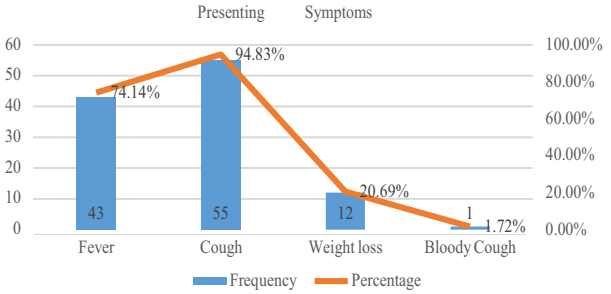

Figure 1: *Distribution of participants by presenting symptoms (n=58)*

Cough was the most prevalent symptom, reported by 94.83% of participants. Fever was also relatively common, affecting 74.14% of the sample population. Weight loss was present in only 20.69% of participants, while bloody cough was reported by only 1.72%.

Table IV. *Distribution of participants by duration of fever (n=43)*

Duration of Fever	Frequency	Percentage
≤2 weeks	4	9.30%
>2 weeks-1 month	23	53.49%
1-2 months	12	27.91%
2-4 months	2	4.65%
4-8 months	2	4.65%

Among the 43 participants with on and off fever, majority of participants (53.49%) had been experiencing fever for more than 2 weeks up to 1 month. 27.91% of participants had been experiencing fever for 1-2 months, while a smaller proportion had been experiencing fever for shorter or longer periods. Specifically, 9.30% had been experiencing fever for ≤2 weeks, while 4.65% had been experiencing fever for either 2-4 months or 4-8 months.

Table V. *Distribution of participants by duration of cough (n=55)*

Duration of Cough	Frequency	Percentage
≤2 weeks	0	0.00%
>2 weeks-1 month	33	60.00%
1-2 months	14	25.45%
2-4 months	4	7.27%
4-8 months	3	5.45%

Among the 55 participants with continuous cough, the majority of participants (60%) had been experiencing cough for more than 2 weeks up to 1 month. 25.45% of participants had been experiencing cough for 1-2 months, while smaller proportions had been experiencing cough for shorter or longer periods. Specifically, 7.27% had been experiencing cough for 2-4 months, while 5.45% had been experiencing cough for either 4-8 months. No participants had been experiencing cough for ≤2 weeks.

Discussion

Tuberculosis (TB) is a global health issue affecting millions of people each year. The present study was conducted with diagnosed TB patients to observe their basic characteristics, and to see if the duration of certain symptoms can act as predetermination factors for the disease. The study hopes to present valuable insights into the demographics, comorbidities, BMI, and symptoms of TB patients, which can aid in improving patient care and treatment strategies. One of the key findings of the study is the demographic distribution of the participants. The majority of the participants were between the ages of 31-50 years, with a mean age of 38.43 years. This was similar to previous study that showed that TB affects individuals in their prime working years[10] In terms of gender, more than half of the participants (58.62%) were male, which was consistent with the higher prevalence of TB in men reported in other studies.[11,12] The study also revealed that the highest proportion of participants were housewives, followed by laborers/farmers and students.

This was in line to the findings of other studies that have shown that individuals with low socioeconomic status and those who work in certain occupations such as miners, healthcare workers, and prisoners are at a higher risk of contracting TB.[11,12] In terms of comorbidities, the study observed the bronchial asthma was the most common (86.21%) comorbidity observed among the participants. This was in contrast to previous studies that have shown that HIV, diabetes, and malnutrition are the most common comorbidities in TB patients.[13,14] However, it is important to note that this study only included a small sample size, which may have contributed to the differences in the prevalence of comorbidities. In terms of BMI, the majority of participants fell within the normal range, with 17.24% being underweight. This was somewhat different to the findings of other studies, which found TB to be more common among malnourished and underweight patients[15,16,17] Cough was the most prevalent symptom reported by 94.83% of participants, which was consistent with the primary symptom of TB.[18,19] However, fever was reported in 74.14% of participants, which was within the 60-85% reported in other studies.[20] The duration of fever and cough among TB patients is an important factor in determining the severity of the disease and the prognosis of the patient.

The findings of the study show that a majority of the participants with on and off fever had been experiencing it for more than 2 weeks up to 1 month, while a significant proportion had been experiencing it for 1-2 months. Similarly, among the participants with continuous cough, the majority had been experiencing it for more than 2 weeks up to 1 month, with a smaller proportion experiencing it for longer periods. These findings were consistent with previous studies that have reported the duration of fever and cough among TB patients. A systematic literature review of found that cough lasting for more than 4 weeks works as a predictor of TB[21] Other studies have also mentioned the importance of longer cough duration as a primary indicator of TB[22]. These findings suggest that the duration of cough among TB patients is often prolonged, and that early diagnosis and treatment are essential in order to prevent the progression of the disease and reduce the duration of symptoms. However, the longer duration of fever was not common in other studies, mainly due to the difference of socioeconomically structure. In most countries, patients with lasting fever get diagnosed early, but many people in Bangladesh still don't have appropriate access to healthcare facilities, and do not visit the hospital unless they absolutely need to.

