United Hospital

reflection

Issue-13 | Quarter-1, 2016

Quarterly Newsletter

Editor's Note

With this issue 'reflection' steps into 4th year of it's publication. We hope that the newsletter has been able to disseminate information related to the varied clinical work carried out by our healthcare givers as well as project a synopsis of the work undertaken by a varied departments.

We are proud to have signed a MOU in early March with Biomedical Physics & Technology (BMPT) Department of Dhaka University whereby their Masters degree students would be able to do their internship in United Hospital.

As part of our CSR activity our doctors, nurses, pharmacists, radiologists etc participated in a day long free medical camp at Yunus Khan-Mahmuda Khanam Memorial Health Complex at Louhajong of Munshiganj where over 1000 people were served including distribution of free medicine amongst them.

We request all our contributors for articles and express our gratitude for their time and effort. We also wish our readers Shuvo Nobo Barsho and welcome Bangla New Year 1423.

United Hospital Signs MoU with Dhaka University Biomedical Physics & Technology Department

The Biomedical Physics & Technology (BMPT) Department of Dhaka University signed a Memorandum of Understanding with United Hospital Limited on 3 March 2016. Under this MoU the Masters Degree students of this department will be doing their Internship in United Hospital. Mr Muhammad Abdul Kadir, Chairman, Department of Biomedical, University of Dhaka and Mr Faridur Rahman Khan, Managing Director of United Hospital signed the agreement on behalf of their respective organizations. Dr Khondkar Siddique-e- Rabbani, Dean of the BMPT Department of Dhaka University and Mr Najmul Hasan, CEO of United Hospital were also present on the occasion.

Mr Faridur Rahman Khan, Managing Director of United Hospital expressed his delight on this opportunity of helping the students of Dhaka University in their education and thus participating in development of technical expertise and nation building. He expressed his interest to expand the scope of research, training and education in relevant field by producing efficient technical manpower for the betterment of the community. During discussions with the Chairman and the Dean of the faculty, Mr Faridur Rahman informed them that United Hospital is also extending similar facility to Biomedical Physics students of Gono Bishwabidalya who are doing their internship and thesis work in the Medical Physics unit of United Hospital. A team of internationally trained Medical Physicists from home and abroad are working in United Hospital and overseeing the Radiation Therapy facility on a full time basis. On a regular basis United Hospital is actively providing training and workshop facility to Medical Physicists and Radiotherapists in collaboration with the International Atomic Energy Agency (IAEA) as well as the Bangladesh Atomic Energy Commission.

Observance of World Cancer Day 2016

On 4 February 2016 World Cancer Day was commemorated in a befitting manner by a morning awareness rally of hospital employees. A free health check booth was inaugurated by Managing Director Mr Faridur Rahman Khan at the hospital lobby. A Get Together discussion of Cancer Survivors was organized at hospital seminar hall followed by a Scientific Seminar where uniqueness of United Hospital Oncology services were discussed amongst hospital doctors and nurses. Further United Hospital Oncology Consultants took part in several Cancer Awareness Television talk shows and Newspaper Roundtable discussion.

Health Awareness Talk as part of CSR




"How to take good care of your kidneys: Ask the Specialist" on this topic Dr Tanveer Bin Latif, Consultant Nephrologist of United Hospital addressed the employees of NEPC Consortium Power Limited on January 25 and the members of Rotary Club of Baridhara on 7 February. To commemorate World Cancer Day, Dr Rashid Un Nabi, Consultant Radiation Oncologist, delivered health talk on cancer awareness and treatment to employees of Auko-Tex group on February 03, employees of Nitol-Niloy Group on February 10 and employees of SGS Bangladesh Limited on February 17. He further addressed the premium customers of Mutual Trust Bank in a cancer awareness session on 5 March at the seminar room of the hospital. On March 08, to commemorate International Women's Day, Dr Hasina Afroz, Consultant Obs & Gynae, delivered presentation on Women Health Issues to female employees of UL VS Bangladesh Ltd. On 13 March Dr A H M Rezaul Haque, Consultant, Orthopaedics Department, delivered presentation on Back & Knee pain and it's Management for the employees of LM Ericsson (Bangladesh) Limited.



