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BREAST CANCER AWARENESS AND ITS PREVENTION: WHERE DO WE STAND?

Abdul Khaleque Akond

Breast cancer is affecting women health of both developed and developing countries in an increasing number and its impact on physical, mental and social dimension of human life turned out to be a major problem. Of the worldwide, total cancer cases in 2012 among young adults (aged 20-40) breast cancer accounted to 30.2% with an age standard incidence rate of 17%.¹ The disease is relatively common in developing countries and increasing sharply. There were more than 15% rise in breast cancer cases in this region from the last 30 years; 52.9% in 2012 vs 35% in 1980.² In the developed countries the disease mainly occurs in postmenopausal (> 50 yrs) women. However, in developing countries it mostly affects the women in reproductive (15-49 yrs) age.³ In South Asian countries incidence of breast cancer is increasing very fast.⁴ Population based study regarding breast cancer in Bangladesh is lacking. Data regarding this disease in Bangladesh mainly derived from hospital based records. Based on the GLOBCAN, India incidence of breast cancer found to be 21.4% in Bangladesh. Age of onset of these cases was much younger (41.8 yrs) compared to the Indians (45-49 yrs), Asian immigrants in US/UK (51.8 yrs).² It is important to note that about 56% of these women with breast cancer of this series were premenopausal whereas of Indian and UK/US population around 45% and 24% cases usually premenopausal respectively. Of the total breast cancer cases of Bangladeshi origin 90% were in stage III-IV. But in women with the disease among Indian, Asian immigrants in UK/US and UK-US Caucasian population presentation was

much earlier stage.² Tumor grades on histopathological examination suggest the time of presentation of the case to the clinicians. In patients of Bangladeshi origin 63% had tumor grade III. Of the total cases 95% had invasive ductal type cancer. Similar type of presentation was found in smaller percentages in India and other populations.² In addition to family history of the disease, it was found to be associated with early menarche, late menopause and hormone replacement therapy. However, its association with marital status and parity has not been observed.⁵

From the above mentioned facts it is assumed that breast cancer in Bangladesh only diagnosed on clinical examination and most of the patients seek medical advice in advanced stage. This might be resulting from their poor health education and lack of awareness of the risk factors related to the disease and its severity. Self-examination of breast is a simple procedure if carried out by individual properly can detect much early and reduce the morbidity and mortality.

We don't have national cancer registry and so far there is lack of any population survey which are of utmost importance in respect to epidemiological and strategic information that provide prerequisite for setting up public health priorities. In the absence of existing screening program country wide community based primary healthcare infrastructure could be used to raise awareness of people about the severity of breast cancer, its risk factors, importance of self breast examination in reduction of morbidity and mortality related to it. Simultaneously attempts

may be made to think of national cancer registry and government endeavor directed for planning cancer screening program of the high risk women.

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CLINICO-PATHOLOGICAL CHARACTERIZATION OF BENIGN BREAST DISEASES PRESENTED IN THE OUTPATIENT DEPARTMENT OF A NON-GOVERNMENT MEDICAL COLLEGE & HOSPITAL

Munny Momotaz^{1, #}, Rashed Uz Zaman²

ABSTRACT

Background and Aim: Women presenting with different forms of breast problem showed an increasing trend in the recent times. The present study looked into the clinico-pathological profile of breast problems in women present in the department of a non-government medical college hospital in a densely populated area on the out-skirts of Dhaka. **Material and Methods:** This cross sectional study included 198 females patients presented with breast diseases over the period of 14 months to the surgery out-patient department. Patients diagnosed with breast cancer were excluded. Statistical package for social science (SPSS) was used to manage the data. Parametric and nonparametric tests were carried out to calculate statistic difference. $P < 0.05$ was taken as level of significance. **Results:** Mastalgia was the most common [62 (31.31%)] findings followed by fibroadenoma [59 (29.79%)], fibrocystic disease constituting [20 (10.10%)], breast abscess [18 (9.09%)], breast TB [14 (7.07%)]. Benign breast disease was observed of the 56.06% of cases in the younger (of 21-30 years) group. The commonest presentation was breast pain which comprised 73 (36.86%) cases followed by breast lump 54 (27.27%), while breast lump with breast pain was observed in 41 (20.70%). **Conclusions:** Data concluded that benign breast diseases in female was mostly common problems in the 2nd and 3rd decade and breast tuberculosis fairly commonly affecting the women. All cases present with discrete breast lumps should undergo the triple assessment for early diagnosis and reduce the mortality to ensure their health care.

Key Words: Benign breast diseases, fibroadenoma, mastalgia, breast abscess and breast tuberculosis.

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Introduction

Benign breast diseases (BBDs) is a group of breast diseases constitute the common breast problems in females and it is more frequent than the malignant ones.¹ In fact, it is at least 10 times more common than breast cancer in the west.² BBDs refer to the neglected entity despite the fact that it constitutes the majority of breast complaints.³ Breast is a dynamic organ which undergoes cyclical changes throughout a woman's reproductive life. Hormones and growth factors acting on the epithelial and stromal elements right from the onset of puberty till menopause cause significant morphological changes leading to aberration in normal development and involution (ANDI) causing majority of benign breast diseases.⁴

Benign breast diseases include a heterogeneous group of lesions and present with wide range of symptoms and can affect any time of life. ANDI classification of BBDs provides an overall framework for benign conditions of the breast that encompasses both pathogenesis and the degree of abnormality.^{5,6} It is a bidirectional framework based on the fact that most BBD arise from normal physiologic processes. Because such change has a variable spectrum of presentations and pathologic backgrounds, modern acceptable practice requires a step-wise diagnostic approach involving clinical, radiological and pathological assessments.^{7,8} Up to 30% of the women who suffer from BBDs will require treatment at some time in their lives.⁹ A triple assessment which is done by a clinical examination imaging like ultrasonography (USG) or mammography and a pathological examination - FNAC or core needle biopsy, during the initial consultation, allows a majority of the patients with discrete BBDs to be given immediate reassurance. Since a majority of the benign lesions are not associated with an

increased risk for subsequent breast cancer, unnecessary surgical procedures can be avoided.

The popular classification of BBDs according to the Aberration of the Normal Development and Involution (ANDI) causes confusion due to a lack of clarity in distinguishing between the normal physiological changes and the pathologic ones. One of the more satisfying classifications would be the one which was devised by Love and his group and called Nashville classification.¹⁰ According to this, BBDs is classified considering pathological basis and clinical presentation. The present study looked in the presentations and pathological basis of benign breast disease cases attending the surgical out-patient department of the non-government medical college which might highlight new insight regarding the disorder.

Materials and Methods

This cross sectional study included women consecutively presented with breast disorders, from August 17 to Sept 18 of 2017, in the surgery department of a non-government medical college hospital on the outskirts of Dhaka. Inclusion criteria included breast pain, lump with or without nipple discharge at women age 10-55 years. Those with known case and features of malignancy were excluded. Variable of interest, family history of breast disease, history of oral contraceptives, physical, laboratory, pathological and imaging findings. Investigations like fine needle aspiration biopsy (FNAC), ultrasonogram of breast and mammography were carried out in necessary cases. Data were expressed in number (percent) and statistical analysis was carried out using statistical package for social science (SPSS). A $p < 0.05$ was taken as level of significance.

Results

Age distribution of the study subjects was shown in figure I. Maximum number, 155 (78.29%) of subjects belonged to 11-30 years [44 (22.23%) and 111 (56.06%) in 11-20 and 21-30 years groups respectively.

Presentation of the problems was shown in table I. Breast pain was the principal complain of 73 (36.86%) cases followed by breast lump 54 (27.27%), breast lump with pain 41(20.70%), pain with nipple discharge in 16 cases, breast lump plus pain plus nipple discharge in 10 cases & nipple discharge only in 4 cases.