Conclusion

The study findings indicate that TB primarily affects individuals in their prime working years, with a higher prevalence in males and those with low socioeconomic status. Bronchial asthma was the most common comorbidity observed among the participants, and the majority of participants fell within the normal range of BMI. Cough was the most prevalent symptom reported, with fever also being reported by a significant proportion of participants. The duration of cough and fever were found to be prolonged in a majority of participants, highlighting

the importance of early diagnosis and treatment. The study's findings suggest that there is a need for more accessible healthcare facilities and greater awareness of TB symptoms and risks among the general population in Bangladesh. Further research with larger sample sizes could also help to better understand the prevalence and risk factors associated with TB in the country. Overall, this study contributes to the growing body of research on TB and can aid in improving patient care and treatment strategies for this global health issue.

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Original Article

Comparison of use of Bupivacaine and Normal Saline in Liver Bed & Ports after Laparoscopic Cholecystectomy in Postoperative Pain Reduction

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Article info
Received : 03.06.2022
Accepted : 11.09.2022
No. of Tables : 10
No. of Figure : 0
No. of References : 21

Cite the Article:
Islam MS, Alam ME, Ghosh GK, Zaman SMA. Comparison of Use of Bupivacaine and Normal Saline in Liver Bed & Laparoscopic Ports after Cholecystectomy Inpost-operative Pain Reduction. Pabna Med. Coll. J. 2022;1(2): 54-.60

Keywords:
Laparoscopic cholecystectomy, Bupivacaine,Normal Saline, Post operative pain.

Abstract:

Background: *Laparoscopic cholecystectomy results in lesspost operative pain than open cholecystectomy. However post operative pain remainsan issue following the procedurewhich can prolong hospital stay and lead to increased morbidity.*

Objectives*: Effective management of post operative pain will thus help to mobilize the patients earlier, reduce the requirement for post operative analgesic; early hospital discharge, return to normal activities & normal work. This will help to reduce the total cost related to the operation and total working days lost.*

Methods:*In this randomized controlled trial A total of 100 patients undergoing routine laparoscopic cholecystectomy were enrolled in this study during March 2015 to May 2016 in Pabna Medical College Hospital. The patients were randomly assigned in control group and bupivacaine group. Patients of the bupivacaine group received local anesthetic agent bupivacaine at their port sites which was infiltrated in the skin, subcutaneous tissue, fascia, and liver bed at the end of the surgery. The control group received normal saline in the same manner. All the patients were followed up to assess the intensity of post operative pain using visual analogue pain scale at 4 hours, 12 hours and 24 hours of operation as well as at the time of discharge from the hospital and at one week after the operation. Data regarding the first analgesic request by the patient after surgery, total doses of analgesic consumed in the post operative period and return to normal day to day activities and the normal work were also collected.*

Results:*Datawere analyzed using SPSS Statistics 17.0 and revealed that patients receiving bupivacaine infiltration at their port sites and liver bed following the surgery had lower pain scores at the times of assessment than those who received normal saline at their port sites. The patients of the bupivacaine group also took longer time for first request for analgesic after surgery and required less doses of analgesic.*

Conclusion: *Infiltration of bupivacaine at port site and liver bed following laparoscopic cholecystectomy is an effective method of managing post operative pain. This also lower the doses of analgesic required, thus laparoscopic cholecystectomy can be considered as a fast - track surgery.*

Pabna Medical College Journal 2022;1(2): 54-7.

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Introduction

Laparoscopic cholecystectomy has become a standard technique for gall bladder surgery of symptomatic cholelithiasis and is now considered to be the gold standard treatment. The introduction of laparoscopic technique to general surgery has dramatically changed our view to the post operative course of patients after cholecystectomy.Laparoscopic cholecystectomy has proven to reduce the post operative pain significantly and allow a short hospital stay and recovery period which is reflected in patient's earlier return to normal life and work activities.[1,2] In most of the centre patients are discharged home on the first post operative day. However, as experience expands further, fewseries have recently shown that the operation is safe and feasible even as an outpatient procedure in properly selected patients.[3,4]

Thus, pain relief and patient comfort during the early post operative period becomes increasingly important, as the need for analgesic may delay discharge. Pain on the day of surgery is typically a diffuse abdominal pain, a more so to the right upper quadrant and right shoulder tip. The cause of this pain is thought to be related to abdominal muscle distension during laparoscopic procedure, irritating effects of residual carbon dioxide in the abdominal cavity and prolonged elevation of diaphragm by pneumoperitoneum .[5]

Decrease in post operative pain after infiltration of bupivacaine into the operative wound has been observed among patients who undergo herniorrhaphy and gynecological procedures.[6,7] Post operative catheter infusion of bupivacaine into the sub costal incision during open cholecystectomy has shown to decrease atelectasis and reduce narcotic usage.[8] Continuous post operative infusion of bupivacaine into the abdominal wound has reduced both post operative pain and narcotic requirements.[9,10]

Bupivacaine is widely used, have a good safety profile. It provides the benefit of anesthesia without the systemic effects that may result from use of enterally and perenterally administered drugs.[10]

