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EDITORIAL

Publication: The lifeline of learning

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In the last centuries we have experienced passionate run from 'known to unknown' with the explosion of knowledge. This new millennium has ushered a plethora of publications with the unbelievable progression of technology of the virtual world. The intellectual community has to provide sincere blessings for the team of professionals behind the launching of this newborn multidisciplinary journal of medical research and practice and inspire them to run along the rally of the revolution of information exchange.

Life is the expression of a series of biochemical reactions passing all the way through a comprehensive organization of cells leading to the accomplishment of optimum state of spirit through perseverance. Through the ages human civilization has been able to learn that exploring the unknown facts of life is the decisive source of knowledge to reach the missing links. In the era of newer hypothesis to find explanations of disease causation Antonovsky's Salutogenic model of health presents the challenging issue to clarify that health is a value and concept to enable us attain highest potential of all the living being. Still pragmatic and objective ways of addressing perception of health is associated with the downstream overt effects of lack of health. In this outlook we need deep internalization to look back why, after the discovery of hundreds of 'curative' drugs for hundreds of morbidities, ill health is still not manageable by exclusive curative approaches with the repetitive bites from emerging and re-emerging diseases. We need to look at the glory of life by 'health promotion' leading to the well-being, rather than engaging in the attention to 'Koch's postulate' of disease with the 'memory game' of endless lists of 'magic bullets', immunizing agents, and adverse drug reactions.[1]

The most important functions of higher education are research and development that is severely lagging behind in low and middle income countries. Instead academic institutes are engaged in retail distribution of degrees and diploma even in the not-for-profit government institutes run by public money collected from taxes. Further, this model has become a 'State-of-Art' in the management of education run by the private sector following the same paradigm. Both public and private sectors are lagging far behind any perceptible contribution to the development of sciences in general and healthcare sciences in particular.

Curricular medical teaching–learning and basic healthcare delivery systems are at cross roads where pro-people reforms are long awaited for decades. We need a paradigm shift to be driven by positive mindset from a medical education system exclusively based on tertiary care academic institutes. The undergraduate and postgraduate students are grossly deprived of the potentially rich contribution from health professionals and health facilities functioning outside the tertiary care system. Although there is no debate that medical education has to produce first contact physician of the community, yet this has been suffering over decades.[2,3]

The journal is expected to report on research works conducted from 'bench side' to 'bed side' at the community level to support interaction between researchers and healthcare providers at grassroot levels to confront and conquer the major healthcare problems of this century.

Think of the ancient Zen proverb: "If a tree falls in a forest and no one hears the sound of the fall, did the tree fall at all?"

Million dollar question worth pondering 'Why we should have courage and time to publish'?

Let us make footprints on the global literature through our original thinking and bold hypotheses.

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ORIGINAL ARTICLE

Knowledge and perception of mothers regarding childhood immunization in a tertiary care teaching hospital in Bhubaneswar

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ABSTRACT

Introduction: Immunization prevents many life-threatening diseases among infants and children. Proper vaccination has to be given at proper time in a proper route. For this it is necessary to have proper knowledge of mothers so that they are motivated to bring their children for vaccination. In this background, the present study was planned to vaccination to find out the role of socio-demographic characteristics on knowledge of mothers regarding immunization and to find out the level of knowledge of mothers regarding immunization of their children. **Materials and methods:** It was a hospital-based cross-sectional study conducted at an immunization clinic of Hi-Tech Medical College and Hospital, Bhubaneswar, among 50 mothers who brought their children for immunization at immunization clinic from November, 2013 to February, 2014. Mothers were asked 12 questions regarding knowledge on immunization and their knowledge was assessed based on their socio-demographic characteristics. **Results and analysis:** All mothers knew that vaccination prevents diseases. Majority (96%) were in favor of vaccination. Briefly, 50% mothers did not know that with mild illness vaccination can be given and 78% mothers were in favor of massage of local area after vaccination, while 32% mothers were totally unaware about the danger of delaying of vaccination. Majority (84%) did not know which vaccines were being given to their children and what are the diseases these vaccines prevent. In total, 66% mothers did not know when to bring their children next time for vaccination. Education has no significant role in changing the knowledge regarding vaccination. However the working mothers had significantly better knowledge than those who were housewives. **Conclusion:** Four key messages regarding the vaccine is must which should not be ignored during immunization session. Proper knowledge of mothers will increase their acceptability for vaccinating their children and the chance of drop out would be minimized.

Key words: Immunization, Knowledge, Perception, Vaccination

INTRODUCTION

Immunization is a proven tool for controlling and eliminating life-threatening infectious diseases like diphtheria, measles, and polio. The fact is that immunization has made many infectious diseases rare or almost unheard of can lead to the opinion among parents and health professionals that immunization is no longer necessary. Owing to gaps in vaccination coverage disease outbreak occurs affecting everyone in the society.

If proper immunization is given from very beginning of life (first day of life) the body's immune system becomes stronger so that the agents cannot enter the human body. Thus timely and scheduled immunization helps in building healthy individual, free of fear of onset of disease or contact of disease, which is essential to build healthy human society.

For optimum immunization of children every country has their National Immunization Schedule. Every child should be vaccinated timely and completely according to the schedule. In India the timeliness and completeness of primary as well as booster immunization are not up to the mark. There is wide variation of immunization status of children living in different states of this large country. Intra-state variation according to geographical area is also seen. Cultural practice of the community, educational status of mothers, and other socio-demographic characteristics play a significant role in vaccinating the child.

Vaccination plays a great role in health promotion. Disease prevention is the key to public health. It is always better to prevent a disease than to treat it. Vaccines prevent disease in the people who receive them and protect those who come into contact with unvaccinated individuals. Vaccines help in prevention of infectious diseases and save lives. Vaccines are responsible for the control of many infectious diseases that were once common in this country, including polio, measles, diphtheria, pertussis (whooping cough), rubella (German measles), mumps, tetanus, etc. Vaccine-preventable diseases have a costly impact, resulting in doctor's visits, hospitalizations, and premature deaths. Sick children can also cause parents to lose time from work.

