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Editorial

Education for the next generation

The teaching and learning process is a dynamic one, changing over time according to the resources and needs of the relevant time and place. In times gone by the process varied greatly from region to region and society to society. Today however the internet is creating a global society, with access and exposure to unlimited resources and knowledge. This is forcing a paradigm shift in the learning process. If we take education 30 years ago, the only sources of knowledge were books, peers and teachers. Now students carry in their pockets a limitless source of knowledge, making the need for the former sources obsolete.

So, what can the teacher of today offer to the new generation of learners. The answer lies in facilitation and role modelling.

Facilitating is essential for the student to know what to look for in the vast ocean of data available on the internet. Guidance is important to create an understanding of the importance and relevance of material the student gleans from browsing the web.

Role modelling is the other pillar for teachers to build their worth upon. This is especially important in a professional courses like Medicine and Nursing. A student should be able to directly observe and emulate the role of a teacher as a professional. This direct observation cannot be obtained from the internet.

Therefore, a teacher of current and future generations must shed off the concept that they need to sit the students down and “teach” them, rather they should engage the students into their daily work routines, encourage discussion and promote experiential learning. or else the teacher will become an obsolete vestige of a lost era.

Chief editor
Dr G .R. Francis



Original research Papers

Clinical audit about staff satisfaction with laboratory service provision in base hospital Chavakachcheri

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Abstract:

Introduction:

In developing countries like Sri Lanka, the quality of laboratory service provision remains challenging due to several factors. Monitoring customer satisfaction is an important and useful quality improvement tool for clinical laboratories and health care organizations. BH Chavakachcheri was selected as the study setting. In this study the internal customers of this hospital such as consultants, medical officers and nursing officers satisfaction toward the laboratory service provision was measured.

Objective:

To assess the staff satisfaction in laboratory service provision of Base Hospital Chavakachcheri

Methodology:

This study was carried out for a week duration as a descriptive cross-sectional study using by using self-administered Likert scale questionnaire. Customer satisfaction was assessed along promptness, acceptability, availability, communication and cleanliness. The consultants, medical officers and nursing officers were taken as the study population. The standard of overall staff satisfaction was set as 70% after focused group discussion.

Results:

The overall satisfaction score was revealed to be 4.25 ± 0.474 (70.8%).

Conclusion:

This study revealed that even though the staff were satisfied with the overall performance just above the set standard, there were several gaps. Therefore, several suggestions were made by the authors to bridge these perception gaps such as standard TATs of investigations informed to staff, rearranging laboratory duty rosters, arranging training programmes and performing a re-audit after these interventions.

LIST OF ACRONYMS

BH Base Hospital, EQA External Quality Assessment, ICNO Infection control nursing officer, IQC Internal Quality Control, MO Medical officer, NO Nursing officer, PDHS Provincial director of Health Services, RDHS Regional Director of Health Services, SD Standard Deviation, SPSS Statistical Package for the Social Sciences, TAT Turnaround time.

Introduction:

Laboratory medicine and clinical medicine are co-dependent components, not independent entities, in the large field of medicine. Medical practice is undergoing a continual rapid improvement process, and laboratory services are evolving at the same time. Almost all clinical management includes a medical laboratory service. A medical laboratory, also known as a clinical laboratory, is a facility that performs tests on clinical specimens to collect information about a patient's health to aid in disease diagnosis, treatment, and prevention. Medical technologists are on staff in these labs, and they are trained to perform a variety of tests on biological specimens collected from patients ⁽¹⁾.

In the end, laboratory tests are required to assess the patient's health, diagnose the disease, and plan for future treatment. Clinical laboratories were used for screening and surveillance of disorders that were important to public health, in addition to their known usefulness to individual patients. On a bigger scale, programme managers assessed the progress of public, international, and global health projects using some applicable tests as surrogate indicators ⁽²⁾. The standardization of laboratory services, the improvement of laboratory systems, and the introduction of innovative and rapid diagnostic technologies have all recently become key challenges within these laboratories. Local and international health authorities and technological professionals are constantly addressing these concerns within the framework of a patient-centred approach ⁽³⁾.

All clinical laboratories strive to provide high-quality diagnostic testing. Several concerns and problems must be addressed to achieve this aim, which highlights the need for increased laboratory capacity. To optimize laboratory services offered to patients, human and financial resources, training and supervision, planning and budgeting, quality assurance, logistics and supply, biosafety and equipment management, and other related laboratory components were determined to be important ⁽⁴⁾. While clinical laboratories are often renowned for their cutting-edge laboratory technologies and tools that perform most of the sample testing, these facilities nonetheless rely largely on laboratory professionals to ensure that results are correct and reliable ⁽⁵⁾.

In Sri Lanka the National Health Laboratory Policy had been approved in the year 2006 and the national Laboratory Service Act was developed subsequently ⁽⁶⁾. Due to a variety of issues, providing high-quality laboratory services in developing countries like Sri Lanka remains a challenge. For clinical laboratories and healthcare companies, monitoring customer satisfaction is a significant and useful quality improvement technique.

A Base Hospital in the Northern province of Sri Lanka – BH Chavakachcheri was selected as the study setting due to the diversity of staff categories, availability of basic clinical units and feasibility of data collection. In this audit, the internal customers such as consultant's, medical officer's and nursing officer's satisfaction with the laboratory service provision were assessed.

1.1. General Objective

To assess the staff satisfaction in laboratory service provision of base hospital Chavakachcheri.

1.2. Audit Indicators

- Perception on Promptness of laboratory service provision in BH Chavakachcheri
- Perception on Availability of laboratory service provision in BH Chavakachcheri
- Perception on Acceptability of laboratory service provision in BH Chavakachcheri
- Perception on Communication of laboratory service provision in BH Chavakachcheri
- Perception on Cleanliness of laboratory service provision in BH Chavakachcheri
- Perception of Overall staff satisfaction with laboratory service provision

As the authors couldn't find similar studies in local context several similar international studies (1,7,8) were used in a focused group discussion with the authors, consultants and medical superintendent to set the standard of overall staff satisfaction toward laboratory service provision of BH Chavakachcheri. Authors also couldn't find a standard indicator values to assess and compare the overall satisfaction of the laboratory provision. Therefore, from the focused group discussion the standard value of this clinical audit for the overall staff satisfaction was set as 70%.

Methodology:

2.1. Study design

This audit was a descriptive cross-sectional study which was carried out among the clinical healthcare staff of the BH Chavakachcheri. This included consultants, medical officers & nursing officers of all units except those who are working in the laboratory.

2.2. Study setting

This study was conducted in the Base Hospital Chavakachcheri. This is located in the Jaffna district along the A9 road about 18km from Jaffna town. There is a laboratory in this hospital with the capacity to conduct all the basic chemical pathology, haematology and microbiology investigations.

2.3. Inclusion criteria

All consultants, medical officers and nursing officers attached to all clinical units and working at BH Chavakachcheri for more than 3 months were included in this audit.

2.4. Exclusion criteria

The following will be excluded from this audit study population,

- Consultants, medical officers & nursing officers working permanently in laboratories or covering-up duties at any laboratories
- Medical officers and nursing officers attached to supportive units such as the quality management unit and planning unit
- Any staff on maternity leave, vacation leave or any form of long leave

2.5. Study population

Considering the inclusion and exclusion criteria the study population for this study is as follows,

- Consultants: 02
- Medical officers: 17
- Nursing officers: 35
- Total: 54

2.6. Study instrument

A self-administered Likert scale questionnaire was used as the data collection instrument.

To assess the satisfaction of the clinicians the questionnaire was divided into the following sections,

- Socio-demographic details
- Promptness
- Acceptability
- Availability
- Communication
- Cleanliness

For the development of this questionnaire nine international studies regarding laboratory services with questionnaires for clinicians were referred (4,7–14). Adapting existing validated questions used in international research, rather than designing new questionnaires, saved time, especially given the short time constraint of this study.

To reduce the central tendency bias, responses to these questions were collected using a 6-point Likert scale rather than a 5-point Likert scale. The midpoint is eliminated by using a Likert scale with an even number rather than an odd number, decreasing the central tendency bias. To reduce participant confusion, all statements were presented in a positive way, and negative words were avoided. The points were allocated in the following manner for the responses,

- Strongly Disagree : 1
- Disagree : 2
- Slightly Disagree : 3
- Slightly agree : 4
- Agree : 5
- Strongly Agree : 6

2.7. Approval for audit

The administrative approval for this audit was obtained from the provincial director of health services – Northern province through the recommendations of the regional director of health services – Jaffna district and the medical superintendent of base hospital Chavakachcheri.

2.8. Data collection

Before the data collection, the authors met the medical superintendent, administrative officer and matron of BH Chavakachcheri.

The importance and the method of this audit were explained. Consultants and the infectious control nursing officer (ICNO) were also met by the authors to explain the importance and procedures. After these discussions, the following persons were delegated with the data collection procedures for each category,

- Consultants – principal investigator
- Medical officers – ICNO / principal investigator
- Nursing officers – ICNO / ward sisters / in charge nursing officer

Before the questionnaires were passed to the participants, all the necessary information regarding this audit was clearly explained by the principal investigator or the allocated data collectors. The participants were informed that it is completely a voluntary process and even if they agree to participate, they can

withdraw from the audit study at any moment. Participants were informed that they will not receive any personal benefits from participation and non-participation or withdrawal will not affect their career, service incentive or grade promotion in any way. They were also assured that none of their data will be collected in this audit which can identify them.

The data collection was carried out for a week period from 18th January 2022 to 24th January 2022.

2.9. Data analysis

All the filled questionnaires were checked individually by the authors before the data entry. Then the data were entered in the IBM SPSS Statistics (version 26) software and the data analysis was made using the same software.

Results :

The questionnaires were distributed to all 54 of the study population and 44 questionnaires were filled and returned within the given time. Therefore, the response rate of the whole population was 81.5%. The breakdown of this response rate is shown in Table 1.

Table 1: Response rate of the study population

Category	No. of participants	Percentage of participants	No. in position	Response rate
Consultants	2	4.5%	2	100%
Medical officers	14	31.8%	17	82.4%
Nursing officers	28	63.6%	35	80%
Total	44	100.0%	54	81.5%

The first part of the questionnaire was used to collect the basic sociodemographic details of the study population and the results of that analysis were given in Table 2.

