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Khulna City Medical College Journal

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The college has modern facilities and the tertiary care hospital provides medical care to patients from surrounding areas and also serves as a referral center for complex cases. The college has a faculty of highly qualified and experienced teachers who are dedicated to providing quality medical education to their students. This is one of the best medical colleges in the region. It is affiliated by Sheikh Hasina Medical University, Khulna and by Bangladesh Medical and Dental Council.

Overall, Khulna City Medical College is a reputable institution for medical education in Bangladesh and attracts students from home and abroad. In addition, Khulna is an important city of Bangladesh with a rich cultural heritage, beautiful natural scenery and a growing economy.

Location:

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Khulna City Medical College (KCMC) aspires to achieve national and international recognition for its capability to produce physicians with the essential knowledge, skills, and professionalism to successfully continue their profession and pursue a career to serve the nation through health promotion, prevention, treatment and medical research. Bangladesh has achieved primary health care for all, but we are lacking in tertiary care which will be our intention to educate students who can provide tertiary health care to all.

Objectives:

The mission of KCMC is to produce competent, compassionate and dedicated health care professionals from home and abroad who

- Consider the care and safety of the patients, their first concern
- Established and maintained good relationship with patients, their attendants and colleagues
- Are honest, trustworthy, and act with integrity
- Are capable of dealing with common diseases and health problems of the country and are willing to serve the community, particularly the rural community; but at the same time acquire firm basis for future training, service and research at both national and international level
- Are committed to keep the knowledge and skill up to date through 'continuous professional development' all through their professional life.

Prof. Dr. Bidhan Chandra Goswami
Principal & Professor of Cardiology
Khulna City Medical College

About the Journal

Aims and Scope

Khulna City Medical College Journal (KCMCJ) aims to publish original articles, review articles, conference abstracts, letters to editor and case reports pertaining to clinical and surgical practice. The journal invites manuscripts of significant research findings from all fields of medical science. Any research study that prospectively influences the outcome of human health is welcome for publication in KCMCJ.

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- Previously published methods (if applicable) with appropriate citations

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- Should be unmounted glossy print in sharp focus, 12.7 x 17.3 cms in size.

- Should bear number, title of manuscript, name of corresponding author and arrow indicating the top on a sticky label and affixed on the back of each illustration.
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Editorial

Management of Carcinoma Breast is a Challenging Issue for Low- and Middle-income Countries

Hossain S.M.¹, Love R. R.², Rahman A.³

Breast cancer is the commonest cancer in terms of mortality and morbidity from malignant disease in female. Incidence varies from country to country, which is low in developing countries and lowest in central Africa. In developed countries of western world, 1 in every 10 to 12 females suffer from breast cancer in lifetime. With westernization of life, incidence gradually increases in low- and middle-income countries. Yearly about two million breast cancer cases are diagnosed globally and nearly 6.5 lacs die annually. About 55% of breast cancer deaths occur in low- and middle-income countries (LMCs) where management of breast cancer disease is very challenging for the medical practitioners owing to several issues [1]. To date, many barriers have been identified for the management of breast cancer disease in LMCs.

Inadequate infrastructure and resources for routine screening:

In high-income countries, organized screening process among risky women has substantially reduced the mortality from breast cancer in view of the fact that high resource centers enable every woman to undergo mandatory checkup for early breast disease. In contrast, among LMCs risky females, screening at early stage of breast cancer is poorly executed as a lack of health resources. With the increased level of awareness and regular screening programs, breast cancer can be diagnosed at early stage and treatment may be confined to surgery only. Over the years, high-income countries have improved social awareness programs to an extent that prevents any drop-out case in screening program.

Clinical presentation:

In LMCs the majority of the patients of breast cancer are present with metastatic features. In a study in Bangladesh by IBCRF (International Breast Cancer Research Foundation), clinical presentation of advanced (stage III and IV) breast cancer was 89% in 2008 and reduced to 68% in 2019 as a result of improved facilities of screening and awareness program. In Nigeria, 72% of patients presented with stage III and IV [2]. In Arab countries presenting status is almost similar and advanced stage (III

and IV) varies from 60-80% [3]. A very big number of inoperable breast cancer cases is a burden for the LMCs. Inadequate facilities and manpower can not provide the expected treatment, therefore, a big gap in the treatment emerges.

Adequacy of diagnostic facilities:

For initial planning of treatment, higher cytologic and histologic diagnosis are essential. Adequate facilities and qualified manpower are mandatory to perform fine needle aspiration cytology, core needle biopsy and excisional biopsy. In LMCs, for a big number of patients there is limited expert histopathologists available in the district hospitals as well as the infrastructure is also poor. For actual planning and follow-up, other adjuvant investigations are USG, mammography, receptor study, CT scanning, PET scanning, and MRI as per requirement. Because of limited resources, most of the investigation facilities are far away from poor people and this creates a challenge to treat breast cancer patients properly.

Pathology and diagnostic tool:

Inadequate pathologic infrastructure is a burden for LMCs; therefore, the majority of patients present with advanced stage of breast disease. Recent studies show poor societies in LMCs have stage III and IV presentations at a higher incidence than in middle- and high-income societies. For instance, in Pakistan, 65.7% of stage III and IV cases belong to poor societies while in Nigeria that incidence is 72%. Among middle east Arabs a similar pattern is observed in case of advanced or metastatic stage reaching 60 to 80% of cases. In contrast, a significantly low incidence is seen among European & American whites. Egyptian females with stages III and IV amount to 68% of all breast cancer cases. As for Oman the rate is 50.8%. On that account, early detection of breast disease is essential to reduce advanced stage breast cancer. Histopathologic diagnosis is crucial for starting treatment for breast cancer. According to The Breast Health Global Initiative (BHGI), basic levels of diagnosis and pathology in LMCs include history, clinical breast examination, physical exam, and resource-adapted mammography.

Initial breast imaging with ultrasound is cost-effective, and furthermore with minimum resources; chest X-rays, ultrasound of liver, and blood studies should be implemented to evaluate metastatic breast cancer. High-level resources include diagnostic mammography, image-guided needle sampling, and bone scanning. At maximum level, investigations include sentinel lymph node biopsy, receptor study (HER2/neu status), cancer biomarkers, and immunohistochemistry staining, and advanced imaging systems that include PET scanning, MIBI scanning, breast MRI etc. However, these advanced level facilities are limited and confined to state capitals and mega-cities in LMCs. Additionally, successful fine needle aspiration cytology and biopsy-based investigations largely depend on efficient pathologists although they are available mostly in metropolitans and are very few in number in district level [4] [5] [6].

Treatment guideline:

“The right measure of successful health care isn’t about the maximum possible for a few, but he averages for everyone... and the minimum opportunities available to even those with the fewest resources and privileges” [7].

Majority of women with breast cancer are poor and most of them are in low- and middle-income countries. A large number of breast cancer patients are included in the subgroup of premenopausal hormone receptor positive women. About 4,20,000 newly diagnosed cases of this subgroup come from low- and middle-income countries [8]. This group can be highly benefitted by well-established and recommended hormone treatment i.e., surgical oophorectomy plus tamoxifen following primary surgery [9]. The treatment guideline for high-income countries should not be considered the same as for low- and middle-income countries. In LMCs, there are so many health service barriers. Many women do not have permission to seek medical care for themselves and thus human right is neglected. The financial resources of many families can not fulfil the cost of diagnosis and treatment. Global health care systems operate on business models with high levels of corruption. Some leading cancer organizations do not choose to offer surgical oophorectomy plus tamoxifen. Though it is the treatment of choice for mass population as one-time intervention with primary surgery. If we consider the quality-of-care metrics like efficiency, safety, patient centeredness, timeliness and equity, standard treatment guideline should be local, not global [10]. The local guideline should be attainable,

affordable, available, and efficient for maximum patients. It is the demand of time to overcome all the barriers of health systems to reduce the level of health business corruption, establish local treatment guidelines, uphold the challenging human right and finally mitigate the restricted medical service. To minimize the care gap in Bangladesh, clinical practice guideline for breast cancer patient has been developed by some Bangladeshi researchers in joint collaboration with IBCRF. These guidelines are a consensus of the authors regarding currently acceptable approach to care of known or suspected breast cancer in the context of Bangladesh. Published scientific data specially efficacy, toxicities and cost effectiveness has been considered important to establish this guideline for Bangladeshi women (www.agbreastcare.org, www.ibcrf.org) [11].

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Original Article

Outcome of laparoscopic correction of diastasis recti

Hossain SM¹, Parvin M², Faruquzzaman³, Nasrin H⁴

Abstract

Background: Diastasis recti is a pregnancy induced divarication of recti. Surgical intervention may be warranted especially when the gap is more than 2 cm. Different types of operative repair technique have been adopted so far. The outcome of laparoscopic and laparoscopy assisted repairs is excellent, reflected in different recent researches. We have done some cases of laparoscopic repair of diastasis recti in our institutes in Bangladesh.

Aims & objective: The aim of this study is to assess the different aspects of laparoscopic correction of diastasis recti in our context on the basis of postoperative outcome.

Methods and materials: A prospective study was conducted in Khulna Medical College Hospital and Khulna City Medical College Hospital, Bangladesh. 101 patients of diastasis recti were included in this research from January 2019 to April 2022 on the basis of purposive sampling. Ethical clearance was taken from the ethical review committee of Khulna Medical College Hospital, Bangladesh.

Results: In our study, surgery was done in 36.5% (37) cases out of total 101 cases. Laparoscopic repair was done in 78.4% (29 out of 37) patients of surgery. Mean±SD of age of the study patients was 48±8.1 years. Seroma and skin fold formation was observed in 5.9% (02) and 11.8% (04) patients respectively. Surgical site infection was seen in 2.9% cases of laparoscopic repair. Chronic wound pain was found in 8.8% (03) patients. Symbotex and Proceed mesh was used in 76.5% & 14.7% cases respectively. Cost effectiveness varies with the mesh used which is depicted in this research with probable crude estimation.

Conclusion: On the basis of the results of this study, laparoscopic and laparoscopy assisted repairs can be considered as resilient repairs for the surgical management of diastasis recti with less complications and better operative outcome.

Key words: Diastasis recti, laparoscopic repair, hybrid repair, laparoscopy assisted repair, outcome.

Khulna City Med Coll J 2023; 1(1) : 03-06

Introduction

Diastasis recti is an abdominal wall defect that occurs frequently in women during pregnancy. Patients with diastasis can experience lower back pain, uro-gynecological symptoms, and discomfort at the level of the defect^{1, 2}. Diastasis recti is diagnosed when the inter-rectus distance is > 2 cm. Several techniques, including both minimally invasive and

open access surgical treatment, are available^{3,4}. Abdominoplasty with plication of the anterior rectus sheath is the most commonly used, with the major limitation of requiring a wide skin incision. The newer techniques are laparoscopic repair, hybrid repair (laparoscopy assisted open repair), REPA (preaponeurotic laparoscopic repair) etc⁵⁻⁸.

