Editorial

OCCUPATIONAL STRESS AND BURN OUT AMONG DOCTORS

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Burnout is a common presentation of emotional exhaustion affecting physicians worldwide. It has three dimensions. First dimension is "emotional exhaustion" that leads to decreased emotional energy to meet work-related demands. Second dimension is "depersonalization", which results in emotional distance from one's job and third is low personal accomplishment at work[1].

Worldwide, millions of doctors report occupational stress as a major factor of their burn out. In United Kingdom only, 80% of the physicians have reported emotional exhaustion[2], While in United States of America, 46% of the physicians have reported symptoms of burnout[3]. In Sweden, 42% of the general practioners have reported high burn out rate[4]. A national study was conducted in Netherland which showed that 21% of the resident doctors working there were showing sign and symptoms of moderate to severe burnout and women reported more emotional exhaustion than men[5]. A meta-analysis in UK doctors have shown that high burn out rate among doctors is associated with Psychiatric illnesses among them which has ranged from 17 to 52%[6].

A study conducted in Karachi among surgeons showed high mean score of emotional fatigue with mean of 57.15 where female residents were suffering more as compared to their male counterparts. Marital status, working long hours, sleep deprivation and financial instability were the reported factors for high burn out rates[7].

A study conducted in Peshawar showed that 25.4% of the doctors were suffering from high burnout rates and an additional 33% were found to be at highest risk of developing this burnout syndrome. This study has also shown highest burn out rates in Orthopedic surgeons (80.14%) followed by Gynecologists (75.35%)[8].

A multicenter cross sectional study in Pakistan showed that competitive working environment, long working hours, psychological pressures and unrealistic expectations are major reasons of burn out in doctors which are resulting in anxiety and depressive disorders among young Pakistani doctors[9].

Negative predictors for development of high burn out rates are younger age, female gender, excessive workload, long working hours, negative marital status, and poor satisfaction with job[10]. Positive predictors to reduce burnout among doctors include competent leadership, Organizational functionality, Satisfaction with work, work life balance and opportunities of personal and professional growth[11].

It has been observed that modifying organizational structure with competent leadership, application of principles of ergonomics, and promoting wellbeing of workers with psychological counseling and coping strategies, brings positive change and can reduce work related stress and burnout among health care providers. Results of a randomized control study showed that regular training programs which include identification

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of stress and how to cope with it can significantly reduce burn out among doctors[12]. Reducing workload, conflict resolution at work place, improving clinical skills, availability of skilled supervision, debriefing session after each counter with difficult patient and availability of time to resolve personal affairs can produce better effect in reducing burn out among young doctors[13].

With increasing societal demands from doctors in Pakistan, with increasing political and economic turmoil, high burn out rates are being observed in Pakistani doctors as well. It is the responsibility of higher authorities to find out factors which are causing job dissatisfaction and high burnout at organization level and to find out remedies for better outcome. Regular Psychological assessments and promotion of organizational policies in best interest of health workforce will substantially change the outcome. Regular training of demanding subspecialties like surgery and ICU residents for coping strategies with stress should be mandatory. Change of leave policies, application of ergonomics and better working environment will positively affect the rates of burnout in Pakistan.

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Original Article

FREQUENCY, RISK FACTORS AND OUTCOMES ASSOCIATED WITH DIARRHEA IN CHILDREN UNDER AGE OF 2 YEARS AT KHYBER TEACHING HOSPITAL PESHAWAR; A CROSS-SECTIONAL STUDY

Jehan Hussan[1], Jehan Anjum[2], Shahid Ali[3], Rabia Israr[3], Shehla[3], Huma Gul[3], Raza Ul Haq[3]

Abstract:

Background: To assess the frequency of diarrhea in children under the age of 2 years in the region of Peshawar and to determine its risk factors and outcomes.

Materials & Methods: A cross sectional descriptive study was conducted in pediatrics wards and OPD in Khyber Teaching Hospital Peshawar from 1st May 2021 to 31st August 2021 with a sample size of 245 children. The Information was collected through questionnaire distribution and by verbally asking the mothers questions regarding diarrhea. For analysis, we used the SPSS software version 20.

Results: The frequency of diarrhea in children under 2 years of age was found to be 56.7% (139). The majorrisk factors associated with diarrhea were the mother's poor educational status (31.4%), children's exposure to the sanitation system of the house (11.2%), incomplete vaccination status (16.73%), poor handhygiene of mothers (8.59%), lack of using boiled water (9.5%) and residency in rural areas (8.24%). Out of 139 children who suffered from diarrhea 61.9% had sunken eyes, 58.3% had dry skin, 75.5% had lethargy, 71.9% had weight loss and only 10.1% had loss of consciousness.

Conclusion: The frequency of diarrhea was very high in Peshawar and the major risk factors were lack of mother's education, lack of use of boiled water, poor hand washing practice by mothers, incomplete vaccination status and residency in the rural area.

Keywords: Diarrhea, Outcome, Prevalence, Risk Factors.

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INTRODUCTION

Diarrhea is the passage of 3 or more loose or liquid stools per day, or more frequently than is normal for an individual. It is one of the common symptoms of gastrointestinal infections[1].

Diarrheal illness is a problem worldwide with considerable local variation in the predominance of particular pathogens. Globally, childhood diarrhea contributes to a major proportion of less than 5 years and infant mortality rate. Global efforts to prevent, protect and manage diarrhea among children have been made over the past few decades and were successful[2]. According to the World Health Organization, about 525,000 children under the age of 5 years die every year due to diarrheal diseases with 1.7 billion cases of diarrhea each

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year[2]. In less developed countries children under the age of 3 years suffer from diarrhea which causes great loss of electrolytes and nutritional substances which greatly affect their growth[3]. Its complications in malnourished children are seen more frequently.

The prevalence of diarrhea is mainly linked to the socio-economic state, poor hygiene, lack of proper sanitary system and unawareness among people. In 2015 in Pakistan, about 465000 children died due to diarrhea and the country ranked 4th with the highest mortality in the world contributing 5% of the total world mortality pie[5]. The high incidences of diarrheal diseases lead to acute and chronic effects of diarrhea on the health of children.

In Ethiopia, research was carried out on the incidence of diarrhea which showed that diarrhea tends to be higher in the second half of an infant's life when a child is born with weak inborn immunity and exposure to contaminated weaning food. They also showed that children living in houses that have toilet facilities are less affected than those that do not have this facility[6]. The major decreases in the incidence of diarrhea are associated with flush toilets compared topit latrines[7]. Public latrines have flies and dirty floors which further promotes infection of salmonella, shigella etc. which are leading causes of diarrhea in children[8]. Diarrheal prevalence was highest among those children who were living inhouses that drink water from unprotected and unhygienic sources like open and unprotected wells[9]. In underdeveloped countries like Pakistan diarrhea has a high mortality rate. In Karachi, studies show that 40% of the population lives in such areas where water and sanitary infrastructure is limited. In these areas the mortality rate of infants is high, about 40% deaths of under the age of 5 years are due to diarrhea[10].

The purpose of this study was to find out the frequency, leading causes and the main consequences associated with diarrhea in children under the age of 2 years. The information from the study about diarrheal diseases regarding their prevalence, risk factors and complications in childrencan give us an overview of the general burden of disease in children in Peshawar. Also, it can be used in devising effective educational programs for reducing the problem in high risk segments of the population. It can also be used for the formulation of management strategies for acute diarrhea and eventually can be used for reducing complications.

MATERIALS AND METHODS

A cross sectional descriptive study was conducted in pediatrics wards and OPD in Khyber Teaching Hospital Peshawar from 1st May 2021 to August 2021 (4 months). We took a sample size of 245 children which was calculated according to WHO formula $N= Z^2 PQ/D^2$ with prevalence of 20%[14] or 0.2, Z for confidence interval = 1.96, Q= 1-P, D= 0.05.

The sampling technique used was convenient non-probability. Data was collected by questionnaire distribution and by interviewing the mothers or guardians present at the data collection site. Detailed information regarding the demographic status& the health condition of the child along with associations and complications of diarrhea was obtained. The study included all children under the age of 2 years and excluded immunodeficient children.

Approval was obtained from the institutional ethical committee with IREB No. 736/IREB/KMC. After obtaining thenecessary consent from individuals, we explained the study's purpose to them and ensured strict confidentiality. All data is presented in the form of tables and Pie charts. Quantitative variables like age are presented as mean standard deviation.

RESULTS

Data was collected from 245 children with a mean age of 15 months and a standard deviation of 1.087. In this study out of 245 children, 144 (59%) were males and 101(41%) were females. Out of 245 children, 139 had diarrhea with a frequency of 56.7%. (Table 1)

The majority of the children that we investigated were under 12 months of age and the highest frequency was found in children from 6-12 months (34%).