Bupivacaine has a half-life of 2.5 to 3.5 hours and has been reported to provide pain control for an average of 6 hours[12]. The margin of safety of the bupivacaine need for anesthesia is wide. At the upper limit of 2.5 mg of bupivacaine per kilogram body weight, 100 mg of the drug can be used safely in a patient with a lean body mass of 40 kgs.[11]

Controversy exists about theprinciple source of pain after laparoscopic procedures. Some clinicians believe that the placement of trocars through the abdominal wall is the primary source. Whereas other believes that most pain arises from intraperitoneal dissection.[12, 13] Variable analgesic effects of periportal infiltration of bupivacaine, intraperitoneal spraying above the gall bladder, instillation into the sub diaphragmatic space and into the sub hepatic space covering the area of hepato-duodenal ligament has been reported. Some of them failed to show any benefit.[14]

Several studies have described pain according to the presumed mechanism, visceral pain, which can theoretically be blocked by intraperitoneal infiltration and parietal pain, which can be blocked by port site infiltration.[15]

Our study is designed to evaluate the effect of combined liver bed and port site infiltration of bupivacaine in comparison to effect of application of normal saline for pain relief following laparoscopic cholecystectomy.

Results

This randomized control trial was conducted to determine the role of port site bupivacaine in reducing post operative pain following laparoscopic cholecystectomy. The results of the 100 respondents are tabulated below.

Table I. *Distribution of the Respondents by Time of First Analgesic required*

Time of First Analgesic(in hrs after operation)	Control	Bupivacaine	Total
≤4.00	15(30.0%)	0(0%)	15(15.0%)
4.00 - 6.00	35(70.0%)	18(36.0%)	53(53.0%)
6.00 - 8.00	0(0%)	22(44.0%)	22(22.0%)
>8.00	0(0%)	10(20.0%)	10(10.0%)
Total	50(100.0%)	50(100.0%)	100(100.0%)
Mean ± SD	4.8 ± 0.68	7.0 ± 1.24	5.9 ± 1.49

p value: 0.000

Table II. Distribution of the Respondents by Duration of Hospital Stay

Duration of hospital stay following operation	Control	Bupivacaine	Total
< 2	35(70.0%)	36(72.0%)	71(71.0%)
2 - 3	11(22.0%)	13(26.0%)	24(24.0%)
>4	4(8.0%)	1(2.0%)	5(5.0%)
Total	50(100.0%)	50(100.0%)	100(100.0%)
Mean ± SD	2.26 ± 0.78	2.22 ± 0.62	2.24 ± 0.70

p value - 0.371

Table III. Distribution of the Respondents by Visual Analogue Pain Score at 4 hrs of Operation

Visual Analogue Pain Score at 4 hrs	Control	Bupivacaine	Total
≤5.0	7(14.0%)	18(36.0%)	25(25.0%)
5.0 - 7.0	22(44.0%)	23(46.0%)	45(45.0%)
7.0 - 9.0	19(38.0%)	9(18.0%)	28(28.0%)
>9.0	2(4.0%)	0(.0%)	2(2.0%)
Total	50(100.0%)	50(100.0%)	100(100.0%)
Mean ± SD	6.76 ± 1.37	5.62 ± 1.28	6.19 ± 1.44

Table IV. Distribution of the Respondents by Visual Analogue Pain Score at 12 hrs of Operation.

Visual Analogue Pain Score at 12 hrs	Control	Bupivacaine	Total
≤2.5	0(0%)	4(8.0%)	4(4.0%)
2.5 - 4.0	18(36.0%)	26(52.0%)	44(44.0%)
4.0 - 5.5	21(42.0%)	20(40.0%)	41(41.0%)
>5.5	11(22.0%)	0(.0%)	11(11.0%)
Total	50(100.0%)	50(100.0%)	100(100.0%)
Mean ± SD	4.5 ± 1.11	3.88 ± 0.93	4.19 ± 1.07

Table V. Distribution of the Respondents by Visual Analogue Pain Score at 24 hrs of Operation

Visual Analogue Pain Score of at 24 hrs	Control	Bupivacaine	Total
≤2.0	17(34.0%)	26 (52.0%)	43(43.0%)
2.0 - 3.0	16 (32.0%)	22(44.0%)	38(38.0%)
3.0 - 4.0	15(30.0%)	2(4.0%)	17(17.0%)
>4.0	2(4.0%)	0 (0%)	2(2.0%)
Total	50(100.0%)	50(100.0%)	100(100.0%)
Mean ± SD	2.66 ± 0.94	2.08 ± 0.66	2.37 ± 0.86

Table VI. Distribution of the Respondents by Visual Analogue Pain Score at Discharge

Visual Analogue Pain Score at Discharge	Control	Bupivacaine	Total
≤ 1.0	10(20.0%)	17(34.0%)	27(27.0%)
1.0 - 1.5	12(24.0%)	17(34.0%)	29(29.0%)
1.5 - 2.0	12(24.0%)	16(32.0%)	28(28.0%)
>2.0	16(32.0%)	0(0%)	16(16.0%)
Total	50(100.0%)	50(100.0%)	100(100.0%)
Mean ± SD	1.70 ± 0.54	1.30 ± 0.38	1.50 ± 0.51