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Methods

This was a prospective study in Khulna Medical College Hospital and Khulna City Medical College Hospital, Bangladesh with a total 101 patients of diastasis recti. These patients were selected by convenient purposive sampling based upon inclusion & exclusion criteria from January 2019 to April 2022. The data were analyzed using both analytic as well as descriptive statistic. Such as; mean, SD, percentage etc. Ethical clearance was taken individually from patient and from the ethical review committee of Khulna Medical College Hospital, Bangladesh.

Surgical images



Figure I: After creation of pneumoperitoneum



Figure II: Assessment of defect

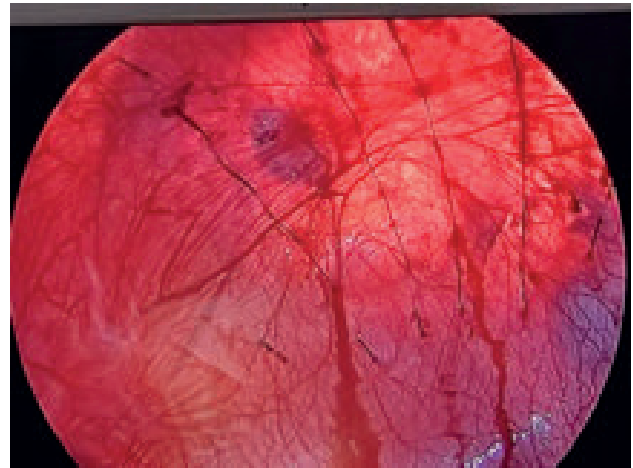


Figure III: Plication of defect

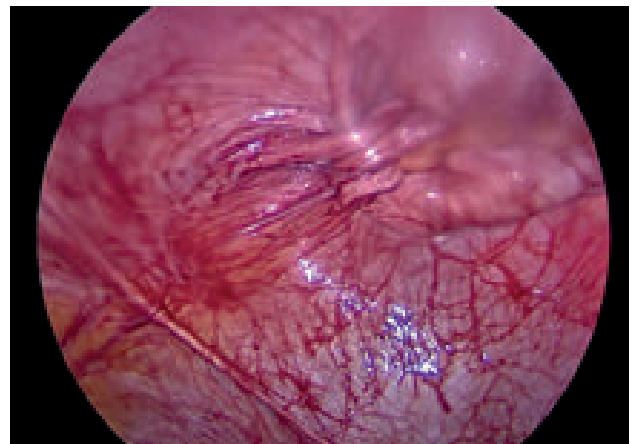


Figure IV: Repair of defect by plication

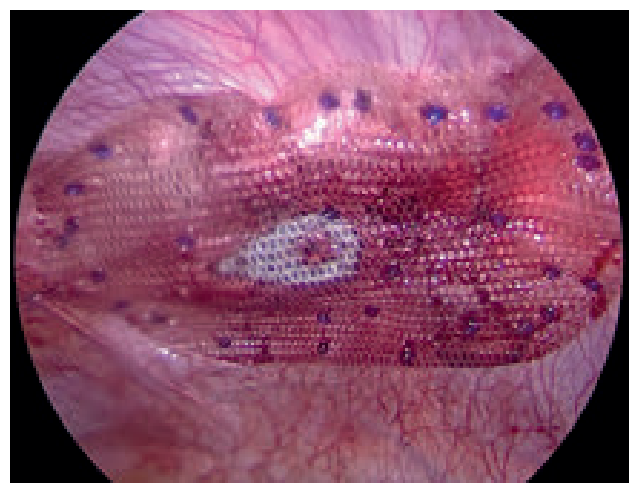


Figure V: Placement of mesh (Symbotex)

Results

The age distribution of the research population is depicted in table 1 which suggests that majority of the study patients (44.6%) were in 40-50 years of age group. Mean± SD of age was 48±8.1.

Years	n	%	Mean±SD
<30	08	7.9	
30-39	30	29.7	
40-50	45	44.6	48±8.1
>50	18	17.8	
Total	101	100	

Table 1: Age distribution of the study population

Among these 101 patients, surgery was done in 37 patients (36.5%).

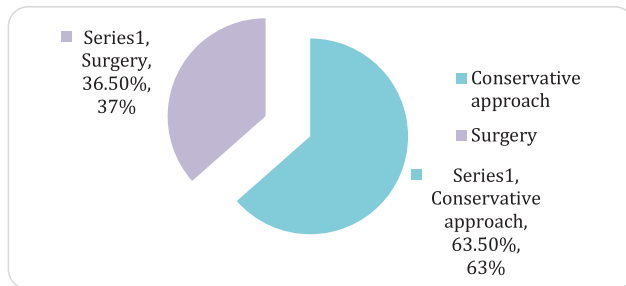


Figure: Modalities of treatment

Open surgery was done in 8.1% (03) of the 37 patients of operative intervention. Laparoscopic repair was done in 29 (78.4%) patients, whereas, hybrid (laparoscopy assisted open) repair was done in 13.5% (05) cases.

Type of surgery	n	%
Open surgery	03	8.10%
Laparoscopic surgery	29	78.40%
Hybrid method	05	13.50%
REPA	00	00%
Total	37	100

Table 2: Type of surgery performed in study patients

Postoperative event was satisfactory and complication rate was attractive in case of laparoscopic and hybrid repair. Chronic wound pain was observed in 8.8% (03) patients.

Postoperative complications	N	%
Seroma	2	5.90%
Haematoma	0	0%
Skin fold formation	4	11.80%
Surgical site infection	1	2.90%
Chronic wound pain	3	8.80%

Table 3: Postoperative complications (procedure specific)

In our study, symbotex mesh was used in approximately 76.5% cases, whereas proceed mesh was used in case of 14.7% cases.

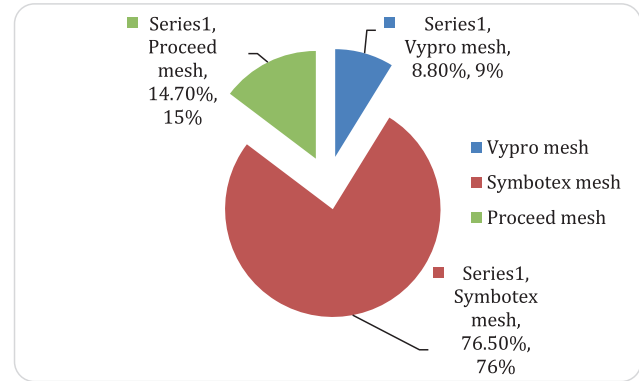


Figure 2: Type of synthetic mesh used

Crude estimation of the overall cost effectiveness has been shown in figure 3.

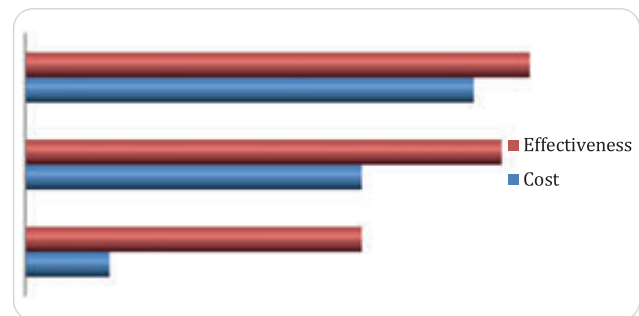


Figure 3: Cost effectiveness of the mesh used

The overall outcome of laparoscopic and hybrid repair was excellent, as reflected in this study (figure 4).

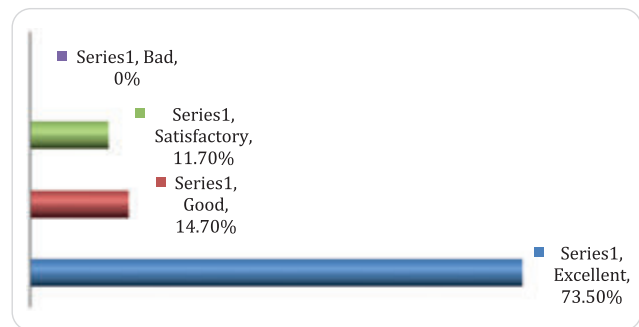


Figure 4: Overall surgical outcome

Discussion

Majority of the cases in our study presented at a relatively elderly age and the mean±SD of age of the patients was 48±8.1 years. Approximately 44.6% (45) patients was in 40-50 years of age group, followed by 29.7% (30) was in 30-39 years of age group. The possible explanation is that the process started much earlier and was masked or neglected for

a variable period of time in most of the patients. Indication for surgery usually depends on many factors including dimension of gap, severity of symptoms, operability etc^{1,7,8}. Operative intervention was done in 36.5% (37 out of total 101) patients. Many patients require careful monitoring and follow up at an early stage. Laparoscopic and hybrid repair was done 78.4% (29) & 13.5% (05) cases respectively. Open surgery was only in 8.1% (03) patients. However, REPA (preaponeurotic laparoscopic repair)⁸⁻¹⁰ was suggested as one of the resilient repairs for diastasis recti, but in this study no such intervention was not done. No major procedure specific complications were noted for laparoscopic and hybrid repair in this study. Seroma was seen in 5.9% (02) patients, skin fold formation was observed in 11.8% (04) patients. Surgical site infection rate was approximately 2.9% (01) in laparoscopic repair which was superficial infection. Chronic wound pain (within 06 months) was observed in 8.8% (03) patients, which was controlled by conservative treatment within few months. Good results are also seen in other recent researches⁹⁻¹³. One of the major drawbacks of our study is that it can't comment on the recurrence rate, as most of our patients are at follow up phase so far. Type and choice of mesh used is an important factor for the postoperative outcome and cost effectiveness. In this study, Proceed mesh was used in 14.7% cases of laparoscopic and hybrid repair. Though, it was costly, effectiveness was highest. Symbotex mesh was used in 76.5% cases. The overall cost was moderate and effectiveness was high. Vypro mesh was relatively cheap, however effectiveness was also less. This was a crude assessment of this research. In case of laparoscopic or laparoscopy assisted repair, excellent result was observed in 73.5% cases. Whereas, good and satisfactory outcome was seen in 14.7% and 11.7% cases respectively. This was also a crude estimation of this study.

Conclusion

Based upon the results of this study, the outcome of laparoscopic correction of diastasis recti is attractive. Complication rate is very low with better postoperative outcome. However, all patients don't require surgical intervention. Patient's selection is an important key to success. Moreover, nature of synthetic mesh used greatly influence the cost effectiveness, therefore, choice and selection of mesh must be judicious.

Conflicts Of Interest

The authors declare no conflicts of interest.