Table 1: Frequency Of Diarrhea

	Frequency	Percent
Yes	139	56.7
No	106	43.3

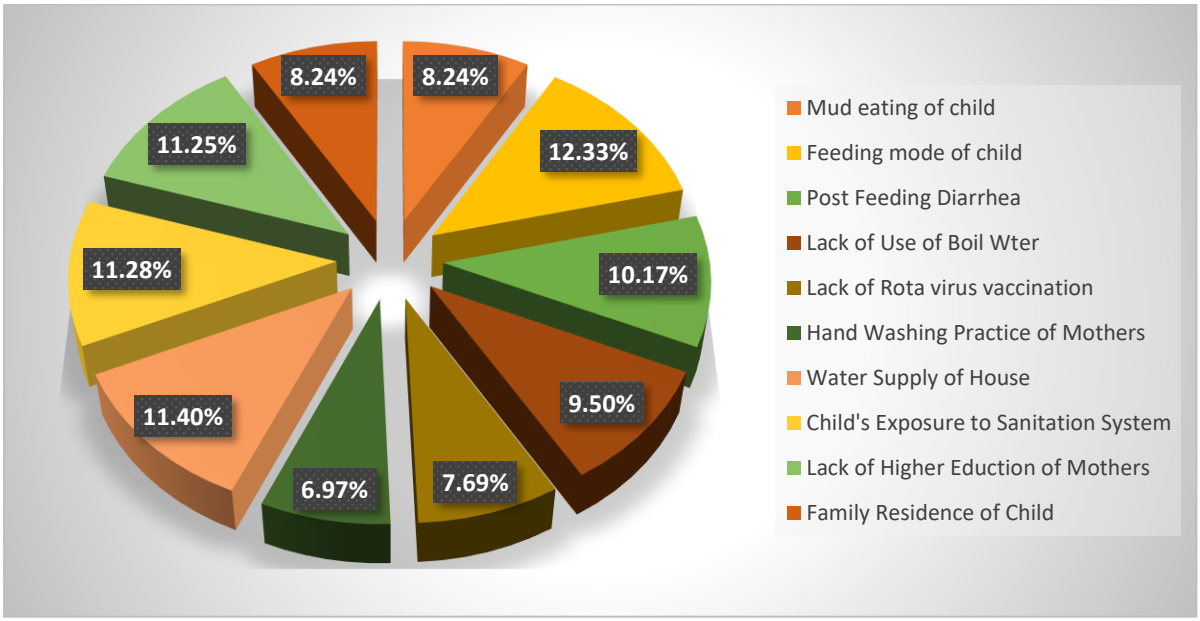

Fig. 1: Risk factors for Diarrhea

As depicted in Fig 1, The major risk factors associated with diarrhea include feeding mode of a child 17 (12.23%), lack of higher education among mothers 16 (11.52%), child's exposure to sanitation system of house 16 (11.51%) water supply of house 16 (11.50%), post feeding diarrhea 14 (10.17%), lack of using boiled water 13 (9.36%), the residential status of a child 11 (8.24%), lack of Rota virus vaccination 11(8%), mud eating habit of a child 11 (8.0%), and poor hand washing practice by mothers 9 (6.48%).

Out of 139 children who had diarrhea about 76% (105) children showed lethargy, 72% (100) children showed weight loss,62% children (86) had sunken eyes and dry skin, and about 10% (14) children had loss of consciousness after diarrheal episode.

DISCUSSION

In the study out of a total of 245 children, 139 had diarrhea. The frequency of diarrhea was 56.7%. It was high as compared to other studies.

A South Indian article has shown the prevalence of diarrhea to be 1 in 6 cases of diarrhea in hospitalized patients. At this age, a soft diet is also taken and the children are exposed more to environmental conditions.[11]

A study was carried out in northern Sudan which showed that 35% of children had diarrhea[12]. Another study was done in Eastern Ethiopia which shows the prevalence of diarrhea was about 21.5%[13].

The overall incidence of diarrhea in one of the articles in Ethiopia showed 20% diarrheal incidence[14].

The findings are not synchronous with our findings in a way that our study showed a very high prevalence rate as compared to the previous study that we mentioned but the cause could be small sample size and time of data collection as a lot of cases of food poisoning and diarrhea generally reports in summer.

Another similar study was conducted in West Bengal by Gautam Sarker, Avisek Gupta and Arup Jyoti Rout about diarrhea in children in 2015. The analysis showed that its prevalence was 20.36%[15]. The study is in synchronous with our study showing incomplete immunization as

a major risk factor for children presenting with acute diarrhea.

Another study conducted in the Peri-urban communities of Karachi in Low Income Peri-urban communities of Karachi, Pakistan in 2017 showed that the incidence was more in less educated mothers and children[16]. The study showed similar risk factors and outcomes associated with diarrhea as in our study further emphasizing the relevance of our study in the current setting.

Due to feasibility only one hospital in Peshawar i.e. Khyber Teaching Hospital was included to check the frequency of diarrhea. The sample size was also small for the same reason. To get accurate representation sample size should be large.

The COVID-19 pandemic significantly limited our data collection efforts. Another limiting factor could be recalling bias as our data collection was a convenient sampling technique so the data that we collected depended on the memory of the guardian/mother creating a risk for such bias.

CONCLUSION

The prevalence of diarrhea was very high (56.7%) in Peshawar, especially in June, July and August and the major risk factors associated with diarrhea were the feeding mode of children, lack of mother's education, lack of use of boiled water, poor hand washing practice by mothers, the water supply of house and residency in rural areas. The major outcomes were lethargy, weight loss, dryness of skin and sunken eyes.

The focus should be on improvement in mothers' educationalstatus and hand hygiene, use of boiled water, proper sanitation system of houses, and awareness among people regarding vaccination and diarrhea.

AUTHOR'S CONTRIBUTION:

JH: Proposal Development
JA: Data Analysis
SA: Data Collection
RI: Data Entry
S: Reference Management
HG: Manuscript Writing
RH: Literature Review

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Original Article

EMERGENCY PERIPARTUM HYSTERECTOMY AND ITS DETERMINANTS IN PATIENTS WITH PLACENTA PREVIA IN A TERTIARY CARE HOSPITAL, MULTAN

Atika Nazish Joiya[1], Rabiah Mahwish[2], Mariam Mazhar[3], Khadija Ahmad[3]

Abstract

Background: Placenta previa is an obstetric condition characterized by painless vaginal bleeding in the third trimester due to abnormal placentation near or covering the internal cervical os. Full previa occurs when the placenta completely covers the os, while marginal previa is when it is less than 2 cm away. This condition increases the risk of postpartum bleeding and may necessitate emergency hysterectomy, leading to significant maternal and fetal morbidity and mortality.

Material and Methods: A descriptive case series was conducted in the obstetrics and gynecology department of Multan Medical and Dental College from November 1, 2022, to April 30, 2023, including 171 women with singleton pregnancies, gestational age > 35 weeks, and parity 0-4. Hysterectomy followed failed postpartum bleeding treatments.

Results: The study included women aged 20-35 years, with a mean age of 30.356 ± 2.24 years, mean gestational age of 38.309 ± 1.19 weeks, parity 1.848 ± 1.10, weight 71.994 ± 13.27 kg, height 1.566 ± 0.09 meters, and BMI 29.453 ± 5.28 kg/m². Most patients (93%) were aged 28-35 years. Placenta previa grades: I (12.9%), II (65.5%), III (15.2%), IV (6.4%). Previous cesarean section history was 58.5%, with emergency hysterectomy in 14% of patients.

Conclusion: Placenta previa is no longer a rare obstetric complication. Major risk factor include previous caesarean delivery. Maternal and fetal morbidities and deaths are reduced when aberrant placental invasion is detected early in pregnancy.

Keywords: Placenta previa, Caesarean section, Emergency peripartum hysterectomy

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INTRODUCTION

The term "placenta previa" refers to a situation in which the placenta implants incorrectly in the lower uterine segment, perhaps covering the internal cervix entirely. There are around 4 cases of placenta previa for every 1,000 live births worldwide[1]. In many cases, adherent placenta, such as placenta accreta, increta, and percreta, coexists with placenta previa. The need for a cesarean hysterectomy is indicated by the possibility of fatal peripartum bleeding caused by certain factors. Those with placenta previa have a 30 times higher probability of needing a cesarean hysterectomy than those without placenta previa[2].

Because of defensive obstetrics practices, an increase in cesarean births, rising maternal ages at first pregnancies, and the use of assisted

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reproductive technologies, the frequency of third trimester bleeding has been rising recently. The increasing number of pregnant women with non-intact uteri (due to prior cesarean delivery) allows us to already see the negative effects associated with this aspect. This factor also raises the risk of aberrant placental adhesions and low-lying placentas in subsequent pregnancies. In the third trimester of pregnancy, obstetrical bleeding is primarily brought on by placenta previa, according to current knowledge[3]. Given that scheduling a tertiary hospital delivery soon before labor or bleeding starts improves the chances of success for both the mother and the infant, antenatal diagnosis of placenta previa is crucial. Although there is evidence of placenta previa from the first trimester, it is typically discovered in the second and third trimester. Prenatal diagnosis frequently uses obstetric ultrasound. Since it occurs in more than 80% of instances, placenta previa raises the possibility of Placenta accrete spectrum[4].

Peripartum hysterectomy can be done at the time of delivery or at any point from that point until the patient is released from the hospital. Severe uterine hemorrhage that is uncontrollable by conservative therapy is the primary reason for peripartum hysterectomy[3].

Worldwide, peripartum hysterectomy rates vary significantly. Peripartum hysterectomy complicates less than one in 1,000 deliveries in high-income nations, whereas it complicates four and eleven in one thousand deliveries in Nigeria and Pakistan, respectively[5]. Meta-analysis and systematic review of the epidemiology of placenta previa accreta conducted in London, UK, shows that of the 20 trials, 14 had data on surgical therapy, and 314 out of 441 women presented with a complex placenta previa due to PAS. 69.2% was the median rate of peripartum hysterectomy[6]. According to a hospital-based descriptive and retrospective research of obstetric hysterectomy performed at the Department of Gynecology & Obstetrics, Medical College & Hospital, Kolkata, 13.2% of patients with Central Placenta Previa underwent peripartum hysterectomy[7]. According to a study done at the Nishtar Hospital in Multan, 31% of the patients had Grade III or IV placenta previa. In 29.2% of the patients, a hysterectomy was necessary[8]. This research paper delves into the intriguing realm of association of placenta previa with peripartum hysterectomy. The study will help to identify avoidable factors such as caesarean section and the necessity of setting up health care systems. It might help to enhance the outcomes for mothers and fetuses in our overall population. To ascertain the prevalence of emergency peripartum hysterectomy and the factors that influence it in women who have placenta previa.