Types of disorders were shown in table 2. Considering the pattern of benign breast diseases, mastalgia was present in 62 (31.31%) cases followed by fibroadenoma 59 (29.79%), fibrocystic disease 20 (10.10%), breast abscess 18 (9.09%), breast tuberculosis 14 (7.07%), Other disorders include galactocele, duct ectesia, sebaceous cyst, fibroadenoma plus fibrocystic change and multiple fibroadenoma constituting much smaller number of cases (Table 2). There were three cases of accessory breast, seven cases of mastitis, four cases of cracked nipple and one case of fibrocystic disease with accessory breast.

Involvement of right or left sided breast was almost similar 75 (38%) vs 73 (37%). Bilateral involvement was seen in only 50 (25%) patients (Figure II).

Table 1: Distribution of the study subjects according to their presentation

Presentation	Number	Number
Breast pain (mastalgia) only	73	73
Breast lump only	54	54
Breast lump + Breast pain	41	41
Breast lump + pain + nipple discharge	10	10
Nipple discharge only	4	4
Breast pain + nipple discharge	16	16

Results were expressed as number percent.

Table 2: Pattern of benign breast disorders of study subject (n=198)

Pattern of benign breast disorders	11-20 yrs	21-30 yrs	31-40 yrs	41-50 yrs	>50 yrs	Total (%)
Mastalgia	8	38	12	3	1	62 (31.31)
Fibro-adenoma	16	32	8	2	1	59 (29.79)
Fibrocystic disease	8	9	2	1		20 (10.10)
Breast abscess	4	13	1			18 (9.09)
Breast tuberculosis	1	12	1			14 (7.07)
Accessory breast		1	2			3 (1.51)
Mastitis	2	2	3			7 (3.53)
Duct ectesia		1	1			2 (1.01)
Galactocele	1	1	1			2 (1.01)
Cracked nipple		3	1			4 (2.02)
Sebaceous cyst		1				2 (1.01)
Fibroadenoma + fibrocystic change		2				2 (1.01)
Fibrocystic disease + accessory		1				1 (0.5)
breast Multiple fibroadenoma	2					2 (1.01)

Results were expressed as number and percent.

Number against the breast diseases denotes the frequency in column of age groups.

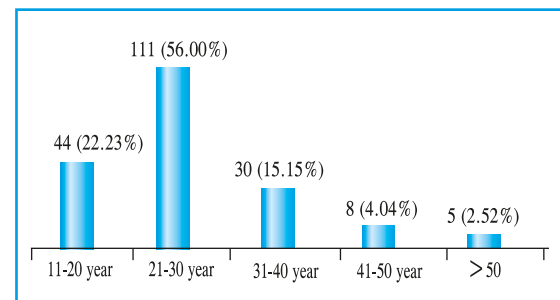


Figure I: Distribution of the subjects presented with benign breast disease on the basis of age group.

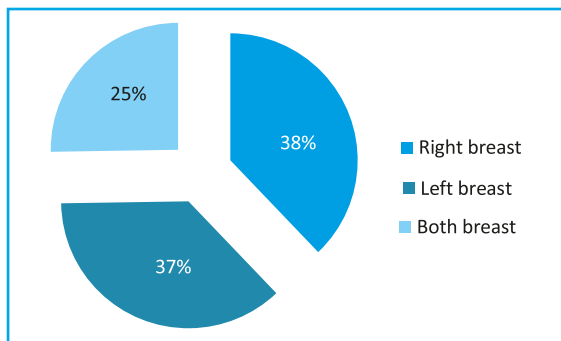


Figure II: Site of involvement of breast disorders.

Discussion

The patients of BBDs generally present with one or more of these complaints of breast lump, breast pain or nipple discharge. It has been recommended that all the patients with discrete breast lumps should undergo a triple assessment to make an early diagnosis.

Demographic changes contribute to the incidence of disease manifestations. In the present study about 80% of patients visited the hospital out-patient department for breast problem which appeared to be major shift in the age of presentations. This can, however, be explained by awareness of people of the deadly consequences of breast problems and also the changing nature of human attitude and availability of facilities. Benign breast disorders shown to be presented with lump in 87.4% and 72.35% cases in different studies.^{11,12} In the present study fibroadenomas lump accounted for 59 (29.79%) cases of the benign breast disorders. The fibrocystic changes were the next common condition in our study accounting for 20 (10.10%) cases. The incidence, however, varies geographically. Study involving African population demonstrated incidence of benign breast lump varying from 29.5-42.2%.¹³ The incidence of mastalgia symptom in the present study 31.31% which is found to be consistent

(12.8%- 30.3%) with other studies.¹² Among African women the proportion of mastalgia of the total BBDs cases was found to be 6.7% which appeared to be quite low.¹⁴

Percent breast tuberculosis cases was 7.07 % in the present study. this finding is relatively higher than 4.5% reported by Shinde *et al.* (2016).¹⁵ Incidence of tuberculosis varies tremendously in different population and also of their socioeconomic strata the relatively higher proportion may be attributed to fact of the lower strata as judged by history of working in fabrics factory and living in congested area. Malik and his group reported breast abscess (12.4%) as second most common benign breast lesion¹⁶ but in the present study the proportion was 9.09% and appeared to be consistent with previous report. It may be argued that distribution of benign breast disorders in patients did not show stark features but interestingly it was found that the patients belonged to relatively younger age group.

Conclusions

Data demonstrated that breast lump and pain alone and in combination constituted the major bulk of presentation. Fibroadenoma, fibrocystic disease, breast abscess and breast tuberculosis were the major diagnosis. Diagnosis of about fifteen percent cases with breast abscess and tuberculosis in combination warrant the triple assessment protocol to make early diagnosis and ensure necessary treatment.

Acknowledgement

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STUDY ON USAGE OF DICLOFENAC SODIUM WITH VITAMIN B IN THE TREATMENT OF ACUTE PULPILITIS

Rumana Kabir^{1, #}, Most Sabinus Sultana², Hasina Akhter³
Tanjin Ara Begum⁴, Shehrina Nazmin⁵

ABSTRACT

Background and Aim: Diclofenac sodium is commonly used to treat pain due to pulpitis in dental practices. Use of vitamin B adjunct with conventional analgesics attributed to be more effective in reducing not only the dose but also duration of analgesic. This study was aimed to investigate the role of vitamin B (B₁, B₂ and B₁₂) to manage pulpitis pain when used with diclofenac sodium as judged by plasma serotonin level. **Materials and Methods:** This interventional study was carried out in the Department of Physiology, Sir Salimullah Medical College (SSMC), Dhaka between July 2014 and June 2015. The study included 60 patients with pulpitis of both sexes, aged 18-40 yrs, by purposive sampling from the Out-patient Department, Dental unit, SSMC. Study subjects consisted of diclofenac treated group (DS, n=30 received diclofenac for 5 days) and combination treated group (DS+VB, n=30, received diclofenac sodium and vitamin B for 5 days). Blood sample were taken at base line and after 5 days. Analgesia was evaluated by visual analogue scale (VAS). Serum serotonin and CRP were estimated by enzyme linked immunosorbant assay (ELISA) and serum B vitamins (B₁, B₆ and B₁₂) by competitive enzyme immunoassay technique. Statistical analyses were done by paired sample 't'-test. $P < 0.05$ was taken as significant level. **Results:** Serum serotonin levels ($p < 0.001$) and serum B vitamins levels ($p < 0.001$) were increased significantly in acute pulpitis patients after 5 days of treatment of diclofenac sodium with B vitamins supplementation compared to the base line value and also those treated with only diclofenac sodium. **Conclusion:** Data concluded that diclofenac sodium with B vitamins reduce pain due to pulpitis compared to the use of diclofenac sodium alone.

Key Words: Acute pulpitis, diclofenac sodium, serotonin, B vitamins.