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Original Article

Mortality and Morbidity Study of Laparoscopic Cholecystectomy in Empyema Gall Bladder: Experience in Khulna City Medical College and Hospital, Bangladesh

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Abstract

Introduction: Laparoscopic cholecystectomy (LC) has dramatically changed the outlook of patients with symptomatic gallstone disease. Empyema of the gallbladder is a potentially fatal complication of gallstones. One of the current worldwide health problems, especially among adults.

Aim of the study: The study aimed to find out the operative outcome of laparoscopic cholecystectomy in patients with empyema of gall bladder.

Methods: This prospective study was conducted in the Department of Surgery at Khulna City Medical College and Hospital, Khulna, Bangladesh. The study was carried out from June 2017 to July 2022. Sample was selected on the basis of convenient sampling based on inclusion & exclusion criteria Ethical clearance was taken from the Ethical review committee of Khulna City Medical College Hospital.

Result: A total of 120 patients were enrolled and analyzed in this prospective study. Most of the 44(36.67%) patients were from the age range of 50-59. According to gender distribution, 65% of patients were male, and 35% were female. From the operational complication, 13(10.83%) patients had peroperative bleeding, 9(7.50%) patients with perforation of the gallbladder, four patients had minor trauma to the common bile duct, and the same number of patients had duodenal perforation. In this study, we successfully operated on 94 patients and converted 26 patients. There were 25 patients who had complications after a successful operation, and 21 converted patients had complications.

Conclusion: Laparoscopic cholecystectomy is a safe, resilient and effective surgical option in management of empyema of gall bladder. However, the rate of open conversion is still high based on many factors. Postoperative complications are relatively higher in complicated cases of open conversion. The experience and expertise of the surgeon plays an important role.

Keywords: Laparoscopic cholecystectomy, empyema and gall bladders, operative outcome, conversion rate, complications.

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Introduction

Laparoscopic cholecystectomy (LC) has dramatically changed the outlook of patients with symptomatic gallstone disease. Empyema of the gallbladder is a potentially fatal complication of gallstones. One of the current worldwide health problems, especially among adults, is gallstone disease [1]. The traditional open cholecystectomy was first performed

in 1882 by Carl August Langenbach. He stated, "the gallbladder needs to be removed not because it contains stones, but because it forms them." Then, it was replaced with laparoscopic cholecystectomy (LC). The first LC was performed in 1985 by Muhe. It is characterized by suppuration superimposed on acute cholecystitis.

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LC revolutionizes the treatment of gallbladder disease and is now the gold standard for the treatment of gallstones and the most ordinary operation performed [2, 3]. Laparoscopic surgery is limited in a few technical aspects, such as limited tactile feedback during manipulation of tissues and dissection, indirect contact with intra-abdominal structures, and loss of three-dimensional perception, through the relatively limited and fixed view of the operative field. When this happens, the operation becomes difficult and results in the conversion to open cholecystectomy. However, practitioners define the "difficult LC" differently. Generally, it refers to multiple technical intra-operative challenges that intensify the risk of complications. Hence, the operation time is prolonged [4, 5]. Approximately 75% of all cholecystectomies are performed using a laparoscopic technique, while conversion to open procedure ranges between 5% and 10% nationwide [6]. However, the national institute of health (NIH) reports that the results of LC are significantly influenced by the skills the surgeons have, which include factors gained through experience, and training, which develop their maturity and confidence in making rational judgments [7]. Typically, conversion to open cholecystectomy is not preferred because it is always associated with some pulmonary infections and surgical sites, increased overall morbidity, and extended ward stays [8, 9]. The potentially fatal complication of gallstones is empyema of the gallbladder. Its categories vary, determined through suppuration superimposed on acute cholecystitis. Usually, its presentation in clinical form is more complicated than acute cholecystitis [10]. Cases involving patients with advanced atherosclerotic disease or diabetes are increasing [11]. In surgical terms, a calculus (or rarely from a malignant mass like underlying cholangiocarcinoma) prevents pus from draining through the cystic duct and obstructs the gallbladder neck [12]. Although practitioners have described multiple sonographic indicators of acute cholecystitis, which include bladder distension and sonography Murphy's sign, the ability to predict the ease or difficulty of cholecystectomy and acute cholecystitis is still weak [13-15]. Features suggesting the seriousness of this disease and its diagnosis are still too few; it used to be a contraindication for LC in response to some fears of complications leading to life-threatening [16-18]. Accordingly, many cases have previously been decided for conversion [19]. In current advancement, the maturity of technology and experience in laparoscopic surgery has changed the scenario significantly. Regarding this, practitioners have found that LC is an effective option

and is safe for acute cholecystitis and its associated conditions like empyema of the gallbladder [19]. Other people may face different complications, subjected to various factors. Generally, damage to nearby vital structures, uncontrolled bleeding, and obscured local anatomy are common factors leading to conversion (complication) [20]. However, the encouraging merits are not stagnant, while evaluation of the role of laparoscopic surgery in such acute conditions is continuously going on.

Methodology & Materials

This prospective study was conducted in the Department of Surgery at Khulna City Medical College and Hospital, Khulna, Bangladesh. The study was carried out from June 2017 to July 2022. The standard 4-port technique performed the LC with few modifications depending upon the situation, such as an additional port and percutaneous decompression of the gall bladder by the spinal needle. The gallbladder was incised in cases of thick pus, and a suction cannula was introduced to aspirate directly into the gall bladder. The suction cannula was also used to dissect the dense adhesions in the area of Calot's triangle. The thickened wall of the gallbladder was also incised to apply the graspers properly in cases where it was difficult to get hold of the thick, edematous gallbladder. Data of each patient was recorded on a data form, including demographic details, operative findings, intraoperative complications, postoperative complications, and duration of hospitalization.

• Inclusion criteria:

- Patients with clinical, sonological and biochemical evidence of cholelithiasis with empyema.
- Patients of aged 20-69 years and gender.

• Exclusion criteria:

- Patients with co-morbidities and organ failure
- Patients with overwhelming sepsis

Convenient purposive sampling was used as sampling method. All data were presented in a suitable table or graph according to their affinity. A description of each table and graph was given to understand them clearly. All statistical analysis was performed using the statistical package for social science (SPSS) program, and Windows. Continuous parameters were expressed as mean±SD and categorical parameters as frequency and percentage. Informed consent was taken individually from patient and ethical clearance was taken from the Ethical review committee of Khulna City Medical College Hospital.

Result

In this study, most of the 44(36.67%) patients were from the age range of 50-59 (Table 1). 65% of patients of this study were male, and 35% were female (Figure 1). Table 2 shows the clinical feature and ultrasound findings; all patients had pain in the right hypochondrium, 90(75.00%) patients had a fever, 69(57.67%) patients had palpable gallbladder, and 34(28.33%) patients had vomiting. Almost 97% of patients had intraluminal sludge of stone, 99(82.50%) patients had thickened walls of the gallbladder, 94(78.33%) patients had distended gallbladder, and 68(56.67%) patients had pericholecystic fluid accumulation (Table 2). In this study approximately 22.7% (26 out of 120) patients had open conversion of laparoscopic cholecystectomy. Among these patients, most often more than on causes were found as reasons of such open conversion. However, the main reasons of open conversion is depicted in table 3; which suggests that in majority of the cases (42.3%), open conversion was required for obscured anatomy of Calot’s triangle. Per-operative bleeding was another leading cause for such conversion (in 26.92% cases). According to operational complication, 13(10.83%) patients had to bleed, 9(7.50%) patients with perforation of the gallbladder, four patients had minor trauma to the common bile duct, and the same number of patients had duodenal perforation (Table 4). In this study, we successfully operated on 94 patients and converted 26 patients. There were 25 patients who had complications after a successful operation, and 21 converted patients had complications (Table 5).

Table 1: Age distribution of the study population (N=120).

Age range (Years)	Frequency	Percentage	Mean±SD
20-29	4	3.33	
30-39	12	10.00	
40-49	34	28.33	50±5.8
50-59	44	36.67	
60-69	26	21.67	
Total	120	100	

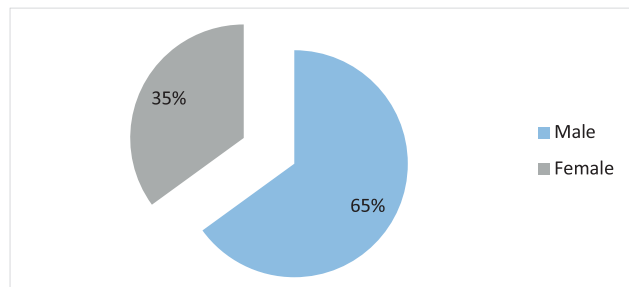


Figure 1: Gender distribution of the study population (N=120).

Table 2: Clinical features and Ultrasound findings of the study population (N=120).

Variables	Frequency	Percentage
Clinical features		
Pain in right hypochondrium	120	100.00
Fever	90	75.00
Vomiting	34	28.33
Palpable gallbladder	69	57.50
Ultrasound findings		
Distended gallbladder	94	78.33
Thickened wall of the gallbladder	99	82.50
Intraluminal sludge or stones	116	96.67
Pericholecystic fluid accumulation	68	56.67

Table 3: Reasons for conversion to open cholecystectomy

Variables	Frequency	Percentage
Totally obscured anatomy in Calot's triangle	11	42.30
Peroperative bleeding	7	26.92
Common bile duct injury	4	15.38
Duodenal perforation	4	15.38
Total	26	100

Table 4: Operative complications

Complication	Frequency	Percentage
Perforation of gallbladder	9	7.50
Minor trauma to common bile duct	4	3.33
Peroperative bleeding	13	10.83
Duodenal perforation	4	3.33

Table 5: Postoperative complications of the study population

Complication	Successfully operated (n=94)		Converted (n=26)	
	N	%	N	%
Port site/wound infection	8	8.51	9	34.62
Bile leak	4	4.26	4	15.38
Intra-abdominal collection	9	9.57	4	15.38
Chest infection	4	4.26	4	15.38