Table 2: Sociodemographic summary of participants

	Frequency	Percentage
<i>Gender</i>		
Male	17	38.6%
Female	27	61.4%
<i>Age group</i>		
20 – 29 years	1	2.3%
30 – 39 years	29	65.9%
40 – 59 years	14	31.8%
<i>Marital status</i>		
Married	29	65.9%
Single	15	34.1%
<i>Ethnicity</i>		
Sinhalese	6	13.6%
Tamil	38	86.4%
<i>Religion</i>		
Buddhism	6	13.6%
Hinduism	33	75.0%
Christianity	5	11.4%
<i>Years of experience in the government health sector</i>		
0 – 2 years	6	13.6%
3 – 5 years	16	36.4%
6 – 8 years	5	11.4%
>8 years	17	38.6%
<i>Years of experience in BH – Chavakachcheri</i>		
0 – 2 years	28	63.6%
3 – 5 years	7	15.9%
6 – 8 years	2	4.5%
>8 years	7	15.9%

The second part of the questionnaire had statements regarding the promptness of the laboratory services

and the responses were collected and analysed. The third part of the questionnaire assessed availability. Both of these results are given in Table 3.

Table 3: Analysis of statements regarding promptness and availability

Statements	Mean	SD
Statements regarding promptness		
Laboratory reports are given within expected time	4.27	0.973
Urgently needed results are given quickly as possible	4.25	0.892
Laboratory reports with critical values are given immediately	4.55	0.761
Any service interruption is notified on time	4.09	0.858
Information regarding any newly introduced investigations are notified on time	4.16	0.713
Specimen delivery process to the laboratory is convenient	4.73	0.694
Promptness score	4.34	0.516
Statements regarding availability		
Adequate staff are available to work in the laboratory.	2.14	1.173
The laboratory is located in a convenient place to access easily.	4.98	1.267
Specimen collection tools are adequately available.	4.89	0.868
The laboratory has most of its necessary modern equipment.	2.61	1.298
Time taken for each investigation (turnaround time) are set and informed to all customers.	3.18	1.419
Laboratory results can be easily accessible on time.	4.20	1.025
Availability score	3.67	0.778

The promptness score was calculated by finding the mean value for all these six statements and it was 4.34 ± 0.516 . as the Likert scale questions had a maximum of 6 points for each question the percentage of this score was calculated out of 6 and it was 72.3%. Therefore, the participants slightly agree that the laboratory services were carried out promptly.

The availability score of 3.67 ± 0.778 (61.2%) was calculated considering the means of all the responses for this section. Therefore, the participants slightly agree that the laboratory services were available for them adequately and the laboratory has adequate resources to function properly.

The summary of the statements regarding the acceptability is given in Table 4.

Table 4: Analysis of statements regarding acceptability

Statements	Mean	SD
Statements regarding acceptability		
Laboratory personnel are competent enough in their professional skill.	4.73	0.758
Formats used for reports are easy and clear to understand.	5.16	0.608
The reference range of normal values for each investigation is clearly mentioned in the reports.	5.30	0.594
Laboratory results are mostly compatible with patient's clinical conditions.	5.00	0.431
Incorrect laboratory test results are usually rare.	4.84	0.568
Quality of service is maintained consistently throughout.	4.75	0.651
Specimens getting lost in the laboratory is usually rare.	4.80	0.851
Laboratory reports are usually not lost in the laboratory.	4.73	0.949
Feedback from the clinicians regarding the results are accepted by the laboratory.	4.98	0.628
Monthly review meetings are carried out to focus on further improvement of the services.	3.66	1.119
External quality assessment programmes to improve the testing procedures are conducted regularly.	3.82	1.018
Internal quality control activities are conducted adequately.	3.82	0.870
Acceptability score	4.63	0.386

As the acceptability score was 4.63 ± 0.386 (77.2%), the participants agree that the laboratory services were acceptable according to their perception.

The results of the communication statements were summarized in Table 5.

Table 5: Analysis of statements regarding communication and cleanliness

Statements	Mean	SD
Statements regarding communication		
Laboratory personnel act in a professional and staff-customer friendly manner.	4.84	0.645
Critical values are notified properly by the laboratory staff.	4.70	0.701
Laboratory staff are using appropriate language while communicating with customers.	4.57	0.661
Properly organized system is available for reporting laboratory results.	4.30	1.133
Laboratory staff are available at all times to attend customer's questions and queries.	3.14	1.391
Laboratory staff are trained in communication skills.	3.50	1.089
Communication score	4.17	0.661
Statements regarding cleanliness		
The laboratory area is maintained clean & attractive at all times.	4.52	1.110
The latrine used to collect specimens is kept clean & comfortable.	3.68	1.308
The blood drawing area is kept clean and free from any bad smell.	3.75	1.184
The used contaminated items are collected in special containers then and there.	4.86	0.734
The laboratory staff maintain their own cleanliness throughout.	4.89	0.579
Proper sample collection system is available to avoid infection and mishandling.	4.80	0.765
Cleanliness score	4.42	0.703

The participants slightly agree that the laboratory handles communication well with its customers as the communication score was revealed to be 4.17 ± 0.661 (69.5%).

The participants also slightly agree that the laboratory maintained its cleanliness throughout its activities as the cleanliness score was 4.42 ± 0.703 (73.7%).

The overall satisfaction score was achieved by calculating the mean of all five section scores;

- Promptness 4.34 ± 0.516 (72.3%)
- Availability 3.67 ± 0.778 (61.2%)
- Acceptability 4.63 ± 0.386 (77.2%)
- Communication 4.17 ± 0.661 (69.5%)
- Cleanliness 4.42 ± 0.703 (73.7%)
- **Overall satisfaction 4.25 ± 0.474 (70.8%)**

This overall satisfaction value expresses the ultimate mean of each and every statement in the questionnaire. This implies that the staff were satisfied with 70.8% regarding the laboratory services provision. Among the different aspects, the staff were most satisfied with acceptability (77.2%) and least satisfied with availability (61.2%).

CONCLUSION :

The results clearly show that the participants perceive that they slightly agree or agree with the laboratory's service provision considering all five aspects - promptness, availability, acceptability, communication and cleanliness. However, among these aspects staff gave the lowest score to the availability of laboratory services (3.67±0.778, 61.2%). The highest score was given to the acceptability of laboratory services (4.63±0.386, 77.2%). The overall satisfaction score was calculated by getting a mean value for all the five areas' mean scores. It was 4.25±0.474 out of 6 and in other words, it can be expressed as 70.8%. This is just barely above the set standard of 70%. The highest mean score for any statement was received for the third statement in the acceptability section which states that the reference range of normal values for the investigations are clearly mentioned in the reports. The participants gave a mean score of 5.30, which shows the laboratory is making sure of the reference range of most or all investigations. The laboratory staff needs to be appreciated and encouraged to continue this process. The lowest mean score for any statement was given to the first statement in the availability section. It states that there is adequate staff available in the laboratory. However, most of the participants disagree and gave a mean score of 2.14. This shows that the participants perceived that there is a lack of human resources in the laboratory. Therefore, the authors suggest that the management of this hospital do a workload analysis of the laboratory and determine whether there is really a human resource crisis or not. If a crisis exists, the management can take the necessary steps to request from higher levels. The laboratory also needs to be appreciated for other high scores given by the participants regarding clear report formats, compatibility with clinical conditions and accepting the clinician's feedback. The hospital management also needs to concentrate on the areas where the participants gave lower scores. One such instance is that the participants perceived that the laboratory staff were not available around the clock to answer queries. If it's connected with the lack of human resources the hospital management should take the necessary steps as mentioned prior. If not the roster of the laboratory staff can be rearranged. The next area was the turnaround time (TAT) and the participants perceived that they were not properly informed about each TAT. The laboratory can print

out a list of estimated TAT for each investigation and can distribute it to all units/wards. Participants even though accept that the laboratory staff use appropriate language and act professionally, they also perceived that the laboratory staff lack proper communication skills training. Therefore, the hospital management may arrange a workshop or training for the laboratory staff on communication skills. The authors believe that this audit study helped in understanding the ground-level situation and satisfaction of the laboratory service provision. The authors also believe that this audit study will help the hospital management to further improve the laboratory service provision and performing a re-audit after the interventions will help in assessing the success of those interventions.

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Case Reports

A case report on idiopathic granulomatous mastitis

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Abstract:

Introduction: Idiopathic Granulomatous Mastitis (IGM) is a rare benign inflammatory breast disease of unknown aetiology. It usually occurs in unilateral breast and most commonly seen in parous young woman within five years of pregnancy. Though the clinical presentation might confuse with malignancy, there is no increased risk of subsequent breast cancer in patients with IGM.

Keywords :- Idiopathic Granulomatous Mastitis, non-lactational mastitis

Case presentation:

A 28-year-old non diabetic non lactating woman, a mother of a 3 year old child, presented with a left sided painful breast lump for 5 day duration. She didn't have fever or chills. She gave a similar history in the last four months that required two admissions with incision and drainage for breast abscess. There was no history of loss of appetite and weight and there was no personal history or contact history of Tuberculosis.

On examination she was in pain, afebrile and not cachectic. There was a warm, tender, cystic and solid areas in the 2 O'clock position of L/S breast under the previous scar suggestive of recurrent breast abscess. There was no axillary lymphadenopathy. Clinical diagnosis was supported with inflammatory markers and ultrasound of both breast and axilla. She underwent incision and drainage via a circumareolar incision over the scar.

The pus and wall tissue culture was negative including for Mycobacterium tuberculosis. Histological assessment revealed features are in favour of IGM. She was managed with oral prednisolone for 3 months following multidisciplinary team meeting. She was followed

up with serial measurement of the size of the lump by clinical examination to assess the treatment response. Needle aspiration was performed twice to drain recurrent abscesses at clinic and cultures proved to be negative. The breast lump found in the previous abscess area that measured about 6cm initially, has completely disappeared after three months.

Discussion :

Recurrent breast abscesses require adequate tissue samples from the wall for histological and microbiological assessment for rare causes of granulomatous mastitis. Granulomatous mastitis can rarely be caused by foreign body reaction, tuberculosis, granulomatosis with polyangitis, histoplasmosis and sarcoidosis.

IGM is a challenging benign disease in view of diagnosis and management. Recurrent breast abscess and malignancy can confuse with the diagnosis of IGM. IGM may present as solitary peripheral tender inflammatory mass or multiple peripheral masses with abscesses and/or overlying skin inflammation and ulceration. There may be an association of corynebacterium species with IGM and thus treatment with doxycycline or linezolid can be done though the evidences are not clear.

IGM is a self-limiting inflammatory condition and

often no specific management is necessary. Surgical excision leads to slow wound healing and is not advocated. Abscesses are best managed by needle aspiration.