MATERIAL AND METHODS

In the obstetrics and gynecology department of the MMDC hospital in Multan, a descriptive case series was conducted using non-probability convenience sampling from November 1, 2022, to April 30, 2023. The formula below was used to determine the 171-sample size[9]. **n=z2pq/d2**

In the case of emergency peripartum hysterectomy, proportion (p=7.7%) with q=1-p d=4% at 95% confidence[9]. Women aged 20–35 who are singleton pregnant according to ultrasound, gestational age > 35 weeks on ultrasound, parity 0-4, placenta previa of any grade according to operational definition, and scheduled cesarean birth are among the inclusion criteria.

Exclusion criteria include having a medical record with endometrial cancer, ovarian cancer, cervical cancer, uterine fibroids, or endometriosis.

After receiving approval from the research department and ethics committee, 171 patients who met the inclusion criteria from the obstetrics and gynecology department of MMDC, Multan, were included in the study. Age, parity, weight on the inclusion weighing machine, and placenta previa grade were recorded as the patients' baseline demographics. Each patient provided their informed consent, guaranteeing anonymity and

confirming that there is no risk to them from participating in this study.

As instructed by the consulting gynecologist, all women were delivered via cesarean section. An experienced consultant gynecologist with two years of post-fellowship experience oversaw the cesarean section. The decision to undergo a hysterectomy after a caesarean section was taken when the operational criteria of postpartum hemorrhage control was not met by routine medical (uterotonic medications, Bakri balloon) or surgical (transuterine compression sutures, surgical uterine devascularization) treatment.

Data was recorded by researchers for emergency peripartum hysterectomy as per operational definition and noted on specially designed proforma. A verbal as well as well as written consent was taken from each participant.

IBM-SPSS V. 22, a statistical software package, was used to examine the data. Percentages and frequency were employed to display the qualitative characteristics, such as age groups, placenta previa grades, prior history of cesarean section, and emergency peripartum hysterectomy. By computing the mean and standard deviation, the quantitative variables—such as age, gestational age, parity, weight, height, and BMI—were displayed. Using stratification, effect modifiers such as age, gestational age, parity, placenta previa grades, history of Caesarean section, and BMI were controlled. After stratification, chi square test was performed, and a p-value of less than 0.05 was considered statistically significant.

RESULTS

Table I: Demographic characteristics of the respondents

	Demographic profile	Mean±SD
1	Age (years)	30.356±2.24
2	Gestational age (weeks)	38.309±1.19
3	Parity	1.848±1.10
4	Weight (Kg)	71.994±13.27
5	Height (m)	1.566±0.09
6	BMI (Kg/m^2)	29.453±5.28

Table II: Determinants of emergency hysterectomy

Determinants	Frequency (n)	Percentage (%)
Age group (years)		
20-27	12	7%
28-35	159	93%
Grades of placenta previa		
I	22	12.9%
II	112	65.5%
III	26	15.2%
IV	11	6.4%
History of Caesarean section		
Yes	100	58.5%
No	71	41.5%

A history of cesarean sections accounts for 58.5% of the patient population, while emergency hysterectomy was observed in 14% of cases.

Table III: Association of Emergency Hysterectomy and Parity

Sr.	Parity	Emergency Hysterectomy		p-value
		Yes	No	
1	0-2	11 (9.7%)	102 (90.3%)	0.024*
2	3-4	13 (22.4%)	45 (77.6%)	
Total		24 (14%)	147 (86%)	

Using the chi-square test with a p-value of 0.024 revealed a significant difference between parity and emergency hysterectomy.

Table- IV: Association of Emergency Hysterectomy and Grades of Placenta Previa

Grades of Placenta Previa		Emergency Hysterectomy		p-value
		Yes	No	
1	I	0(0%)	22(100%)	0.000*
2	II	1(0.9%)	111(99.1%)	
3	III	15(57.7%)	11(42.3%)	
4	IV	8(72.7%)	3(27.3%)	
Total		24(14%)	147(86%)	

Chi-square test was significant at p = 0.000 when applied to see association between increasing grades of placenta previa and emergency hysterectomy. The higher grade shows increased chances of emergency hysterectomy.

No significant association was found when chi-square test was applied between emergency hysterectomy and different variables such as age of respondents (p=0.147), gestational age (p=0.815), history of cesarean section (p=0.363) and BMI (p=0.634).

DISCUSSION

Placenta previa is another risk factor that women experience for placenta accreta spectrum (PAS). Placenta accreta, increta, and percreta are among the conditions in this range. A hysterectomy that renders the patient infertile, an ICU admission, a blood transfusion, may be necessary in cases of uncontrollable postpartum bleeding caused by placenta previa or PAS. Our study was based on 171 participants visiting in the MMDC Hospital Multan's Obstetrics and Gynecology Department. The age range in this study is similar to other studies on placenta previa, with an average age of 30.356 years. The age range of 28 to 35 comprised 93% of the total cases. The study found that patients aged 28-35 had a higher percentage of emergency hysterectomies (15.1%) compared to those aged 20-27 (0%). It was similar to another study where the prevalence of placenta previa varied by age group: it was 41.7% in women aged 30-34, 25% in those aged 35-39, and 33.3% in those aged over 40[10]. This is likely due to the fact that placenta previa is more common in older women, especially those who have had a previous cesarean section. The p-value suggests a significant association between age and the need for emergency hysterectomy. We also noted that in this study, 58.5% of patients with placenta previa had previously undergone a cesarean section. The study found no significant association between a history of caesarean section and the need for emergency hysterectomy. This result suggests that a previous caesarean section may not be a major contributing factor to the need for emergency hysterectomy in cases of placenta previa. These results were contrary to a retrospective study where cesarean section was considered a strong contributing factor to placenta previa and placenta accreta, as well as maternal morbidity[11].

38.309 weeks was the mean gestational age at delivery, which is a little bit later than the average gestational age at birth for all pregnancies. This is likely due to the fact that many women with placenta previa require a cesarean section, which is typically performed at or after 37 weeks of gestation as compared to a tertiary central hospital's analysis of the newborn state at birth revealed that the average gestational age was 35 weeks[12].

The mean parity in this study was 1.848, which is slightly higher than the average parity for all pregnancies. Mean parity in a study conducted in China was 2.2±0.4 of conventional group of mothers[13]. Patients with a parity of 3-4 had a higher percentage of emergency hysterectomies (22.4%) compared to those with a parity of 0-2 (9.7%). The p-value suggests a strong correlation between parity and the requirement for an urgent hysterectomy. This result suggests that patients with higher parity may be at increased risk of requiring an emergency hysterectomy.

This is also likely due to the fact that placenta previa is more common in women who have had previous pregnancies. According to our findings, multiparous women are more likely than primiparous women to experience placenta previa. It was similar to results reported in a study where multi gravida were mostly involved (45%)[14].

The degree of placenta previa was found to be substantially linked with an emergency hysterectomy. An increase in the proportion of emergency hysterectomies was linked to higher-grade placenta previa.

In this research, 14% of hysterectomy cases were emergency cases. This is comparable to the emergency hysterectomy rate found in other placenta previa investigations. Like a retrospective study reported 18% of emergency hysterectomies were attributed to placenta previa[14], p-value suggests a significant association between age and need for emergency hysterectomy. This indicates that older pregnant individuals in this study were more likely to require an emergency hysterectomy.

The average weight of the participants in this study was 71.994 kg, which is somewhat greater than the average weight of Chinese pregnant women. The mean height was 1.566 meters, which is marginally higher than the Chinese norm for pregnant women[15].

The mean BMI was 29.453 kg/m^2, which is in the overweight range. According to a study done on the Korean island of Jeju, significant bleeding after cesarean section was independently correlated with higher BMI at delivery, placenta accreta, and overall degree of previa in patients with PP[16]. The study found no significant association between BMI and the need for emergency hysterectomy. This result suggests that BMI might not be a significant predictor of the need for emergency hysterectomy in these cases. Nearly one third of women with suspected placenta previa in our study required admission to an ICU in contrast to an Indian study where half of the women required intensive care unit (ICU) support owing to significant blood loss[17].

As it was a single setting study so results cannot be generalized on whole population. Similar studies should be conducted on large scale as well to reduce maternal and infant mortality rates the study may have significant therapeutic ramifications despite its shortcomings. In cases when mid-trimester ultrasonography results raise suspicions about placenta previa, doctors should use transvaginal ultrasound to determine the placenta's location (anterior or posterior). Considering the potential association with emergency postpartum hysterectomy, women identified as having placenta previa by mid-trimester ultrasonography would benefit from treatment in a tertiary hospital, where appropriate attention is provided to both mothers and infants to avoid complications.

CONCLUSION

Placenta previa is no longer a rare obstetric complication. Major risk factors include previous caesarean delivery. Maternal and fetal morbidities and deaths are reduced when aberrant placental invasion is detected early in pregnancy. Additional research involving various sites and standardized diagnostic criteria is required to determine the best management approaches for this morbid illness.

AUTHOR'S CONTRIBUTION:

ANJ: Conception, Study Design, Data Collection, Processing, Drafting of Manuscript, Critical Review

RM: Data Analysis, Interpretation, drafting of manuscript, critical review, literature research.

MM: Data Collection, Processing, Drafting of Manuscript.

KA: Data Collection, Processing, Literature Search.

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Original Article

COMPARISON OF POSTOPERATIVE PAIN BETWEEN COLD STEEL DISSECTION METHOD WITH BIPOLAR DIATHERMY METHOD OF TONSILLECTOMY

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ABSTRACT

Background: Tonsillectomy is performed to relieve the patients from repeated attacks of recurrent tonsillitis. Post-tonsillectomy pain lasts for 8 to 10 days. Postoperative complications like pain after tonsillectomy can lead to more burden on hospital settings and patient's resources.