Table VII. Distribution of the Respondents by Visual Analogue Pain Score at 1 week of Operation

Visual Analogue Score at 1 week	Control	Bupivacaine	Total
≤0.3	0(0%)	10(20.0%)	10(10.0%)
0.4 - 0.5	15(30.0%)	20(40.0%)	35(35.0%)
0.6 - 0.7	14(28.0%)	20 (40.0%)	34(34.0%)
≥0.8	21(42.0%)	0(0%)	21.0%
Total	50(100.0%)	50(100.0%)	100(100.0%)
Mean ± SD	0.69 ± 0.20	0.50 ± 0.14	0.60 ± 0.20

Table VIII. Distribution of the Respondents by Total doses of analgesic required

Total doses of analgesic required	Control	Bupivacaine	Total
≤8	0(0%)	17(34.0%)	17(17.0%)
9-10	10(20.0%)	33(66.0%)	43(43.0%)
11 - 12	20(40.0%)	0(.0%)	20(20.0%)
>13	20(40.0%)	0(0%)	20(20.0%)
Total	50(100.0%)	50(100.0%)	100(100.0%)
Mean ± SD	12.00 ± 1.42	9.00 ± 0.83	10.50 ± 1.90

Table IX. Distribution of the Respondents by Day on which post operative pain in the Respondent was completely gone

Day on which post operative painwas completely goneControl		Bupivacaine	Total
≤4	0(0%)	17(34.0%)	17(17.0%)
4 – 5	17(34.0%)	17(34.0%)	34(34.0%)
5 – 6	16(32.0%)	16(32.0%)	32(32.0%)
>6	17(34.0%)	0(0%)	17(17.0%)
Total	50(100.0%)	50(100.0%)	100(100.0%)
Mean ± SD	6.00 ± 0.83	4.98 ± 0.82	5.49 ± 0.97

Table X. Distribution of the Respondents by Day on which the Respondent returned to normal activity

Day on which the Respondent returned to normal activity	Control	Bupivacaine	Total
≤2	0(0%)	17(34.0%)	17(17.0%)
2 - 3	17(34.0%)	17(34.0%)	34(34.0%)
3 - 4	17(34.0%)	16(32.0%)	33(33.0%)
>4	16(32.0%)	0(0%)	16(16.0%)
Total	50(100.0%)	50(100.0%)	100100.0% ()
Mean ± SD	3.98 ± 0.82	2.98 ± 0.82	3.48 ± 0.96

Discussion

Although Minimal Invasive Surgery is characterized by reduced pain, it is not painless. Patients undergoing laparoscopic cholecystectomy suffer considerable pain on the day of surgery frequently requiring narcotic analgesics. Post operative pain control is directed to early mobilization, recovery, discharge and return to work. Thus, the shorter the duration of post operative pain the lesser the loss of working days and productivity.

Controversy exists about the principal source of pain after laparoscopicprocedure. Some clinicians maintain that placement of trocars through the abdominal wall is the primary source; whereas others believe that most pain arises from intraperitoneal dissection and insufflations of CO2 resulting in distension of abdominal wall and prolonged elevation of diaphragm.

Early pain after laparoscopic cholecystectomy is a complex process andincludes different pain components secondary to different pain mechanisms, such as surgical trauma to the abdominal wall, intra-abdominal trauma secondary to the gall bladder removal, abdominal distention, pneumoperitoneum using carbon dioxide etc. Optimally, therefore pain should be treatedmultimodally.[16] We therefore studied the effect of combined somato-visceral (intraperitonealand port site) instillation of local anesthesia for analgesia after laparoscopic cholecystectomy.

This study was undertaken to find out the effect of bupivacaine in post operative pain following laparoscopic cholecystectomy. The study under consideration involved two groups of patients undergoing elective laparoscopic cholecystectomy but one group received local anesthetic agent bupivacaine at their port sites after operation (the bupivacaine group) but the other group did not (the control group). All the patients were followed up at 4 hours, 12 hours, 24 hours, discharge and at the end of one week of operation for post operative pain using visual analogue pain score. Data were also collected for time required for the need of first dose of analgesic, total duration of pain requiring analgesia, total doses of analgesics required before complete disappearance of post operative pain, and time required for return to normal day to day activities and usual work.

The mean (± SD) pain score at the end of 4 hours of operation for control group and bupivacaine group were 6.76(±1.37) and 5.62(±1.28) respectively [p value-0.015], at the end of 12 hours 4.5 (±1.11) and 3.88 (±0.93) respectively [p value-0.001], at the end of 24 hours of operation 2.66 (±0.94) 2.08(±0.66) respectively [p value-0.002], at discharge 1.70 (±0.54) and 1.30 (±0.38) respectively [p value-0.000] and, at the end one week of operation were 0.69 (±0.20) and 0.50 (±0.14) respectively [p value-0.000]. The mean (± SD) time required for the first dose analgesic following operation was 4.8 (±0.68) for the control group and 7.0 (±1.24) for the bupivacaine group [p value: 0.000]. Total doses (mean± SD) of analgesic required for control group was 12.00±1.42 and 9.00±0.83 for the bupivacaine group before complete disappearance of post operative pain [p value-0.000]. The day on which the post operative pain was completely disappeared were 6.00(±0.83) for the control group and 4.98(±0.82) for the control group [p value-0.000]. The respondents of the control group returned to their normal day to day activities on 3.98 (±0.82) but the bupivacaine group on 2.98(±0.82) [p value-0.000]. The mean (± SD) post operative day when the respondents returned to their usual activity and work were 6.98(±0.82) for control group and 6.46 (±0.97) for the

bupivacaine group [p value-0.008]. The average duration of hospital stay for control group was 2.26 (±0.78) days and for bupivacaine group was 2.22 (±0.62) days [p value-0.371].