Parents are constantly concerned about the health and safety of their children and take many steps to protect them. Vaccines work to protect infants, children, and adults from illnesses and death caused by infectious diseases that can be passed on to people who are not protected by vaccines.

In this background, the present study was planned at an immunization clinic of Hi Tech Medical College and Hospital, Bhubaneswar, among mothers bringing their children for vaccination to find out the role of socio-demographic characteristics on knowledge of mothers regarding immunization and to find out the level of knowledge of mothers regarding immunization of their children.

MATERIALS AND METHODS

i. Study Area

The study was conducted at an immunization clinic of Hi-Tech Medical College and Hospital, Bhubaneswar, Odisha, in the eastern part of India.

ii. Study Subjects

The study was conducted among mothers coming to the immunization clinic of Hi-Tech Medical College and Hospital to immunize their babies.

iii. Study Design

It was a hospital-based cross-sectional study.

iv. Study Period

November 2013 to February 2014.

v. Study Tools

A pre-designed, pre-tested, semi-structured questionnaire was used for data collection.

vi. Study Technique

Mothers were interviewed about their knowledge and perception regarding childhood immunization and post-immunization care.

vii. Sample Size

Data were collected from 50 mothers after taking informed consent.

viii. Inclusion Criteria

i. Mothers having baby of up to 10 weeks of age during the first visit or aged more than 10 weeks but have come to receive either DPT-1/ Pentavalent-1, OPV-1, HBV-1 or DPT-2/ Pentavalent-2, OPV-2, HBV-2.

ii. Mothers who gave informed consent to take part in the study.

ix. Exclusion Criteria

i. Mothers having baby who came to receive either 3rd or booster dose of DPT, OPV or measles or for secondary immunization.

ii. Mothers who did not wish to give informed consent to take part in the study.

iii. Mothers who did not come back for next dose of vaccination of their babies during the study period.

Table 1: Score for different questions on knowledge of vaccination

Question	Possible scores		
	2	1	0
Does vaccination prevent disease?	Knows completely	Knows partially	Does not know
Are you in favor of vaccination?	Knows completely	Knows partially	Does not know
Is vaccination harmful?	Knows completely	Knows partially	Does not know
Will you recommend vaccination to others?	Knows completely	Knows partially	Does not know
Today which vaccine would be given to your child?	Knows completely	Knows partially	Does not know
What are the vaccines given to the child for disease prevention?	Knows completely	Knows partially	Does not know
What are the diseases prevented by vaccination?	Knows completely	Knows partially	Does not know
Is there any problem if vaccination is delayed?		Knows completely	Does not know
Is there any dietary restriction after vaccination?		Knows completely	Does not know
Is massage needed after vaccination?		Knows completely	Does not know
With mild illness can the child be vaccinated?		Knows completely	Does not know
Next time when to bring the child for immunization?		Knows completely	Does not know

iv. Mothers who did not wish to participate in the 2nd interview.

x. Parameters Used

Age, education, occupation of mothers, per capita income in the family, knowledge and perception regarding vaccination, e.g., importance of timely vaccination, prevalence of diseases, role of different community members in the society, problems faced for immunization.

xi. Knowledge Score of Mothers

Knowledge of mothers regarding childhood immunization was assessed by asking questions to them and according to the level of knowledge scoring was given. In total, 12 questions were asked. Then intervention was delivered in the form of health education about the proper knowledge regarding vaccination. The level of knowledge of mothers were again assessed by repeating these 12 questions to the mothers who returned back for immunizing their children for the next dose of vaccination. Total knowledge score was compared before and after intervention. Table 1 shows the questions on knowledge of vaccination.

xii. Statistical Analysis

After collection of data it was double entered in Microsoft excel sheet and verified. A clean datasheet was generated and copied into SPSS sheet (Version 16.0). Then the whole analysis was performed in SPSS. Bar diagram and pie charts were prepared for graphical representation of data. Independent sample t-test and correlation were the main statistical tests of significance used in this study.

RESULTS AND ANALYSIS

Table 2 shows the knowledge and perception of mothers regarding vaccination of their babies. It is seen that 100% of the mothers knew that vaccination prevents diseases. In total, 96% of mothers were in favor of vaccination. Majority of the mothers (82%) knew that vaccination was not harmful for their babies. Briefly, 78% of the mothers told that they will recommend vaccination to others. Only 38% of the mothers knew the name of vaccines to be administered to their children. A few mothers (2%) knew the name of various vaccines given for disease prevention. Only 6% of the mothers were aware about the diseases preventable by early and timely vaccination. Majority of the mothers (68%) opined that problem will occur if vaccination is delayed. Most of the mothers (72%) said that diet restriction is needed after vaccination. Briefly, 78% of the mothers told that massage is not needed after vaccination of their babies. Half of the mothers told that with mild illness children can be vaccinated and half of them denied the fact and most of the mothers (66%) were unaware about the next date for immunization of their babies.

Figure 1 describes that 70% of the mothers chose this private facility for near distance, 24% of them chose for relative working here/ staff reference and only 6% of them chose for better facility.

In Table 3, the Anova test shows that the total knowledge score of mothers having different educational levels is not significant (0.148).