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Introduction

Acute pulpitis is an inflammatory condition of dental pulp caused by noxious stimuli in which the pulp is capable of returning to the normal state following removal of the stimuli.¹ It is characterized by pain and inflammation.² Pain is a protective mechanism of the body. Whenever tissues are damaged and pain is caused the individual reacts to alleviate the pain stimulus by taking diclofenac. Pain is classified clinically into two types, acute and chronic. Acute pain or fast pain is the pain which is felt within 0.1 second after application of pain stimuli which is conducted by type A δ fiber. Whereas, chronic pain begins after 1 second or more and conducted by type C fiber.³

Management of pain involves the administration of both opioid and non-opioid analgesics. Non opioids include acetaminophen and non-steroidal anti-inflammatory drugs (NSAID). However, NSAIDs are commonly used for the control of moderate to severe intensity of pain. The commonly used NSAIDs include ibuprofen, etoricoxib, diclofenac etc.⁴ Among them diclofenac sodium exhibits potent analgesia and anti-inflammatory effects⁵, and commonly used in dental practices.⁶ Although the traditional analgesics can alleviate pain and anxiety effectively and facilitates wound healing, but they have some side effects like gastritis, nausea, vomiting, bleeding, sedation and hypersensitivity reactions etc.⁴

Vitamin B has number of water soluble molecules which include thiamine, riboflavin, niacin, pantothenic acid, pyridoxine, biotin, folic acid, cobalamins. These play important roles in different body functions.⁷ However, some of the members attributed to exert analgesic and anti-inflammatory effects in laboratory animals and human; thiamin (vitamin B₁) has shown analgesic and anti-inflammatory

effects in mice⁸, pyridoxine (vitamin B₆) analgesic effects in diabetic peripheral neuropathy⁹, cyanocobalamin (vitamin B₁₂) analgesic effects in low back pain¹⁰, Moreover, vitamin B₁₂ is shown to relieve pain after short and prolonged period of supplementation on rats.¹¹

Supplementation of B vitamins (thiamin, pyridoxine and cyanocobalamin) with diclofenac sodium found to have shown more analgesic and anti-inflammatory effects. B vitamins has been used in combination with diclofenac for various painful conditions; for the treatment of lumbosacral radiculopathy¹², lumbago¹³, pain originated from tonsillectomy¹⁴, acute pain due to lower limb fracture and surgery.⁵ In addition, vitamin B found to show potentiate the analgesic effect of diclofenac sodium in carrageen induced hyperalgesia in rat.¹⁵

Serotonin is an inhibitory neurotransmitter and can block pain signals at the spinal cord level.¹³ Supplementation of pyridoxine alone or in combination with thiamin and cyanocobalamin found to increase synthesis and secretion of serotonin in various regions of rat brain like cerebral cortex, hippocampus, thalamus, hypothalamus, brain stem, cerebellum and spinal cord.¹⁵ Pyridoxine is found to have effect on synthesis of serotonin in the monkey brain.¹⁶ Serum serotonin level was found to be high in women performing yoga for 12 weeks suffering from chronic low back pain¹⁷. The combination of diclofenac with B vitamins has a different and complementary analgesic mechanism of action and could show a better analgesic effect than single drug alone.¹⁴ Diclofenac has the risk of gastrointestinal side effects by damaging the gastric mucosa.¹⁸ To lower the risk of such adverse effects, the duration of diclofenac treatment could be limited by combined treatment of diclofenac with B vitamins.¹³

Studies carried out at home¹¹ and abroad^{12,13} demonstrated effects of diclofenac sodium with B vitamins on reducing pain and inflammation in some painful diseases. However, little is known regarding the combined treatment on acute pulpitis patient. So, this study was undertaken. It is expected that the findings of this study will be beneficial for the faculty of dentistry for better management of acute pulpitis patients and can reduce the adverse effects of traditional analgesics.

Materials and Methods

This prospective interventional study was carried out in the Department of Physiology, SSMC, Dhaka between July 2014 and June 2015. The study protocol was approved by the Institutional Ethics Committee (IEC) of SSMC. Sixty diagnosed acute pulpitis patients of both sexes, aged 18-40 years were included by purposive sampling from the Out-patient Department of Dental unit of SSMC, Dhaka. Informed written consent was taken from each subject. The study was approved by the research review board of SSMC. They were divided into 2 groups (30 patients in each group), as diclofenac treated group received only diclofenac sodium (DS) at a dose of 50 mg 12 hourly for 5 consecutive days and combined treated group received combination of DS (50 mg 12 hourly for 5 consecutive days) with B vitamins (BV) at a dose of B₁: 100 mg, B₆: 200 mg and B₁₂ 200 µg 12 hourly for the same duration (DS+BV). Blood samples were obtained at baseline from the two groups; Diclofenac Sodium was given only on day 1 (DS D₁) and then it was given after 5 days (DSD5). The combined treatment group received DS with B vitamins on day 1 (DS+BV D₁) and then after 5 days (DS+BV D₅). Subjects having diabetes mellitus, hypertension, ischemic heart disease, nephropathy, hypersensitivity to diclofenac sodium or B vitamins, pregnancy

were excluded from the study. With all aseptic precautions, five (5) ml of venous blood was drawn from median cubital vein by sterile disposable syringe. Serum serotonin level was estimated by enzyme linked immunosorbent assay (ELISA) method in the Department of Biochemistry, BSMMU. Serum B vitamins (B₁, B₆ and B₁₂) levels were measured by competitive inhibition enzyme immunoassay technique in the Department of Chemistry of Dhaka University, Dhaka. Data were expressed as mean±SD. Statistical analyses were carried out using Statistical Package for Social Science (SPSS). Paired sample t-test to calculate statistical difference. $P < 0.05$ was taken as level of significance.

Results

Basic data of the study subjects were shown in table 1. Value in the two groups did not show statistical difference.

VAS score and CRP value were shown in table 2. VAS score in the both treatment groups was significantly decreased after five days. The effect was more pronounced in the diclofenac sodium along with vitamins adjunct ($p=0.05$ vs $p=0.001$). Blood CRP value was significantly decreased in both the groups ($p=0.001$).

Table 1: Age, BMI and blood pressure of the study subjects (n=60)

Parameters	DS Group	DS+BV Group
Age (years)	36.6±1.9	35.8±2.2
BMI (kg/m ²)	22.8±1.4	23.2±1.6
SBP (mm of Hg)	111±3	114±9
DBP (mm of Hg)	74±4	77±6

Data are expressed as mean±SD.

DS group, subjects received only diclofenac sodium; DS+VD, received diclofenac sodium and vitamin B.

Serum serotonin level in diclofenac sodium group was significantly increased compared to the baseline ($p=0.002$). Combination treatment (diclofenac sodium supplemented with vitamins) also showed significant increase in serum serotonin level ($p=0.001$).

All three vitamin B levels were significantly increased in the combination treatment group compared to the baseline ($p=0.001$) (Table 4).

Serum creatinine level in the two groups after five days of treatment did not show any statistical difference (Figure I) ($p=0.3120$).

Table 2: VAS score and serum CRP level in different groups (n=60)

Parameters	DS D1 (n=30)	DS D5 (n=30)	P value	DS+BV D1 (n=30)	DS+BV D5 (n=30)	P value 0.001
VAS score (cm)	6.1 \pm 0.6	3.9 \pm 0.8	0.05	6.00 \pm 0.65	2.27 \pm 0.45	0.001
Serum CRP level (mg/dl)	15.82 \pm 3.8	8.7 \pm 1.3	0.001	15.68 \pm 2.34	6.76 \pm 1.46	0.001

Data are expressed as mean \pm SD.

Statistical analysis was done by Paired 't'-test. $P < 0.05$ was taken as level of significance.