The findings of the study revealed that infiltration of local anesthetic agent (bupivacaine) after surgery through the port site had pain of reduced intensity at 4hours, 12 hours, 24 hours and even at the time of discharge and at the end of one week of operation than who were not infiltrated. The study also showed that patients who received local anesthetics at the port sites had longer delay requiring the first dose of analgesic, shorter duration of post operative pain requiring analgesic, lower doses of analgesic required in the post operative period, shorter time to return to their normal day to day activities and usual work than who did not receive. These findings can be explained by the fact that pain intensity was less among patients who received local anesthesia at the end of surgery than among those who did not. The study showed no statistically significant difference between the two groups in term of duration of hospital though the average duration of hospital stay was higher in the control group than the bupivacaine group.

In our study, over all pain (incisional & visceral) is reduced. In previous randomized control trial studies where, incisional local anesthetics were used for analgesia Alexander et al[17] and Sarac et al[18] found reduction in the intensity of pain and opioid requirement whereas Ure et al[21]did not found pain to be reduced, when local anesthetics were infiltrated into the abdominal wall. This difference may be due to study in different ethnic group. Out of 10 Randomized placebo-controlled studies to check the effectivenessof intraperitoneal local anesthetics, five reported reduced overall pain afterintraperitoneal instillation of local anesthetics in patient undergoinglaparoscopic cholecystectomy. Our study showed modest overall analgesic effect whereas there was a statistically significant difference during the first 6 hours. Cuniffe et al[15] showed a significant decrease in shoulder tip pain after intraperitoneal bupivacaine out of 8 RCT that was reviewed. Our present study did not show any significant reduction in shoulder tip pain and it was consistent with the findings of Chundrigar et al and Szem et al.[11, 20]

Bisgaard et al[19] examined the effect of combinedmultiregional incisional and intra-peritoneal local anesthetic blockade in a RCT. Our study showed a significant difference in pain intensity in the early postoperative period.

Bisgaard et al showed a significant reduction in overall pain and narcotic requirements, however there was no significant effect on shoulder tip pain found in our present study.[19]

We found a large variation in pain scores at each of the assessment times. Aside from individual difference in pain perception, several other patient and technical factors may have affected the scores. Despite the large variation in the pain scores, we did detect differences in mean pain scores between the bupivacaine and control group during the 6hours and 12 hours postoperative assessment but only Mean scores at 6 hours and 12 hours was found to be statistically significant.

As the efficacy of the local anesthetic suspended for the period of 6-8hours, we expected effect ofthe local anesthetic to wear off afterthe period, there was no increase in the pain score at the 3rd pain assessment at 24hours postoperatively in the patients who received bupivacaine.

For the control group pain scores peaked immediately and was maximum during the first 6-8hours after the surgical procedure and thereafter declined to the level comparable to that for the bupivacaine group by the third assessment at 24hours postoperatively.

We did find an appreciable difference in total narcotic requirement between the control and bupivacaine group and this was consistent with the findings that of Bisgaard et al[19] in a randomized control study. If laparoscopic cholecystectomy is to be a routine ambulatory surgical procedure, the pain experienced by the patients during early postoperativeperiod must be addressed.

Our study showed that Infiltration of bupivacaine into the port site andintraperitoneal instillation diminishes the peak of pain occurring during the first 6 hours after the surgical procedure and significantly reduces the need for narcotic analgesics. In open abdominal procedures, incisional local anesthetics are most promising after small procedures, such as hernia repair. However, in a recent trial of a large – dose, somato- visceral, local anesthetic block after laparoscopic cholecystectomy, incisional pain not intra abdominal or shoulder pain, was reduced and incisional pain dominated in the control group were obtained.

Any reduction in such pain is relevant, particularly if it is statistically significant, whether the lower pain score translated into increased patients comfort and compliance is questionable. However, at whatever level they functioned they did so more comfortably.

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Original Article

Comparative Study on Outcome of Vaginal and Abdominal Hysterectomy for Benign Non-prolapsed Uterus

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Article info
Received : 22.05.2022
Accepted : 30.08.2022
No. of Tables : 5
No. of Figure : 0
No. of References : 37

Cite the Article:
Nihar F, Sultana N, Islam J, Sultana P. Comparative Study on Outcome of Vaginal and Abdominal Hysterectomy for Benign Non-prolapsed Uterus. Pabna Med. Coll. J. 2022;1(2): 61-67.