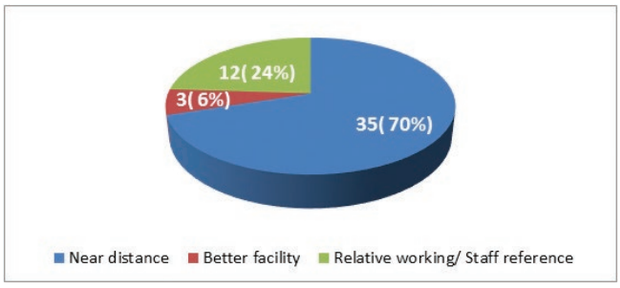

Figure 1: Reasons for choosing private facility

Table 2: Knowledge and perception of mothers regarding vaccination of their children

Question	Score		
	2	1	0
Does vaccination prevent disease?	50 (100%)	0 (0%)	0 (0%)
Are you in favor of vaccination?	48 (96%)	2 (4%)	0 (0%)
Is vaccination harmful?	41 (82%)	5 (10%)	4 (8%)
Will you recommend vaccination to others?	39 (78%)	7 (14%)	4 (8%)
Today which vaccine would be given to your child?	19 (38%)	20 (40%)	11 (22%)
What are the vaccines given to the child for disease prevention?	1 (2%)	7 (14%)	42 (84%)
What are the diseases prevented by vaccination?	3 (6%)	5 (10%)	42 (84%)
Is there any problem if vaccination is delayed?		34 (68%)	16 (32%)
Is there any dietary restriction after vaccination?		36 (72%)	14 (28%)
Is massage needed after vaccination?		11 (22%)	39 (78%)
With mild illness can the child be vaccinated?		25 (50%)	25 (50%)
Next time when to bring the child for immunization?		17 (34%)	33 (66%)

Table 3: Relationship between education of mother and total knowledge score

Total score	Sum of squares	Degree of freedom	Mean square	*F*-value	*P*-value
Between groups	23.503	3	7.834	1.872	0.148
Within groups	192.497	46	4.185		
Total	216.000	49			

*Statistical test performed – Anova test.

In Table 4 it is noted that mothers who were Housewives, have mean total knowledge score of 12.12 as compared to those who were working have mean total score 14.14 and this difference is statistically significant ($P = 0.016$).

Table 5 shows that there is no significant coefficient correlation ($P = 0.714$) between total knowledge score of mothers and age of mothers. Pearson's correlation coefficient is 0.054.

Table 6 shows that the mean total knowledge score of mothers belonging to nuclear family is 13.00 as compared to that of joint family 12.21 and this difference is not statistically significant ($P = 0.260$).

Table 5: Correlation between age of mothers and total knowledge score

Comparing variables	Pearson correlation coefficient	*P*-value
Age of mothers with total knowledge score	0.054	0.714

*Statistical test performed – correlation.

Table 6: Relationship between type of family and total knowledge score

Type of family	Number (%)	Mean total score	Standard deviation	Standard error mean	*P*-value
Nuclear	12 (24%)	13.00	2.523	0.728	0.260
Joint	38 (76%)	12.21	1.947	0.316	

*Statistical test performed-independent sample *t*-test.

DISCUSSION

In spite of the effort of the govt. to prevent vaccine preventable diseases by vaccination it has been found that the proportion of children vaccinated is not 100% and it varies according to the particular vaccine and the particular areas in which the children live. Many socio-demographic parameters often play a great role in taking decision to vaccinate or not to vaccinate the child.[1] Usually in India mothers bring the children for vaccination. In this regard the socio-demographic parameters and knowledge of mothers often take a leading role in taking decision regarding vaccinating their children. This finding was matched with the study by Kitamura et al.[2]

The present study was conducted in an immunization clinic of a Medical College and Hospital (Hi-Tech Medical College and Hospital, Bhubaneswar) to find out the knowledge and perception of mothers regarding childhood immunization.

In India teenage pregnancy is not uncommon. Young mothers who give birth to a child at very tender age often are not able to rear their children properly. Teenage pregnancy is associated with early school dropout and the knowledge of these mothers is often poor which is reflected in the knowledge of child rearing practice also. Wilson et al[3] revealed that practice of childhood vaccination is poor among younger mothers. Bbaale[4] in a study in Uganda has found significant association between ages of mothers with their knowledge regarding children. However, in the present study no significant correlation between ages of mothers and their knowledge scores regarding childhood immunization is seen. This finding is collaborated to finding of Etana et al.[5] The present study was conducted in the city of Bhubaneswar, which is the capital of Odisha and the minimum age of mothers was found to be 20 years. Hence, no teenage mother came to the immunization clinic during the study period and as a result of it the correlation between age of mothers and total knowledge scores of them has not shown any significant relationship.

In formal education a person is often educated about the ways of normal day to day practice. Hence, mother's educational status is often linked with their knowledge and practice regarding immunization of their children.[6] In the developing country like India where social taboos and customs often prevent a child to get vaccinated, adequate education of mothers can fight against this and help the child to get vaccinated. In studies by Rammohan et al[7] and Vikram et al,[8] it has been found that with the maternal education of secondary level and above the likelihood of child to get vaccinated is significantly increased. In some other studies from different parts of the World like study by Fatiregun et al[9] also found the significant association of education of mothers with their knowledge regarding childhood immunization. But in the present study no

Table 4: Relationship between mothers' working status and total knowledge score

Mothers' working status	Number	Percentage	Mean total score	Standard deviation score	Standard error of mean	*P*-value
Housewife	43	86	12.12	2.049	.313	0.016
Working	7	14	14.14	1.574	.595	

*Statistical test performed – Independent sample *t*-test.

significant association was found between education of mothers and their total knowledge scores. It may be due to small sample size or it may also happen that in all communities formal education and the knowledge regarding childhood vaccination do not go hand in hand. Further, it has also been noted that with health education session the knowledge scores of mothers belonging to all educational levels increased significantly.

In India till now a large proportion of women are housewives. Often it is postulated that housewife mothers rear their children better than the working mothers. But working mothers get chance to interact with more people and so their knowledge levels is often better than housewives. In the present study it has been found that the knowledge level of working mothers regarding childhood immunization was significantly better than housewives. However, with health education session the knowledge of both increased significantly.