Discussion

Laparoscopic cholecystectomy (LC) has become a preferred choice even in the most difficult situations associated with complicated gallbladder disease [21-23]. Several encouraging reports are answering earlier arguments about its safety and efficacy. More laparoscopic surgeons are being persuaded to perform LC in acute cholecystitis [24-27]. Few reports have specifically evaluated the safety of LC in empyema of the gallbladder. Our study presents details of 28 LCs performed on empyema gallbladders within 24 hours of admission to evaluate the

safety and appropriateness of the laparoscopic approach in this condition. The difficulties we encountered in dissection in the area of Calot's triangle are more or less the same as mentioned by other similar studies [28]. The overall conversion rate in this study (19.40%) is consistent with other reports [29, 30]. History of recurrent acute cholecystitis and an undue delay in the surgery are the main contributing factors for conversion in this study, a finding consistent with other similar studies [28, 31-33]. The nature of the study population must also be known, as suggested by Gouma [34]. The study population in this report is mainly from poor socio-economic backgrounds, coming from remote areas of Khulna, Bangladesh. There is a general reluctance for surgery in these patients because of economic reasons and a general fear of surgery. Their presentation is therefore delayed, and operation is technically complex due to fibrosis and firm adhesions. These are the common factors producing a distortion of local anatomy [35, 36]. This has been the main factor in conversions in this series, with an additional contribution to our standing on the learning curve. The conversion rate can be significantly reduced by patience, clear display, and identification of the anatomy of Calot's triangle before cutting or applying clips. The dissection should proceed cautiously, and gentle adhesion separation should be done. The duodenum should be identified and gently pushed down to avoid injury. The use of diathermy should be minimal, and the threshold for conversion should be kept low to ensure patients' safety. We decompressed the distended gallbladder before proceeding to Calot's triangle to facilitate dissection. Tseng et al. have also favored this procedure to make surgery safe and easier [37]. Another way of handling such life-threatening situations is to perform subtotal cholecystectomy after removing all the stones to ensure the safety of the patient's life instead of continuing dissection in the frozen Calot's triangle with totally obscured anatomy. The rate of major complications is not significant in the current study to preclude the laparoscopic approach in this condition. However, there should always be a word of caution while operating in such difficult conditions. This is consistent with the findings of Hobbs et al., claiming that the increased risk of complications with LC has stabilized [38]. However, a few cases of major cystic artery bleeding and duodenal perforation occurred, and we had to resort to the open

technique considering the safety of the patients. The cystic artery bleed was initially attempted to be controlled by tamponade and gauze pressure, failing which we converted the cases and the bleeding controlled. The duodenal perforation was identified then and there, and the operation was converted with subsequent primary closure of the duodenum. There is always a risk of common bile duct (CBD) injury if the operating surgeon is impatient and the anatomy of the field is not displayed before clipping and cutting. Undue use of diathermy is also a significant factor in causing CBD injury and should be avoided in the area of Calot's triangle. The total hospital stay in the converted population was prolonged, with an average of 10 days. This is, however, contrary to the finding of Johansson et al. claiming that conversion did not prolong the postoperative hospital stay in the study population [39]. LC in empyema has shown less morbidity and no mortality in our study. The analysis of our study and literature review has shown that this procedure was associated with less intraoperative blood loss, shorter hospital stays, less wound infection, and less postoperative pain.

Limitations of the study: *Every hospital-based study has some limitations and the present study undertaken is no exception to this fact. The limitations of the present study are mentioned. Therefore, the results of the present study may not be representative of the whole of the country or the world at large. The number of patients included in the present study was less in comparison to other studies. Because the trial was short, it was difficult to remark on complications and mortality.*

Conclusion And Recommendations

Laparoscopic cholecystectomy (LC) is a safe and acceptable option in gallbladder empyema. However, there are significant technical difficulties due to edema, adhesions, and distorted anatomy in the area of Calot's triangle. The experience of the surgeon plays an important role. We recommend that patient safety be prioritized and that the conversion threshold be kept low. Sub-total cholecystectomy may be considered where resection proves dangerous.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee.

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Original Article

Meta-analysis and Guideline of Management of Cluster Infections at Laparoscopic Port

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Abstract

Back ground: Port site infection is an established and recognized problem in surgical practice. “Micro-cluster infection” is an especial variant of surgical site infection. During COVID-19 infection, this infection was in outbreak in many hospitals and clinics in Khulna, Bangladesh.

Objective: The aim of this study was to assess the magnitude of the problem, evaluation of the diagnostic options and the management guideline.

Methodology: This study was a prospective study with a total number of 112 cases of micro-cluster infection in tertiary level hospitals and in private chambers in Khulna. Study period was from November 2019 to November 2022 on the basis of convenient purposive sampling. Ethical clearance was taken from the Ethical review committee of Khulna City Medical College Hospital.

Result: In this study, 55.4% (62) micro-cluster infection was seen in laparoscopic port, especially in umbilical (40.3%) and epigastric port (32.3%). Though the process manifested within 07-10 days, patients usually presented to the hospital at transition state (within 02-04 weeks). Several predisposing factors have been identified. Central obesity was associated with approximately 56.5% cases. GeneExpert (for Mycobacterium tuberculosis) was negative in all patients. Histopathological report revealed non-caseating granuloma (30.0%), fibrous reaction (100%), granulomatous reaction (95.0%) and foreign body reaction (45.0%). Best outcome was observed with wide local excision and appropriate antibiotics selection.

Conclusion: Micro-cluster infection commonly affected laparoscopic ports. Several risk factors include postoperative seroma, haematoma, patient’s co-morbidities, immune state, genetic, size of incision etc. Fibrous granulomatous reaction/ foreign body reaction with tissue induration and sinus formation is commonly seen. Wide local excision, judicious and selective use of appropriate antibiotics is important.

Keywords: Micro-cluster infection, port site infection, surgical site infection, clinical feature, histological feature, diagnosis, treatment, surgery, outcome, granulomatous infection

Introduction

According to the US CDC (United States Centers for Disease Control and Prevention), surgical site infection is infection at the site of surgery within 30 days. However, in case transplant or implant surgery, the time limit is one year^{1,2}. Port site infection is a type of surgical site infection commonly seen at midline laparoscopic port³. In most of

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the circumstances, the process is idiopathic^{3,4}. However, in some literatures, different risk factors have been identified. Most often poor hygiene, small incision, body-immunity, age, genetic have been considered as important predisposing factors^{5,6}. After laparoscopic cholecystectomy, the incidence rate of port site infection is

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1.4%-4.2%^{7,8}. A specific pattern of port site infection is usually seen especially after laparoscopic surgery. In this research this infection is termed as “micro-cluster infection”. “Micro-cluster infection” is a special pattern of non-tuberculous granulomatous surgical site infection characterized by formation of micro-fibrous tracts at the site of incision in clusters as a result of micro-granulomatous infection within 30 days of surgery. As non-tuberculous granulomatous infection causes formation of micro-cluster non-caseating granuloma with infected micro-fibrous tracts, hence it can be termed as micro-cluster infection. It is a special pattern of foreign body tissue reaction where obesity, individual’s immunity, genetic play key role. Generally, small incisions and port site incisions are more prone to develop micro-cluster infection. During COVID-19 ear, “micro-cluster infection” was in outbreak in different hospitals including several Government and private hospitals and clinics in Khulna city, Bangladesh. In our experience, cluster infection not only has clinical aspect, but also associated with medico-legal aspect, as it usually increases the cost of the patients and hospitals tremendously. In this paper, we are going to present different clinical aspects of this outbreak.

Methods And Materials:

This study was conducted as a prospective study with a total number of 112 cases of micro-cluster infection in Khulna Medical College Hospital, Khulna City Medical College hospital, Bangladesh, and in private chambers from a period of November 2019 to November 2022. Study population was selected by convenient purposive sampling based on inclusion and exclusion criteria. The survey data were usually be analyzed using both analytic as well as descriptive statistic. Such as; mean, SD, percentage etc. informed consent was taken individually from patient and ethical clearance was taken from the Ethical review committee of Khulna City Medical College Hospital.

Results

Cluster surgical site infection is a special type of surgical site infection. During the study period, a total 112 surgical patients of such infection was detected. Among these patients, 55.4% (62) were patients of laparoscopic surgery. Type of operation is depicted in table 1.

Type of operation	N	%
Laparoscopic surgery	62	55.4
Appendicectomy (open incision)	18	16.1
Abdominal hysterectomy	13	11.6
Cesarean section	15	13.4
Other operation	04	3.6
Total	112	100

Table 1: Type of operation associated with cluster infection

In case of laparoscopic surgery, the site of port infection is presented in figure 1, which suggests that laparoscopic port site infection is common in case of umbilical port (40.3%).

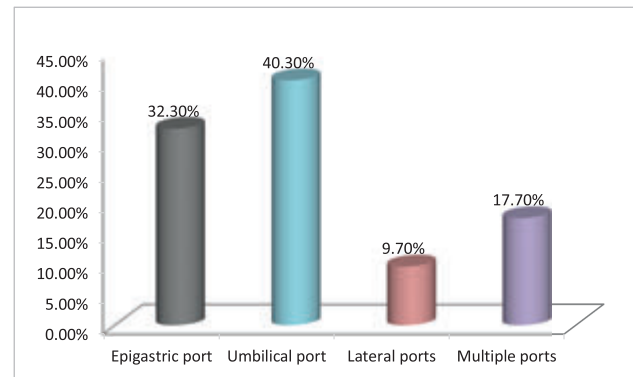


Figure 1: Site of port site cluster infection

Most often, the process of non caseating granulomatous inflammation usually occurred within 07-10 days following surgery. However, the presentation of the patients to hospital was variable. Table 2 suggests the time of presentation of the patients of laparoscopic surgery (62 patients) to hospital.

Stage	Time	N	%
Immediate	Within 02 weeks	20	32.3
Early/ transitional	02-04 weeks	28	45.2
Advanced/ mature	After 04 weeks	14	22.6
Total		62	100

Table 2: Time of presentation of port site cluster infection to hospital

The results of this study suggest that BMI>30 kg/m², postoperative seroma, heamatoma formation, immunocompromised state are significant risk factors for cluster infection of laparoscopic port site

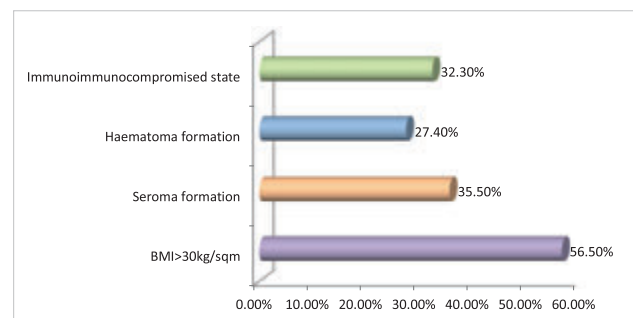


Figure 2: Associated known risk factors

In all patients, GeneExpert test (for *Mycobacterium tuberculosis*) was negative; however, histopathological examination of the excised lesion (done in 40 patients out of total 62 patients following wide local excision) shows various changes (figure 3)

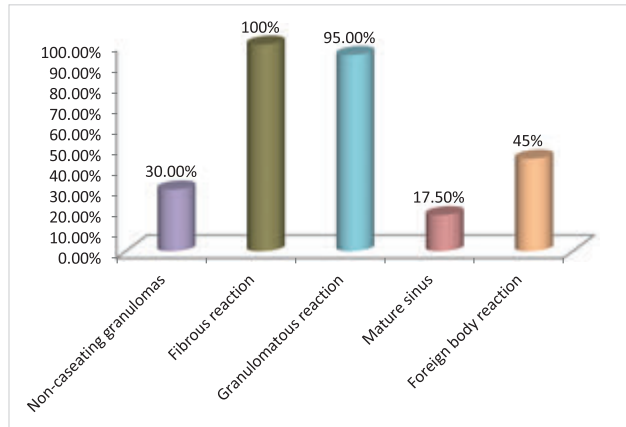


Figure 3: Histopathological findings of the excised lesion

This research suggests that outcome was largely depended on surgical intervention (wide local excision) and antibiotic therapy. Antibiotic sensitivity with or without intervention is shown in table 3.