In refractory cases with persistent or progressive symptoms, treatment with steroids with or without methotrexate gives promising results. Generally oral prednisolone 0.5 mg/kg/day is used until pain and erythema resolves, usually for about 4 weeks, and tapered over 2-3 months.

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Case Reports

Spontaneous cholecystocutaneous fistula: a rare complication of gallbladder disease

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Case Summary:

A 59-year-old woman with the history of hypertension and dyslipidemia was referred to our hospital from a private sector with complaints of pain in the abdomen and discharging sinus in the epigastrium for 2 years. She has had excision biopsy of epigastric sinus 1 year back at a different hospital and histology revealed active chronic inflammation. Ultrasound of the abdomen showed 2cm tract in anterior abdominal wall in the epigastrium appears to communicate with peritoneal cavity, in favour of fistula formation with background chronic cholecystitis and gallbladder calculi. Subsequently CT fistulogram was performed and findings were diagnostic of cholecystocutaneous fistula.

Liver function tests were normal, and there were no contraindications for surgery under general anesthesia. We performed laparoscopy and decided to convert to open surgery due to the density of the adhesions specially at the Calot's triangle. At laparotomy, the fistulous tract was demonstrated and found to enter the fundus of the gallbladder. Gallbladder was thick, fibrotic, and hard in consistency and was seen to adhere to the liver, with surrounding hard induration of the liver, and also the cystic duct - common hepatic duct junctional area, raising the suspicion of carcinoma of the gallbladder. There were several large and hard stones within the gallbladder. We proceeded with en bloc excision of aponeurotic muscle, skin and fistulous tract together with the gallbladder, and a 5cm cuff of the liver, and cystic duct - common hepatic duct junction, and the common bile duct down to the level of the superior

border of the duodenum. A jejunal Roux-en-Y loop was raised, and end to side hepaticojejunostomy performed with 5/0 Polydioxanone interrupted sutures. A subhepatic drain was left in situ and patient received broad-spectrum antibiotics during and after surgery. The patient made a slow but uncomplicated recovery and was discharged home well on post-op D6. During follow up noted to have superficial wound infection on D9 which was managed with oral antibiotics and on D20 wound completely healed. Histology of the specimen confirmed acute on chronic cholecystitis with a fistula between the skin and the lumen of the gall bladder, without evidence of malignancy or tuberculosis.

Introduction :

Fistula is an abnormal condition, which results from abnormal connection between two epithelialized surfaces. Biliary fistulas are rare complications of gallstone, that connect between the biliary tract and other organs, there are two main groups of biliary fistulas: internal and external[1]. Internal biliary fistula connects the gallbladder with gastrointestinal tract, it is induced by chronic cholecystitis[2]. External biliary fistula connects the gallbladder with abdominal wall, it could be spontaneous, postoperative or post-traumatic or caused by iatrogenic injury of biliary tract[1,3].

Cholecystocutaneous fistula (CCF) is a type of external biliary fistula, which connects the



Figure 1 Fistulous opening in the epigastrium



Figure 2 Arrow showing the fistula



Figure 3 3D Constructed fistulogram

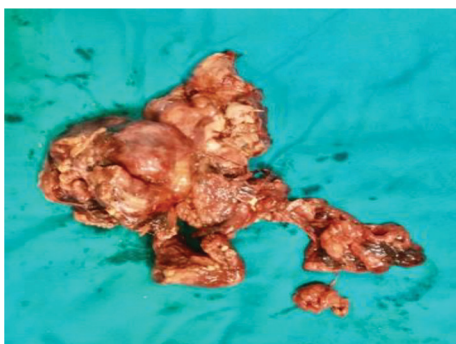


Figure 4 Resected gallbladder with fistulous tract

gallbladder with skin. There are less than 100 cases of cholecystocutaneous fistula reported in the medical literature[4]. The first reported case of CCF was in 1670 by Thilesus, who described this phenomenon for the first time. However, at that time fistulas were a common complication of chronic and untreated cholecystitis[5]. According to a 2005 study, 226 cases have been reported in total, with fewer than 25 in the last 50 years[6]. The reduced incidence in current times can be attributed to more rapid diagnosis and treatment with antibiotics or surgery. Although occurring in acalculous cholecystitis and carcinoma of the gallbladder, fistulas are still most commonly associated with gallstones[7,8].

The right upper quadrant is the most common location for the exit tract of the fistula, but locations such as the gluteal region, umbilicus and right groin have also been documented[6]. CCF are most often seen in elderly women over the age of 60. Cases have been reported in patients aged as young as 24 years[8]. We report a case of a cholecystocutaneous fistula in a patient with previously undiagnosed gallstone disease.

Discussion :

Spontaneous cholecystocutaneous fistulas are rarely observed today because of early diagnosis and safe management of biliary tract disease. Over the past 50 years, less than 20 cases of spontaneous CCFs have been reported.[6] Cholecystocutaneous fistulas are almost always a result of neglected biliary tract disease. They are painless and commonly appear in the right upper quadrant. However, they have been observed at the umbilicus, left costal margin, right iliac fossa, right groin and the back[11]. The external opening of the fistula can be confused with a pyogenic granuloma, infected epidermal inclusion cyst, chronic osteomyelitis of ribs, enterocutaneous fistula, discharging tuberculosis or metastatic carcinoma[11]. The discharge from the fistula may be purulent, mucoid or bile depending on the patency of the cystic duct [8,9,12].

In a recent review, Kaminsky reported on the frequency of biliary fistula to the gastrointestinal tract. The great majority of the fistulas occur with connection to the duodenum (60%), followed by the colon (24%), stomach (6%) and choledochal duct (5%). In this series, cholecystocutaneous

abscesses or fistulas accounted for only 2% of all the cases[10]. Major risk factors for the development of a spontaneous CCFs include elderly females (>50 years), steroid treatment, history of typhoid, bacterial dissemination, trauma, immunocompromised states, etc.

The pathophysiology of CCF has been associated with increased pressure in the gallbladder, secondary to cystic duct obstruction, either caused by a calculus or neoplasia. The increase in intraluminal pressure leads to impairment of the blood flow and lymph supply to the gallbladder, thus causing mural necrosis and perforation. Perforation can occur as 1) acute-free perforation leading to peritonitis, 2) subacute perforation resulting in an abscess around the gallbladder, or 3) chronic perforation with the formation of an internal or external biliary fistula. These fistulas, as presented in this case, frequently arise from the fundus of the gallbladder[8,9]. The state preceding spontaneous rupture has been termed “empyema necessitatis” by Nayman[13]. This term essentially describes a “burrowing abscess” of the abdominal wall as a result of gallbladder inflammation.

The management of an external biliary fistula clearly depends on the underlying aetiology. The acute phase requires treatment with adequate antibiotics, analgesia and resuscitation. In a proportion of patients the external biliary fistula will heal spontaneously, and therefore surgery may be avoided if the patient is elderly or debilitated. Possible surgical options include cholecystostomy with removal of the gallstones or cholecystectomy. As cholecystostomy carries the possibility of further stone formation in the gallbladder, cholecystectomy is usually the treatment of choice.

In conclusion, early laparoscopic cholecystectomy for gallstones may prevent chronic cholelithiasis complications. The diagnosis of cholecystoenteric fistula must be kept in mind with chronicity of symptoms and non-specific presentation. A high level of suspicion and a low threshold for referral needs to be maintained in patients with discharging sinus located in the anterior abdominal wall. In these cases, the judicious use of CT as imaging modality should be considered to rule out the diagnosis and for proper preoperative planning for the best approach. Finally, the choice of laparoscopic versus open and one-stage versus two-stage approach

should be guided by the patient’s clinical condition, local expertise and the best postoperative outcome for the patient.

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Case Reports

Hartmann's procedure for perforated rectal carcinoma and tumor deposits in the distal doughnut following the reversal of Hartmann's procedure.

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Abstract:

Role of Hartmann's procedure is much limited in patients Colorectal Cancer (CRC) and undergoing reversal of Hartmann's procedure which done for CRC is even rare. The scope of this report to present a case of 60-year-old women whose resected distal doughnut became positive for tumor deposit following the reversal of Hartmann's procedure. She presented for reversal of Hartmann's procedure after 43 months following the primary surgery. After the preoperative evaluations she underwent reversal of Hartmann's procedure and her post-operative course was uneventful. Histological assessment of resected tissues revealed positive tumor deposits found in the distal doughnut. Then her case was discussed in the MDT which suggested a close follow-up. There were no locally reported cases found in our literature review with initial R0 resection became positive for tumor deposit following the reversal of Hartmann's procedure.

Introduction:

Initial R0 resection becoming positive for tumor deposit following the reversal of Hartmann's procedure is rare. High clinical suspicion and extensive pre-operative assessment should be considered for early detection and prompt management of residual disease before the reversal of Hartmann's procedure.

Case history

57-year-old female patient presented with 3 months history of altered bowel habits, per rectal bleeding and mucoid stool. All systemic examinations and digital rectal examination (DRE) are unremarkable. Lower Gastrointestinal Endoscopy (LGIE) revealed a rectal growth at 10cm from the anal verge and biopsy proved moderately differentiated adenocarcinoma. Contrast Enhanced Computed Tomography (CECT) of Chest, Abdomen and Pelvis revealed 6.3cm length irregular soft tissue growth arising from the recto sigmoidal junction with few enlarged LN in the pararectal fossa is favoring malignant growth. No local adjacent structural infiltration, and no liver secondaries. She was planned to undergo Anterior Resection (AR), but she defaulted the follow-up. Two months later again she presented with acute abdomen and she underwent emergency explorative laparotomy. Intraoperative findings are perforation of the upper rectum, Upper rectal mass and mass adhered with uterus, ovary,

and fallopian tube. Hartmann's procedure with Hysterectomy done. Her post-operative period was uneventful. Her histology came as moderately differentiated adenocarcinoma with Dukes C and PT4b PN1 PMx.

Then she followed up in the oncological care where she was initially planned to receive 12 doses FOLFOX 4 regime but after receiving 7 doses she defaulted the follow-up. After that she was followed-up with Oral capecitabine for 19 months and at the end of 19 months she underwent CECT scan of chest, Abdomen and pelvis which reported as no evidence of recurrence. At that time her CEA level was 3.51ng/ml. With those findings she was referred for reversal of Hartmann's procedure.

Pre-operative assessments were unremarkable including LGIE, where visualized up to the entire 10cm from anal verge and no evidence of recurrence. Then she underwent reversal of Hartmann's procedure. Her post-operative course

was unremarkable. The histology of resected distal and proximal donut came follows, sections through the proximal donut is free of tumor involvement and sections through the distal donut show a few tumor cell clusters from an adenocarcinoma.