While assessing the knowledge levels of mothers regarding childhood immunization some questions were asked to them. All of the mothers agreed that vaccination prevents disease and most of them were in favor of vaccination. This finding was also supported by the study of Tarrant et al.[10] In spite of the above fact 8% mothers thought that vaccination is harmful and they would not recommend vaccines to others. It was found that only 2% mothers know fully the name of vaccines which are given to the child for disease prevention and only 6% mothers fully knew the names of the childhood diseases which are prevented by vaccination. This is corroborated with the findings of Tobin-West et al,[11] who found that 15.2% mothers new the names of six vaccine preventable diseases. The knowledge regarding post-immunization care and problem of delayed vaccination were also far below the desired level.

Keeping all these deficiency pockets in knowledge health education session is must for mothers regarding the knowledge of childhood immunization. Hence, Government of India has initiated to train the ANMs to deliver four key messages to caregivers when they are bringing their children during immunization session. However, the proper utility of that tool is not there in many places.

This study indicates that still there is huge lack of knowledge of mothers regarding immunization of children. Although there are different factors governing the childhood vaccination, if mothers are educated by regarding the proper knowledge, the overall improvement can happen in childhood immunization as mothers with proper knowledge will bring their children for immunization at proper time and it is also likely that the post-immunization care will also be delivered properly. Overall the burden of infectious diseases among children may go down.

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SHORT COMMUNICATION

Adolescent obesity, a growing concern among the semi-urban population–Rajasthan India

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ABSTRACT

Adolescent obesity has reached epidemic levels in developedas well as in developing countries. Ingeneral, overweight and obesity are assumed to be the results of an increase in caloric and fat intake. On the other hand, there are supporting evidences that excessive sugar intake by soft drink, increased portion size, and steady decline in physical activity have been playing major roles in the rising rates of obesity all around the world. Consequently, both over-consumption of calories and reduced physical activitiesare involved in childhood obesity. Obesity is a multi-factorial disorder, which is often associated with many other significant diseases such as diabetes, hypertension and other cardiovascular diseases, osteoarthritis, and certain cancers. The management of obesity will therefore require a comprehensive range of strategies focusing on those with existing weight problems and also on those at high risk of developing obesity. Hence, prevention of obesity during childhood and during adolescence should be considered as a priority, as there is a risk of persistence to adulthood. The aim of the present study was to assess the prevalence of obesity among the adolescent population of Pilani, India and do risk factor assessment for the same. Another aim wasto assess the nutritional status of school children and also to compare the obesity between gender and between the residential and non-residential schools.

Key words: Adolescent obesity, Body mass index (BMI), Overweight, Hypertension, WHO, UNICEF, COR

INTRODUCTION

"Tummy fat and inactivity has pushed up hypertension in city children 5 fold in as many years". This is one of the alarming finding in our Indian kids. It was reported in a newspaper by a study conducted by archives of disease in childhood. Till date we had relied on the assumption of checking blood pressure only after the age of 16 or 18 years unless and until any special need arises. But this finding sets us back to think. There are some changes in monitoring of blood pressure which now states to check it at the age of 6 or as soon as child walks into the clinic especially if there is a family history of the disease.

Childhood overweight and obesity are global problems that are on rise. Obesity is evolving as a major nutritional problemin developing countries, affecting a substantial number of adultsand resulting in an increased burden of chronic disease.[1] Innational surveys conducted in the USA from the 1960s to the1990s, the prevalence of overweight in children increased from5% to 11%.[2] In a study conducted on school children in Ernakulam, Kerala, over a period of 2 years from 2003 to 2005 to know the time trends and to explore the hypertension, it was found that the proportion of overweight children increased from 4.94% of the total students in 2003 to 6.57% in 2005.

Distinguishing feature of an adolescent obesity is an above average weight in comparison to their height. Some of the factors contributing to adolescent obesity include; junk food in schools, excessive snacking, poor dietary patterns, and lack of physical exercise. The dietary patterns of children today have changed compared to what they were 30 years ago. More and more families are headed by a single parent or two-parent families with both parents that work. The readily available junk food in vending machines, which are being put in our schools, makes it very easy for children to snack throughoutthe day on high calorie non-nutritious foods. A study conducted by Cfore and Hindustan times reported that more than 60% of Indian kids consuming junk food daily and another study by Associated Chambers of Commerce and Industry of India reports 52% of 8–11year olds spend over 5h online daily. Following are the main objectives of the present study:

- To check the prevalence, do risk factor assessment of obesity in the preadolescentand adolescent population of Pilani (Rajasthan).
- Assessment of nutritional status of school children.
- To compare obesity between gender and between the residential and non-residential schools.

The reason that has to be considered about rising rate of obesity is because children with obesity have a fairly high rate of becoming overweight or obese adults. Teens that are overweight have a 70% chance of carrying this weight into adulthood and the risk goes up to 80% for children with one obese parent.

METHODS AND MATERIALS

The study was conducted with a sample size of 720 respondents from four different schools in Pilani. The selection of schools included both residential and non-residential schools and boy's and girl's schools. Two Questionnaires were designed to achieve the aim of the study and along with interviewing the respondent some anthropometric measurements like height, weight, waist circumference, and hip circumference were also performed. An apparatus "Inner Scan" was used for the purpose of calculating the body fat percentage. After the data collection it was entered separately for all the schools and analyzed using Microsoft excel with all possible combinations. The data was analyzed for overall subjects, gender wise, age group wise, and according to the type of school.[3–10]

RESULTS

Prevalence of obesity

Table 1 shows the prevalence of obesity.

Food habits among adolescents

Table 2 shows the food habits among adolescents.

Table 1: Prevalence of obesity

	Percentage of obesity
With BMI as diagnostic criteria	
• Complete sample	13
• Adolescent girls	18
• Adolescent boys	4.25
• Age group of 10–13 years	2.37
• Age group of 14–15 years	15.54
• Age group of 16–18 years	20.09
• Adolescents of residential schools	17.34
• Adolescents of non-residential schools	2.52
With body fat percentage as diagnostic criteria	
• Complete sample	35
• Adolescent girls	25.11
• Adolescent boys	7.99
• Age group of 10–13 years	9.12
• Age group of 14–15 years	22.9
• Age group of 16–18 years	24.01
• Adolescents of residential schools	25.2
• Adolescents of non-residential schools	3.85

BMI: body mass index.