VAS, visual analogue scale, CRP, C-reactive protein.

DS group, subjects received only diclofenac sodium; DS+VD, received diclofenac sodium and vitamin B.

DS D1, Day 1 for those receiving only diclofenac sodium; DS D5 Day 5 for those receiving diclofenac sodium for 5 days; DS+VB D1, Day 1 for those receiving only diclofenac sodium and vitamin B, DS+VB D5, Day 5 for those receiving only diclofenac sodium and vitamin B.

Table 3: Serum serotonin and B vitamins (B₁, B₆, B₁₂) levels in different groups (n=60)

Parameters	DS D1 (n=30)	DS D5 (n=30)	P value	DS+BV D1 (n=30)	DS+BV D5 (n=30)	P value
Serum serotonin (ng/dl)	157 \pm 22	169 \pm 15	0.002	159 \pm 8	197 \pm 15	0.001
Serum vitamin B ₁ (μ g/dl)	3.1 \pm 0.4	3.1 \pm 0.3	0.328	2.9 \pm .27	5.1 \pm 0.3	0.001
Serum vitamin B ₆ (ng/ml)	9.5 \pm 2.9	9.7 \pm 2.9	0.795	10.3 \pm 2.6	20.7 \pm 1.4	0.001
Serum vitamin B ₁₂ (pg/ml)	257 \pm 36	259 \pm 57	0.804	265 \pm 49	473 \pm 67	0.001

Data are expressed as mean \pm SD.

Statistical analysis was done by Paired 't'-test. $P < 0.05$ was taken as level of significance.

DS D1, Day 1 for those receiving only diclofenac sodium; DS D5 Day 5 for those receiving diclofenac sodium for 5 days; DS+VB D1, Day 1 for those receiving only diclofenac sodium and vitamin B, DS+VB D5, Day 5 for those receiving only diclofenac sodium and vitamin B.

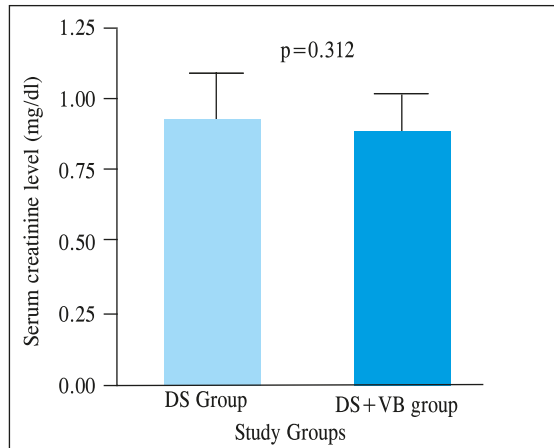


Figure I: Serum creatinine level in the diclofenac sodium only (DS Group) and combination with vitamin B (B₁, B₂ and B₁₂) treatment (DS+VB group) of the study subjects.

Discussion

Pain management is an important issue in medical practices. A right choice of medicine is accessed by how patients are feeling about pain and discomfort.

Pulpitis pain is assumed to be mediated by inflammatory mediators such as prostaglandins, TNF, IL-6, substance P, C reactive protein (CRP) etc¹⁸ which activate sensitive nociceptors surrounding the tooth resulting the symptom.¹⁹ It has been suggested that, diclofenac sodium impairs prostaglandin synthesis^{5,13,14}, inhibits synthesis of leukotrienes¹³, phospholipase A₂²⁰ and CRP²¹, thus decreases inflammation and pain.^{13,22} In dental practices pain originating from pulpitis needs to be addressed quickly because of the nature and discomfort suffered by the individual. To treat pain due to pulpitis practitioners usually consider NSAIDs and of it diclofenac sodium found to be drug of choice which, however, implicated to different adverse effects of GIT but often dose dependent.⁴

Vitamin B, in particular B₁, B₆ and B₁₂, reported to have analgesic effect in different studies.⁸⁻¹⁰ Serotonin, a neurotransmitter, is known for its

analgesic effect imparted by its anti-inflammatory effect. Vitamin B (B₁, B₆ and B₁₂) attributed to exert its analgesic effect by increasing release serotonin.

Treatment with diclofenac sodium only and supplemented with vitamin B showed significant reduction of serotonin level in both groups (p=0.001). Mean (\pm SD) value of serotonin after 5 days of treatment in the group treated with diclofenac sodium and vitamin B was significantly lower (2.27 ± 0.45) compared to the counterpart group (3.94 ± 0.59) treated only with diclofenac sodium (p=0.001). This rise of serotonin level after treatment indicated importance of serotonin in pain pathophysiology and use vitamin B augmented the release of the molecule and exerted its analgesic effect. The rise of serum serotonin level was earlier demonstrated in different studies most notably one which reported increase in serotonin level following injection of B vitamins.²³ Pyridoxine alone or in combination with thiamin and cyanocobalamin postulated to increase the synthesis and secretion of serotonin in various regions of the brain by decarboxylation of 5-hydroxytryptophan, which is the precursor of serotonin.²³

Vitamin B₁₂ also reported to increase the secretion of noradrenalin in the CNS which acts as inhibitory neurotransmitter in the nociceptive system.²⁴ It has been reported that vitamin B₁₂ due to some unknown mechanism(s) decrease formation of TNF- α ²⁵, IL-6²⁶ and CRP²⁷ and thus attribute to analgesic properties. Moreover, some research workers demonstrated that accumulation of exogenous methylcobalamin promotes nerve regeneration or remyelination.

In the present use vitamin B (B₁, B₆ and B₁₂) with diclofenac sodium demonstrated reduction in pain and judged by decrease in visual analogue scale and CRP level and increase in serotonin level. The study also demonstrated higher level of B₁, B₆ and B₁₂

vitamin in plasma after five days of supplementation. The features appeared to be consistent with proposition that these three vitamin B possesses analgesic properties. One of the major limitations of the study was that three vitamins were used simultaneously. Use of B₁, B₆ and B₁₂ separately with diclofenac sodium would have provided the opportunity to explore their analgesic properties more accurately.

Conclusions

Vitamin B (B₁, B₆ and B₁₂) in combination with diclofenac sodium is useful in the treatment of pain in dental practices. Diclofenac sodium in half of the usual dose when used in combination of vitamin B exerted efficient pain relief. It may also attribute to circumventing gastrointestinal side effects of NSAIDs when used for longer period.

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PARENTAL SOCIO-ECONOMIC STATUS AND AWARENESS ABOUT IMMUNIZATION, PERSONAL HYGIENE AND NUTRITION THAT MAY AFFECT HEALTH OF CHILDREN ATTENDING OUT-PATIENT DEPARTMENT OF A UPAZILLA HEALTH COMPLEX

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ABSTRACT

Background and Aim: There has been remarkable progress in the public health sector but it is still a long way to go to achieve the desirable target. Healthy children are the key of the future world. The present study was aimed to look into the socio-demographic status of parents and evaluate their awareness about immunization, nutrition, personal hygiene affecting health of children. **Materials and Methods:** Parents of total 120 children consecutively attending the Out-patient department in an Upazilla Health complex were included in this cross-sectional study over a period of seven working days. Variables included mother and father's occupation, education and monthly income, children's age and immunization status, number of daily meals, source of drinking water, sanitation status were collected using a structured questionnaire. Data were expressed as number and percent and analyzed using statistical program SPSS for Windows Version 15.0. **Results:** Male and female distribution was 55.83% and 44.17% respectively. Out of 120 children 43.33% were between 5-7 years of age. Housewife mothers constituted 65.83% and day laborer father 29.16%. Monthly family income in 45% was Tk 10,000-20,000/-. Three meals a day was reported for 82.5% children. Intake of fish/meat/egg per day was found 55.0% cases. Immunization schedule was complete in 55.83% children. Use of tube well water for drinking reported by 62.5% and sanitary latrine 70.83% children. Habit of brushing teeth once a day was reported for 72.5% children, washing hand before taking meal 75.83% and washing hand after toilet 77.5%. **Conclusions:** Data concluded that lack of awareness regarding sanitation, hygiene and immunization in low socioeconomic setup affects health of children, however, conclusive comments may not be made due to small number of samples and lack of consideration of some relevant variable. Present data suggest population based study to design necessary action plan to address the issue.