Materials and methods: A hospital-based comparative study was conducted in the Department of ENT, Hayatabad Medical Complex (HMC) Peshawar between June 1, 2019, and Jan 23, 2022, after obtaining ethical approval from the ethical board of HMC. A total of 236 patients were selected and divided into two equal groups of 118 each, labelled as A and B by consecutive sampling technique. Patients in group A were operated on by the cold steel dissection method while group B by the bipolar diathermy method of tonsillectomy and were assessed for postoperative pain on Visual Analogue Score (VAS). The intensity of pain on VAS was measured after the 6th postoperative hour. Independent t-test for 2 samples was used to compare mean pain scores between the groups and one-way ANOVA test for the differences of pain scores among different age groups.

Results: Bipolar diathermy electro dissection has mean post-operative pain of 7.62±1.79 on VAS as compared to cold steel technique with mean pain of 5.41±2.42 which was then analyzed using independent t-test and was found to be statistically significant with p-value $\leq$ 0.001. One-way ANOVA was used to see differences in pain scores among different age groups in groups A and B, which showed a significant difference in pain scores with a p-value $\leq$ 0.04.

Conclusion: The Diathermy method of tonsillectomy caused more pain compared to the cold steel method. Pain scores among the two groups increase with age.

Keywords: Cold Steel dissection, Bipolar Diathermy, Tonsillectomy, VAS pain score.

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INTRODUCTION

Tonsillectomy is a surgical procedure performed on both children and adults throughout the world. The primary reasons include recurrent tonsillitis and sleep or breathing disorders. Tonsillectomy is commonly indicated in individuals who despite acquiring adequate medical treatment, experience recurrent tonsillitis, recurrent pharyngitis, or those individuals who don't respond to medical therapy[1].

In the U.S, approximately 289,000 tonsillectomies are done annually on children under 15 and 5968 on adults performed

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between 2005 and 2011[2]. National Health Services (NHS) in the UK reports around 35,000 tonsillectomies every year[3].

Studies suggest that the median hospital revisit rate of tonsillectomies is 9.5%, a mortality rate of 0.03%, a complication rate of 1.2%, and a post-tonsillectomy haemorrhage rate of 2.62%[2,4,5]. In the UK, tonsillectomy is performed with a consistent rate of around 45,000 to 49,000 procedures annually, and it is particularly prevalent in children, who represent nearly two-thirds of the cases[6]. Evidence suggests that in US the rates of childhood tonsillectomy is three times higher than in the UK. According to Herzon et al[7], in the US, one-third of patients with peritonsillar abscesses comprise children. According to a report, 11.7% of Norwegian children and 12.1% of Turkish children suffer from Recurrent tonsillitis.

Cold steel dissection and bipolar diathermy are two techniques used for tonsillectomy. Although there is much advancement in surgical and anesthetic techniques, still tonsillectomy has significant postoperative morbidities which include pain, poor oral intake, fever, dehydration, vomiting and bleeding. These morbidities are present both in hospital and at home after discharge[8].

Pain following surgery has an impact on a patient's response to therapy. Postoperative pharyngeal discomfort results from the exposure of sensory nerve endings of the glossopharyngeal and the vagus nerve that supplies this region[8]. When tissues like these are exposed to the environment after surgery, they become irritated, which might cause spasms. Because the constrictor muscles contract with every swallow, inflamed constrictor muscles can be quite painful. Any improvement in surgical technique would seem to have to deal with the problem of these structures being damaged and exposed. Post-operative pain causes difficulty in chewing and swallowing causing dehydration and results in lassitude and delayed recovery of strength and well-being. studies suggest that postoperative pain after tonsillectomy can lead to pharyngeal pain, otalgia, severe pain intensity, vomiting associated with nausea, difficulty in swallowing, earache, and can be incapacitating, affecting hydration[9].

These studies suggest that significant post-operative pain after tonsillectomy, especially with larger wounds and recurrent pre-operative tonsillitis, can lead to prolonged hospital stays, although some cases show mild pain with an average discharge time of 2.4 days[10].

Post-operative pain severely affects the quality of life soon after the procedure. It also results in increased length of stay in the hospital thus affecting hospital workload and output statistics[11]. This study is conducted in the settings of tertiary care hospital of district Peshawar to evaluate and compare the pain score after cold steel and diathermy method of tonsillectomy. This study may be useful to generate updated evidence regarding the best method with less pain for the local population.

MATERIALS AND METHODS

A comparative hospital-based study was conducted in the Department of ENT, Hayatabad Medical Complex, Peshawar from June 1st, 2019 to Jan 23, 2022.

Patients both males and females aged 10-25 years with chronic tonsillitis with duration > 6 months were included in this study. Patients having conditions such as adeno-tonsillitis, unilateral tonsillitis, metastatic malignancy, peritonsillar abscess, congenital anomalies and other comorbid like Down syndrome and asthma were excluded from this study. Ethical approval was sought from the ethical committee of HMC and the CPSP research committee.

All patients attending OPD, and fulfilling the inclusion criteria were included in the study, at Hayatabad Medical Complex, Peshawar. A proforma was designed to note all the information about age and gender was recorded. Confounders were controlled by following exclusion criteria. A written informed consent was obtained that explained the purpose of the study, the risks that were involved and the benefits offered to the patient.

A detailed history was obtained from all the patients, and clinical examination and necessary pre-operative investigations were done.

A total of 236 patients were selected using the WHO sample size formula[10] following assumptions of 95% confidence level and 80% power of the test and keeping a margin of error at 0.05. Patients were selected through consecutive sampling techniques. Patients were divided into two groups with 116 patients in each group. Patients in group A were subjected to the cold steel method of dissection during tonsillectomy while patients in group B were subjected to the bipolar diathermy method during tonsillectomy. All tonsillectomies were done under general anesthesia by experienced ENT surgeons having minimum of five years of experience to avoid bias. All the patients were admitted to the hospital for at least 24 hours. The intensity of pain on VAS was measured after the 6th post-operative hour by trained personnel and if any patient complained of pain, then diclofenac sodium (IM) was given based on body weight. VAS is calibrated from 0 to 10 depending upon the severity of pain.

The data were analyzed using SPSS version 22. Frequencies and percentages were calculated for categorical variables like gender. Mean and standard deviation were calculated for continuous variables like age, duration of recurrent tonsillitis and pain on VAS. Independent sample t-test was used to compare the mean pain scores in both groups while keeping the p-value of < 0.05 as significant. Pain score in different age groups was further analyzed using a one-way ANOVA test using a p-value < 0.05 as significant. Mean pain scores in both groups were stratified among the age, gender, and duration of illness to effect modifiers keeping a p-value of < 0.05 as significant.

RESULTS

Patients in group A underwent tonsillectomy by cold steel dissection method while for patients in group B, tonsillectomy was done by bipolar diathermy.

There were 73 (61.86%) male and 45 (38.13%) female patients in the cold steel group while 59 (50.0%) were male and 59 (50.0%) were females in the diathermy group. Pain distribution among male and female was statistically insignificant in both the group with p-value 0.06 as shown in Table no 1.

A comparison of mean pain scores showed that cold steel group A had average pain of 5.41±2.42 SD while in diathermy group B it was 7.62±1.79 SD. After applying the independent t-test it was found that mean pain score was significantly higher in the diathermy group with a p-value of 0.001 as shown in Table no 2.

Stratification of mean pain scores for age groups in group A and group B were analyzed using a one-way ANOVA test, it was shown that the distribution of pain among different age groups was statistically significant in groups with a p-value of 0.04. The mean pain score in age groups is shown in Table no 3.

Table 1: Gender Distribution in Group A and Group B

Gender Distribution in Both Groups					
		Gender of Patient		Total	p-value
		Male	Female		
Type of Group	Group A (cold steel)	73 (61.86%)	45 (38.13%)	118 (100.0%)	0.06
	Group B (diathermy)	59 (50.0%)	59 (50.0%)	118 (100.0%)	
Total		132	104	236	

Table 2: Comparison of Mean Pain Scores between Group A and Group B

Type of group		Pain Score on VAS	p-value
Group A (cold steel)	N	118	0.001
	Mean	5.4153	
	Std. Deviation	2.42257	
Group B (diathermy)	N	118	
	Mean	7.6271	
	Std. Deviation	1.79170	

Table 3: Stratification of mean pain score for age groups in Group A and Group B

			Group A (cold steel)		Group B (diathermy)		
Age Groups	**Comparison Groups**	**ANOVA**	**N**	**mean±S.D**	**N**	**mean±S.D**	**p-value**
10-15	16-20	0.811	81 (68.64%)	4.22±2.01	64 (54.23%)	6.31±2.35	0.04
	21-25	0.045					
16-20	10-15	0.811	19 (16.10%)	5.05±2.01	32 (27.11%)	6.68±1.53	
	21-25	0.219					
21-25	10-15	0.045	18 (15.25%)	5.76±2.51	22 (18.64%)	8.55±1.02	
	16-20	0.211					

DISCUSSION

Tonsillectomy is one of the most frequently performed procedures in the department of otolaryngology around the globe in all age groups[10]. Postoperative pain after tonsillectomy can lead to an increased burden on hospital and patient resources. the method of tonsillectomy varies from one setting to another as consensus on the use of the best method for tonsillectomy is not yet developed and more studies are recommended[12]. This study was designed to compare 6th-hour postoperative pain scores in cold steel dissection tonsillectomy and Bipolar diathermy in our study setting.

There were 73 (61.86%) male and 45 (38.13%) female patients in the cold steel group while 59 (50.0%) were male and 59 (50.0%) were females in the diathermy group. Pain distribution among males and females was statistically insignificant in both the group with a p-value of 0.06.