Her case was discussed in the MDT and which suggested a very close follow-up.

Discussion :

Colorectal Cancer (CRC) can also present as acute surgical emergencies. These conditions include perforation, hemorrhage, and obstruction [1].

The role of Hartmann's procedure in the management of CRC plays a critical role in emergencies associated with CRC. According to a study conducted in England, most preferable emergency surgical management for sigmoidal cancer was Hartman's procedure with or without mucus fistula which followed by sigmoid colectomy with primary anastomosis [2].

According to a study conducted in Singapore among patients who underwent reversal of Hartmann's procedure the most common indication for Hartmann's procedure was colorectal carcinoma (49.0%) and restoration of intestinal continuity was attempted only in 19.2% patients[3].

As per Swedish Rectal Cancer Registry, relative 5-year survival rate was 70.1 per cent after anterior resection, 59.8 per cent after abdomino perineal resection and 39.8 per cent following a Hartmann's procedure[4].

Another study revealed that Circumferential Margin Involvement (CMI) following Abdominoperineal excision of rectum (16.7%) or Hartmann's operation (31.7%) was significantly higher than following anterior resection (7.5%). The patient and procedural risk factors, which significantly influenced local recurrence, were found to be cancer stage (Dukes') and operative intent (curative or palliative). The difference in CMI rates persisted after correction for these variables[5].

Initial R0 resection in Hartmann's procedure becoming positive for tumor deposits following the reversal of Hartmann's procedure is scarce in the medical literature. No locally reported cases found in our literature review.

Conclusion :

Reversal of Hartmann's procedure attempted very less frequently in patient who initially underwent Hartmann's procedure due to complicated CRC and resected doughnuts becoming positive for tumor deposits following the reversal is even rare. A high clinical suspicion, along with assessment with appropriate investigations will lead to an early detection and appropriate management strategies should be initiated before the reversal of Hartmann's procedure.

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Case Reports

Transdiaphragmatic intercostal herniation and perforation of small bowel following road traffic accident

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Abstract:

Transdiaphragmatic Intercostal hernias are very rare, and usually occur following trauma to the chest wall. The scope of this report is to present a case of a 42-year-old male patient that developed a transdiaphragmatic intercostal hernia following a blunt trauma to right lower chest. He presented with a soft tissue mass in the right lateral thoracic wall, clinically suggestive of a hematoma. Surgical exploration was performed, and found strangulated small bowel with perforation. Emergency laparotomy was done with resection and end to end anastomosis of involved small bowel segment. The patient's postoperative course was uneventful. Intercostal hernias should be suspected following high-impact injuries of the thoracic wall. We consider the early surgical exploration as the treatment of choice to ensure a favorable outcome with minimal complications.

Introduction

The herniation of abdominal contents through the chest wall, as a result of the damage to diaphragmatic and intercostal muscles, is an uncommon clinical scenario.¹ this condition is usually reported to occur following penetrating or blunt injuries of the chest wall.² it can present with strangulation and perforation in the herniated bowel loop in very rare occasions as in this case. Careful assessment and early exploration are lifesaving.

Case history :

42 Years old male presented following a road traffic accident with right side lower chest and upper abdominal impact. On admission He complained of R/S pleuritic type of chest pain and R/S upper abdominal pain. He complained of nausea but denied vomiting or any changes in his bowel habit. He had a tender lump over R/S lower chest without cough impulse. His Hemoglobin was 14.1g/dl. His chest x-ray showed 8th rib fracture with no pleural effusion , pneumothorax or gas under diaphragm, His Extended focused assessment with sonar for trauma showed thin rim of free fluid in the hepatorenal pouch. The subcutaneous lump was suggestive of Chest wall hematoma with possible rib fracture. There was no pleural effusion noted.

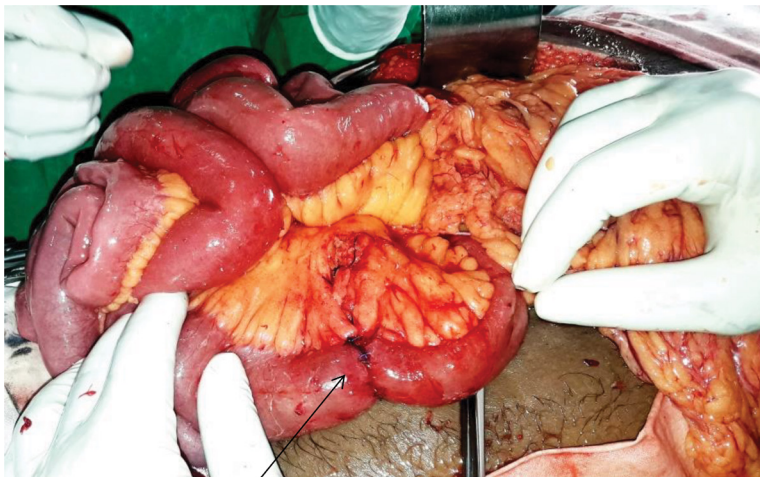
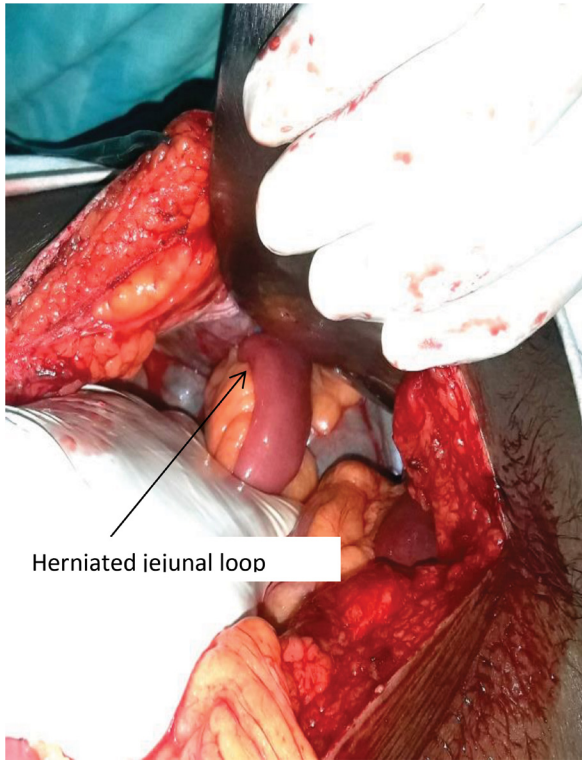
Patient was kept under observation with analgesics. Next day patient complained of persisting pain over the lump despite of analgesics with significant tenderness. Clinical diagnosis was made as chest wall hematoma and Decided to go for evacuation.

Exploration was done and found hematoma with some food particles inside with a perforated bowel loop. Perforation was repaired temporarily with few interrupted sutures to minimize Peritoneal and Pleural contamination. Right side Intercostal drain tube was inserted. Exploratory laparotomy was done and found to have Jejunal loop herniation through the diaphragm and chest wall into subcutaneous tissue.

Herniated loop reduced, Diaphragmatic rupture was repaired, Unhealthy area of jejunum resected and end to end anastomosis done. Patient was observed at surgical ICU for couple of days. Patient got recovered and discharged without any residual effects.

Discussion :

Clinically, a patient with transdiaphragmatic intercostal hernia would typically present with a palpable soft tissue lump in the lower chest wall with a positive cough impulse. High clinical suspicion, with history, and examination are needed



End to end anastomosis

for the exact diagnosis in clinically challenging cases. CT chest will confirm the chest wall herniation. Although ultrasound is also useful in diagnosing such cases, 3 but it can be missed occasionally. If it was diagnosed or suspected pre operatively, the risk of aspiration following induction would have been minimized.

During jejunal loop herniation, it can get damaged by the sharp ends of fractured rib. It was a 5 cm laceration in the Diaphragm and the herniated jejunal loop got strangulated by Diaphragm, chest wall muscles and fractured rib. That has led to the absence of symptoms and signs of peritonitis.

Transdiaphragmatic intercostal hernias are scarce

in the medical literature.⁴ No locally reported cases found in our literature review with associated small bowel perforation.

Conclusion :

Chest wall hernia is a rare clinical entity that can develop either immediately following a trauma, or as a late presentation. It should be suspected following high-velocity blunt or penetrating injuries, and should be followed up appropriately. A high clinical suspicion, along with a timely CT scan, will lead to a correct diagnosis of a transdiaphragmatic intercostal hernia, which may contain different abdominal organs. Small bowel herniation can associate with perforation without any salient features of peritonitis. Early diagnosis and exploration of such herniation will be lifesaving with excellent outcome.

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Case Reports

Problem of a Rare Anomalous Common Hepatic Artery during Whipple's Procedure

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Abstract:

Identification of abnormal origin of common hepatic artery during whipple's procedure has been reported rarely and it is a key factor influencing on intraoperative decision in regard to further management of the patient. Failing to identify few types of anomaly in hepatic arterial anatomy may result in lethal damage to patients. We encountered such abnormal anatomy during a whipple's procedure and as we were able to identify it on time before doing any irreversible steps, we were able to make a safe decision to abandon the procedure and went for a biliary bypass.

INTRODUCTION

Common hepatic artery is a branch of coeliac trunk which supplies liver and gallbladder. Variations are frequently observed in the anatomy of common hepatic artery which should be kept in mind during surgical and radiological interventions. Variation in hepatic arterial anatomy is seen in 40-45% of people. Knowledge on variations in hepatic arterial anatomy is essential during hepatobiliary surgeries(1,2)

CASE REPORT :

A seventy years old female on treatment for Diabetes Mellitus, Hypertension and Heart failure presented with a one month history of yellowish discoloration of eyes, pruritus and dark urine. There was a palpable gall bladder. Ultra-sound scan of abdomen was suggestive pancreatic head lesion which is causing intra and extra hepatic duct dilatation. And CECT abdomen confirmed operable pancreatic head neoplasm without any evidence of metastasis.