Key Words: Health awareness, sanitation, personal hygiene, immunization, dietary pattern.

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Introduction

Malnutrition, mainly affecting children is frequently part of vicious cycle between poverty and disease.¹ It has been attributed to poor food quality, insufficient food intake, severe and repeated infectious diseases, or frequently some combinations of the three. This has been earlier proposed that malnourished children are at an increased risk of death from a variety of infectious diseases² and the prevalence and severity of these diseases and consequently mortality rate of children can be influenced by a wide range of underlying social and economic factors.³ Almost a decade ago WHO adopted a new global target of reducing the number of stunted children under 5 by 40% by 2025. Growing evidence suggests a link between child linear growth and household water, sanitation and hygiene (WASH) practices. It was estimated that as much as 50% of children under nutrition may be attributable to poor WASH practices.⁴ Enteric infections in infants and young children found to be linked through mouthing soiled fingers and household items, mostly common in rural and low-income environments affecting a child's nutritional status by diminishing appetite, impairing nutrient absorption and increasing nutrient losses.⁵ Other report regarding inadequate sanitary conditions and poor hygiene practices play major roles in the increased burden of communicable disease within this developing countries.⁶

Vaccine preventable diseases (VPDs) such as measles, tetanus, tuberculosis, poliomyelitis, pertussis, diphtheria and Hepatitis B contribute substantially to morbidity and mortality among children less than five years in developing countries. A large fraction of the world's illness and death is attributable to communicable diseases. Sixty-two percent and 31% of all deaths in Africa and Southeast Asia, respectively, are caused by infectious disease. This trend is especially notable in developing countries where acute respiratory and intestinal

infections are the primary causes of morbidity and mortality among young children.⁷

Asia, in particular the South, Eastern and Southeastern Asian regions, is in rapid transition-economically, demographically and politically. Millennium development goal (MDG) is meant to deal with the challenges to ensure equal opportunities for all. However, the MDG target 7C on WASH has had several limitations including the focus on access to water and sanitation services but not on quality, either for water or sanitation, the omission of hygiene and the lack of attention on equity.^{8,9} The proposed SDG Goal 6 is to 'Ensure availability and sustainable management of water and sanitation for all' with the goal focusing on the achievement, by 2030, of universal and equitable access to safe and affordable drinking water and adequate and equitable sanitation and hygiene for all.¹⁰

Bangladesh faces many challenges related to water, sanitation and hygiene. Non-fatal chronic conditions such as diarrhea, worm infections, cholera, malaria, trachoma and schistosomiasis are also sourced from water and improper sanitation practice. Water-related diseases are responsible for 24% of all deaths and gastroenteritis and diarrheal diseases killing 110,000 children below the age of five every year in Bangladesh.¹¹ Improper sanitary practice such as open defecation, lack of proper hand washing practice, fecal disposal in open places are the major risk factors that results in diarrheal or water-borne diseases.¹² Considering the above facts the present study was undertaken to look into the parental socio-economic status and awareness about immunization, personal hygiene and nutrition of the children attending the out-patient department of Upazilla Health complex.

Materials and Methods

This cross sectional study included 120 children, age range 1-12 years, consecutively attending the Out-patient department in an Upazilla Health

complex during 15-22 October 2017. Inclusion of one child was considered for each family and attending father or mother considered as respondent(s). Data regarding parental socio-economic status, awareness about nutrition and hygiene practice, children age, immunization status, parental education and profession, number of daily meal and source of drinking water were recorded in a predesigned case record form through face to face interview. Data were expressed number and percent. Statistical package for social science (SPSS) was used for statistical analysis. Statistical tools Chi-squared and proportion tests were carried out as appropriate. $P < 0.05$ was taken as level of significance.

Results

Distribution of children in age group gender, family member and monthly family income were shown in table 1. Of the 120 children 103 (85.8%) were between age 3-9 years. Male female distribution did not show any statistical significance ($p=0.204$). Number of family members 2-6 was found of 55.85% of the families. Monthly family income 10,000/- to <20,000/- was observed in 45% families which was significantly different compared to those higher income (Tk 20,000/- to <30,000/-) group ($p=0.024$).

Occupation of the mothers and fathers of the children recruited in the study was shown in figure I and figure II. Of the 120 families 66% mothers were house wives and other 34% constituted mainly by ready made garment workers and house maids. Regarding father's profession, day laborer constituted 29% and garment workers was 22% (Figure II). Presence of fish/meat/egg in meal per day was reported by 66 (55%) (Table 3). Frequency of meal for the children above age three years (111 out of 120) was enquired. Taking three meals was reported by 82.5% children followed by 13.33% four times and 4.17% two meals (Figure III). Status of completion of immunization schedule was shown in figure IV.

Immunization scheduled was completed in 56% children. In 31% children it was partially done. Rest of 13% did not complete the schedule. Practice related to hygiene was shown in table 3. Taking bath was reported for only 58.3% children and brushing teeth once daily 72.5%. Washing hands after defecation by the children or mothers of the very the very young children was 77.5%. Cutting nails, as evidenced by its trimmed states was 72.5%. Source of drinking water was mainly tap water 75 (62.5%), followed by tube well water 31 (25.8%). History of drinking pond water of was 10 (0.08) and river 4 (0.03%). History from the children and the mother showed use of sanitary latrine was 70.8% followed by kacha latrine 17.5% and ring/slab 11.6% (Figure VI).

Table 1: Distribution of respondents according to the Selected Characteristics

Characteristics	Categories	Respondent	
		No	%
Age group (yrs)	1-3	9	7.5
	3-5	26	21.67
	5-7	52	43.33
	7-9	25	20.83
	>9	8	6.67
Gender	Male	67	55.83
	Female	53	44.17
Family Members (No)	2-4	35	29.17
	4-6	67	55.85
	>6	18	15.0
Monthly Income (Tk)	Group I	41	34.17
	Group II	54	45.0a
	Group II	19	15.83b
	Group IV	6	5.0

Results were expressed as number (percent).

Monthly family income had in Group I, Tk 5,000- <10,000/-; Group II, Tk 10,000- <20,000/-; Group III, 20,000- <30,000/- and Group IV, Tk >30,000/-.

Proportion test was conducted to calculate statistical difference. Different superscripts in the right hand column indicated statistical significant difference. $P < 0.05$ was taken as level of significance.

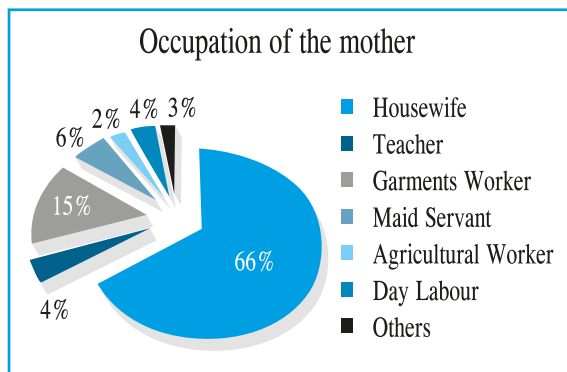


Figure I: Percent distribution of mothers by profession of the children included in the study.