Therapy	Antibiotics	Without wide excision	With wide excision
No antibiotic	No antibiotic	Sensitivity<25%	Sensitivity>75%
1st line	Amoxicillin-Clavulanic acid	Sensitivity>70%	Sensitivity>92%
2nd line	Linezolid	Sensitivity>80%	Sensitivity>95%
3rd line	Meropenem, Colistin	Sensitivity>90%	Sensitivity>98%

Table 3: Antibiotic sensitivity with or without surgical intervention

Discussion

In this research, among the total 112 patients of “micro-cluster infection”, 62 (55.4%) patients developed “micro-cluster infection” following laparoscopic surgery at the port sites. Most often, in these patients, the process of micro-cluster infection occurred with 07-10 days following port site incision, characterized by fibrous reaction, wound discharge and unusual induration. Small incisions- Grid Iron incision, Lenz incision and gynaecological incisions were more prone to develop cluster infection. In many researches, these incisions along with laparoscopic port incisions are recognized as high risk incisions for such infection9,10. Many literatures suggest that midline laparoscopic port incisions (umbilical, epigastric port) are

more vulnerable to develop cluster infection. The results of this study suggest that in 40.3% cases, umbilical port was involved, followed by in 32.3% cases, epigastric port was affected. Lateral port was less vulnerable to develop cluster infection. Poor umbilical hygiene is a possible cause of development of such infection. Though, cluster infection starts and manifests within 07-10 days of surgery. On the basis of maturation, this infection has typical three arbitrary stages/ phases. Most of the patients (45.2%), in this study, presented to hospital at transitional stage (in between 02 to 04 weeks). However, 22.6% cases presented at advanced/ mature stage.

Port site infection is frequently idiopathic reflecting in most of the clinical researches7,8. However, here in this research, it has been evidenced that by careful observation, in majority of cases, several risk factors can be identified. Postoperative seroma or haematoma formation can be leading causes. Moreover, obesity, co-morbidities, immunocompromised state, genetic etc. may play major role. Here, in patients with central obesity (BMI>30 kg/m2), the incidence rate of cluster infection was 56.5%. Seroma and hematoma formation were associated with 35.5% & 27.4% cases respectively. This was an important question “Why micro-cluster infection was in outbreak in COVID-19 era?” The possible answer is COVID-19 has vital association with immunocompromised state of surgical patients, therefore, these ultimately has close relationship in between. Previously in many studies is has been considered that for such granulomatous infection, *Mycobacterium tuberculosis* is the leading predisposing factor. However, now-a-day it has been realized that cluster infection is not a result of *Mycobacterium tuberculosis* infection11-13. When infection occurs by *Mycobacterium tuberculosis*, it should be considered as a different entity of extra-pulmonary tuberculosis infection and treated accordingly (the incidence of such TB infection exceedingly rare in such relation)14,15. In our research, no case of *Mycobacterium tuberculosis* infection was established. In majority of patients, GeneExpert (for *Mycobacterium tuberculosis*) was done, but the result was negative in all patients. Out of total 62 patients of cluster infection following laparoscopic surgery, in 40 patients wide local excision was done and tissue was sent for histopathological examination. Histopathological report suggests that fibrous and granuloma tous reaction was

noticed in 100% and 95.0% cases respectively. Foreign body reaction was observed in approximately 50% cases and non-caseating granuloma was seen in 30.0% cases. Mature sinus tract was detected in 17.5% cases. Abnormal fibrous reaction is usually associated with non-meticulous tissue handling and injudicious use of electrocautery. This foreign body reaction is possibly due to suture material and organized haematoma. Therefore, the judicious choice of suture material is important with less tissue reaction. The role of surgical intervention and antibiotic sensitivity is a big question for management of port site infection¹⁶⁻²⁰. Our study reflects that wide local excision has great role especially in complex and refractory cases. The necessity of surgical intervention and antibiotics depends on several clinical factors. Wide local excision (debridement & histopathology) and antibiotic in selective cases was associated with best clinical response.

Conclusion

Micro-cluster infection is common surgical site infection after laparoscopic surgery at the ports. Umbilical and epigastric ports are more prone to develop such infection. Several risk factors may play key role in many circumstances such as postoperative seroma, haematoma, patient's co-morbidities, immune state, genetic, size of incision etc. Most of the patients presented to hospital at transitional phase. This infection has no association with *Mycobacterium tuberculosis* infection. However, this is most often associated with fibrous granulomatous reaction/foreign body reaction with tissue induration and sinus formation. Wide local excision, judicious and selective use of appropriate antibiotics usually bring excellent prognosis.

Conflict Of Interest

The authors declare no conflict of interest.

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Original Article**Outcome of tennis elbow: our experience**Shahnewaj SM¹, Hosain MT², Saha CK³, Ziko KRM⁴, Rahman MM⁵**Abstract**

Back ground: Tennis elbow or lateral epicondylitis is a common condition in Orthopaedic practice that presents with pain and tenderness around the common extensor origin of the elbow. We are treating so many patients of tennis elbow in our hospital on regular basis.

Objective: This aim of this study was to assess the outcome of pain and relapse in patients of tennis elbow treated in 250 Beded Razia Naser Zila Hospital, Bagerhat.

Methodology: This study was a case control study with a 250 patients of tennis elbow in 250 Bedded Razia Naser Zila Hospital, Bagerhat, Bangladesh. Study period was from January 2015 to November 2022 on the basis of convenient purposive sampling. Ethical clearance were taken from the Ethical review committee of 250 Beded Razia Naser Zila Hospital, Bagerhat.

Result: Majority of the study patients, in this study, was female (58.4%). Mean±SD of age was 35.4±6.2 and 38.5±5.0 years respectively in male and female. Peak incidence is seen in 21-30 years age group. Pain on movement (88.8%), lifting weight (58.4%), bending arm (52.0%) and gripping object (34.4%) was common presentation. Intractable pain and incapacitating pain were associated with 16.8% and 7.6% patients respectively. Improvement of pain was significantly good in patients with intra-articular use of injection corticosteroid in comparison to treatment with medical management and physiotherapy alone. Relapse rate is significantly lower following intra-articular injection of corticosteroid.

Conclusion: Better outcome in terms of pain and relapse was observed in case of treatment with intra-articular corticosteroid injection in addition to medical treatment and physiotherapy.

Keywords: Lateral epicondylitis, tennis elbow, clinical feature, outcome, diagnosis, treatment, relapse.

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Introduction

Tennis Elbow was first described by Runge¹ in 1873 and eventually given the label 'Lawn Tennis Arm' by Henry Morris, writing in the Lancet in 1882. It has, however, acquired a number of other names including tendonosis, lateral epicondylitis and angiofibroblastic hyperplasia^{1,3}. Lateral epicondylitis, or tennis elbow is a common condition that presents with pain and tenderness around the common extensor origin of the elbow. Tennis elbow is estimated to affect 1–3% of the adult population each year and is more

common in the dominant arm⁴. Lateral epicondylitis, also known as 'tennis elbow', is a very common condition affecting mainly middle-aged patients⁵. The pathogenesis remains unknown but there appears to be a combination of local tendon pathology, alteration in pain perception and motor impairment^{6,7}. The disease has a self-limiting course of between 12 and 18 months, but in some patients, symptoms can be persistent and refractory to treatment⁸.

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Most patients are well-managed with non-operative treatment and activity modification. Many surgical techniques have been proposed for patients with refractory symptoms^{9,10}.

In our hospital, we are treating so many patients of tennis elbow at daily basis. We are concern regarding the clinical features, diagnosis, treatment and challenges in such patients. Here in this study, we are going depict the outcome in terms of pain and relapse in case of treatment with intra-articular injection of corticosteroid in contrast to treatment with medical treatment and physiotherapy alone.

Methods And Materials:

This study was conducted as a case control study with a total number of 250 cases of tennis elbow in 250 Beded Razia Naser Zila Hospital, Bagerhat, Bangladesh from January 2015 to November 2022. Study population was selected by convenient purposive sampling based on inclusion (patients with tennis elbow, age in between 15 to 75 years age, patients with no congenital abnormality was included) and exclusion criteria (patients with severe co-morbidities, patients with terminal care, liver failure, renal failure were excluded). The survey data were usually be analyzed using the statistics, such as- mean, SD, percentage etc. Informed consent was taken individually from patient and ethical clearance was taken from the Ethical review committee of 250 Beded Razia Naser Zila Hospital, Bagerhat.

Medical treatment and physiotherapy was given in every patient. In a majority of the patients, local application corticosteroid (Triamcinolone) injection was given in addition to the medical treatment. In this study, study patient was divided into two groups. In group A, all patients had medical treatment and physiotherapy; whereas in group B, all patients had Medical treatment, physiotherapy and intra-articular use of injection corticosteroid (Triamcinolone). Pain scale and Visual Analogue Score (VAS) was used as assessment tool in this study to analyze the outcome¹¹.

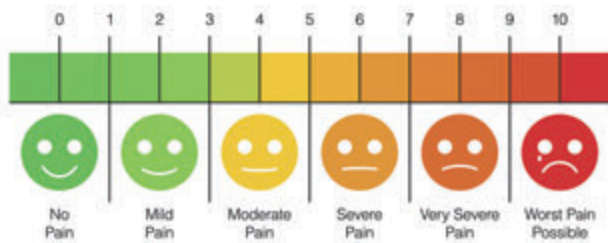


Figure I: Pain scale¹¹

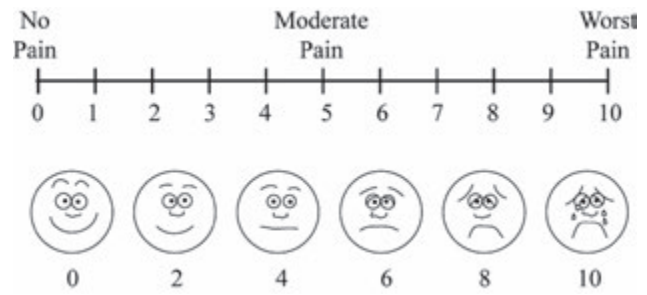


Figure II: Visual Analogue Score (VAS)¹¹

Results

41.6% patients were male and 58.4% patients were female in this study. Mean±SD of age was 35.4±6.2 and 38.5±5.0 years respectively in male and female. Majority of the cases were in 21-30 years age group.