ERCP attempted and failed. Couldn't proceed with EBD as there is minimal duct dilatation. After optimizing her medical co morbidities, Whipple procedure was attempted. Open access through Right subcostal incision revealed pancreatic head tumour without evidence of metastasis. Duodenal kocherisation done. During dissection of porta hepatis we found that the common hepatic artery is getting originated from superior mesenteric artery

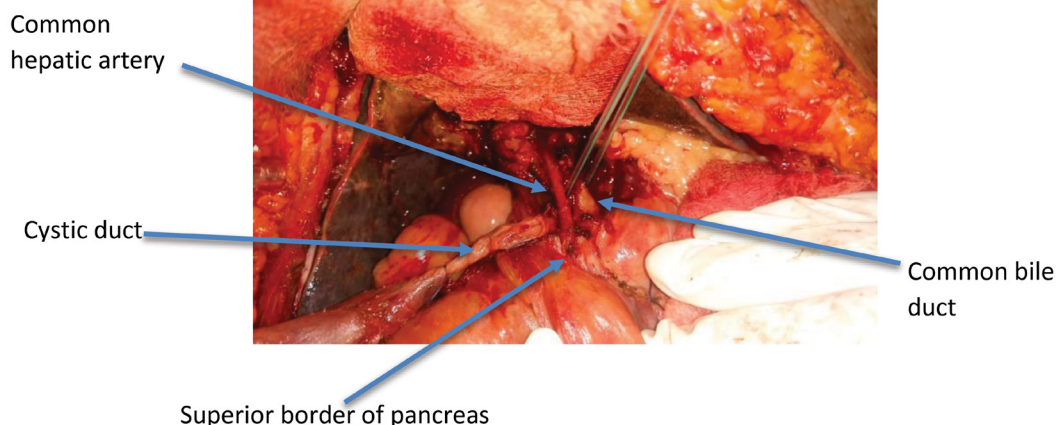


Fig 1: Photograph showing common hepatic artery which is traveling through the pancreas.

and which travels through the pancreatic neoplasm. Whipple procedure was abundant and biliary bypass was done with choledochojejunostomy. Postoperative period of the patient was uneventful. She was discharged on postop day 7 and referred to oncologist for further management.

DISCUSSION :

The stages of development of hepatic artery explains the reason for commonly observed variations in the artery supply of liver. In the embryonic life liver is supplied from 3 arterial sources

1. Left hepatic artery from left gastric artery
2. Middle hepatic artery from coeliac trunk
3. Right hepatic artery from Superior mesenteric artery

With further development, middle hepatic artery establishes communications with right and left hepatic arteries and their proximal portions disappear. Thus the adult arterial pattern is established with both right and left hepatic arteries arising from middle hepatic artery which becomes the common hepatic artery. Persistence of all the three arteries that normally disappear or disappearance of an artery that normally persists can lead to any of the following variations in artery supply of liver(3,4).

- 1) Common hepatic artery supplying right lobe of liver and left hepatic artery arising from the left gastric artery
- 2) Common hepatic artery supplying left lobe of liver and right hepatic artery arising from superior mesenteric artery
- 3) Persistence of all the three arteries
- 4) In atrophy of middle hepatic artery, the common hepatic artery arises either from superior mesenteric artery (9%) or left gastric artery (1%) or from both (2%).

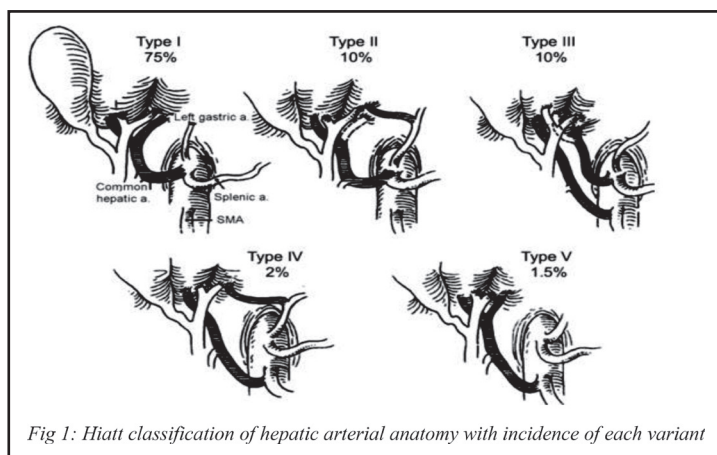


Fig 1: Hiatt classification of hepatic arterial anatomy with incidence of each variant

CONCLUSION :

The stages of development of hepatic artery explains the reason for commonly observed variations in the artery supply of liver. In the embryonic life liver is supplied from 3 arterial sources

1. Left hepatic artery from left gastric artery
2. Middle hepatic artery from coeliac trunk
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Case Reports

Dengue encephalitis complicated with status epilepticus

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Abstract:

INTRODUCTION

Dengue is a common mosquito borne febrile viral infection with a spectrum of clinical presentation ranging from asymptomatic infection to dengue shock syndrome [1]. Neurological manifestations of dengue fever, such as dengue encephalitis, are not commonly encountered even in endemic areas [2]. Although dengue virus is not commonly included under neurotrophic viruses, it has the capability of direct invasion of neuronal tissues resulting in encephalitis [3]. We report a case of young male presented with fever and acute severe headache followed by status epilepticus, in whom a diagnosis of dengue encephalitis was made.

Keywords :- Dengue, Dengue encephalitis

CASE HISTORY :

A 37-year-old male patient was managed for an acute febrile illness with neutropenia, moderate thrombocytopenia (lowest platelet count was $114 \times 10^3 / \mu\text{L}$) and mild transaminitis. Serum dengue NS1 antigen test was not performed due to unavailability. He was discharged after 2 days of inpatient management for viral fever/dengue fever as he was afebrile for 48 hours and as his platelet count was rising. He got readmitted on following day with recurrence of fever and acute onset severe headache for 12 hours.

On admission he was febrile with a temperature of 101°F and normal vital functions. There were no rashes or neck stiffness. His neurological system examination including optic fundi were normal. Rest of the systemic examination was also normal. However, after 14 hours of admission, patient was restless, agitated and confused. After 24 hours patient became drowsy and was not communicating. On day 3, patient developed generalized tonic-clonic convulsions with post ictal drowsiness. After that, patient's level of consciousness was gradually deteriorating. Focused history revealed no past history of epilepsy or drug/substance abuse. On day 4, his Glasgow Coma Scale (GCS) was 10/15 (E3V2M5) and he developed recurrent episodes of

generalized convulsions. On day 10 his GCS was 8/15 (E2V2M4) and went into status epilepticus while on multiple antiepileptic drugs. There were no focal neurological signs. His vitals were stable though he was running high fever.

His FBC results were WBC $17.6 \times 10^3 / \mu\text{L}$ (Neutrophil 70%, Lymphocytes 19%), Hb 15.1 g/dL, PCV 45%, platelet count $306 \times 10^3 / \mu\text{L}$. CRP was 30 mg/L and ESR was 31mm. AST and ALT were 60 U/L. Other blood investigations including blood glucose, renal functions, electrolytes and liver functions were normal. Non-contrast CT- brain did not reveal any abnormality. Magnetic resonance scan (MRI) of brain with Magnetic resonance angiogram (MRA), performed on day 4, did not show any abnormality. Electroencephalogram (EEG) revealed 5-7 Hz low amplitude slow wave discharges suggestive of encephalitis while there were no epileptiform discharges.

Cerebro-spinal fluid (CSF) analysis revealed turbid fluid with a coagulum, protein 40.5 mg/dL, glucose 75 mg/dL (blood glucose 142 mg/d), red cells $60 / \text{mm}^3$, no neutrophils or lymphocytes. CSF gram stain and culture did not reveal any organisms. CSF analysis including Japanese encephalitis (JE) IgM antibodies, Herpes simplex virus (HSV) PCR, Mycobacterium tuberculosis PCR, India ink staining and Cryptococcal PCR was negative. CSF for NMDR antibody assay was also negative.

Blood culture was negative. Retroviral screening and Venereal disease research laboratory test (VDRL) were negative. Thin and thick blood films for malaria parasite was negative. Serum Rickettsial IgM antibodies and toxoplasma IgM antibodies were not detected. His thyroid function test as well as antithyroid peroxidase (TPO) antibody level was within normal range. Antinuclear antibody titre was not elevated.

Ultimately his serum as well as CSF for dengue IgM antibodies was positive. Serum dengue PCR was positive for dengue virus type 3 (DEN-3).

After admission, intravenous Ceftriaxone 2 g bd and acyclovir 500mg 8H with intravenous dexamethasone 4mg 8H were started empirically. Once he developed generalized convulsions, antiepileptic drugs were started and escalated due to recurrent seizure episodes. As patient went into status epilepticus, endotracheal intubation was done and he was managed in Intensive Care Unit (ICU) with sedation and ventilation. He recovered uneventfully after one month of hospital stay without further episodes of convulsions or any significant residual neurological deficits.

DISCUSSION :

Dengue is a common arthropod borne viral infection in Sri Lanka. Even though dengue is classically not considered as a neurotropic virus, serotype 2 and 3 show neurotropism [4]. It can cause a wide variety of neurological manifestations, including encephalopathy, encephalitis, Guillain Barre and transverse myelitis [3]. 4-21% of patients infected with dengue can have evidence of encephalitis or meningoencephalitis [2]. Dengue encephalopathy is considered as a manifestation of host immune response while dengue encephalitis results from direct viral invasion of brain parenchyma [5]. According to the case definition proposed by Soares, our index patient fulfilled the criteria for dengue encephalitis (fever, signs of cerebral involvement like altered sensorium and seizures, positive dengue IgM in cerebrospinal fluid and positive dengue PCR with the exclusion of other causes of viral encephalitis) [5]. The pathophysiology underlying dengue encephalitis is poorly understood and brain imaging findings are nonspecific. Outcome of dengue encephalitis can vary while there is no specific treatment.

CONCLUSION :

Cases presenting with features like headache, confusion and meningism in regions of high prevalence of dengue infections, should always be considered with a rare differential diagnosis of possible central nervous system involvement due to dengue infection and high vigilance is needed to identify such cases of dengue.

COMPETING INTERESTS :

The authors declare that they have no competing interests.

FUNDINGS : None

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Case Reports

Infective endocarditis: A deadly end of intra venous drug usage.

AAA Suramiya, V Sujanitha

Abstract:

INTRODUCTION

In the modern era of globalization, drug addiction has lately become one of the biggest social issue with huge health sequelae. Intra venous route of drug abuse method become the fast growing drug consuming method with highest health issues when compare to other methods [1].

Infective endocarditis(IE), microbial infection that involves the endocardial surface of the heart, is one of the fatal sequele of IV drug abuse. The prevalence of IE is 3–9 cases per 100,000 per year in general population. The overall incidence of IE among IVDU ranges between 2% and 5% per year and responsible for 5-8% of hospital admission among IVDU[3,5]. In developed countries, the hospital mortality is around 15–22% with an overall 5-year mortality up to 40%[2]. Although IV drug usage classically associated with right side endocarditis, left side valvular involvement is not an uncommon event[5].