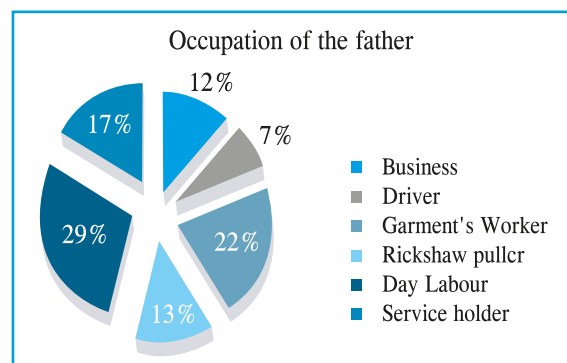


Figure II: Percent distribution of father's profession of the children included in the study.

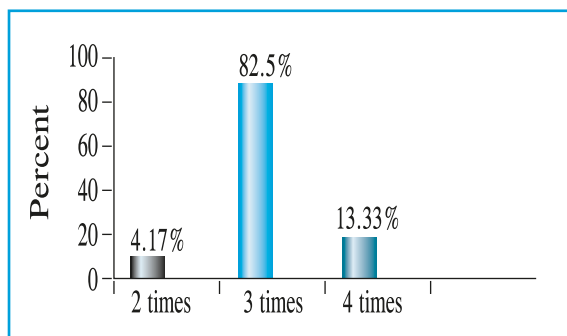


Figure III: Frequency of meal taken by children recruited in the study.

Table 2: Distribution of respondents according to types of food intake (n=120)

Fish/ Meat/ Egg per day	Number	Percent
Yes	66	55.0
No	54	45.0

Results were expressed as number (percent).

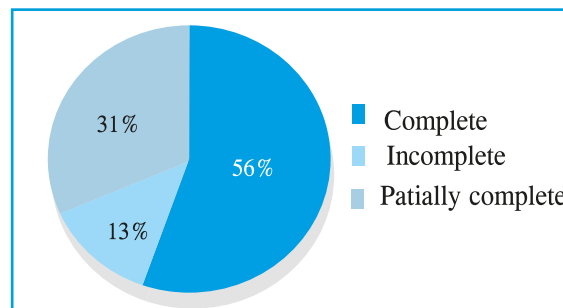


Figure IV: Status of completion of immunization schedule of the children.

Table 3: Distribution of the respondents regarding their information on personal hygiene

Characteristics	Categories	Respondent	
		No	Percent
Taking Bath	Daily	70	58.33
	Every alternate day	39	32.5
	Not concerned	11	9.17
Brushing teeth	Once a day	87	72.5
	Twice a day	12	10.0
	Not brushing	21	17.5
Hand washing before meal	Yes	91	75.83
	No	29	24.17
Washing hand after defecation	Yes	93	77.5
	No	27	22.5
Cutting nails regularly	Yes	87	72.5
	No	33	27.5

Data were expressed as number (percent).

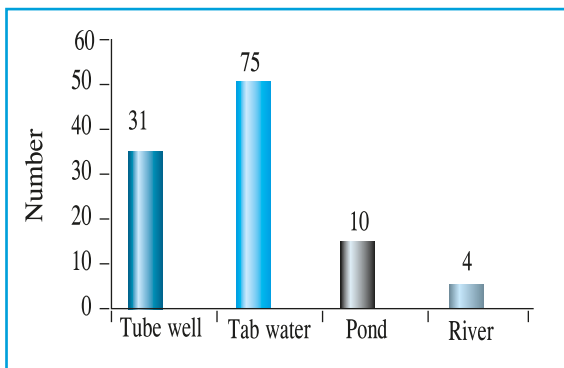


Figure V: History of source of drinking water of the children in the study.

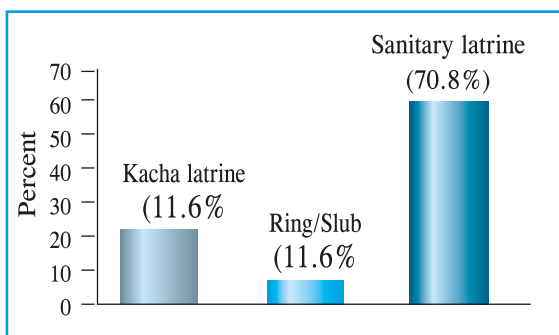


Figure VI: Types latrine of used by the family of the children included in the study.

Discussion

Childhood is an important period when the most growth and development occur and life-long habits- in particular eating, hygiene and physical activities are formed.¹³⁻¹⁶ Digestive system is not fully developed in childhood. The absolute amount of nutrient intake is lower than that of adults', but the calories, protein, and water intake needed per kilogram are much larger than that of adults'. Hence good eating habits and nutrient intake should become the basis of this period to build a foundation for growth and development throughout the life.¹⁷

Of the 120 children 85.8% were between age

group 3-9 years. The families came from low socioeconomic groups as it was observed that 75% of the children belong to the families of low income group. And number of family member were between 4-6. Majority of the mothers' were house wives and/or readymade garment workers and fathers wives day laborer and garment workers. Of the 10 children 82.5% had three meals a day but fish or meat or egg per day was ensured in their diet in only 55% cases. In addition percent of either parent having graduation was only 9%. Among the rest of them few had HSC and mostly SSC or less. Possibly this has reflected in the completion of immunization schedule of these children. The scenario observed in the study reflects the facts that child nutrition is associated with socio-economic characteristics such as parental education, occupation, and household economic status has been documented in several analyses.^{18,19,20,21} Increasing income as well as wealth status of a family has a positive correlation with literacy levels. Children of skilled workers are less likely to be severely malnourished than children of agricultural-employee and/or unskilled manual classified as unskilled workers, and this group is usually illiterate. The findings also reveal that children of illiterate mothers have a higher risk of severe malnutrition and this inference is consistent with other studies.^{22,23}

Immunization Schedule found about 55.83% completed, Incomplete 13.33% and partial complete 30.84%. Immunization in rural areas is much lower than urban areas due to many factors like lack of accessibility to health centers, lack of awareness and misconceptions. Parents in rural areas have a much lower education status and knowledge regarding immunization.²⁴

Regarding hygiene the scenario found to be bleak. Of the 120 children 17.5% did not

brushing teeth every day, 24.17% did not washing hands before taking food, 22.5% not washing hands after ablution. Source of drinking water in around 26% and 12% children was from tap water and surface water respectively. Unhygienic toilet practice was observed for about 30% of children. An earlier report also pointed out the sizeable problem regarding hygiene and sanitation affecting children health in rural Bangladesh.²⁵ The scenario is not uncommon in different parts of India. Reports have demonstrated poor sanitation and hygiene practice attributed to poor health and stunting growth of under aged children.^{26,27,28}

Considering the number of children included in the present study it would not be wise to draw any conclusive comments. It, however, did work as an eye opener in regard to health of children and the scenario of hygiene, sanitation, socioeconomic status parental education in rural area. There are also numbers of issues in the present study like parental educational status and age-standard height of those children were missing which should have been taken into account. The present study, however, shed some light on the effect parental socioeconomic status and awareness of personal hygiene and nutrition on the health of children in rural areas.

Conclusion

The finding of the study may be taken as eye opener to look into the issue of lack of awareness regarding sanitation, hygiene and immunization in low socioeconomic setup affecting health of children. Study involving representative large sample size may be undertaken to pin point the issues and ultimately to design necessary action plan to ensure achieving millennium development goal.

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LEPTOSPIROSIS: AN EMERGING INFECTION IN BANGLADESH

Asma Kabir

ABSTRACT

Leptospirosis, a zoonotic disease, found to be prevalent throughout the world. It is often undiagnosed because clinical features are similar to that of typhoid fever, dengue and malarial fever. Case fatality is significant due to delay in diagnosis and lack of available diagnostic facility. As an emerging disease, To treat leptospirosis it is needed to, develop infrastructure for diagnosis and awareness about the disease should be increased.