Age in years	N	Male		Female		
		%	Mean±SD	N	%	Mean±SD
<20	17	6.8		18	7.2	
21-30	41	16.4		48	19.2	
31-40	26	10.4		32	12.8	
41-50	10	4.0	35.4±6.2	20	8.0	38.5±5.0
51-60	06	2.4		18	7.2	
>60	04	1.6		10	4.0	
Total	104	41.6		146	58.4	

Table 1: Age & sex distribution of patients with tennis elbow

Regarding the occupation of the study patients, 20% (50) was housewife, followed by 12.8% (32) was day labourer. Approximately 12.0% (30) was student and 4.8% (12) was player.

Occupation	N	%
Housewife	50	20.0
Housemaid	26	10.4
Day labourer	32	12.8
Farmer	27	10.8
Player	12	4.8
Student	30	12.0
Others	73	29.2

Table 2: Occupation of the study patients

Pain was a cardinal feature of patients with tennis elbow. Severe intractable and incapacitating pain was found in approximately 16.8% and 7.6% patients respectively. 88.8% (222) patients had pain on movement; whereas 58.4% patients had pain on lifting weight.

Severity of pain	N	%
Pain on movement	222	88.8
Pain on lifting weight	146	58.4
Pain on bending arm	130	52.0
Pain on gripping object	86	34.4
Severe intractable pain	42	16.8
Incapacitating pain	19	7.6

Table 3: Type & severity of pain

Medical treatment and physiotherapy was given patients in Group A; and in group B, intra-articular use of injection corticosteroid (Triamcinolone) was given in addition to medical treatment and physiotherapy. 32% (80) and 68% (170) patients were in group A and B respectively.

Pain score was used as an assessment tool for evaluation of pain and follow-up in both groups (where score 0 is no pain and score 10 is severe intractable pain)11.

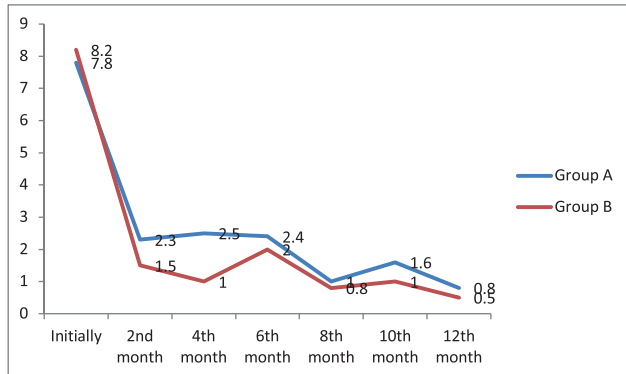


Figure 1: Assessment of pain in follow-up (using pain scale)

Visual analogue scale (VAS) was another assessment tool for evaluation of pain and follow-up in both study groups (where score 0 is no pain and score 10 is severe intractable pain)12.

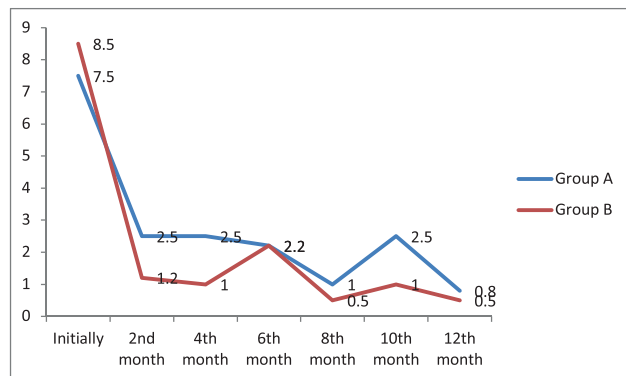


Figure 2: Assessment of pain in follow-up (using VAS)

Incidence of relapse is relatively higher in case of group A in contrast to Group B.

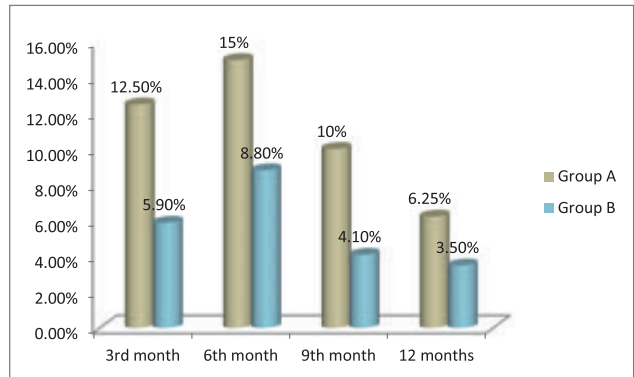


Figure 3: Rate of relapse cases in both study groups

Discussion

In this study, the incidence of tennis elbow was relatively higher in female population. Majority of the patients were young or middle aged. Incidence was significant higher in 21-30 years age group, followed by 31-40 years age group. Approximately 16.4% and 15.2% in male and female patients were in between 31 to 40 years. Mean±SD of age was 35.4±6.2 and 38.5±5.0 years respectively. In many of the studies, similar result was observed regarding the age of the patients13,14. However, in many studies, it has been suggested that tennis elbow is more common in male than in female population12. Occupation may have relation with pathogenesis of tennis elbow, reflecting in several studies15,16. Here in our study, majority of the affected cases was housewife, housemaid, day labourer, farmer or student. Only 4.0% patients were players. 20.0% & 10.4% patients were housewife and housemaid respectively. 12.0% patients were students. Pain is one of the important symptoms of tennis elbow. Almost all patients it is the common cardinal feature, however, may different in type and severity. The results of this study suggest that in 88.8% cases, tennis elbow was associated with movement. In a study, over 90% patients had pain on movement and bending of arm13. On the other hand, 58.4% and 52.0% patients had pain on lifting weight and bending arm in our study. Pain on gripping small object is an important diagnostic feature in tennis elbow especially in students14. In this study, such pain was noticed in approximately 16.8% cases. Intractable and incapacitating pain was found in 16.8% and 7.6% cases respectively.

Pain scale and visual analogue scale was used in this study to assess the pain and overall patient's satisfaction^{11,12}. This outcome is better in group B in contrast to group A. However, relapse is seen at different point of follow-up (at least 01 year follow-up was done in each patient). Pain trended to fall at maximum level with time (best result is seen at one year). In many literatures, it has been suggested that in case on intra-articular corticosteroid injection, the overall outcome and relapse rate is better¹⁷⁻²⁰. At 3rd month of follow-up, the incidence of relapse was 12.5% and 5.9% in group A and B. At one year, it is 6.25% and 3.5% in respective groups. Through the whole period of follow-up, relapse rate was better in case of group B.

Conclusion

Demographic profile of study population suggests that the incidence of tennis elbow was higher in young and middle aged female. Outcome and improvement in terms of pain was relatively better in case of intra-articular injection of corticosteroid in contrast to medical treatment and physiotherapy alone. Moreover, Relapse rate was comparatively lower in case of patients treated with corticosteroid injection.

Conflict Of Interest

The authors declare no conflict of interest.

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Case Report**Odontogenic Keratocyst in Anterior Mandible of a Teenage Patient: A Very Rare Case Report**Shameem SI¹, Ava KMM², Rana J³, Islam S⁴**Abstract**

Back ground: Odontogenic keratocyst (OKC) is rare, non inflammatory developmental odontogenic cyst. Which is locally aggressive and usually found incidentally on dental radiograph. It may occurs in any age group but usually occurs in third and fourth decades of patient's life. Most commonly occurs in posterior mandible. Mandible makes up 60% to 80% of cases and shows a specific tendency to involve the ramus and posterior area. Female is more predilection than male. Female to male prevalence is 2:1 respectively. Here, we report a very uncommon case of odontogenic keratocyst (OKC) in the anterior mandible in a 14-year-old male patient managed successfully with conservative approach.

Keywords: Odontogenic keratocyst; Odontogenic Tumors; OKC; Benign Tumor; Oral & Maxillofacial Surgery.

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Introduction

The term odontogenic keratocyst (OKC) was first used by Philipsen in 1956[1]. The odontogenic keratocyst (OKC), previously known as Keratocystic Odontogenic Tumor (KCOT) constitutes 3 to 11% of all Odontogenic cysts [2]. It is generally agreed that OKC arises from the cell rests of the dental lamina [2]. OKC may be detected in patients of various age groups, from infants to seniors, and usually occurs in the third and fourth decades of the patient's life. Female to male prevalence is 2:1 respectively [3].

Mandible makes up 60% to 80% of cases and shows a specific tendency to involve the ramus and posterior area.

in rare cases, it has been reported in the anterior mandible. In 25 to 40% of the cases, an unerupted tooth is involved in the lesion. Detection of OKC

by clinical examinations and radiography is to be suspected, and thus, confirmation via histopathology is needed [4-6]. In this case report, we describe odontogenic keratocyst (OKC) in the anterior mandible in a 14-year-old male patient which is very rare.

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Case Report:

A 14 years old male patient came to the Dental & Maxillofacial Surgery department in the Khulna City Medical College Hospital with the complaints of discomfort and tooth displacement in the midline of the lower jaw for 1 year. There was no history of trauma, pain, discharge, or any other symptoms related to the lesion. The patient was apparently healthy, and his vital signs were within normal limits.

Extraoral examination:

There was no gross facial asymmetry, discharge or sinus tract. On palpation of the lower chin, no tenderness was present. (figure 1)

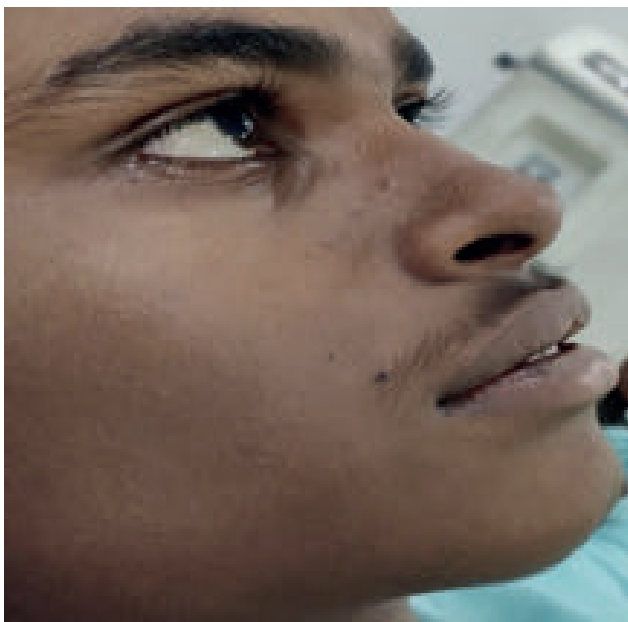


Fig 1: Extraoral face profile

Intraoral examination:

The mouth opening was approximately 35 mm. There was spacing in the anterior region of the mandible. A diffuse swelling was observed with respect to the lower anterior region, with vestibular obliteration extending mediolaterally. There was tenderness on percussion from right canine to left first premolar. There was no tooth mobility but left central incisor was distally inclined. Left lateral incisor and canine was missing. The overlying mucosa was normal color and texture as compared to the surrounding mucosa with no sinus tract observed. On palpation swelling was bony hard with no crackling sensation that means no cortical perforation. (figure 2)



Fig 2: Intraoral picture

Radiographic findings:

Panoramic radiograph showed a well-defined unilocular radiolucent area with scalloped margin extended from root of right 2nd premolar to distal root of left 1st molar. Left canine was unerupted with in the lesion. The root of right canine, left central and lateral incisors was displaced by this large lesion. (figure 3)



Fig 3 : Panoramic radiograph

Fine Needle Aspiration Cytology(FNAC) was performed after radiographic examination, using 24- gauge needle attached to a 10-mL syringe but there was no collection.