Table 2: Food habits among adolescents

	Convenience food (%)	Prepared food (%)	Eating when in stress (%)	Snack often (%)
• Complete sample	47.49	66.57	22.84	51.94
• Adolescents of residential schools	43.76	67.76	79.13	51.23
• Adolescents of non-residential schools	44.81	64.8	23.5	55.12
• Boys	49.31	61.81	26.39	49.31
• Girls	46.28	69.77	25.12	53.72

CONCLUSION

To conclude, the prevalence of obesity in the adolescent population of Pilani, Indiais around 13% if considered according to body mass index. While taking body fat percentage as the diagnostic criteria the prevalence is around 35%. Girls have a higher rate of prevalence than boys with 18% and 4.25%, respectively, according to body mass index. With the diagnostic criteria of body fat percentage the prevalence of obesity in girls and boys is 49% and 16%, respectively. The students in the residential schools have a higher rate of obesity when compared to the students of non-residential schools.

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Case Report

Suspected meningitis with fulminant septic shock due to community-acquired *Achromobacter xylosoxidans* in an immunocompetent child: A case report

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ABSTRACT

Septic shock is the most life-threatening complication of sepsis where the underlying circulatory and cellular/metabolic abnormalities are profound enough to substantially increase mortality. It is characterized by circulatory failure manifested by tachycardia, low blood pressure, and other features of organ failure. Septic shock is still one of the leading causes of Intensive Care Unit (ICU) admissions both in adult and pediatric age groups where the causative agents most commonly are Gram-negative enterobacteriaceae, Gram-positive cocci, and Gram-negative diplococci (meningococci). *Achromobacter xylosoxidans* is a Gram-negative bacilli rarely associated with human infection especially in children. It is mostly associated with catheter-related blood stream infections as well as arthritis and osteomyelitis secondary to open fractures, meningitis mostly in the neonatal period, peritonitis, and chronic otitis media. In the present paper, a case of fulminant septic shock with suspected meningitis in a 5-year-old girl where the blood culture revealed the growth of *Achromobacter xylosoxidans* which is very rarely associated with community-acquired human infection was presented.

Key words: Septic shock, *Achromobacter*, Infection, Immunocompetent

INTRODUCTION

Achromobacter xylosoxidans, formerly called *Alcaligenes xylosoxidans* is an aerobic, motile, catalase- and oxidase-positive, lactose non-fermenting, Gram-negative bacillus. The recent classification of the bacteria denotes two subspecies namely denitrificans and xylosoxidans.[1] Bacterial infection with *Achromobacter xylosoxidans* is thought to occur mostly in children who have central venous catheters,[2] shunts,[3] and peritoneal dialysis catheters[4] and is associated with high mortality. Infection in children with *Achromobacter xylosoxidans* have included bacteremia, meningitis, urinary tract infections, abscess, osteomyelitis, prosthetic valve endocarditis, peritonitis, and pneumonia in immunocompromised and immunocompetent hosts as well, mostly as nosocomial infection.[4] Our index case is a 5-year-old immunocompetent girl who developed community-acquired *Achromobacter xylosoxidans* sepsis and ultimately succumbed.

CASE REPORT

A 5-year-old girl was admitted to our hospital in a drowsy state with high grade fever, abnormal twitching movements of the face along with incontinence of bladder and bowel. She had history of high grade intermittent fever for the last 15 days associated with headache and non-bilious vomiting during the episodes of fever. The frequency of vomiting had increased since last 7 days and the child became drowsy 3–4 h before admission to our hospital. On examination, child was drowsy (GCS – 8/15), HR – 180/min, pulse volume was low and thready in character, BP – 80/50 mm of Hg, RR – 34/min, CBG – 106 mg/dl, temperature – 102.6°F, oral mucosa – dry, skin pinch > 3 s. Neurological examination revealed pupils – B/L equal in size and reacting to light, tone – increased in all four limbs with lower limbs > upper limbs, DTR was exaggerated in all the limbs, superficial reflexes – diminished, Plantar – B/L withdrawal response. Liver was 2 cm below the right costal margin in MCL.

The child was immediately shifted to PICU, airway was secured, adequate oxygenation was maintained, and normal saline boluses were given. Temperature was immediately brought down to normal with antipyretics and hydrotherapy. Active convulsions started which were controlled with intravenous bolus doses of lorazepam followed by loading dose of intravenous fosphenytoin. Blood was drawn for routine investigations and culture, then the child was started empirically on intravenous Ceftriaxone. Head end of the bed raised to 30° with head in midline position. Briefly, 3% NaCl infusion was also started to reduce the intracranial tension. Despite the initial fluid boluses the pulse volume was still low, hence an arterial access was done which showed BP – 60/40 mm of Hg. Dopamine infusion was started. In view of deteriorating respiratory pattern and poor GCS (7/15) after 1 h of admission, the child was intubated and put on mechanical ventilation in volume control mode. Mild hyperventilation with pCO_2 around 35–40 mmHg was targeted.

As the BP was persistently low and the dose of dopamine infusion had to be rapidly excalated, central venous line access was performed and the child was started on adrenaline followed by noradrenaline. Maintenance dose of intravenous fosphenyoin was continued.