A comparison of mean pain scores showed that cold steel group A had average pain of 5.41±2.42 SD while in diathermy group B it was 7.62±1.79 SD. After applying an independent t-test it was found statistically significant with a p-value of 0.001. Tay et al showed that diathermy has increased postoperative pharyngeal pain. It was mentioned that diathermy also has an increased otalgia risk. A study done by MN Kumar found that postoperative pain on the first day was less in the cold steel method (4.4889±0.6613) compared to the bipolar diathermy method (4.9556±0.2084)[13,14]. However, Nunez et al and M. Ali in their studies reported that there is no significant difference between pain scores in the two groups in the first 24 hours.[15,16]

Stratification of mean pain scores for age groups in group A and group B were analyzed using a one-way ANOVA test, it was shown that the distribution of pain among different age groups was statistically significant with a p-value of 0.04 with a higher mean pain score of 8.55±1.02 was found in diathermy group aged 21-25. This is in line with research by Wexler et al.[17] that found children following tonsillectomy surgery using the cold steel dissection technique reported less pain. Similar results in terms of postoperative pain were revealed by Chettri et al[18]. Tay's study[13] also

reported that on the first postoperative day in adult patients, there is significantly more pharyngeal pain on the diathermy. This is in agreement with research by Wexler et al[17] which indicated that children undergoing tonsillectomy with cold steel dissection technique experienced less postoperative pain than those using the diathermy approach.

CONCLUSION

Cold steel tonsillectomy with blunt dissection is a safe method. The Diathermy method of tonsillectomy caused more pain compared to the cold steel method. Pain scores among the two groups increase with age.

AUTHOR'S CONTRIBUTION:

MUS: Conceived Idea, Designed Research Methodology, Data Collection, Proofing & Final Approval

SI: Literature Search, Data Analysis, Manuscript Writing, Proofreading, & Final Approval

HM: Designed Research Methodology, Data Collection, Literature Search,

JA: Proofreading, Literature Search, Data Analysis

K: Designed Research Methodology, Data Collection, Literature Search

MIU: Literature Search, Data Analysis, Manuscript Writing.

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Original Article

BORDERLINE AMNIOTIC FLUID INDEX AND CAESAREAN SECTION FREQUENCY IN FULL-TERM PREGNANT PATIENTS PRESENTING TO A TERTIARY CARE HOSPITAL

Fazeela Shahzad[1], Sehrish Waseem[2], Sadia Akhtar[3], Ayesha Iqbal[4], Shazia Zulfiqar[5], Aqsa Khan[6]

Abstract

Background: The optimal approach to borderline Amniotic fluid index (AFI) in pregnancy is uncertain, sparking ongoing debate and controversy. This study primarily aimed to determine the frequency of cesarean deliveries in term pregnancies with borderline AFI in our clinical setting.

Material & Methods: A cross sectional descriptive study conducted in Unit I of Obstetrics and Gynecology Department of Jinnah Hospital, Lahore, from January 2023 to June 2023. Total 90 pregnant women were selected through non probability consecutive sampling. Patients between 37 to 41 weeks with borderline were included. The cut-off values for the AFI were defined as AFI of 0-5 cm labelled as low fluid, 5.1 to 8 cm as borderline and greater than 8 cm as high fluid value, 5, 16 After complete clinical evaluation, labour induction was done with Prostaglandin E2 gel vaginally, 6 hours apart two doses. All patients monitored during labour and tracked until delivery. Key outcome variable was rate of Caesarean section performed for unsuccessful induction of labour. All data was entered in SPSS version 22.

Results: Out of 90 patients, mean age was calculated as 28.53±5.99 years. Mean gestational age was 38.47±1.08 weeks and mean AFI was 6.62±0.93 cm. Cesarean section done for unsuccessful induction of labour in 27.8 % (n=25) of women having borderline AFI while successful vaginal birth observed in 65 patients (72.2%).

Conclusion: In our clinical environment, the rate of caesarean section is not substantially elevated in women with borderline AFI at term that experienced failed induction.

Keywords: Amniotic Fluid, AFI, Cesarean Section, full term

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INTRODUCTION

An appropriate amount of amniotic fluid is very important in pregnancy, as enough amount of amniotic liquid allows the gestational events to progress normally from four months onwards[1]. Amniotic Fluid Index (AFI) was first described in 1987. Since then, it has been accepted as a validated tool for the accurate amniotic fluid estimate[2]. Monitoring amniotic fluid volume in conjunction with a non-stress test is a frequently employed technique to assess fetal well-being in high-risk pregnancies[3]. Oligohydramnios affects 3-5% normal pregnancies and it is associated with induction of labour[4]. Amniotic fluid index is determined

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using ultrasonography and all quadrants of the abdomen are examined and summed up[2]. The AFI below 5 is considered as oligohydramnios, borderline when the value of AFI is 5 to 8 cm and is taken as normal when value is 8.1 to 24[5]. The cut-off values for the AFI were defined as AFI of 0-5 cm labelled as low fluid, 5.1 to 8 cm as borderline and greater than 8 cm as high fluid value[5,6]. It can be projected that both borderline and low AFI is associated with feto-maternal morbidity. There are more chances of fetal distress, low Apgar score, growth retardation and increased chances of cesarean section[6]. According to various studies, fetomaternal outcomes remain largely consistent between individuals with normal AFI and those with borderline AFI[7]. Literature observes that incidence of failed induction of labor and need for operative birth including cesarean section is significantly high in pregnant woman with borderline AFI[8]. Borderline AFI is associated with adverse fetomaternal morbidity and mortality[9]. Cesarean delivery showing a rising trend globally, has its own set of complications and morbidities. Prompted by a perceived and worrying trend of undue labour inductions in borderline AFI pregnancies, frequently culminating in failed inductions and operative births, this study investigated this phenomenon in our healthcare context. The primary objective was to determine the frequency of cesarean deliveries in term pregnancies with borderline AFI to assess whether elevated rate of operative deliveries for borderline AFI is prevalent in our clinical setting, eventually addressing concern of rising rate of operative birth.

MATERIALS AND METHODS

A cross sectional descriptive study was conducted in Unit I of Obstetrics and Gynecology Department of Jinnah Hospital, Lahore, from January 2023 to June 2023 after approval from institutional ethical board. Total of ninety pregnant women were selected through non probability consecutive sampling, full filling the inclusion criteria. Patients having gestational age between 37 to 41 weeks according to last menstrual period and/or dating scan and having borderline AFI 5-8 cm defined a borderline by an expert obstetric ultrasound done after 36 weeks of gestation were included in the study[5,16]. Phelan et al defined borderline AFI as between 5 and 8 cm and Gumus and Miller have defined a borderline AFI as an AFI of 5.1-10[16,17]. We defined borderline AFI according to Phelan et al. Pregnant patients having any co morbidity including hypertension, diabetes mellitus, chronic renal or liver disorder, autoimmune diseases or gestational hypertension or gestational diabetes in medical and scarred uterus in obstetric history were excluded from this study. In addition to basic demographic data, parity and gestational age were noted. After an informed consent a detailed demographic and clinical profile was collected on a pre-designed performa and ultrasound examinations was performed. All patients were assessed for induction of labour as per standard guidelines and protocol in the department. After completing clinical evaluation, and necessary preparation for emergency Caesarean section in case need arise, labour induction was done with Prostaglandin E2 gel vaginally, 6 hours apart two doses, in the morning hours between 6 to 11 am (on non-emergency days of the unit). All patients were monitored during labour as per WHO labour care guide protocol, routine practice in the department for laboring women and labour tracked until delivery. Pregnancy outcome was noted in terms of mode of delivery. Caesarean section was performed for unsuccessful induction of labour or passage of meconium or CTG category II or III changes persisting for more than or equal to 2 minutes in a for 10 minutes trace. Standard pre- and postoperative and postnatal care was provided to all patients after delivery. Information was entered into a pre-designed Performa for documentation and all data entered in SPSS version 22.0 The quantitative variables like age, gestational age and AFI were expressed as mean and standard deviation. The frequency and proportions of qualitative variables such as parity and mode of delivery were calculated.

Data was stratified for effect modifiers like age, gestational age, and parity and post stratification Chi-square test was applied for any statistical significance. A p-value ≤ 0.05 was considered as statistically significant.

RESULTS

A total of 90 booked and unbooked cases having borderline AFI on expert obstetric ultrasound were enrolled. The data were statistically described in terms of mean, ± standard deviation (±SD), percentages and frequencies. Data stratified for age, gestational age and parity. Analysis of the age distribution showed in Table 1. Mean gestational age was 38.47±1.08 weeks and mean AFI was 6.62±0.93 cm. Mean parity was calculated as 2.31±0.90. (Table No. 1). Frequency of cesarean section was 27.8 % in full term pregnancy with borderline AFI and 72.2% had SVD. Caesarean section was done on failed induction of labour with prostaglandin E2. A statistically significant result was found for mode of delivery with age and parity. ($p < .05$). Stratification for gestational age showed a non-significant relationship with mode of delivery. ($p > .05$). (Table No. 2).

Table 1: Demographic and Obstetrics profile of patients (n =90)

Variables n = 90	Frequency	Percent	Mean ± SD
Age (Years)			
18-30	55	61.1	28.53
31-45	35	38.9	± 5.99
Gestational Age (Weeks)			
37-40	78	86.7	38.47
> 40 - 41	12	13.3	± 1.08
Parity			
1-2	76	84.4	2.31 ±
3-4	14	15.6	0.90

Table 2: Mode of birth and age, gestational age and parity cross tabulation (n=90)

Variables n = 90	Mode of Delivery				P-value
	LSCS n= 25		SVD n =65		
Age (Years)					
18-30 years	20	(22.2%)	35	(38.9%)	0.023
31-45 years	5	(5.6%)	30	(33.3%)	
Total	25	(27.8%)	65	(72.2%)	
Gestational age (weeks)					
37-40	21	(23.3%)	57	(63.3%)	0.644
40 1 to 41 weeks	4	(4.4%)	8	(8.9%)	
Total	25	(27.8%)	65	(72.2%)	
Parity					
1-2	25	(27.8%)	51	(56.7%)	0.012
3-4	0		14	(15.6%)	
Total	25	(27.8%)	65	(72.2%)	

DISCUSSION

The Amniotic Fluid Index (AFI) is a critical component of the fetal biophysical profile, playing a significant role in predicting pregnancy outcomes and mode of birth[3]. Extremely low AFI values are associated with intrauterine growth restriction and fetal renal anomalies, perinatal morbidity and mortality[6]. Monitoring amniotic fluid levels during pregnancy is essential, as fluctuations in AFI can indicate potential complications[10]. Oligohydramnios, a condition characterized by low amniotic fluid levels, affects approximately 1-5% of pregnancies and often necessitates labor induction[8]. The AFI is a commonly used method for assessing oligohydramnios, first introduced by Phelan in 1987, AFI is now an established tool for accurately estimating amniotic fluid volume[5]. AFI below 5 is considered as low, borderline when 5 to 8 cm

and is taken as normal when value is 8.1 to 24 cm[5]. It is evident in literature that both borderline and low AFI are associated with feto-maternal morbidity. There are more chances of fetal distress, low Apgar score, growth retardation, failure of induction and increased chances of cesarean section in cases with borderline and low AFI.[6, 8.] Cesarean delivery showing a rising trend globally, has its own sets of complications and morbidities. Although the risks associated with borderline AFI are established, the growing concern of increased operative birth rates in this group necessitates additional research. The existing evidence on Caesarean section rates in women with low AFI is contradictory, with some studies indicating increased surgical intervention, while others suggest favorable outcomes for vaginal deliveries, similarly no consensus for optimal approach of management for such pregnant women is available[9].