Differential diagnosis:

1. Dentigerous cyst
2. Odontogenic Keratocyst (OKC)
3. Ameloblastom

Treatment

The lower border of the mandible was very close to fracture during surgical procedure. Considering the age of this patient, conservative enucleation was the treatment choice rather than jaw resection.

The lesion was totally enucleated with peripheral osteotomy and the tissue was submitted to histopathological examination. No recurrence has been reported till date. (Figure 4,5,6,7,8)



Fig 4: Reflection of periosteum showed intact cortex



Fig 5: Removal of bony cortex showed cystic lining

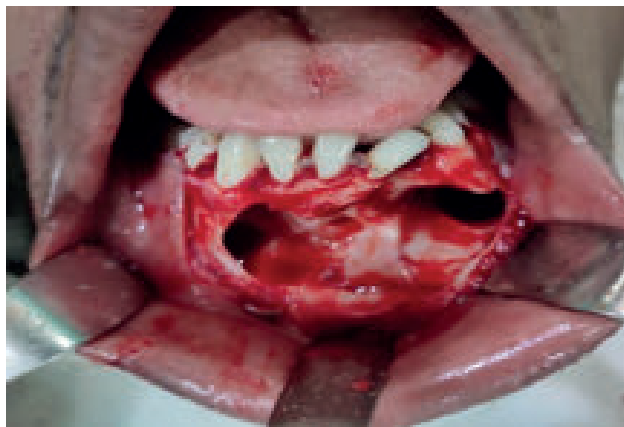


Fig 6: Cavity after complete enucleation



Fig 7: Completely removed lesion and within the lesion showed keratin.



Fig 8: After closure of the defect with antibiotic gauze

Biopsy report:

The histopathological report revealed that the section showed cyst wall, lined parakeratinized stratified squamous epithelium. It is supported by fibrous tissue and infiltrated with chronic inflammatory cells. An impression of inflamed odontogenic keratocyst (OKC), parakeratinizing type was made by the histopathological report.

Discussion:

Odontogenic Keratocyst is one of the most aggressive odontogenic cysts. Their aggressiveness is reflected by their destructive and infiltrative growth (carcinomas and ameloblastomas), their growth potential and their tendency to recur [7]. OKC is generally thought to be derived from either the epithelial remnants of the tooth germ or the basal cell layer of the surface epithelium [8]. OKC may be detected in patients of various age groups, from infants to seniors, and usually occurs in the third and fourth decades of the patient's life. Female to male prevalence is 2:1 respectively [3]. The mandible is involved in 60% to 80%

of cases with a marked tendency to occur in the posterior body and ascending ramus. Radiological report shows a well- defined radiolucent area with smooth and often corticated margins and may be unilocular or multilocular, & unerupted tooth is usually seen about 25% to 40% in association with the lesion. [9] However in this case, the lesion was present in anterior mandible associated with impacted canine and involving contralateral jaw bone. OKC is usually asymptomatic when small but large cyst shows clinical manifestations such as pain, swelling, or drainage. OKC has a tendency to grow anteroposteriorly in the medullary cavity, without bone expansion is evident in this condition. Expansion may occurs when large enough.[10] Odontogenic keratocyst (OKC) were separated into three histologic categories: parakeratinized, orthokeratinized, or a combination of the two types. There were no statistically significant differences between the types of OKCs when age, race, sex, presenting symptoms, and the clinical impression were compared. Parakeratinized recurred more than orthokeratinized type.[11] OKCs are characterized by high tendency to postoperative recurrence (30%-60%) because of incomplete removal, remnants of dental lamina, and presence of daughter / satellite cysts within the cyst wall.[12] Treatment based on the basis of proper clinical assessment, accurate diagnosis and appropriate test. Management option of OKC include marsupialization and enucleation, combined with adjuvant cryotherapy with Carnoy's solution, and marginal or radical resection.[8] In our case completely enucleated with intact cystic lining. Our patient has been under follow- up every 2 months interval with no evidence of recurrence. (figure:)

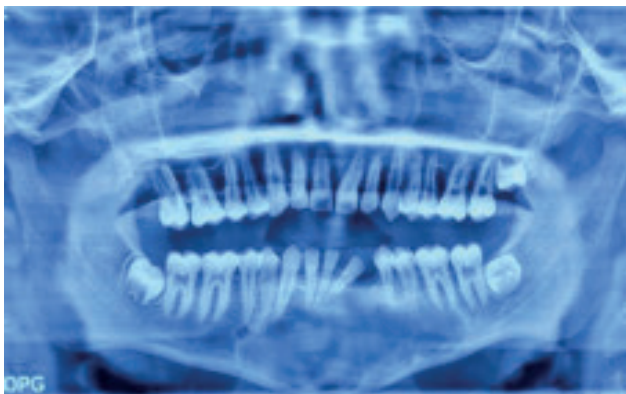


Fig: Post-operative X-ray shows no recurrence with new bone formation.

Conclusion:

This is very rare case of OKC occurring in a 14 years old male patient in the anterior mandible managed successfully with conservative surgical approach. The clinical, radiographic and histopathological correlations are essential for

proper patient treatment and follow-up. Follow-up of any case of OKC with annual radiographs is essential for at least 5 years after the surgery because of its high rate of recurrence.

Declaration of patient consent:

Consent has to be obtained with appropriate patient consent forms. In the form the patient consents for her images and other clinical information to be reported in the journal but anonymity cannot be guaranteed.

Conflicts of interest: No

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Review Article

Barriers of Self-Management of Chronic Diseases Digitally

Aziz MMA¹, Akter S²**Abstract**

Background: Self-management of Chronic diseases digitally have tremendous potential via education, monitoring and support, timely feedback, and remote access to health professionals. The use of digital tools has been surprisingly low in clinical practice, even though the shift to a value-based care system has encouraged the adoption and use of it to manage chronic conditions. Moreover, to our knowledge, there is limited information on the factors that hinder the adoption of digital technologies. **Objective:** This review provides a comprehensive summary of the barriers to adopt digital health technologies for self-management of chronic diseases which can lead us to develop a model for developing self-management interventions (SMIs) particularly for the developing countries like Bangladesh. **Methods:** Structured literature searches were conducted using 3 databases to identify relevant studies from 2014 to 2020: PubMed or Medical Literature Analysis and Retrieval System Online, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Excerpta Medica database (EMBASE). We found 89 literature according to our inclusion and exclusion criteria. The total of 9 articles were included and analyzed using qualitative content analysis. **Results:** Through the analysis, four main types of barriers for self-management of chronic diseases digitally were found, such as limitations due to personal conditions, inadequate technological competence, poor usability of technology, and hindered motivation to use technology. **Conclusions:** We can overcome the barriers by real-world testing and incorporating feedback which will help in designing technologies and it will improve their overall usability. Finally, to fully realize the potential of digitally enabled self-management of chronic conditions, there is a greater need to validate these technologies by overcoming these barriers with reliable and accurate information which will improve the cost effectiveness and competency of these digital health technologies.

Keywords: Barriers, Self-management, Chronic diseases, Digital health technologies.

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Introduction

Elderly people are growing at a rapid pace as well as the chronic diseases, methods and technologies must be found to help them to take care of their illness by themselves. Self-management of Chronic diseases using digital health technologies have tremendous potential via education, monitoring and support, timely feedback, and remote access to health professionals¹⁰. When designed and implemented successfully digital technology has offered an opportunity to support the quadruple aim of health care by improving health outcomes, increasing patient experience, reducing health care costs, and improving clinician satisfaction¹¹. The American Medical Association defined

digital health technologies are as those systems and solutions that engage patients for clinical purposes, collect, organize, interpret, use clinical data, and manage outcomes and other measures of care quality including telemedicine and telehealth, mobile health, wearables, remote monitoring, and apps¹². The use of digital tools has been surprisingly low in clinical practice, even though the shift to a value-based care system has encouraged the adoption and use of it to manage chronic conditions¹³. Moreover, to our knowledge, there is limited information on the factors

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that hinder the adoption of digital technologies. Previously published literature includes surveys that cite factors influencing Digitalization adoption such as organizational and financial barriers¹⁴. This review provides a comprehensive summary of the barriers to adopt digital health technologies for self-management of chronic diseases which can lead us to develop a model for developing self-management tools particularly for the developing countries like Vietnam and Bangladesh.

Methods

Structured literature searches were conducted using two databases to identify relevant studies from 2014 to 2020: PubMed or Medical Literature Analysis and Retrieval System Online, Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Excerpta Medica database (EMBASE). The detailed search strategies for Pub Med have been provided as an example (see Appendix 1). We found 89 literature according to our inclusion and exclusion criteria. At first, five reviewers, with subject matter and methodological expertise, independently reviewed all abstracts identified by the searches and conflicts were resolved by a third reviewer. Then, two reviewers screened the full texts to select the final studies to be included in the review. The authors also conducted a gray literature search (including conference proceedings) through a Web search engine. In addition, two articles were handpicked based on the same inclusion criteria used for articles analyzed using qualitative content analysis. The total of 14 articles were included and analyzed using qualitative content analysis.

Results and discussion

Through the analysis, four main types of barriers for self-management of chronic diseases digitally were found, such as limitations due to personal conditions, inadequate technological competence, poor usability of technology, and hindered motivation to use technology.

Table 1. Key findings of barriers of self-management of chronic diseases digitally.

Limitations due to personal conditions

- Health impairments
- Financial concerns to use digital technology

Inadequate technological competence

- Lack of awareness about digital tools in self-management
- Inadequate support to use digital tools
- Insufficient technological skills

Poor usability of technology

- Difficult to use apps
- Continuous up-dating of the apps needed
- Concerns about online confidentiality
- Malfunctioning technology
- Health threat due to unsuitability of the app
- Insufficient access to internet and devices

Hindered motivation to use technology

- Considering apps not adding value
- Feeling digital tools more troublesome than beneficial
- Time consuming to use
- Difficulty in persistent using

First, **Limitations due to personal conditions** included health impairments and financial concerns to use digital technology which describes below.

Health impairments contained cognitive and psychological barriers that hinder the use of digital technology in self-management such as creating password, remembering it as well as difficulty to access to the web, which felt like a burden rather help them to manage the diseases^{1,3,4}. Moreover, physical and sensorimotor disabilities impair ability to access to the web and the effort required to use the apps for self-monitor formed a barrier^{1, 4}.