Initial blood reports revealed Hb – 7.9 g/dl, TLC – 10,900/cmm (N84L14), platelets – 164,000, CRP – 320 mg/dl. Serum Na – 120 mg/dl, Ca – 7.9 g/dl, K – 3.7 g/dl. RFT was normal, LFT was normal except SGOT – 395 g/dl, LDH – 1273 IU/L. Briefly, 3% NaCl infusion was increased with the target Na level around 150 mg/dl. Routine serology for HIV was negative and CSF study could not be performed due to extremely fragile condition of the baby. The condition of the child continued to deteriorate over the hours and the antibiotics were upgraded to Meropenem and Vancomycin .The ventilator settings as well as doses of the inotropes had to be increased. After 8 h of PICU admission, the child had a sudden cardiac arrest from which the child could not be revived back despite our best resuscitative efforts. Briefly, 3 days later the blood culture reports came which yielded the growth of quite a rare organism called *Achromobacter xylosoxidans* which was found to be resistant to all cephalosporins, aminoglycosides, fluroquinolones and susceptible to piperacillin-tazobactum and Carbapenems.

DISCUSSION

Achromobacter xylosoxidans is a Gram-negative, aerobic, motile, oxidase- and catalase-positive, non-lactose fermenting bacillus that grows well in MacConkey agar medium.[5] In the community this organism has been recovered mainly from the water sources.[6] *Achromobacter xylosoxidans* has been well described in cancer patients[7] and occasionally in other immunodeficiency states resulting in a wide variety of illness including pneumonia,[8] meningitis,[9] and urinary tract infection.[10] Manifestations in children include chronic purulent otitis media, arthritis and osteomyelitis secondary to open fractures of the tibia,[12] and peritonitis because of peritoneal dialysis catheters.[4,13] Catheter-associated bacteremia has also been described in a few children with cancer[7] and with AIDS.[2] Meningitis is a frequent manifestation of *Achromobacter* infection in neonates resulting in ventriculitis and a high mortality.[9,11] Most cases in the neonatal period occurred in preterm or LBW babies. Nosocomial transmission is the usual mode of acquisition of *Achromobacter xylosoxidans* in the nursery although a case of well-documented perinatal transmission has been described.[14] In immunocompetent children *Achromobacter* can be isolated from throat or stools not being responsible for illness. It is regarded as an unusual and rare pathogen in nosocomial infection and that too in the immunocompromised. Bacteremia in our patient was diagnosed on the basis of blood culture report that was positive after 72 h of incubation and it was never suspected initially as the baby came from the community and was apparently immunocompetent. The pattern of susceptibilities of *Achromobacter xylosoxidans* to antibiotics is different to most Gram-negative rods. It has been suggested that a combination of antibiotics might be superior to a single antimicrobial based on some data showing that sometimes the antibiotics with good activity may not be bactericidal.[15] Because of scars reported experience on this infection, it is not possible to draw conclusions about the best treatment options and therapy must be individualized based mainly on the underlying disease and the site of infection. In recent years the incidence of infection due to *Achromobacter xylosoxidans* has increased along with placement of indwelling catheters and increase in the number of immunocompromised patients. Since the differentiation of *Achromobacter xylosoxidans* from other non-fermenting Gram-negative rods can be difficult, an accurate identification is necessary as the response to conventional antibiotics can be inadequate. In conclusion, *Achromobacter xylosoxidans* is a relatively new bacterium that may be pathogenic mostly in immunocompromised hosts in whom it may cause severe infections and mortality. The rarity in our case lies in this fact that the infection happened in the baby who was apparently immunocompetent and acquired from the community. Our findings further expand the knowledge about the clinical spectrum of infections by this rare but important opportunistic pathogen.

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Case Report

A case study of variation of medial pectoral nerve in a cadaver

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INTRODUCTION

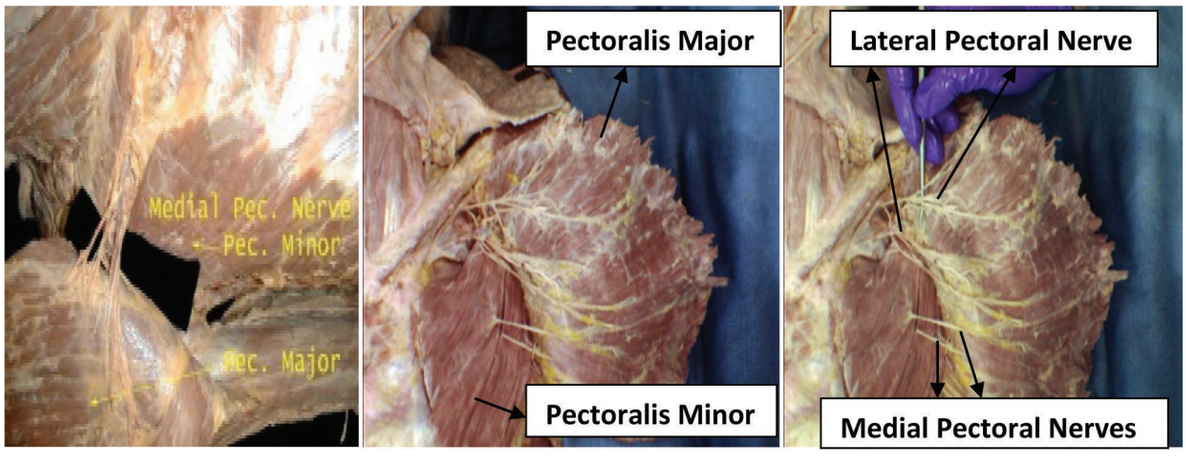
The medial pectoral nerve is the first branch of medial cord of brachial plexus and lies behind the first part of axillary artery. The nerve passes forward between axillary artery and vein, joins with lateral pectoral nerves to form a loop in front of the artery. It pierces the pectoralis minor, supplies the pectoralis minor, enters deep surface of pectoralis minor, and ends by distributing fibers to pectoralis major. Usually in most cadavers only one nerve pierce pectoralis minor but occasionally two or three branches may pierce pectoralis minor and may pass round its inferior border to end in pectoralis major.

AIM OF STUDY

Knowledge of course of the medial pectoral nerve is important more in women as it may be affected during breast carcinoma due to infiltration of nerve causing pain in breast. Also it is important during pectoralis major muscle resection and grafting.