Here we are describing two cases of IVDU who were presented with two type of IE.

CASE 1 :

A 31-year-old previously healthy male, presented with severe malaise, tiredness, generalized body ache with poly arthralgia for 2 weeks duration. He also complained of worsening shortness of breath (SOB) and bilateral leg swelling for one week. However, there was no chest pain or fever. Furthermore, he claimed that, he was an IVDU with his last use of heroin was about 1 month ago. Of note, within the month leading up to hospitalization, he was treated with multiple courses of antibiotics for presumed septic arthritis of his left knee joint. After admission he developed, fever with chills and night sweats. And he started to deteriorate rapidly.



Figure 3:
34X27mm TVVegetation

breath. His mobility was restricted due to severe polyarthralgia involving bilateral knee joint, shoulder joint and sacro iliac joints. His haemodynamics were normal. But, he had a crescendo decrescendo systolic murmur, 5/6 loudest over the tricuspid area and elevated JVP suggestive of Tricuspid regurgitation (TR). He also had a tender hepatomegaly with pedal edema. His lungs examination was normal on admission but subsequently he developed scatted crackles bilaterlly. Skin examination was notable for track marks around the left arm with thickened cubital and basilar veins (Figure 1). However, there was no peripheral stigmata of IE noted. There was mild effusion in his bilateral knee joints.



Figure 1: Track marks with distended vein

Laboratory analysis was significant for a neutrophil leukocytosis, normochromic normocystic anaemia and moderate thrombocytopenia. He had renal impairment with microscopic haematuria. Inflammatory markers were markedly elevated with ESR-122mm in 1st hour and CRP - 142mg/dl. Methicillin Sensitive Staphylococcus aureus(MSSA)

On admission, he was alert, pale, dyspnoeic and in distress partly due to arthralgia and shortness of

was isolated from all three blood cultures. His chest x-ray showed multiple septic emboli (Figure 2). Trans Thoracic echocardiogram (TTE) revealed a large (34mm*27mm) tricuspid valve vegetation and moderate to severe TR. (Figure 3). Hepatitis C antibody was positive at high titers.



Figure 2: multiple septic emboli in lung

He was treated with proper IV antibiotics for six weeks duration, according to the guide line with the guidance of microbiologist and culture sensitivity pattern. As he showed clinical as well as biochemical improvement and his repeated echocardiogram revealed a reduction in size of tricuspid valve vegetation, he was discharged with oral antibiotics. Nevertheless, after a week, he was again admitted with fever and severe anemia. Blood culture was positive for Staphylococcus aureus. He was again treated with proper IV antibiotics, meanwhile he was referred for surgery. Tricuspid valve vegetectomy and TV repair was done. He had a successful recovery and discharged.

CASE 2

He is a 21-years-old unmarried mason, admitted with a history of back pain, malaise, tiredness for 5 days duration. His past medical history was significant for long-standing multiple IV drug usage. There was no history of SOB and chest pain. But he complained pain in his pulp spaces. On examination he looked ill, pale and febrile. There were track marks on his left arm. He had painful nodule on his index finger suggestive of osler's node, but there was no other peripheral features of infective endocarditis. His cardiovascular examination revealed soft first heart sound with grade IV pan systolic murmur in apex. He was haemodynamically stable and respiratory system examination was unremarkable. There was significant tenderness on his spinal and sacro iliac joints.

His laboratory results included neutrophilic leukocytosis, mild normochromic normocystic anaemia and moderate thrombocytopenia with markedly elevated inflammatory markers. His liver and renal profiles were normal. HIV screening test was negative. Blood culture was positive for

methicillin sensitive staphylococcus aureus. His initial TTE which was done on the day of admission showed grade II-III MR without vegetations and Trans-oesophageal echocardiogram (TOE) was planned and empirical antibiotics were started. The repeated TTE which was done prior to TOE showed small vegetation in mitral valve leaflet. With microbiologist opinion and culture sensitivity pattern, his IV antibiotics were upgraded and continued. Despite of treatment, he failed to show clinical and biochemical improvement. On the day 8 of admission he suddenly developed right upper limb and lower limb weakness with gaze palsy. NCCT brain showed a massive ICH with mid line shift and space occupying lesion [Figure 4]. As his GCS deteriorated rapidly with haemo-dynamic instability, he was intubated, ventilated and transferred to ICU for further care. Because of his unstable haemodynamic status, neuro surgical team decided to manage conservatively. He deteriorated rapidly and succumbed into death after a day of ICU care.

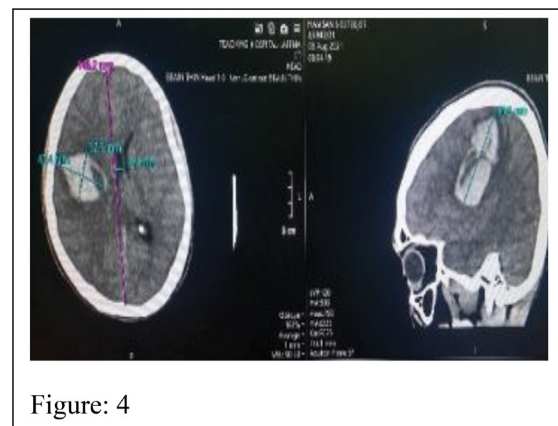


Figure: 4

DISCUSSION :

IE in IVDU was first described in the 1950s and it is responsible for the increasing incidence of IE in developed countries. Staphylococcus aureus is the causative agent in 60-70% of IE related to IVDU which is mostly MSSA. The tricuspid valve endocarditis is common and involves 50-70% of IVDU cases of IE while mitral and aortic valves are affected in 20-30% of cases[2]. As heroin is increasing the pulmonary arterial pressure and creating more turbulence at the tricuspid valve, tricuspid valve endocarditis may be more common in heroin users. However, substances such as cocaine and methamphetamines are causing increased turbulence at the sites of the aortic and mitral valves by increasing the systemic afterload. Therefore, the availability of certain illicit substances predominantly reflect the shifts in the incidence of right versus left-sided IE [2,5].

The modified Duke criteria which is used for the diagnosis. It has a high negative predictive value. However, it should not be used in replacement of clinical judgement.

Antimicrobial chemotherapy is the mainstay of treatment. The choice of antibiotics and the duration of treatment depends on the likely microorganism and its sensitivity, location and type of valve infected and the types of drug injected and solvent used.

Both the American College of Cardiology (ACC) and the European Society of Cardiology (ESC) recommends that surgery intervention, when there is native valve endocarditis, or the mobile vegetation with a size of more than 10 mm or a vegetation at high risk for peripheral embolic event is present. They also recommends surgery, when the predictors of a complicated course such as heart failure, abscess formation, persistent infections or poor control of infection are present. Urgent surgical intervention may be warranted to prevent hemodynamic instability, the mobilization of large vegetations or to control the infection, for which we did surgery to our patient.

However, due to the high risk of recurrent IE in IVDU, surgery should be considered only when there is intractable right heart failure with poor response to diuretics; persistent bacteraemia despite of appropriate antibiotic usage and large vegetation at a size of more than 20mm. As our first patient had all these features, we decided for surgery. Even though, choosing the best and optimal time for surgery may be difficult, especially when the patient is a suboptimal surgical candidate like our second patient. With the experiences from our patients' management, we think that early surgical intervention may be beneficial to prevent further morbidity and mortality in selected patients.

When comparing the endocarditis in non IVDU, IVDU have a more severe clinical course with poor cardiac function and a higher rate of systemic embolization and death. Previous Clinical studies have shown, compared to right-sided IE, left-sided IE, especially when the aortic valve is involved, has worse outcomes with mortalities of 5% and 20-30% respectively. [2]

Bone and joint infection can occur in endocarditis as a result of hematogenous seeding. But the risk of musculoskeletal seeding seems to be significantly higher in IVDU with IE[3]. Even though both of our patient's main complaint was poly arthralgia and back pain, their sacro iliac and spinal imaging were

normal. But, as the musculo-skeletal complaints are quite common among IVDU, clinicians must have a high index of suspicion, in order to prevent musculoskeletal complications as a result of bacteremia.

CONCLUSION :

Despite of ameliorations in diagnostic modalities, clinicians must be vigilant, especially in high-risk patient populations as delayed recognition in IE can easily become a life-threatening disease.

ABBREVIATIONS :

IVDU- Intra venous Drug Abuser, IE- Infective Endocarditis, GCS- Glasco Coma Scale, IV- Intra venous, ESR- Erythrocyte sedimentation Rate, CRP-C- Reactive Protein, UFR- Urine Full Report, NCCT- Non Contrast CT, MSSA- Methcillin Sensitive Staphylococcus Aureus, MR- Mitral Regurgitation, ICH- Intra Cranial Haemorrhage.

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Case Reports

Severe Anaphylaxis with Kounis Syndrome following Covid-19 Vaccination:

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Abstract:

INTRODUCTION

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection which is also designated as COVID-19 results in a global pandemic. Vaccines to prevent SARS-CoV-2 infection are considered to be the most promising approach for curbing the pandemic.

Given the importance of the vaccine in fighting this public health crisis, understanding the allergic reactions with the approved COVID-19 vaccines is crucial. The vaccines against COVID-19 are new and some have a novel mechanism of action. Moreover, it is not surprising that anaphylaxis has not been reported in the clinical trials to-date, given the very low incidence and the exclusion of individuals with a history of hypersensitivity reactions in most studies. [1].

Kounis syndrome is the occurrence of acute coronary syndromes in the setting of allergic or hypersensitivity insults. This syndrome is caused by inflammatory mediators released during the allergic activation process [2]. Kounis Syndrome is known to occur as a result of hypersensitivity reaction to vaccines. We herewith report a case of severe anaphylaxis complicated with Kounis syndrome following ChAdOx1nCoV-19 Corona Virus Recombinant (Oxford Aztrazeneca) Vaccine.

CASE PRESENTATION :

A 47 years-old-female health staff attendant with a history of anaphylaxis for contrast media received her first dose of ChAdOx1 nCoV-19 Corona Virus Recombinant Vaccine. Following few minutes after the vaccination she developed severe tightening chest pain which progressed to shortness of breath. Though there was no urticarial rash, she developed intense itching of body. Examination revealed a dyspnoeic patient with respiratory rate of 32/min. Her blood pressure was unrecordable and she was tachycardiac with pulse rate of 120 bpm. Lung examination revealed diffuse rhonchi. Saturation was not detected by the pulse oximeter. She was immediately attended by the medical team and intramuscular 1:1000 adrenaline 0.5ml was given.