Key Words: Leptospirosis, emerging disease, Bangladesh

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Introduction

Leptospirosis is an emerging zoonotic disease of public health importance in countries of South East Asia Region. However it is still widely overlooked and under-reported. One of the possible reasons for this is attributed to non-specific signs and symptoms which are similar to those seen in many other infectious diseases. Leptospirosis is a systemic febrile infectious disease that is caused by pathogenic spirochaetes that belong to the leptospira genus. It is one of the widely distributed zoonoses worldwide that is endemic in tropical regions.¹ Human leptospirosis is characterized by a broad spectrum of clinical manifestations, varying from in-apparent infection to clinical disease. It is seen in humid, tropical and subtropical areas

with heavy rainfall. It is an emerging disease, affecting mammalian species including human being.^{2,3} Leptospirosis has become an emerging infectious disease in the last 10 years. The disease has spread from its traditional rural base to become the cause of epidemic in poor urban slum communities in developing countries.⁴ Leptospirosis was evident in different geographical locations of Bangladesh such as south-eastern, central and north western parts with different landscapes and flood prone areas. It was distinctly frequent during breeding period of late winter, early monsoon and after monsoon. Leptospirosis was an eminent cause of fever in urban and rural Bangladesh causing hospitalization. A study conducted in two

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hospitals in Dhaka showed 18% of the dengue negative patients were positive for leptospirosis.⁵ In a study in Bandarban districts in between 2007-2010 have shown that 2-44% of febrile patients have leptospirosis in Bangladesh.^{6,7} Leptospirosis is reported in a number of countries in South-East Asia Region from time to time. The magnitude differs from country to country and depends on awareness and attitude of public health care decision makers. Most human cases reported from India, Indonesia, Thailand, and Sri Lanka during the rainy season. Major outbreaks in South-East Asia were reported from Jakarta (2003), Mumbai (2005) and Sri Lanka (2008). Seasonal outbreaks are reported in northern Thailand and in Gujrat, India following heavy rainfall and flooding. A few human cases have been reported from Maldives. According to currently available reports, incidence range from approximately 0.1-10 per 100000 per year globally. There are anecdotal reports of human and animal cases from Bangladesh, Myanmar, Nepal and Timor-Leste.^{1,8}

Epidemiology

Leptospirosis is endemic throughout the world. Peak incidence occurs in rainy season in tropical regions. Outbreaks follow excessive rainfall.

Modes of Transmission

Human leptospiral infection results from direct or indirect exposure to the urine of infected animals. Other modes of transmission of infection such as handling infected animal tissues and ingestion of contaminated food, water are also possible.^{1,4, 9}

Incubation period

The incubation period is usually 7-10 days, with a range of 2-30 days.¹

Clinical Manifestations

The clinical manifestations are highly variable. In general the disease presents in four broad categories. (i) A mild influenza like illness; (ii) Weils syndrome characterized by jaundice, renal failure, haemorrhage and myocarditis; (iii) Meningitis/meningoencephalitis; and (iii) Pulmonary hemorrhage with respiratory failure.^{1,7,9}

Diagnosis

The diagnosis of leptospirosis should be considered in any patient presenting with an abrupt onset of fever, chill's, headache, myalgia and jaundice. The diagnosis is more difficult when patients present with symptoms of cough, dyspnoea, nausea, vomiting, abdominal pain, diarrhoea, arthralgia and skin rash.

Laboratory Diagnosis.^{1,2,4,7}

1. Dark field microscopy
2. Staining
3. Culture
4. Polymerase Chain Reaction (PCR)
5. Microscopic Agglutination Test (MAT)

Treatment

Treatment with effective antibiotics should be initiated as soon as the diagnosis of leptospirosis is suspected and preferably before the fifth day after the onset of illness. In severe cases admission to a hospital is necessary. Aggressive supportive care with strict attention to fluid and electrolyte balance is essential. Peritoneal and haemodialysis is indicated in renal failure. Mechanical ventilation is indicated for lung haemorrhagic manifestation.¹ Severe cases of leptospirosis should be treated with high doses of intravenous penicillin. Less severe cases can be treated with oral antibiotics such as amoxicillin, ampicillin, doxycycline or

erythromycin. Third generation cephalosporins such as ceftriaxone and cefotaxime also appears to be effective.^{1, 10,11}

Prevention and Control

Prevention and control should be targeted at:

1. The source of infection
2. The route of transmission between the infection source and the human host
3. Infection or disease in human host.

Control measures can be targeted to the local reservoir species of animals. Such measures include

- The reduction of certain animal reservoir populations, eg rats.
- The separation of animal reservoirs from human habitations
- Immunization of dogs and livestock
- The removal of rubbish and keeping areas clean

The main aim is to increase the awareness of the disease among the population, risk group and health care providers so that the disease can be recognized and treated as soon as possible.

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MUCOCELE OF THE APPENDIX: A CASE REPORT

Abu Sayed Mollah

ABSTRACT

Mucocele appendix is not an uncommon precancerous condition. However, it is often encountered accidentally. A suspected case must be meticulously examined and laboratory investigations carried out for correct diagnosis and subsequent management. The case was encountered during an elective caesarian section operation. The obstetrician noticed a distended appendix and sought opinion from a general surgeon. Appendicular mucocele was suspected and surgically removed. Post operative recovery was uneventful and post operative biochemical parameters were within normal limits. On histopathological examination the specimen was confirmed to be the case of mucocele of the appendix. The patient had no complain at the follow-up after six months.

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Introduction

Mucinous Cystadenoma is a rare cystic neoplasm of vermiform appendix characterized by villous adenomatous changes of the appendiceal epithelium associated with marked distension with mucin in the lumen. About 25% are asymptomatic and the condition is found incidentally on imaging or at the time of surgery.¹ It is more frequent among individuals aged 50 years or more.^{2,3} Gender prevalence is controversial. While some articles confirm its prevalence among women,^{2,3} others demonstrate a higher incidence among men.^{4,5}

Mucocele of the appendix may be classified according to the histological characteristics.⁶ It includes simple mucocele (inflammatory, obstructive or retention cyst), hyperplastic

mucocele, mucinous cystadenoma and mucinous cystadenocarcinoma. The simple mucocele is characterized by degenerative epithelial changes and results in the obstruction and the distension of the appendix with no evidence of hyperplasia or mucosal atypia. In the hyperplastic mucocele, the appendix dilatation occurs due to the hyperplastic growth of the appendix. Simple and hyperplastic mucocèles correspond to 5 to 25% of the cases, and mucus is usually acellular. The mucinous cystadenoma is an appendix neoplasm with dysplastic epithelium similar to colon adenomatous polyps, and corresponds to 63 to 84% of the cases. The mucinous cystadenocarcinoma presents high grade cellular dysplasia and stromal invasion, besides

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muscularis mucosae, and represents 11 to 20% of the cases.⁶ However, frequency of the four types of the conditions reported to be 52%, 20%, 18% and 10% respectively.⁷ Mucinous appendiceal neoplasms represent 0.2-0.7% of all appendix specimens.^{8,9} Appendiceal mucinous neoplasm found to be presented as acute appendicitis in only 8%-14% cases.^{10,11}

Treatment is always surgery and determined by the organ's integrity, the dimensions of the base and histological type of the lesion. For cystadeno-carcinoma type of mucocele intraperitoneal chemotherapy is recommended. However, there is growing practice of carrying right colectomy and same time other group recommends only appendectomy.^{12,13}

The aim of reporting of this present case is due to its nature of identification and subsequent diagnosis.