OBSERVATIONS

In right pectoral region of the cadaver there are two medial pectoral nerves piercing the pectoralis minor muscle and ending in pectoralis major muscle. It was seen to form loop with the lateral pectoral nerve beneath the pectoralis major. The left pectoral region of the cadaver had normal findings.



INFERENCE

The course of medial pectoral nerve is important during modified radical mastectomy (MRM) performed for the breast carcinoma patients. Sometimes pectoralis major muscle grafts are also resected and grafted in cases of cellulitis of foot after extensive surgical exploration of dead tissues. Also muscle grafts are sometimes used in extensive third degree burn patients along with the skin grafting.

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Case Report

Nasal mucosal hemangioma: A rare but must-include D/D of nasal bleeding mass

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ABSTRACT

Hemangiomas are benign tumors of blood vessel endothelium, capillary type being the commonest. Capillary hemangiomas arising from nasal mucosa is relatively rare but it should be included in the differential diagnosis of recurrent epistaxis or nasal bleeding mass. Careful clinical examination of nose is important to diagnose even small hemangiomas that can lead to troublesome bleeding. A case report is presented here of a 30-year-women with capillary hemangioma of left nasal cavity having recurrent epistaxis treated with minimally invasive nasal endoscopic excision of the mass.

Key words: Capillary hemangioma, Epistaxis, Surgical treatment

INTRODUCTION

Hemangiomas are very common tumors composed of blood-filled vessels. Capillary hemangiomas are the most common type; these occur in the skin, subcutaneous tissues, and mucous membranes of the oral cavities and lips, as well as in the liver, spleen, and kidneys.[1] Hemangiomas arising from nasal mucosa is rare. The most common symptoms are nasal bleeding and obstruction. A case report of a 30-year-old woman with a capillary hemangioma of left nasal cavity mucosa was presented. The importance of considering capillary hemangioma as a differential diagnosis of nasal bleeding mass was emphasized. Trans-nasal endoscopic technique is sufficient for treating these tumors and it does not require a pre-operative embolisation.

CASE REPORT

A 30-year-old woman presented with recurrent episodes of nasal bleeding from left side of nose since 3 months. She had a habit of nose picking occasionally. No other relevant history was presented. Clinical examination with head light and thudicum speculum revealed a tiny growth (1×0.5 cm approximately) arising from left inferior turbinate, which was bleeding on manipulation. Rest of the examination was unremarkable. The patient's laboratory work-up was normal. She was treated surgically by endoscopic excision of the mass under local anesthesia (with cotton pledges placed in nasal cavity soaked in 4% lignocaine after using topical nasal decongestants) as a day case and cauterization of the base with bipolar diathermy. She tolerated the procedure well. Follow-ups till 3 months she has no further nasal bleeding/recurrence of mass.

DISCUSSION

Head and neck hemangiomas comprise about 0.5% of all head and neck neoplasm, commonly present at cutaneous sites as scalp, neck, ear, lip, and nose. These usually present as erythematous, raised, mobile masses. Depending on the dominant vessel size at microscopy, hemangiomas are divided into capillary, cavernous, and mixed types. These may produce functional or cosmetic sequale specially if located in ear, nose, or lips. Surgical excision may be accomplished keeping in mind the higher rate of recurrence of these tumors because of their more infiltrative growth pattern. Medical therapy includes steroid (for controlling the proliferative growth phase of hemangiomas) and antiangiogenic property of interferon alpha 2a (used for massive and life-threatening tumors) but are not without side effects.[2,3]

Capillary hemangiomas of nasal cavity, though uncommon, are reported in the literature as lobular capillary

hemangioma, commonly known as pyogenic granuloma. In 1980, Mills *et al*. termed pyogenic granuloma as lobular capillary hemangioma because of its characteristic microscopic features.[4,5] These lesions more commonly seen in women in third decade like in our case. The commoner sites include gingiva, buccal mucosa, lips, and tongue. In the nasal cavity, these arise from antero-inferior part of nasal septum or as in our case, from turbinate. Causes attributed are local trauma, hormonal factors including pregnancy, or contraceptive pill usage. Nasal bleeding and varying degree of nasal obstruction are reported as clinical features in most literature.[5,6] Differential diagnosis of such lesions are Rhinosporidiosis, Wegener's granulomatosis, Angiosarcoma, or Kaposi sarcoma.[7] Naked eye appearance of the tumor is that of a red or purple solitary mass. Histologically, there is a central vessel, surrounded by varying sized capillaries.[6] In our case, the lobular pattern was not seen, there was proliferation of thin walled vessels intermixed with inflammatory cells. Total excision of these tumors is recommended which is best done with the transnasal endoscopic techniques. No recommendation for preoperative embolization is mentioned in literature.[6] This patient was managed by endoscopic excision of the complete mass under local anesthesia and post-operatively specimen sent for histopathology which confirmed our clinical diagnosis (Figure 1). The patient had no recurrence of symptoms after 3 months of follow-up, also clinically there was no growth seen.

This case report was presented to emphasize that, hemangiomas, though uncommon lesion in nasal cavity, should be included in the differential diagnosis of recurrent epistaxis or a bleeding mass of nasal cavity. Careful clinical/endoscopic examination is of utmost importance to diagnose even small tumors which can lead to significant bleeding and unnecessary nasal packing and other morbidities to the patient.