Subsequently, she received another 3 boluses of intramuscular adrenaline, IV Chlorphenamine 10mg and IV hydrocortisone 200mg which improved the blood pressure to 70/50 mmHg. She was started on adrenaline infusion with rate of 0.1 mcg/kg/minute. With infusion her blood pressure was

maintained around 100/70. Her pulse rate stabilized around 100 bpm. The lung ronchi were cleared and saturation was improved to 98%. Gradually her adrenaline infusion was tailed off over 12 hours and she could maintain her BP around 100/60 mmHg without inotrope support. Figure1 is the first ECG on admission (1.5hr after anaphylaxis)

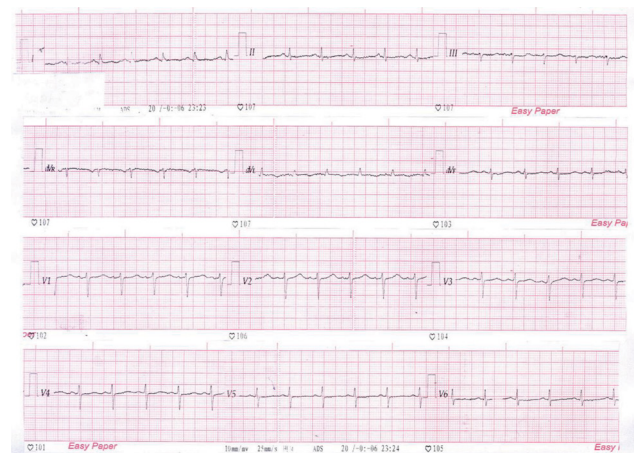


Figure 1: The first ECG on admission (1.5hr after anaphylaxis). ECG showed sinus rhythm with marginal QTc prolongation (QTc with Bazett formula 465ms)

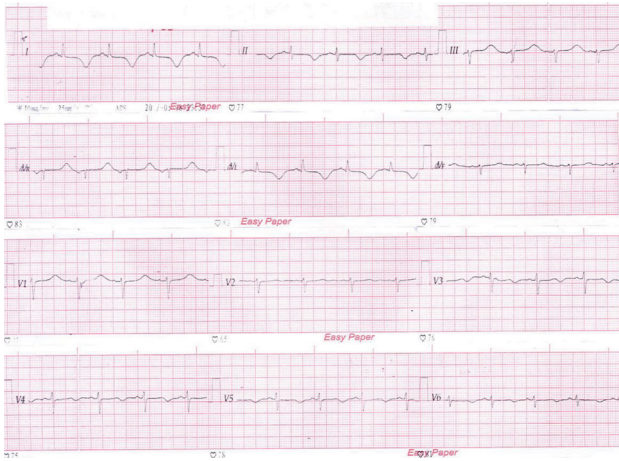


Figure 2: The repeat ECG following 24 hours. There were dynamic ECG changes with development of deep T waves in lead I,II,aVL,V3,V4, V5,V6. QTc with Bazett formula 581ms.

Her troponin I titre was progressively rising from 3.5 ng/ml, 5.76 ng/ml 7.8 ng/ml (<0.5). Her transthoracic echo showed inferolateral hypokinesia with ejection fraction of 50%. Her serum electrolytes were normal. She was referred to cardiology team for coronary angiogram.

Because of the past history of anaphylaxis with contrast, it was decided by the cardiology team to manage the patient medically without coronary angiogram. She was treated with Enoxaparin and dual antiplatelets. The long QT in the ECG was attributed to intravenous chlorperanamine which she received for 2 days. Subsequently it was corrected once culprit drug was withdrawn. She was discharged with good recovery after one week of inward care.

DISCUSSION :

Out of the first 4,041,396 doses of Moderna vaccine administered in the United States, 10 cases were determined to be anaphylaxis, with a rate of 2.5 anaphylaxis cases per million. Nine of these anaphylaxis cases, included a patient history of allergies or allergic reactions [3]. Out of first 1,893,360 doses of Pfizer-BioNTech vaccine administered in the United States, 21 cases were determined to be anaphylaxis (a rate of 11.1 per million doses administered) [4]. The interim analysis of four randomised controlled trials in Brazil, South Africa, and UK out of 12021 ChAdOx1 nCoV-19 vaccine received, only 1 case of anaphylaxis was reported [5]. As for our knowledge, this is the first case report of a severe anaphylaxis following covid-19 vaccination in Sri Lanka.

In addition to anaphylaxis, our patient experienced an acute coronary syndrome following the

vaccination. Two mechanisms can be used to explain the occurrence of acute coronary syndrome in this patient. The first being the Allergic vasospastic angina, also termed as Kounis syndrome. In literature number of cases have been reported in vaccine associated with Kounis. Kundi et al. report a patient who developed Kounis syndrome following an allergic reaction to a tetanus vaccine [6]. Our patient might have experienced Kounis syndrome following covid-19 vaccination. In current literature there are no case reports Covid-19 Vaccine associated with Kounis syndrome. The other mechanism explaining the acute coronary syndrome is the effect of multiple bolus doses of adrenaline. This could have precipitated the coronary vasospasm which lead to subsequent acute coronary syndrome.

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Case Reports

Pancreatic pseudocyst – A rare post-operative complication following laparoscopic cholecystectomy

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Abstract:

Pancreatic pseudo cyst is not a well identified post-operative complication following laparoscopic cholecystectomy. The scope of this report presents a case of a 57-year-old male patient who developed pancreatic pseudocyst following laparoscopic cholecystectomy. He presented with right hypochondrial pain after 11 days following laparoscopic cholecystectomy and ultrasound scan of the abdomen revealed fluid collection involving left sub phrenic space, peri splenic space and Para-aortic gutter. He underwent aspiration of the fluid collection two times and then underwent exploratory laparotomy, which revealed a pancreatic pseudocyst. The patients post operative course was uneventful. Pancreatic pseudocyst could be an unidentified post-operative complication of laparoscopic cholecystectomy and it should be suspected in patients presenting with intraabdominal fluid collection following laparoscopic cholecystectomy.

INTRODUCTION

Occurrence of pancreatic pseudocyst as a post-operative complication of laparoscopic cholecystectomy is rare. Suspecting a pancreatic pseudo cyst in patients presenting with cystic lesion during the post-operative period of laparoscopy cholecystectomy will lead to early detection and intervention.

CASE HISTORY :

57 years old male patient, who is a nonalcoholic presented with right hypochondriac pain following 11 days after the laparoscopic cholecystectomy. At the initial presentation ultrasound scan of the abdomen showed moderate ascites suggestive of haemoperitonium or bile ascites. Full blood count shows neutrophilic leukocytosis and serum amylase level was 238U/L. He also underwent aspiration of 1000cc of fluid which is negative for culture and AFB with macroscopically it was a blood-stained

brown color thick fluid. After fifteen days again he underwent another aspiration of 1.5L of same characteristic fluid. Full report showed pus cells of 30-35/HPF, RBC of 3-4 /HPF and with negative cultures.

After 10 days he got admitted to a tertiary care hospital with abdominal distention and underwent CECT Abdomen, which showed a cystic lesion extending from splenic area towards pelvic cavity. He underwent exploratory laparotomy following routine basic investigations. Intraoperative finding was,



large thick-walled cyst found in the lower abdomen with adhesion to multiple small bowel loops and cyst communicated with the tail of the pancreas and cholecystectomy site appears normal.

Adhesiolysis done, cyst dissected up to the tail of pancreas and at tail of the pancreas neck of the cyst was divided and sutured with 2-0 polypropylene. Patient was observed at surgical ward for couple of days. Patient got recovered and discharged without any residual effects. He was followed up in the clinic for 2 months and that period was uneventful.

DISCUSSION :

Pseudocyst of the pancreas is a localized fluid collection that is rich in amylase and other pancreatic enzymes and is surrounded by a wall of fibrous tissue that is not lined by epithelium[1]. Data collected from Wayne State University Hospital in Detroit, USA reported that occurrence of pancreatic pseudocyst following a operative trauma is 0.3%[2].

The clinical presentation of pancreatic pseudocyst can range from asymptomatic patient to major abdominal catastrophe due to complications.

Laparoscopic cholecystectomy is now regarded as the "gold standard" therapy for management of symptomatic cholelithiasis[3].

Sensitivity rates for ultrasound scan in the detection of pancreatic pseudocysts are 75% to 90%. Therefore, ultrasound scan is inferior to CT, which has a sensitivity of 90% to 100%. Ultrasound scan has several limitations, as compared with CT, in the initial diagnosis of a pseudo cyst. Presence of overlying bowel gas decreases the sensitivity of ultrasound scan, and unlike CT, Ultrasound scan examinations are highly operator dependent[4].

Pancreatic pseudocyst following laparoscopic cholecystectomy are scarce in the medical literature. No locally reported cases found in our literature review with pancreatic pseudocyst following laparoscopic cholecystectomy.

CONCLUSION :

Pancreatic pseudocyst following laparoscopic cholecystectomy is a rare complication. It should be suspected in patients who presenting with intrabdominal fluid collection following laparoscopic cholecystectomy. A high clinical suspicion, along with timely radiological assessment will lead to a correct diagnosis and early intervention. Early diagnosis and intervention will lead to excellent outcome.

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Case Reports

Pneumoperitoneum due to missing diaphragmatic hernia

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Abstract:

INTRODUCTION

Diaphragmatic hernia is a defect in the diaphragm that allows protrusion of abdominal contents into the thorax. It may be congenital or acquired. Congenital ones are the most common entity, however acquired ones are less frequently diagnosed. Despite the rarity, complications related to hernia may lead to lethal consequences if not addressed in time [1]. Stomach, spleen, pancreatic tail, small intestine and colon are frequently noted hernial contents in literature. In this case, we present a gastric perforation in an adult patient with diaphragmatic hernia.

CASE PRESENTATION :

A 33-year-old male patient presented to casualty ward with severe epigastric discomfort and worsening abdominal pain for one-day duration. Prior to this admission, he was alright but had burning epigastrium following binge alcohol intake and the pain eased with antacids. He denied recent alcohol intake. The pain was associated with repeated non-bilious vomiting and according to him symptoms appeared after the heavy meal on previous day. He denies past history of major trauma, hospitalization and surgery.