Keywords: Vaginal hysterectomy, Abdominal hysterectomy, uterovaginal prolapse;

Abstract

Background: *Vaginal hysterectomy is infrequently carried out when there is no utero–vaginal prolapse. The past few years have seen growing indications of vaginal hysterectomy which is now preferred over abdominal hysterectomy. Despite enough evidences in favour of vaginal hysterectomy, it is not the preferred route for hysterectomy in our country, probably due to lack of technical skill and expertise in non-descent vaginal hysterectomy in our country*

Methods: *This cross-sectional comparative study was done in the Department of Obstetrics & Gynaecology, in Institute of Child and Mother Health (ICMH), Dhaka.*

The Study period was 6 months, from May 2015 to October 2015.

Results: *Baseline characteristics were similar were similar in both groups of patients. There was no intraoperative complication in either either group. Operative time, intraoperative blood loss, time of out-of-bed activity, mean maximum postoperative body temperature and duration of fever were significantly shorter and less severe in the in the Vaginal Hysterectomy group compared to Abdominal hysterectomy group. In addition, vaginal length in the VH group was significantly shorter than AH group.*

Conclusion: *Despite the overwhelming evidence in favour of vaginal hysterectomy, it is not a preferred route for hysterectomy in case of undescended uterus in Bangladesh. The reason for this practice may be lack of controlled evidence in favour of vaginal hysterectomy and lack of expertise & skill of the surgeon in our country.*

Pabna Medical College Journal 2022;1(2): 61-67.

Introduction

Hysterectomy belongs to the oldest surgical procedure in medicine. Hysterectomy is a very frequent pregnancy–unrelated surgical procedure performed in women, which may be accomplished either by abdominal or vaginal route.[1] Vaginal hysterectomy is infrequently carried out in this country when there is no utero– vaginal prolapse. The past few years have seen growing indications of vaginal hysterectomy which is now preferred over abdominal hystrectomy.[2] Vaginal hysterectomy is a safe and effective procedure for benign non-prolapsed uterus especially when its size is less than 12 weeks.[3] With increasing concern over the containment of health care costs, there is a need for expanding the indications for performing hysterectomies via the vaginal non-laparoscpic method.[8] This should be an important enough incentive for gynaecologist to obtain the skill necessary to carry out vaginal hysterectomy for non-descent uterus and enlarged uterus.[4]

Keeping in view that this vaginal approach could substantially decrease treatment cost, duration of hospital stay and morbidity, this study will be carried out to observe the advantage of vaginal hysterectomy over abdominal hysterectomy in women with benign gynaecological disorder other than prolapse.

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In our country, most of the gynaecologists are trained to do abdominal hysterectomy for non prolapsed uterine diseases. Recently vaginal hysterectomy is being encouraged for non descent uterine conditions. However a study on 3 years of performance data from ICMH showed that average 600 hysterectomy were performed annually and 65% of them were performed by abdominal route.[5] At ICMH, vaginal hysterectomy is being practiced very recently and no study was carried out to evaluate its outcome.

A study advocates that all patients requiring a hysterectomy for menstrual problems with a moderate sized uterus can be offered the vaginal route of surgery with appropriate counselling.[6,7] But a decision regarding the correct approach will depend on the technical skills and experience of the surgeon, the size of uterus and a careful assessment of certain patient parameters.

A non-descent hysterectomy may be advised for a number of conditions, like abnormal uterine bleeding (menorrhagia, metrorrhagia), fibroids, cervical abnormalities (precancer or carcinoma in situ of the cervix), endometrial hyperplasia, chronic pelvic pain etc.

A good mobility and small uterine size (not more then 16 weeks) are needed for non-descent vaginal hysterectomy.[8,9,10] But with newer techniques like bisection, morcellation and myomectom, it has become easy to perform vaginal hysterectomy even in enlarged uterus in benign cases.[2] Adnexal pathology, history of 2 or more serial abdominal surgeries or pelvic organ surgeries are to be exclude from the vaginal hysterectomy.[11,12]

Despite enough evidences in favour of vaginal hysterectomy, it is not the preferred route for hysterectomy in our country, probably due to lack of technical skill and expertise in non-descent vaginal hysterectomy in our country. The objective of this study is to evaluate the outcome of vaginal hysterectomy for benign non-descent uterine conditions.

Objectives

General:

To find out the outcome of the vaginal hysterectomy comparing with total abdominal hysterectomy for the patients of benign conditions in the absence of uterine prolapse.

Specific:

- To compare the operative time between the two groups
- To assess the intra operative complications between the two groups
- To find out the post operative complications within early days.

Methods

Study design: The study was a cross-sectional comparative study.

Place of study: This study was carried out in the Department of Obstetrics & Gynaecology, Institute of Child and Mother Health (ICMH), Dhaka.

Study period: Six months-from May, 2015 to October, 2015.

Study population: The patients admitted in the in-patient Department of Obstetrics and Gynaecology, ICMH for hysterectomy with no utero vaginal prolapse during the study period. Total 60 cases were studied.

Selection criteria:

Patients admitted to the above mentioned hospital and after meeting the inclusion and exclusion criteria a probability sampling technique was applied for selecting the sample patients.