Case Report

A 35 years old female admitted for elective caesarean section. It was her fourth gravida and she had two caesarean sections previously. Lower Uterine caesarean section was performed usual procedure, at the end of procedure obstetrician while had a close look into abdomen noticed hugely distended appendix. She then sought help from general surgeon. Per operatively the appendix was found to be hugely distended at middle and distal part but the base was normal. The wall was tense, appeared thin and has prominent vascularity (Figure I and II). No mesenteric and para-aortic lymphadenopathy was observed. Cecum was normal and both the ovaries were normal. No exudative or infected fluid collection was observed. Primarily diagnosis was mucocele of appendix. Appendectomy was done with utmost precaution to avoid rupture of the appendix. Post operative recovery uneventful and post operative all vital parameter was within normal limit.

Gross examination revealed dilated appendix and signs of increased vascularity. It measured 68 mm in length and 20 mm in diameter containing mucoid material. Dilatation was mainly observed in the middle and distally. Histopathological examination confirmed the case to be cystic neoplasm. The mucosa was lined by single layer of mucinous epithelium showing mild dysplastic changes and denuded at places. Few papillary configurations arising from the wall are also projecting within the lumen. Sections also reveal thinning of the wall and disappearance of the lymphoid tissue and submucosa. No malignancy is seen.

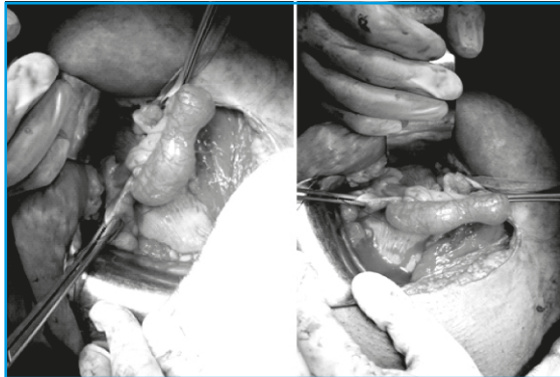


Figure I: Images (A and B) showing per-operative fixed mucocele appendix.

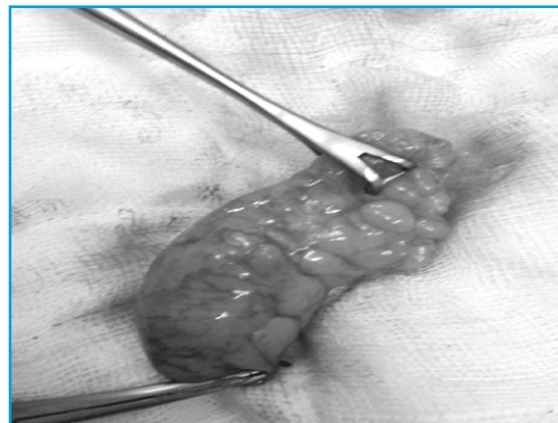


Figure II: Image showing excised mucocele appendix.

Discussion

The mucocoele of the appendix is a descriptive and unspecific nomenclature that defines the cystic dilation of the appendix caused by the accumulation of mucus secretion. This process found to be slow and gradual and often with no signs of infection inside the organ. It results from the lumen obstruction in the appendix, which is secondary to the inflammatory or neoplastic proliferation of the appendix mucosa, or of lesions in the cecum, adjacent to the appendiceal ostium.

Patients clinical symptoms may includes pain right lower quadrant of abdomen, palpable abdominal mass, nausea, vomiting, weight loss and in severe case may present with gastrointestinal bleeding and signs of intussusceptions. Preoperative diagnosis is important for selection of adequate surgery to prevent peritoneal dissemination, to prevent intraoperative and post operative complication and repeated surgery.

Mucocoele of the appendix still remains to be a diagnostic dilemma.¹⁴ In about 50% cases it is discovered during radiologic and endoscopic examinations or at surgery. The CT appearance of a mucocoele has been well described.¹⁵⁻¹⁷ In general, a mucocoele appears as a well circumscribed, low-attenuation, spheric or tubular mass contiguous with the base of the cecum. The finding of curvilinear mural calcification suggests the diagnosis but is seen in less than 50% of cases.^{15,18}

In patients with right lower quadrant pain, acute appendicitis with an associated mucocoele can be clinically indistinguishable from acute appendicitis without mucocoele.¹⁹ It was observed that as many as 50% of patients with mucocoele may have symptoms compatible with typical acute appendicitis.²⁰

The present case was indentified elective cesarean section operation. It remained dormant

possibly being masked by pregnancy situation. But from the surgeon's point of view it was important to decide whether to perform appendectomy with or without partial colectomy and taking utmost care to void any perforation. Attention always needed to be focused on follow up management based on biochemical markers and histopathological examination. The post operative period was uneventful. One missing point is inadvertent mistake of failing to investigate serological cancer marker for this patient. However, she showed uneventful postoperative period and did not show any problem for six months till her follow up.

In any discomfort in lower abdomen and suspected mass meticulous investigations must be made. This should include serological and radiological modalities and in inconclusive cases CT scan might be tried to delineate the structure.

Conclusion

Mucocoele of appendix should be considered as differential diagnosis of cystic lesions in the right lower abdomen. For hyperplasia and cystadenoma, appendicectomy is usually suffices if the resection margins are free, for mucinous cystadenocarcinoma right hemicolectomy needed. As colonic carcinoma is six times higher and recurrence is common, regular follow-up probably be part of management plan.

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The drugs and chemicals used must be mentioned precisely including generic name, dose and route of administration.

Statistical procedure should be briefly and comprehensively addressed.

Instructions for Authors

Results

The results should be presented in logical sequence in text tables, and illustrations. It is described without comment and supplemented by concise textual description of the data presented in tables and figures where it is necessary.

Tables

Each table should be typed in double spaced on a separate sheet and numbered in Roman letters (I, II, III, and IV etc). Table numbers appear consecutively in the order of their first citation in the text and supply a brief title for each. Do not submit tables as image. Any explanatory matter must be placed in footnote. Explain all the nonstandard abbreviations that are used in each table in the foot notes.

Identify statistical measures of variations such as standard deviation and standard error of the mean. Do not use internal horizontal and vertical rules.

The submission of extensive tabular material is discouraged.

Illustration

All illustrations must be numbered consecutively in Arabic numerals as cited in the text.

Print photograph of each illustration along with its electronic file should be submitted.

Figure number, title of manuscript, name of the corresponding author, and arrow indicating top should be written on a sticky label affixed on the back of each illustration.

Original drawings, graphs, charts and letterings should be prepared on an illustration board or high grade white drawing paper by an experienced medical illustrator.

Legend

Legends must be typed in a separate page. Photo micrograph should indicate the magnification internal scale and the method of staining

Discussion

The discussion section should reflect the comprehensive analysis of the results. Emphasis

should be made on new and important aspects of the study and the conclusions derived thereof.

Repetition in detail data or other material given in the introduction or results section should be avoided.

Describe the implications of the findings and their limitations, including, implications for future research.

Relate the observations to other relevant studies.

Conclusion(s)

Conclusion must be linked with the goals of the study. Unqualified statement(s) and conclusion(s) which completely do not support the data must be avoided and in appropriate situation recommendation, if any, is encouraged.

Acknowledgement

Contributions that need acknowledgement but do not justify authorship should be specified.

Individuals' institution, sponsor, organization for technical help, financial and material support can be acknowledged.

References

Reference should be written in modified Vancouver style and should follow the ICMJE guidelines (<http://www.icmje.org>).

References should be numbered consecutively in the order in which they are first mentioned in text.

Names of 6 (six) authors must be given followed by et al if author number is more than six.

Example

Choudhury S, Chowdhury T. A Laparoscopic assessment of tubal functions in sulfentility. *Bang J Obstet Gynaecol* 1992; 17: 9-16.

Journal articles with organization as author World Health Organization. WHO laboratory manual for the examination and processing of human semen 5th ed. Geneva: World Health Organization Press 2010 P 17.

Standard Journal article on the Internet <http://www.unicef.org/bangladesh /child and Maternal Nutrition %281%29.pdf> accessed on 18th April 2014.

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