In this study, overall cesarean section rate observed was 27.8% (n=25), and when we compare cesarean section with respect to age, we found that frequency of C-section was higher (22.2%) in age group of 18-30 years of age as compared to another group 5.6%. (P = 0.02). We compare cesarean section with respect to gestational age we found that frequency of C-section was higher (23.3%) in gestational age group of 37-40 weeks as compared to another group 4.4%. (P-value 0.64). In the current study, significant results were observed (p-value 0.01) when comparing cesarean section rates across different parity groups. The frequency of C-sections was notably higher (23.3%) in the parity group of 1-2, compared to 0% in other groups. Rate of caesarean section in our study group was significantly lower than vaginal birth while many studies in the literature reveal a persistent trend of elevated caesarean section rates among patients with borderline AFI, surpassing vaginal delivery rates[11]. Other studies show that there is no difference between normal and borderline AFI patients in terms of fetomaternal outcomes[12]. Patients with borderline AFI may have increased chances of failure of induction at term. Failed induction of labour at term is one of the common indications for cesarean section[13,14].

Maternal outcomes such as preterm delivery, meconium-stained liquor, and lower segment cesarean section in women with borderline AFI were significantly higher ($p \leq 0.001$). The borderline AFI group had a higher rate of perinatal complications such as Apgar score of <7 ($p = 0.001$)[15]. Our study showed a significant finding for LSCD with parity among patient with borderline AFI. ($P < .012$). Findings suggest that, in our clinical environment, the rate of caesarean section is not substantially elevated in women with borderline Amniotic fluid index who experience failed induction of labour at term and is comparable to the evidence in literature. Moreover, the results provide evidence to the current clinical approach and rightful decision making for induction of labour in situations with borderline AFI being followed in our department while continuing close observation and fetomaternal surveillance.

AUTHORS CONTRIBUTION:

FS: Study Conception, Methodology, Data Analysis, Writing Results & Discussion
SW: Revision of Manuscript
SA: Literature Search & Manuscript Preparation
AI: Data Collection & Preparation of First Draft
SZ: Literature Search, Manuscript Preparation
AK: Write Up of Introduction, Preparing Tables from Results

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Original Article

PHYSICIANS PERSPECTIVE OF BREAKING BAD NEWS-SPIKES PROTOCOL

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Abstract

Background: Doctor patient relationship is one of the closest and trusted relationship. An effective and good communication is the key to a satisfied client with enhanced capacity to take right decisions. To assess physician knowledge and attitude about SPIKES protocol of breaking bad news.

Material and Methods: This cross sectional study was conducted at Ghurki Trust Teaching hospital affiliated with Lahore Medical & Dental College from 1st October 2023 to 31st December 2023. We used convenient sampling through a questionnaire based on SPIKES protocol which will be filled by doctors who consented to participate in the study.

Results: A total of 182 doctors belonging to different specialties of the hospital participated in the study. There were 153 (84.1%) females and 29 (15.9%) males. Majority (63.1%) were residents and had less than 10 years of experience. 90.6% were not aware of the SPIKES protocol for breaking bad news and (68.1%) learnt by seeing experts or by hit and trial. About 48.9% considered setting of BBN should be in an office. Majority (80.2%) had a tendency to tell the truth about diagnosis to both patients and family members. About 60.4% admitted that they listened to questions asked by patients without interruption. Half of the participants (53.8%) felt sad while delivering bad news. About fears faced by doctors while BBN 37.9% feared they will be ending hope for patient and 20.3% feared of patient's reaction. One hundred and sixty (87.9%) participants believed that it is very important to incorporate "how to break bad news" in graduation course.

Conclusion: Breaking bad news is an essential communication skill for doctors. Training should be given about protocol in undergraduate years.

Keywords: S setting, P perception, I invitation or information, K knowledge, E empathy, and S summarize or strategize **(**SPIKES), Breaking bad news, Communication skills

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INTRODUCTION

Doctor patient relationship is one of the closest and trusted relationship. An effective and good communication is the key to a satisfied client with enhanced capacity to take right decisions[1]. A crucial aspect of communication is breaking bad news. Bad news is defined as news "that results in a cognitive, behavioral or emotional deficit in the person receiving the news that persists for some time after the news is received"[2]. Intellectually humans find it very challenging to grasp bad news when it arrives and have a great propensity to personify the bad news and identify it to the person who brings it.

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Before the late 1900s, physicians were advised to keep a deathly diagnosis confidential. With changing trends, patients want their doctors to be honest and informative apart from being compassionate, caring and hopeful. However, many healthcare professionals are uncomfortable discussing bad news due to perceived lack of training, stress, emotional needs, fear of upsetting patients, and inadequacy in treatment. This leads to poor patient satisfaction, poor rapport and stress to physicians[3,4].

Breaking bad news well is an essential skill for all doctors but mostly they lack training with protocols. There are a number of protocols available like BREAKS, Rapport, Explore, Announce and ABCDE[5]. One of the most widely used protocol for breaking bad news (BBN) is the SPIKES (Setting up, Perception, Invitation, Knowledge, Emotions, Strategy and Summary) protocol published in The Oncologist in the year 2000, as a protocol for delivering bad news to cancer patients[6]. SPIKES protocol has four objectives: Gathering information from patient, transmitting the medical information, providing support to the patient and eliciting patient's collaboration in developing strategy or treatment. This has been the most widely used protocol and even part of curriculum in various settings[7,8].

Health care providers need to be skilled at breaking bad news, but curricula don't give this skill much emphasis. As a result, health care providers experience increased burnout, distress, and exhaustion when they feel ill-prepared to break unpleasant news. Studies have shown that healthcare professionals who take training course on breaking bad news feel more comfortable and confident when communicating such information[8,9]. We planned this study to evaluate the perception and attitude of physicians about SPIKES protocol of breaking bad news.

MATERIALS & METHODS

This cross-sectional quantitative study was conducted at Ghurki Trust Teaching hospital affiliated with Lahore Medical & Dental College. We used questionnaire based on SPIKES protocol which will be filled by doctors at the above hospital. Doctors who did not come in contact with patients directly (pathologist, radiologist, lab workers) and those who did not sign the free and informed consent statement were excluded. The potential sample included all doctors of hospitals including the junior doctors as well as the senior ones. Convenient sampling technique was used and the duration of study was from 1st October 2023 to 31st December 2023. Total number of doctors who participated in the study was 182.

RESULTS

Of a total of 182 participants, more than half were females 153 (84.1%), while fewer 29 (15.9%), were males. Mean age of participants was 30.32± 4.57. Those with experience of 1-10 years were 115 (81.3%). 141 (77.4%) participants did not know of any protocol for breaking bad news.

Among these medical professionals, the majority, 94 (51.6%), occasionally provided bad news to others, while 82 (36.8%) provided bad news to others frequently. Majority 132 (72.5%) used verbal and non-verbal forms, and 50 (27.4%) used only verbal counselling. Coming to rating their ability to deliver bad news 45.6% considered themselves good, 24.7% very good, 28.02% acceptable, and 1.65% thought they were bad at it.

While considering the ideal setting of breaking bad news of 182 respondents, 67 (36.81%) searched for a private and cozy place to give bad news, 89 (48.9%) preferred doing it in an available office. In the case of bedridden patients, the majority, 56.5% liked to inform them standing beside the bed, while 43.4% liked sitting beside the bed.

Amongst all, 89 (48.92%), provided the bad news in a clear manner easily understandable words while rest explained in more detail.

The majority 146 (80.2%) doctors tend to tell the truth very carefully about the diagnosis. Among these, 167 (91.75%) thought that

medical truth should be told to the family and patients both.

About 110 (60.4%) professionals admitted that they listened to the questions asked by patients carefully and without interrupting them.

When asked about the contents they explored during their conversation with patients 67 (36.8%) respondents explored what the patient already knew about their health condition, 8 (4.4%) wanted to explore what patient wanted to know, 29 (15.9%) explored what concerned the patient and rest utilized multiple ways mentioned above.

When asked about how did the doctors feel about giving bad news 96 (52.7%) felt sad after giving bad news, 47 (25.8%) felt helpless while fewer felt 2 (1.09%) sacred and 5 (2.74%) unsafe after giving bad news.

About the fears doctors faced while giving bad news, 69 (37.9%) feared that they will be ending hope for patient, 37 (20.3%) feared of patient's reaction ,16 (8.7%) had fear of being blamed, while others had multiple answers to the type of Fear.

Of 182 subjects, 51 learnt during graduation ,56 learned to deliver bad news by trial and error, 58 by seeing other experts, and 17 by other ways. Majority (77.4%) of professionals did not know of any instrument in use to give bad news.