Inclusion criteria:

1. Benign uterine conditions (fibroid, dysfunctional uterine bleeding, adenomyosis, indicated for hysterectomy)
2. Uterine size less than 12 weeks.

Exclusion criteria:

1. History of previous pelvic surgery.
2. Uterine size more than 12 weeks.
3. Restricted uterine mobility, limited vaginal space, adnexal pathology, invasive carcinoma of cervix.

Method of data processing: All the 30 consecutive vaginal hysterectomy cases operated and was classified as Group A. At the same time 30 consecutive cases of abdominal hysterectomy patients were considered as Group B. All the data were then put in a computer and were processed by the computer. Statistical package for the social – science (SPSS) version 22.0 for windows was used to analyze the data.

Results

Table I. *Comparison of age and parity between two groups of the patients (n=60)*

Variables	Group A (n=30) Mean±SD	Group B (n=30) Mean±SD	p value
Age (years)	44.78±6.57	45.64±5.74	0.59^{ns}
Parity	3.24±0.74	2.89±0.71	0.07^{ns}

Table II. *Comparison of operative time between two groups (n=60)*

Operative time (minutes)	Group A (n=30) Mean±SD	Group B (n=30) Mean±SD	p value
Operative time (minutes)	49.78±4.21	74.22±6.74	<0.001*

Table III. Comparison of peroperative complication between two groups (n=60)

Peroperative complications	Group A (n=30) No. (%)	Group B (n=30) No. (%)	p value
Haemorrhage	3(10.0%)	5(16.7%)	0.31^{ns}
Others (Injury, Slip of ligature)	1(3.3%)	2(6.7%)	
No complications	26(86.7%)	23(76.7%)	
Total	30(100.0%)	30(100.0%)	

Table IV. *Comparison of postoperative complication (n=60)*

Postoperative complications	Group A (n=30) No. (%)	Group B (n=30) No. (%)	P value
No complications	25(83.3%)	20(66.7%)	0.14^{ns}
Complications	5(16.7%)	10(33.3%)	
Fever	3(10.0%)	6(20.0%)	
Urinary tract infection	1(3.3%)	0	
Haematuria	1(3.3%)	0	
Per vaginal bleeding	0	2(6.7%)	
Wound infection	0	1(3.3%)	
Wound dehiscence	0	1(3.3%)	
Total	30(100.0%)	30(100.0%)	

Table V. Comparison of hospital stays between two groups (n=60)

Hospital stays (days)	Group A (n=30) Mean±SD	Group B (n=30) Mean±SD	p value
Hospital stays (days)	3.12±0.37	4.75±0.52	<0.001*

Discussion

Hysterectomy, the most common major surgical procedure for gynaecological conditions, is used for both malignant diseases and benign conditions such as fibroids, endometrial hyperplasia, adenomyosis, endometriosis, uterine prolapse, dysfunctional uterine bleeding, and cervical intraepithelial neoplasia. There are many approaches to hysterectomy for benign diseases, including abdominal hysterectomy, vaginal hysterectomy, laparoscopic assisted vaginal hysterectomy (LAVH), total laparoscopic hysterectomy (TLH), and subtotal laparoscopic hysterectomy. With the constant modernization of minimally invasive concepts in obstetrics and gynaecology, doctors choose surgical routes by considering not only the patient's health status, but also the psychological needs of patient and the patient quality of life after surgery.[13]

Hysterectomy can be done by abdominal or vaginal route. Until recently the abdominal route was confined to nondescent cases with uterine pathology. Traditionally, the vaginal route is preferred for prolapsed uterus in our country, but this route can also be used for cases of benign conditions of the uterus without any descent.[5,14] All large scale surveys of hysterectomy practice have shown that 70% to 80% of hysterectomies are performed by the abdominal approach.[15,16] Vaginal route is normally used for utero vaginal prolapse, but this indication accounts for only approximately 10% of cases.[17] The gynaecologist continues to use the abdominal approach for most hysterectomies that could be performed vaginally. Well-documented evidence proved that vaginal hysterectomy has distinct health & economic benefit in terms of fewer complications, better post operative quality of life and reduced hospital stay.[18]

The available evidence shows that since the widespread introduction of prophylactic antibiotics vaginal hysterectomy is associated with less febrile morbidity, less bleeding necessitating transfusion, shorter hospitalization and faster convalescence than abdominal hysterectomy.[19]

With the development of Gynaecological Laparoscopy, laparoscopy assisted vaginal hysterectomy (LAVH) came into vogue. LAVH, although introduced as an alternative to abdominal hysterectomy, needs expertise of specially trained personnel and is associated with higher cost and longer duration of operation.[20,21] With increasing concern over the containment of health care costs, there is a need for expanding the indications for performing hysterectomies via the vaginal non-laparoscopic method instead of confining it to the conventional uterine descent[10].Usual limitation of vaginal hysterectomy in non descent uterus is its size but now with larger sizes uterus can be facilitated by bisection, myomectomy, wedge debulking and intramyometrial coring (morcellation)[22]. This approach could substantially decrease cost, duration of hospital stay, morbidity and faster convalescence than abdominal hysterectomy.