Financial concerns to use digital technology meant concern about affordability of mobile data³, affordability of the apps to all⁵, concerns about the costs of use of internet³ and smartphone data plans⁹.

Secondly, **Inadequate technological competence** included lack of awareness about digital tools in self-management, inadequate support to use digital tools, and insufficient technological skills are described in detail below.

Lack of awareness about digital tools in self-management was about limited health literacy³, information gap about availability of digital tools², nor getting recommendation² or GP's advice to use an app³. Moreover, patients were not being aware of tools available and it was not recommended by their GP or someone else^{2, 3}.

Inadequate support to use digital tools was about lack of patient education to support self-management as well as they need help to operate the computer⁷. In addition, individual needs for additional and expanded training to use smart device system and follow up assistance⁶. A study mentioned about the limitations in duration of support¹.

In addition, Insufficient technological skills include Limited skill to use the internet³, Lack of basic computer skills³, Difficulty in using apps⁵, Inexperience with computer⁷, Difficulty in using the net initially as well as later⁷ and poor technological literacy⁵.

Next barrier for digital self-management is Poor usability of technology which is the most frequently mentioned barrier which includes difficult to use apps, continuous up-dating of the apps is needed, concern about online confidentiality, malfunctioning technology, health threat due to unsuitability of apps and insufficient access to device and internet are described below.

Difficult to use apps includes apps are not user friendly, had complicated layout, and was difficult to use and navigate⁵. It also pointed out that different units of measurements in different countries⁵.

Continuous up-dating of the apps needed comprises app content needs continuous re-evaluation for sustainable engagement⁸, as well as teaching approach needs reevaluated regularly for sustainable engagement⁸.

Concerns about online confidentiality encompasses smart phone base mHealth could pose a threat to unstable patients⁶ and Diabetes app does not suit the patients with multiple chronic illness⁶. It also mentioned that longitudinal progress on the graph are less useful for patients with stable condition⁶ and lack of knowledge to interpret questions of app led to inaccurate report⁶. Another study reported that difficult to develop an appropriate PROM (patient reported outcome measures - questionnaire for self-assessment of self- management)⁷.

Malfunctioning technology involves technical issues such as connectivity, technology failing, app crash and slow internet connection prevented patients from using DHTs⁵. Additionally, some feels that high speed internet is a must⁸ for digital health care.

Health threat due to unsuitability of the app covers patients were comfortable with access to health data being limited to only themselves and their providers. However, patients were concerned about personal information is in the web³, 9, confidentiality of diagnoses³, and their medication in the web³. They are also concern about risks of accessing information online³, vulnerability of online systems to hackers³, computer viruses³, and online security³.

Insufficient access to internet and devices consist patients have limited access of computers³, the internet ^{3,9}, and a

computer or smartphone⁹. It also mentioned that the net and format of the PROM must be easily accessible.⁷.

Final barrier is hindered motivation to use technology which includes considering apps not adding value, feeling digital tools more troublesome that beneficial, time consuming and difficult in persisting using described below.

Considering apps not adding value contains patients pointed out current self-care methods were considered sufficient without apps⁵, and there is a disbelief that app would improve self-management⁵, who feel apps are not superior than writing down physically⁵. On top of that, the health condition was not considered to need app for self-care support⁵, which makes it less valuable intervention added to the management. Moreover, they assume that their GP is GP is unfamiliar with the technology and not interested about app use⁵.

Feeling digital tools more troublesome than beneficial incorporates another barrier frequently highlighted in the literature was the complexity of technologies (n=5). Usability and technical issues led to frustration and discouragement⁶ as well as patients have disbelief on help of technology applications in improving quality of life⁴. Moreover, they assume that inadequate technical training of health worker may lead to longer consultation⁶. In addition, they did not have the desire to learn newer technologies⁵. However, patient did not like loss of face-to-face communication⁸ because they would not be accountable for their behaviors².

Time consuming to use introduces time required to use the apps for self-monitoring formed a barrier², as well as intensive assessment, self-survey length and complexity could be burden for patients⁷.

Moreover, Difficulty in persistent using have barriers in adapting, persistently using of technology in self- management use⁴, as well as sustaining engagement is difficult⁸.

Conclusions

Our findings suggest that several important barriers of self-management of chronic conditions digitally such as limitations due to personal conditions, inadequate technological competence, poor usability of technology, and hindered motivation to use technology. Developing countries such as Vietnam and Bangladesh where digitalization is rapidly growing, it will tremendously shape up the

health care for the growing elderly population. We can overcome the barriers by real-world testing and incorporating feedback which will help in designing technologies and it will improve their overall usability. Finally, to fully realize the potential of digitally enabled self-management of chronic conditions, there is a greater need to validate these technologies by overcoming these barriers with reliable and accurate information which will improve the cost effectiveness and competency of these digital health technologies.

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Abstract From Current Literature

Changes in platelet levels and prognosis in patients with acute liver failure and late-onset hepatic failure

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doi: 10.1097/MD.00000000000031438

Abstract

The therapeutic strategies for acute liver failure (ALF) and late-onset hepatic failure (LOHF) still have room for improvement. Recent studies have reported an association between platelets and the pathophysiology of ALF. In this study, we investigated changes in platelet levels and clinical findings in ALF and LOHF patients. We retrospectively investigated the clinical data of 62 patients with ALF and LOHF. We analyzed the association between changes in platelet levels for 7 days after admission and the prognosis in patients with ALF and LOHF. The factors associated with changes in platelet levels were also analyzed. The platelet levels on days 1, 3, and 7 were significantly lower in the patients who died or underwent liver transplantation than in the spontaneous survivors. Administration of recombinant thrombomodulin was associated with spontaneous survival. The platelet levels in patients who met the King's College Hospital Criteria or the Japanese scoring system (JSS) for ALF ≥ 4 were significantly decreased 7 days after admission. The area under the receiver operating characteristic curve (AUROC) of a JSS score of 3 for predicting low platelet levels on day 7 was 0.903. Decreased platelet levels were associated with poor prognosis in patients with ALF and LOHF. The patients with low platelet levels and JSS scores on admission showed a high AUROC for predicting low platelet levels on day 7. Decreased platelet levels after admission may be a simple prognostic marker in ALF and LOHF patients.

Intramural Jejunal Hematoma Causing Intermittent Bowel Obstruction—A Rare Manifestation of Warfarin Toxicity

Arun S. Patil, Shriya Shriya, Nikhil Dhimole, Jalbaji More
doi: 10.1055/s-0042-1755223

Abstract

Patients with thromboembolic disorders are commonly on anticoagulants; hence, they are susceptible to bleeding episodes such as ecchymosis, gingival, subconjunctival bleeding, and rarely can have intramural hematoma of small bowel causing patient to present with intestinal obstruction. It is a rare cause of mechanical bowel obstruction requiring a nonsurgical management. Our patient was a 55-year-old male, a known case of thromboembolism on warfarin medication, presented with abdominal pain and vomiting. Patient's laboratory reports reflected anemia and deranged coagulation profile with prothrombin time and international normalized ratio, both being elevated. Intramural hematoma of jejunum was diagnosed by abdominal contrast-enhanced computed tomography. Conservative management was done, warfarin was stopped and vitamin K was administered. Patient received fresh frozen plasma and packed cell blood. It is important to suspect warfarin toxicity in patients on the medication who come with such presentation to avoid surgical management, which could be catastrophic due to excessive bleeding. It is important for regular monitoring of coagulation profile of such patients and to reduce prescribing other medications that can interact with warfarin. It is worth noting that novel oral anticoagulants, such as dabigatran and rivaroxaban, are associated with fewer side effects and do not require close laboratory monitoring.

Abstract From Current Literature

Evidence-Based Approach to the Surgical Management of Acute Pancreatitis

Alex James Sagar, Majid Khan, Niteen Tapuria

doi: 10.1055/s-0042-1758229

Abstract

Background: Acute pancreatitis is a significant challenge to health services. Remarkable progress has been made in the last decade in optimizing its management. **Methods:** This review is a comprehensive assessment of 7 guidelines employed in current clinical practice with an appraisal of the underlying evidence, including 15 meta-analyses/systematic reviews, 16 randomized controlled trials, and 31 cohort studies. **Results:** Key tenets of early management of acute pancreatitis include severity stratification based on the degree of organ failure and early goal-directed fluid resuscitation. Rigorous determination of etiology reduces the risk of recurrence. Early enteral nutrition and consideration of epidural analgesia have been pioneered in recent years with promising results. Indications for invasive intervention are becoming increasingly refined. The definitive indications for endoscopic retrograde cholangiopancreatography in acute pancreatitis are associated with cholangitis and common bile duct obstruction. The role of open surgical necrosectomy has diminished with the development of a minimally invasive step-up necrosectomy protocol. Increasing use of endoscopic ultrasound-guided intervention in the management of pancreatic necrosis has helped reduce pancreatic fistula rates and hospital stay. **Conclusion:** The optimal approach to surgical management of complicated pancreatitis depends on patient physiology and disease anatomy, in addition to the available resources and expertise. This is best achieved with a multidisciplinary approach. This review provides a distillation of the recommendations of clinical guidelines and critical discussion of the evidence that informs them and presents an algorithmic approach to key areas of patient management.

Effects of Metformin, Insulin on Hematological Parameters of COVID-19 Patients with Type 2 Diabetes

Pavlo Petakh, Vasilij Griga, Issah Bin Mohammed, Kateryna Loshak, Ivan Poliak, Aleksandr Kamyshnyiy 1

doi: 10.5455/medarh.2022.76.329-332

Abstract

Background: COVID-19 infection caused by SARS-COV-2 can result in multi-organ injuries and significant mortality in severe and critical patients, particularly those with type 2 diabetes as a comorbidity. Metformin and insulin are the main diabetes medications that affect the outcome of patients with COVID-19. **Objective:** The purpose of our study was to find out the features of the hematological indicators of patients with COVID-19 patients and type 2 diabetes. **Methods:** This is a retrospective study of the hospital confirmed COVID-19 patients between January to March 2022, who were admitted to Transcarpathian Regional Clinical Infectious Diseases Hospital (Uzhhorod, Ukraine). **Results:** The effect of type 2 diabetes, metformin, and insulin on COVID-19 were analyzed, respectively. Demographics and blood laboratory indices were collected. In patients who took metformin, the level of CRP was significantly lower than in patients who did not take metformin (24 mg/L [IQR 15 - 58] vs 52 mg/L, [IQR 22–121], $P = 0.046$). **Conclusion:** Our findings suggest that pre-admission metformin use may benefit COVID-19 patients with type 2 diabetes.

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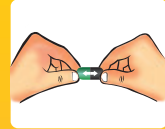
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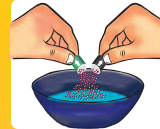


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