Most doctors 160 (87.9%) believed that it is very important to incorporate "how to break bad news" in the graduation course.

Table 1: Demographics & Perception of participants about Breaking Bad news-SPIKES Protocol

Demographics	Categories	Number	Percentage
Mean Age	30.32±4.57		
Designation	Consultant	67	36.8
	Resident	115	63.2
Years of Experience	<10 years	147	80.8
	>10 years	35	19.2
Gender	Female	153	84.1
	Male	29	15.9

Table 2: Frequency of responses of doctors regarding their perception of breaking bad news according to spikes protocol

	Responses	Number	Percentage
What is Bad News?	All information that causes physical harm to the patient	14	7.7
	Just give notice of death	6	3.3
	Any information transmitted that implies any negative change	162	89.0
How often do you give bad news?	Almost always	15	8.2
	A lot	67	36.8
	Occasionally	94	51.6
	little and never	6	3.3
How do you give bad news?	Only verbally	50	27.5
	Verbal and non-verbal form (touch, look, empathy...)	132	72.5

How do you rate your ability to deliver bad news?	Very Good	45	24.7
	Good	83	45.6
	Acceptable	51	28.0
	Bad	3	1.6
Where do you give bad news?	Search for a private and cozy place	67	36.8
	Inform in an available office	89	48.9
	Informally inform in the hallway or somewhere outside the office	26	14.3
If the patient is bedridden	Inform sitting beside the bed	79	43.4
	Inform standing beside the bed	103	56.6
How do you provide the bad news? (may have more than one answers)	With Clear, Understandable Language, Avoiding Technical Words	89	48.9
	With Clear, Understandable Language, Avoiding Technical Words, I Explain in Detail	51	28.0
	With Clear, Understandable Language, Avoiding Technical Words, I Explain in Detail, And Technically, I Clarify Doubts	36	19.8
	I Put Myself in The Patient's Shoes	6	3.3
When breaking bad news do you always tell the truth about the diagnosis, prognosis and treatment?	Never	2	1.1
	Avoid telling the truth	4	2.2
	Say it all at once	30	16.5
	Give cautiously, as required by the patient and family members.	146	80.2
Who do you Tell the truth to?	Only to the patient	3	1.6
	Only to the family	12	6.6
	To the patient and their companion at the same time	39	21.4
	Preferably first to the patient, then to the family	69	37.9
	Preferably first to the family, then to the patient	59	32.4
When the patient speaks and/or asks a question, you: (may have more than one answers)	Listen carefully and without interrupting the patient	110	60.4
	Listen to what the patient says, but interrupt whenever he has something to add	36	19.8
	Does not let the patient talk too much and is objective	5	2.7
	Listen carefully and without interrupting the patient, always take the time to answer the questions	30	16.5

What Contents do you explore during the conversation with patients?	Health condition awareness	67	36.8
	Communication preferences	33	18.1
	Addressing worries	29	15.9
	Addressing patient queries	8	4.4
	Health condition awareness, Communication preferences, Addressing worries	31	17.0
	Health condition awareness, Addressing worries	89	48.9
How do you feel about giving bad news?	Sad	96	52.7
	Pitiful	14	7.6
	Feel Helpless	48	26.3
	Relieved	15	8.2
	Unsafe/ Scared	7	3.8
What fears do you have when giving bad news?	Fear of being blamed, fear for patients' reaction	25	13.7
	Fear of ending the patient's hope	69	37.9
	Fear of ending the patient's hope, Fear of death and the disease itself	33	18.1
	Fear of ending the patient's hope, Fear of the patient's reactions	46	25.3
	Fear of your own emotional reactions	7	3.8
How did you learn to deliver bad news?	During Graduation	51	28.0
	By trial-and-error method	66	36.3
	Specific course	7	3.8
	Seeing other experts	58	31.9
Do you know any instrument that helps in the ability to tell bad news?	Yes	41	22.5
	No	141	77.4
How important do you think is the incorporation of how to break bad news in the graduation course?	Very Important	160	87.9
	Unimportant	8	3.3

DISCUSSION

Breaking bad news is a major dilemma which physicians face and is stressful for both physician and patient. Traditionally, medical education has placed more emphasis on technical proficiency than communication skills. In our study, 77.4% of participants did not know about any protocol of BBN although it was agreed by 87.9% that learning to break bad news is very important. The studies from developing countries show similar findings of poor knowledge of physicians regarding any structured protocol of BBN[7,10-12]. There is evidence that skills-based communication training programs can be successful for learning how to break bad news. However, it is clear that purely didactic modalities are ineffective in changing communication behavior. Mixed strategies including brief lectures, discussions and simulations were described as important and effective as well as well received, resulting in more confidence and proficiency in breaking bad news[13]. In our study, 80.2% selected to give bad news cautiously as required by the patient and family members. In similar study from Sao Paulo,

93.3% physicians gave bad news cautiously[14]. There can be very little time to establish a rapport when a doctor has to break terrible news to a patient or family during an emergency because it is frequently the first interaction. This negative news may come as a surprise to patients and their families, which can cause shock, denial, animosity, dread, and grief[15]. While half (48.9%) of our participants break bad news with clear understandable language, only 19.8% wanted to go in details and clarify doubts. A study from Sindh shows similar results with 83.3% delivered news without clarifying doubts16. Recognizing that a BBN encounter will inevitably elicit powerful feelings, even if they are not verbally articulated, is the first step towards resolving emotions. It's critical to highlight vocal empathy expression in these interactions, as well as to acknowledge and validate the patient's feelings.

The most challenging aspect of BBN especially of cancer and any life changing illness or death is whom to break the news; patient or the family. In our study, 37.9% preferred giving news to the patient first and then family while 32.4% preferred informing the family first. It is important to ask the patient if he or she would like to be accompanied by family or a friend or a companion according to SPIKES protocol. When using a patient- and family-centered approach, the doctor delivers the information based on the requirements of the patient and the patient's family. When determining these demands, the family's cultural, spiritual, and religious traditions and beliefs are taken into consideration[7,10,11,12]. Patient's perspective is also important in BBN. Studies report that they prefer to know the truth themselves. This has important implications in the era of patient's choice and freedom[17].

In our study, experienced doctors (over 10 years) found both verbal and non-verbal methods effective (80%) versus 70.7% of less experienced doctors. Experienced doctors showed more empathy, while less experienced ones felt more helpless (27.8%). Overall years of experience had more profound effect in the ability to break bad news. Vogliotti et al noted that longer-experienced doctors took more time and used better approaches in delivering bad news[18].

Most (31.8%) of the participants learnt to break bad news by observing senior doctors and 30.7% by trial and error in our study. There is no formal training which was identified as need of hour by majority of participants. Similar deficiency is reported by other studies from Pakistan as well[12,16]. Various studies emphasize teaching breaking bad news in clinical years or educational courses. [19, 20] Simulation has strong theoretical underpinnings and is frequently used to teach medical professionals how to deliver bad news.

AUTHORS CONTRIBUTION:

AS: Conceptualization of Project & Writing of Manuscript
SS: Literature Review
IR: Data Analysis
AW: Data Collection
MSN: Review of Manuscript
TW: Review of Manuscript

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Case Report

ACUTE NEUROMUSCULAR RESPIRATORY FAILURE: A DIAGNOSTIC CHALLENGE DURING THE COVID-19 PANDEMIC

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ABSTRACT

Background: Acute respiratory failure is a common presentation in COVID-19 patients, but other causes should not be overlooked. Neurotoxic snake bites can also cause acute respiratory system involvement, though they are rare.

Case Presentation: We report the case of a 20-year-old male who presented to the emergency department during the peak of the COVID-19 pandemic with sudden onset dyspnea and low-grade fever. Although the absence of any significant history initially raised suspicion of COVID-19 induced lung involvement, radiological findings and PCR swab results ruled out COVID-19 infection. Reevaluation revealed a neuromuscular cause due to recent flooding in the patient's area and subsequent snakebite. Empiric anti-venom therapy was initiated, and the patient showed remarkable recovery after 24 hours, weaning off the ventilator.

Conclusion: This case highlights the importance of considering alternative diagnoses in patients presenting with acute respiratory failure during the COVID-19 pandemic, especially in regions with a higher risk of snakebite.

Keywords: Snake Bite, COVID-19, Respiratory Paralysis, Antivenom, Pakistan

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INTRODUCTION

Snakebite remains a significant public health concern in many tropical and subtropical countries, leading to millions of bites and tens of thousands of fatalities each year globally[1]. In Pakistan, the estimated annual mortality rate from snakebites is 1.9 per 100,000, with various venomous snakes, such as Saw Scaled Viper, Lavantine Viper, Persian Horned Viper, Asian Cobras, Common Indian Krait, and Russel's Viper, pose a threat to human health. Symptoms of snakebites can be categorized into hemotoxic, neurotoxic, and myotoxic, with Kraits and Cobras being neurotoxic in nature. Envenomation by these snakes can result in a broad spectrum of presentations, ranging from ptosis and ophthalmoplegia to respiratory arrest due to neurotoxic effects.

During the COVID-19 pandemic, respiratory failure was a common presentation in affected patients, primarily associated with severe COVID-19 pneumonia[2]. However, it is essential for clinicians to recognize that not all cases of respiratory failure are related to COVID-19. Snakebite-induced acute respiratory failure is a significant differential diagnosis that may present as a diagnostic challenge, particularly when there is no clear history of envenomation. Clinicians need to be aware of rare and uncommon presentations of respiratory failure in order to identify the cause correctly. In this context, we present a case

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report of acute neuromuscular respiratory failure, suspected to be caused by a snakebite, which posed a diagnostic dilemma during the COVID-19 pandemic. This report highlights the importance of considering uncommon causes of respiratory failure to ensure timely and accurate management of such cases.