Upon examination, he was ill-looking, diaphoretic and dehydrated with a heart rate of 110, respiratory rate of 24 cycles/min and temperature 36.9oC. Gaseous distention and generalized tenderness noted in abdomen. Apart from tachypnea, reduced bi-basal air entry was noted.

Basic investigations were performed and said to be normal, except the serum amylase 394. Chest x-ray showed left hemi-diaphragmatic elevation with pneumoperitoneum.

Computed tomography scan revealed mesentrioaxial gastric volvulus with evidence of wall ischemia, possible perforation and cranial displacement of stomach could be due to posterior diaphragmatic hernia with intact pleuro-peritoneal interface.

Emergency laparotomy was performed due to worsening of vital parameters. Operative findings were, gross contamination of peritoneal cavity with partially digested food particles and herniation

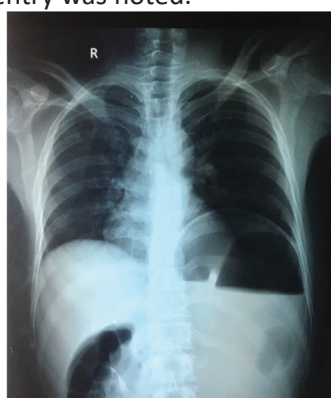


Figure 1 Chest x-ray showing left hemi-diaphragmatic elevation with pneumoperitoneum.

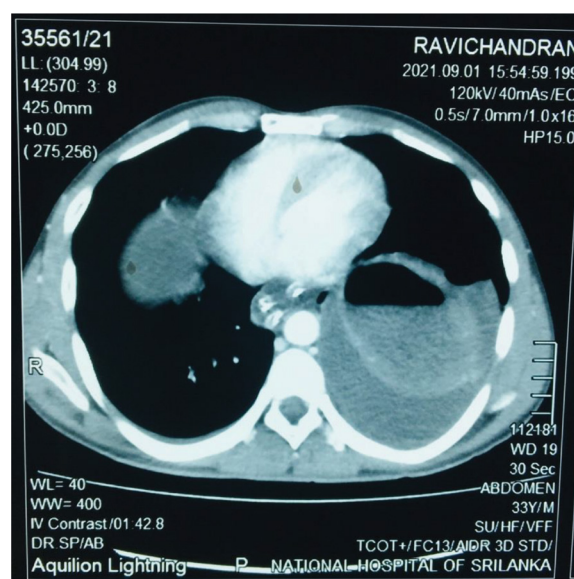


Figure 2 CT scan showing protrusion of abdominal contents into left thoracic cavity.

of fundus of the stomach and spleen through weakened part of the diaphragm also demonstrated (Fig. 2). After dividing left coronary ligament, left lobe of the liver mobilized. Then hernial contents reduced into abdomen by blunt dissection. Stomach was ischemic and 3x5cm defect noted at the fundus due to perforation (Fig. 3). Spleen was normal and also 7cm size weakened area detected in left diaphragm.

Peritoneal cavity was thoroughly irrigated with warm-saline. Then decided to perform total gastrectomy and esophago-jejunosomy along with repair of diaphragmatic defect. A jejunal Roux-en-Y

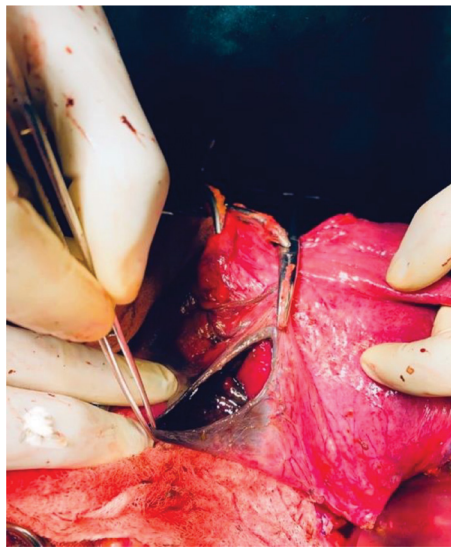


Figure 3 Intra-operative photo depicting gastric perforation at the fundus.

loop was raised, and end to side 25mm circular stapler esophago-jejunosomy done. The weakened area of diaphragm was plicated abdominally with 3/0 Prolene. Subhepatic and pelvic drain was left in situ and secured to abdominal wall. Then patient was shifted to surgical ICU for close monitoring and he received broad-spectrum antibiotics during and post-surgery. He was extubated on post-op D2 and recovery was uneventful. Gastro-graffin study done on post-op D8 and anastomotic site integrity reassured. He was discharged home well on post-op D12. His histology revealed gangrenous stomach with evidence of perforation.

DISCUSSION :

Congenital diaphragmatic hernia being the commonest, acquired ones are seen in trauma setting. Mostly congenital types present intrauterine or soon after delivery with neonatal respiratory distress. If missed, can present during adulthood [2]. Highlight of this case is diaphragmatic hernias should be suspected in adults even when there's no history of chest or abdominal trauma.

Pain in epigastrium, initially lead to medical casualty admission to exclude acute coronary events. Due to diagnostic conundrum, there was 12 hours delay in call for surgical referral. It is worth mentioning that delayed diagnosis of gastric perforation can lead to undesirable consequences [3].

Given the history of alcohol consumption, epigastric pain at presentation and elevated serum amylase prompt us to make the diagnosis of acute pancreatitis. Elevated serum amylase levels in gastroduodenal perforations are of significance primarily because they confuse the picture which otherwise might be typical of perforation [4]. The clinician should always think about the possibilities of extra-pancreatic causes of elevated serum amylase. When there's high suspicion of perforation and serum amylase value is abnormally high but pneumoperitoneum can't be demonstrated, the clinician should use other methods to demonstrate whether perforation has occurred.

In this case, we demonstrated the weakening at the posterolateral part of the left hemi-diaphragm plus absence of trauma history favors late-presentation of congenital diaphragmatic hernia. Incidence of diaphragmatic hernia more on the left side, reason being right hemi-diaphragm is slightly stronger and interposition of liver play a crucial role in preventing right sided hernias.

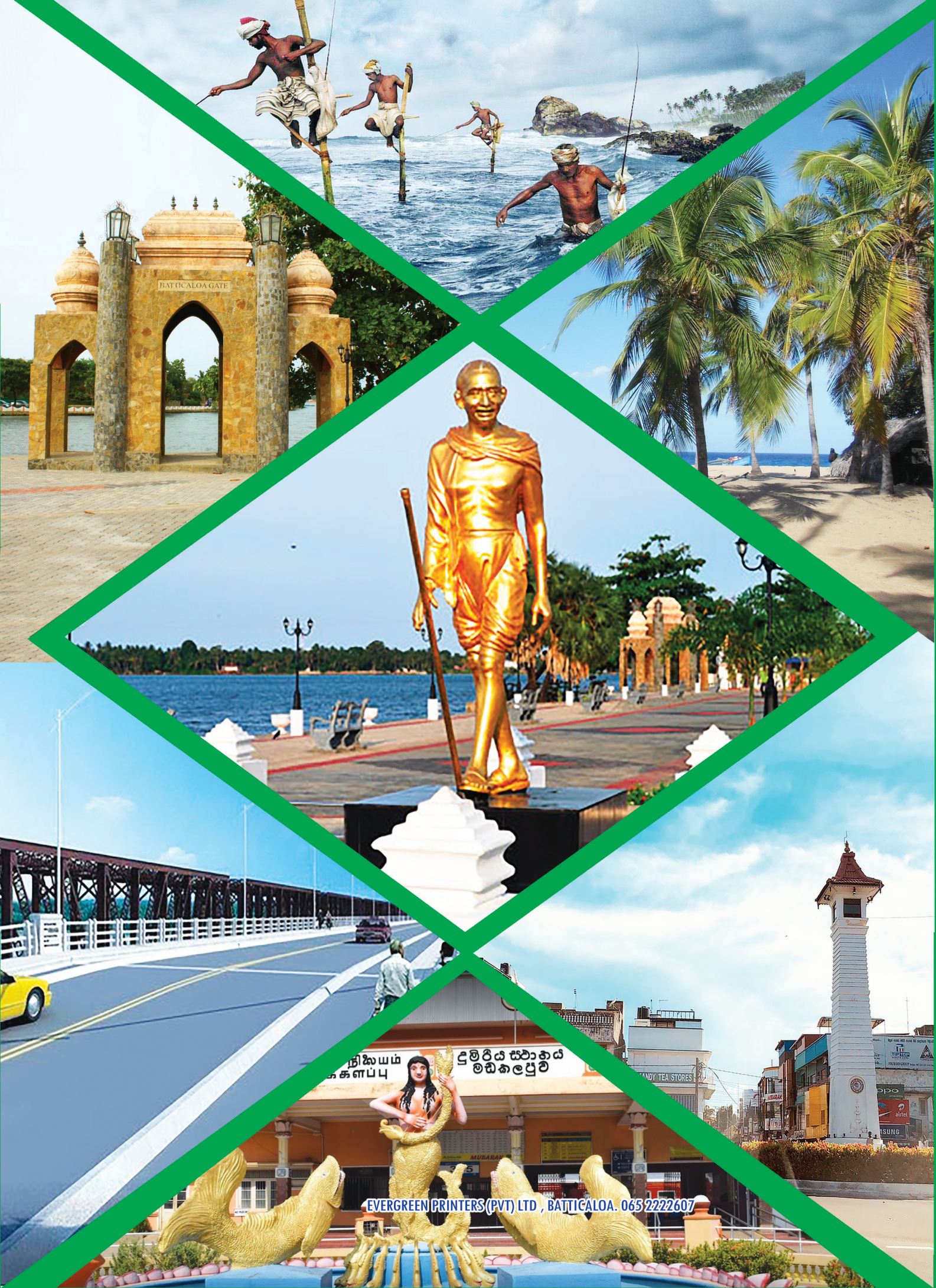
Presentation of diaphragmatic hernia can vary from asymptomatic to full-blown acute abdomen. Interestingly, respiratory complaints are commoner than abdomen. Massive hematemesis and splenic vein thrombosis being the other modes of presentation of herniated gastric fundus.

Diaphragmatic hernias should be operated to avoid pulmonary and abdominal related complications. Most hernias could be reduced abdominally but rarely thoracotomy is necessary [5]. When there's long standing hernia surgeons prefer thoraco-abdominal incision anticipating adhesions and difficult dissection. For elective diaphragmatic hernia repair, mesh can be considered but it wasn't used because of peritoneal contamination.

In conclusion, high-degree of suspicion and early detection of diaphragmatic hernia drastically decrease morbidity, mortality and improves patient outcome.

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