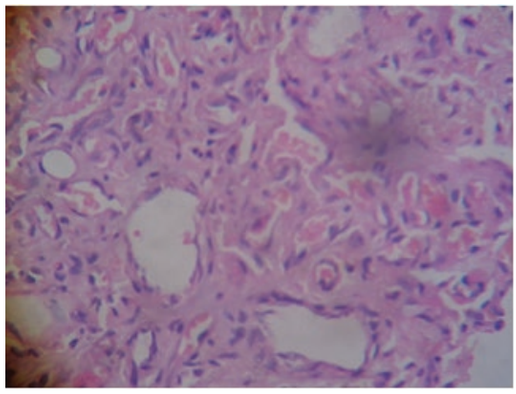

Figure 1: Histopathology of excised mass

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Case Report

Unusual branch of superior mesenteric artery

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ABSTRACT

Knowledge of the anatomical variations of the colic arteries is clinically important during abdominal surgeries and radiological invasive procedures. During routine dissection in the Department of Anatomy, ESI Medical College, Kolkata, an anomalous common trunk arising from superior mesenteric artery, giving a slender pancreatic and a thick colic branch was observed. The colic branch passes in front of the anterior surface of left kidney and anastomose with ascending branch of left colic artery, arising from the inferior mesenteric artery. The common trunk was thus seen to supply the whole transverse colon and upper 2/3rd of descending colon but the left colic was supplying only the lower 1/3rd of descending colon. These types of variations have embryological and clinical implications. The anomalous origin and course of the common trunk can be considered vulnerable as it is liable to injury during pancreatic, colonic, and renal surgeries.

Key words: Superior mesenteric artery, Colic artery, Inferior mesenteric artery

INTRODUCTION

The knowledge of the anomalous arterial branching patterns of colic branches of mesenteric arteries is essential from the view point of surgical and radiological anatomy. The superior mesenteric artery (SMA) is the artery of mid gut. SMA originates from the aorta 1 cm below the celiac trunk, posterior to the splenic vein, and the body of the pancreas. It ends by giving branches to ileum and form an anastomosis with a branch of ileo-colic artery in most of the cases. The artery gives off several branches which include; the inferior pancreatico-duodenal artery from the posterior aspect, jejunal, and ileal branches from the left surface and ileo-colic, right colic, and middle colic branches from right surface.[1]

The left colic artery (LCA) is the first branch of the inferior mesenteric artery. It divides into two branches, the ascending branch anastomose with the left branch of the middle colic artery whereas the descending branch anastomose with the ascending branch of the first sigmoidal artery. LCA supplies the left one-third of the transverse colon and upper part of the descending colon.[1]

Numerous variations of the SMA and LCA regarding origin, course, and branching pattern have been reported in the literature. Rarely, it may arise from the superior mesenteric artery[2] or celiaco-mesenteric artery.[3] Frequently, LCA and sigmoid arteries may arise as a common trunk from the inferior mesenteric artery.[4]

The most common variation of SMA is associated with the origin of a right hepatic artery which arises from the SMA.[5] Herein a case of abnormal origin of LCA from superior mesenteric artery and its anomalous course across the left kidney was reported.

MATERIALS AND METHODS

The present study was conducted on a male cadaver aged approximately 70 years in the Department of Anatomy, ESI-PGIMSR, Kolkata during routine dissection on 7 January, 2016. The dissection was conducted as per Cunningham's manual of practical anatomy. The peritoneum and the viscera's were carefully separated and cleaned from the field of view. SMA was then traced proximally and distally. Origin, course and branching pattern of SMA and IMA were carefully observed. The case was thoroughly dissected, colored, displayed and photographed.

RESULTS AND ANALYSIS

During dissection an anomalous common trunk was seen arising from SMA. The common trunk gave a slender pancreatic and a thick colic branch. The colic branch passes in front of the anterior surface of left kidney and anastomoses with ascending branch of left colic artery, arising from inferior mesenteric artery. The left colic artery was appearing smaller as compared to normal cases. The common trunk was thus seen to supply the whole transverse

colon and upper 2/3rd of descending colon but the left colic was supplying only the lower 1/3rd of descending colon. Inferior pancreatico-duodenal artery was normally arising in addition to slender pancreatic branch from SMA. Other branches of SMA had normal course and distribution. There was no major venous anomaly seen.

DISCUSSION

Morphological variations of colic branches of mesenteric arteries are clinically important during pancreatic, renal, and colorectal surgeries. The anomalous origin and course of the common trunk from SMA can be considered vulnerable as it is liable to injury during such procedures. Variations of the left colic artery are, however, extremely rare. Origin of the left colic artery from superior mesenteric artery is seen in less than 1% of cases. There have been reported cases of the superior mesenteric artery giving a branch to the descending colon, and they named the branch as accessory LCA.[2] Although there are a few reports on its variations, there is no report on its close relation with the inferior border of the body of the pancreas, as seen in the present case study. Jiji et al.[6] observed a case of anastomosis between the left colic artery and dorsal pancreatic artery. Contrary to classical anatomy text books, Niculescu et al.[7] have observed the superior left colic artery arising from the superior mesenteric artery.

Kitamura et al.[8] suggested the embryological explanation for development of the celiac–mesenteric system. According to him the seven primitive splanchnic branches arising from the abdominal aorta in embryo are connected by the ventral longitudinal anastomosis among the roots of omphalo-mesenteric artery, of which some disappear and classical branches of celiac trunk, SMA, and IMA are formed. The embryological explanation of our case may be that the classical branching pattern of SMA and IMA were not properly developed in this developmental stage.

Careful attempt to delineate the branching pattern of the superior mesenteric intra-operatively is recommended to avert possible dismal surgical outcome in surgical procedures like right hemicolectomy, resection of transverse colon, and en bloc resection of head of pancreas. An angiographic study to further delineate functionality of the arterial anastomoses in this region is recommended in living subjects. Knowledge of this rare anatomical variant of left colic artery is of significant clinical importance in pancreatic surgeries such as Whipple's procedure for treatment of pancreatic carcinomas, in vascular studies and radiological interventional procedures such as Transcatheter Arterial Embolization in the treatment of ruptured left colic artery aneurysm.

Pancreatic surgery, in particular the pancreatico-duodenectomy is considered to be a formidable surgery.[9] Postoperative bleeding occurs in 3–13% of patients after pancreatic surgery.[10] Knowledge of variations of visceral arteries of the abdomen is important for a successful approach of invasive procedures.

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