The enlarged uterus can be removed vaginally following the same principles as for a normal sized uterus. Once uterine pedicles are clamped the uterus is largely devascularized and can be bisected with a relatively little blood loss. Fibroids can be 'shelled out' or morcellated, reducing the size of the uterus to allow its removal.[23]

A comparative study performing vaginal hysterectomy with or without morcellation provides that morcellation is safe and facilitates the vaginal removal of moderately enlarged uterus without increasing perioperative morbidity.[24]

In this study, time being less needed in the vaginal route than abdominal route and the difference was statistically significant ($p<0.001$). These findings are comparable with the study done by Dorsey et al and his group. In their study total abdominal hysterectomy took in average 30 minutes longer than vaginal hysterectomy, while in total abdominal hysterectomy more blood loss occurred compared to vaginal hysterectomy in that study but the study done by Ottosen et al peroperative blood loss was more in vaginal hysterectomy but the finding was not statistically significant[25]. Similarly blood loss during total abdominal hysterectomy was more in the present study done by another study which is comparable to the present study.[26]

The complication rate in case of total abdominal hysterectomy was more than that of vaginal hysterectomy in this study. Febrile state was commonest morbidity in each group. Fever was 2 times commoner in abdominal hysterectomy than vaginal hysterectomy. The main cause of the febrile condition was wound infection (8%) in case of total abdominal hysterectomy, whereas in vaginal hysterectomy it was UTI (4%). The study of Laventhal and Lazarus[27] contradict this study. They got it 28%

to 52% in vaginal hysterectomy group and 27.3% for total abdominal hysterectomy group. The main cause for morbidity was UTI (48%) in vaginal hysterectomy group, although the major complications like ureter injury, bladder injury were found in total abdominal group. The difference in morbidity may be attributed to current wide spread use of prophylactic antibiotic with vaginal hysterectomy. Several recently conducted double blind trials have shown that prophylactic antibiotic use substantially reduces morbidity among women undergoing vaginal hysterectomy.[28] The efficacy of prophylactic antibiotic with total abdominal hysterectomy is less well established.[29] Dicker and his associates in their study found that total abdominal hysterectomy has 1.7 times more risk of complications than vaginal hysterectomy. Febrile morbidity was also the major cause for morbidity but the cause for febrile morbidity could not be identified in 16.8% of total abdominal hysterectomy and 7.2% of vaginal hysterectomy group. After that in both the groups UTI was the commonest cause for febrile morbidity. The major operative complications like ureteric, bladder injuries were also found in total abdominal hysterectomy group.[30]

Thus wound infection was the main cause for febrile morbidity in total abdominal hysterectomy in the present study. We can certainly reduce the morbidity of hysterectomy by improving the sterilization and aseptic methods.

The hospital stay was longer in total abdominal hysterectomy group in the present study. This finding is consistent with the study done by Ottosen and his associates[35] and Dicker & his associates.[5] Early discharge even as early as within 24 hours after vaginal hysterectomy is possible. Reiner (1988) carried out a study of 41 cases for feasibilities of early discharge (within 24 hours) after vaginal hysterectomy.[31] In his study there were no cases of delayed infection, hemorrhage or other postoperative complication that could be attributed to early hospital dismissal. Some selective healthy patient even can have the option of ambulatory surgery, outpatient hysterectomy. A prospective trial evaluating the feasibility and safety of outpatient vaginal hysterectomy was conducted by Stovel and his group[31] and Bran & his group.[32] Majority of the patient were satisfied by their outpatient hysterectomy. Laparoscopy hysterectomy has been shown to have significant advantage over total abdominal hysterectomy.[32,33] But vaginal hysterectomy is lesser invasive and better operation than laparoscopic hysterectomy.[44] Laparoscopic hysterectomy is associated with long duration of operation, long recovery time & expensive due to disposable instruments.[34,35]

In the present study, the cost of the operation was significantly lower in the vaginal hysterectomy than total abdominal hysterectomy. Reduction in postoperative analgesic required, less morbidity and shorter hospital stay are the factors for the reduced cost. A cost analysis for abdominal hysterectomy, laparoscopic assisted vaginal hysterectomy and vaginal hysterectomy by Ransom, SB[36] has revealed that vaginal hysterectomy was significantly more cost effective for permanent management of primary menorrhagia than laparoscopic assisted vaginal hysterectomy. Cost effectiveness of the vaginal route has also been described by Anthony Davies et al.[37]

The reduction in morbidity would save additional money spent on therapeutic antibiotics, diagnostic tests, blood transfusion and hospital fees. So we should encourage vaginal hysterectomy as much as it is feasible and possible for the patient's benefit.

Conclusion

Vaginal hysterectomy is a safe, feasible and patient friendly method. It is less invasive technique having several benefits over abdominal hysterectomy which includes morbidity associated with incision (e.g. infection, dehiscence, discomfort or hernia) is avoided; fewer post operative adhesions, better tolerated by elderly patient, shorter hospital stay and faster convalescence. Despite the overwhelming evidence in favour of vaginal hysterectomy, it is not a preferred route for hysterectomy in case of undescended uterus in Bangladesh. The reason for this practice may be lack of controlled evidence in favour of vaginal hysterectomy and lack of expertise & skill of the surgeon in our country.

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