CASE PRESENTATION

A 20-year-old healthy nonsmoker male was presented to the emergency department (ED) in early September 2020, with acute dyspnea and low-grade fever that started abruptly the previous morning. At around 10 AM, he experienced dyspnea accompanied by occasional dry cough, but no chest pain, cyanosis, or wheezing. The patient had no history of headache, vomiting, muscle pain, or contact with any COVID-19 infected individuals. He reported vague abdominal pain and fatigue, for which he took acetaminophen with no relief.

During his ED stay, his oxygen saturation began to drop, and with the rising number of COVID-19 cases during the first wave in Pakistan, the suspicion of severe COVID-19 pneumonia led to immediate intubation and ventilatory support, followed by transfer to the Covid intensive care unit (ICU). He was managed as a case of presumed COVID-19 pneumonia and received appropriate antibiotics, steroids, and general supportive care according to hospital protocol. He was afebrile with a heart rate of 100 beats per minute and blood pressure of 100/60 mmHg. Oxygen saturation was 100% at a fraction of inspired oxygen of 40%. The chest was clear on auscultation, and normal heart sounds were audible. Neurological examination revealed bilaterally reactive pupils, no papilledema, and down going planters. Peripheral reflexes could not be elicited. His complete neurology assessment could not be performed as he was sedated and paralyzed.

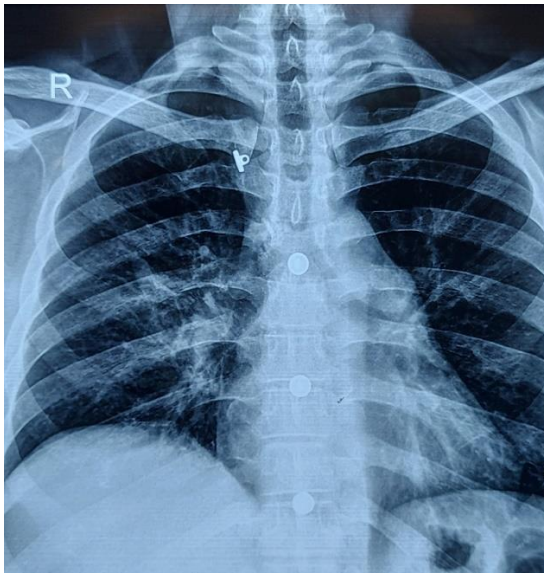

Figure 1: Chest X-Ray showing normal findings

Figure 2: High-resolution computed tomography (HRCT) chest showing normal findings

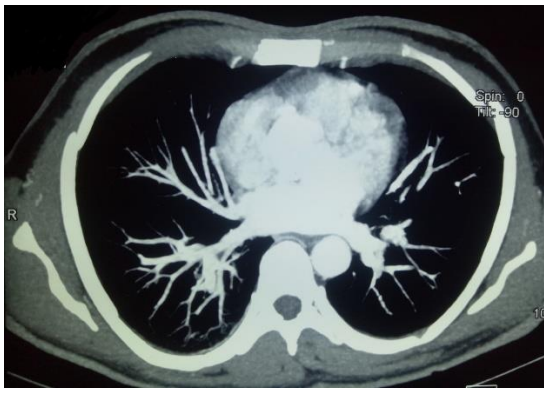

Figure 3: CT pulmonary angiogram of chest showing normal findings

However, the patient's COVID-19 PCR test was negative, and further evaluation by a neurologist and infectious disease specialist

was initiated. The Total Leucocyte Count (TLC) was elevated, and mild coagulopathy was noted in Prothrombin time (PT) and Partial Thromboplastin time (PTTK) tests. As the investigations did not provide a clear cause for the symptoms, the team shifted the focus to a possible neuromuscular cause for the respiratory failure. Considering the patient's mild coagulopathy, abdominal pain, and acute neuromuscular respiratory failure as the primary presentation, the team explored the possibility of a snake bite, despite no visible fang marks. Empirically, the patient received anti-venom treatment and a neostigmine infusion to address neuromuscular junction paralysis. The patient responded remarkably to this treatment, and within 72 hours, he was successfully weaned off the ventilator.

The case was a medical mystery for the treating team. The team decided to follow the principle of parsimony of diagnosis. The primary author had previous experience of dealing with such cases. During the multidisciplinary meeting, he recommended focusing on two important things in the history and findings pertinent to the diagnosis. The first was mild coagulopathy and abdominal pain, and the second was an acute neuromuscular respiratory failure as the initial presentation. There was a consensus that considering all the investigations and a negative COVID-19 test, the most likely explanation for acute respiratory failure was a possible undetected snake bite. The legs, arms, and buttocks were thoroughly inspected for any possible fang marks, but no marks were found. The coagulation profile, including PT, PTTK was repeated and was still abnormally high (PT 18/14 seconds and PTTK 46/34). The team decided to administer anti-venom as empirical treatment[4]. In addition, the patient was given a neostigmine infusion for eight hours to help recover neuromuscular junction paralysis. The patients responded very well to this treatment protocol. The coagulation profile returned to normal within 24 h, and within 72-hour time, he was successfully weaned from the ventilator. We inquired about any history of insect or snake bites that he denied. He was discharged after seven days of hospital stay with a normal coagulation profile.

DISCUSSION

This case highlights the unique and life-threatening presentation and management of neurotoxic snake bite with evident neuromuscular respiratory failure during the peak of COVID-19. The COVID-19 is an unprecedented global health care crisis. We have presented a case of acute respiratory failure, which presented as a diagnostic dilemma. A complete history could not be obtained, and the initial radiological and laboratory data did not suggest a clear diagnosis. However, in clinical medicine, one can identify and join relevant pieces of information just like in a jigsaw puzzle and ignore red herrings to reach a conclusion. The case presented during the first peak of the COVID-19 pandemic and the index of suspicion was high, and COVID-19 pneumonia leading to the respiratory failure was usually the first consideration in such cases.

The team applied the principle of parsimony of diagnosis or Occam's Razor that states that "Among competing hypotheses, favor the simplest one"[5]. This means that when investigating a patient with multiple symptoms, clinicians should aim to find a single diagnosis rather than multiple unrelated ones[6]. While this principle is not absolute and may not apply to the elderly, cancer patients, or those with multiple comorbidities, it remains valuable for younger patients.

After excluding COVID-19 pneumonia as a possible cause, we systematically analyzed the patient's signs, symptoms, and diagnostic data to determine the most likely explanation for his acute respiratory failure and mild coagulopathy. Our analysis led us to a hypothetical diagnosis that was later confirmed by the patient's recovery with the prescribed treatment.

One key factor in our differential diagnosis was the normal HRCT chest, which ruled out COVID-19 pneumonia and pulmonary

embolism which helped to narrow down the possible causes of neuromuscular failure as being the likely reason of dropped oxygen saturation. We also considered the possibility of Guillain-Barré syndrome, but the patient's symptoms and progression were not typical of this condition[7]. In addition, COVID-19 is unlikely to present as Guillain-Barré syndrome without lung involvement and a negative PCR test. Given the short duration of onset, toxic causes were the first consideration compared to infectious or metabolic causes. Additionally, there was evidence of mild coagulopathy, as shown by the deranged PT and PTTK results.

Botulism was also considered, but it is rare in Pakistan and did not match the patient's symptoms. Given that the city was experiencing urban flooding, we considered the possibility of snakebite, which often increases after flooding. Reports from neighboring countries like India suggest that up to 35% of snakebites occur in the early morning hours without any documented history[8]. This makes it crucial for healthcare professionals to be aware of the unusual presentation of snakebites, especially when patients present with sudden onset respiratory failure.

It is worth noting that identifying the snake species responsible for the bite is often challenging, as majority of healthcare workers and physicians in Pakistan are not formally trained to do so. Kraits, cobras, and vipers are commonly found in the region, with kraits being particularly dangerous due to their potent neurotoxic venom. Their dark bodies and tendency to remain low in vegetation make them difficult to notice, especially during the early morning hours when people are out for prayer, fieldwork, or defecation[9]. Furthermore, kraits can have a painless bite and cause minimal local swelling. Therefore, increasing awareness among healthcare professionals regarding the unique presentation of snakebites is crucial for timely intervention and potentially lifesaving treatment.

Acute neuromuscular paralysis is the most frequent and severe manifestation of neurotoxicity resulting in death. Kraits and cobras produce pre-synaptic and post-synaptic neurotoxins that mainly target the muscles of the throat, eye, tongue, and chest, leading to respiratory paralysis[10]. The severity of envenomation and respiratory paralysis depends on various factors such as the amount and potency of venom injected, the anatomical location of the bite, age, health status, and immune system of the victim[10,11]. However, prompt diagnosis followed by administration of anti-snake venom can be lifesaving in snakebite cases.

As Sir Arthur Conan Doyle said, "when you have eliminated the impossible, whatever remains, however improbable, must be the truth." This quote still holds true today, emphasizing the importance of considering all possible explanations and ruling out the unlikely ones to reach an accurate diagnosis[10].

CONCLUSION

This case report highlights the importance of considering alternative causes of acute respiratory failure in COVID-19 negative patients. Healthcare professionals practicing in regions where snake bites are prevalent must be vigilant regarding the atypical symptoms of snake envenomation, particularly in instances where patients experience sudden respiratory distress in the early morning, despite no apparent history of snake bites. Timely and accurate diagnosis, along with prompt administration of antivenom, plays a critical role in saving lives. Furthermore, during global health crises like COVID-19, maintaining vigilance and exploring alternative diagnoses for conditions with overlapping presentations is paramount. Early identification and treatment of snake bite is pivotal in avoiding unnecessary ventilator support and enhancing patient outcome.

AUTHORS CONTRIBUTIONS:

IA: Identification, diagnosis, and management of the case, drafting the manuscript, critical

review, approval of the final version to be published.
FAR: Literature search, drafting the manuscript, critical review, approval of the final version to be published.
MAA: Drafting the manuscript, critical review, approval of the final version to be published.

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