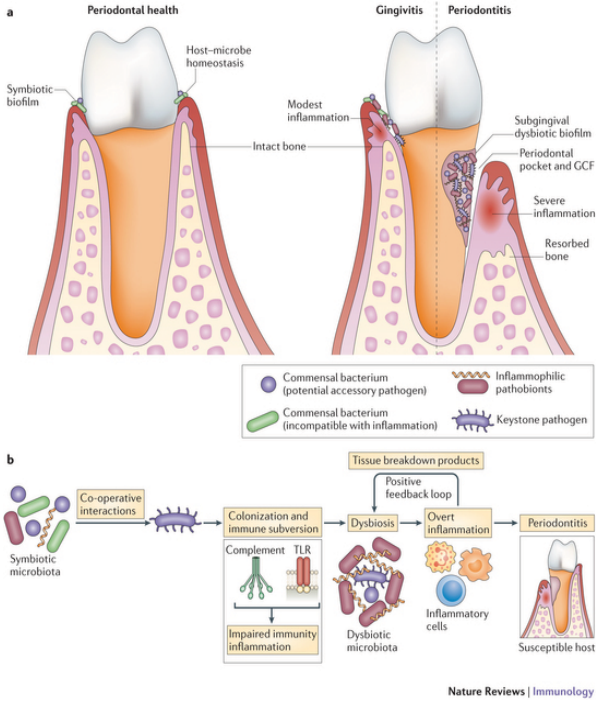
Diabetes and Periodontitis

Dr Md Nazrul Islam, Dr Lutfun Nahar, Dr Kazi Md Nurul Basar

Periodontitis is an infection around the tooth or gum defined as a common chronic inflammatory disease characterized by destruction of the supporting structures of the teeth (the periodontal ligament and alveolar bone). It is highly prevalent (severe periodontitis affects 10–15% of adults) and has multiple negative effects on life e.g. gum bleeding, bad breath, loosening of teeth, progressive bone loss, reduced blood sugar control etc.

Epidemiological data shows that poor periodontal condition can lead to poor blood sugar control. Research has shown that, periodontal treatment (conventional non-surgical periodontal therapy) has been associated with improvements in glycaemic control in diabetic patients with reductions in serum HbA1c level of approximately 0.4% following periodontal therapy. For these reasons, management of periodontitis in people with diabetes is particularly important.

There is strong scientific support that diabetes can adversely affect periodontal disease further as there is a clear relationship between degree of hyperglycaemia and severity of periodontitis. People with diabetes get periodontal disease more easily, and their periodontal disease progresses faster than it does in non-diabetics. Emerging science indicates that periodontal disease may also be one of the reasons people get Type 2 and gestational diabetes.



However, many people with diabetes are not aware that they have periodontal disease, meaning that regular dental checkups in diabetics are extremely important for the identification and treatment of periodontal disease. The dental team therefore has an important role to play in the management of people with diabetes. An emerging role for dental professionals is envisaged, in which diabetes screening tools could be used to identify patients at high risk of diabetes, to enable them to seek further investigation and assessment from healthcare providers.

Traumatic Intracerebral Haematoma

Dr S S Ahmed, Dr Shuvamay Chowdhury, Dr Saurav Chowdhury

Md Ahiyan, a 17 months old toddler was admitted in the Neurosurgery Department of United Hospital 5 hours after falling from a height of 8 feet. After the impact, for half an hour, he was unconscious. He vomited 3 times but there was no convulsion. Initially he was taken to a Pediatrician who advised CT scan of brain. The CT scan revealed Extradural Hemorrhage (EDH) & Intracranial Hemorrhage (ICH) with midline shifting. On admission the boy was pale, neurological examination revealed his GCS was 9/15 (E2V2M5), pupils were 3 mm and reacted well to light. There was cut injury on the tongue with abrasions on the forehead and scalp. Patient's guardians were counseled about the boy's pathology, treatment options and the possible outcomes, complications, risks and benefits of the surgical treatment. Craniotomy & evacuation of EDH, ICH with Subarachnoid Hemorrhage (SAH) was done by a neurosurgical team led by Dr Syed Sayed Ahmed. His post-op period was almost uneventful except for slight constipation and a single instance of vomiting. After 8 days post-op recovery, he was much better with a GCS score of 15/15. He was neurologically and haemodynamically stable, his stitches were removed and he was subsequently discharged. Follow up visits presented us with a healthy, playful boy with normal neurological functions.

Free Medical Camp on Antorjatik Matribhasha Dibash



On 21 February 2016 United Hospital conducted a free medical camp to observe the Shaheed Day & International Mother's Language Day (Antorjatik Matribhasha Dibash) in a befitting manner. The medical camp was inaugurated by Mr Faridur Rahman Khan, Managing Director of United Hospital Limited. More than 100 doctors, nurses and paramedics and technician of United Hospital from Cardiology, Oncology, Nephrology, Neonatology, Urology, Medicine, Eye, ENT & Head Neck Surgery, Obstetrics & Gynaecology, Paediatrics departments attended the free medical camp at Yunus Khan-Mahmuda Khanam Memorial Health Complex at Louhajong of Munshiganj.

In addition free investigations like pathology tests, X-ray, Ultrasound, Echocardiography and free medicines were also provided to more than thousand patients of Louhajong and adjacent areas who availed the services of the camp.




Silent CPR: A concept at United Hospital Emergency

Dr Abdullah Al Farook

One afternoon, a patient came to United Hospital Emergency with cardiac arrest. The receiving nurse shouted for help and started chest compression. The "Silent CPR" team arrived and started their designated tasks. The team leader's voice was the only voice heard during CPR. The ACLS protocol was well coordinated since everyone knew what to do next. Within a short period of time the code blue team arrived and the patient was well managed and there was ROSC (return of spontaneous circulation). After the initial stabilization the patient was sent to Coronary Care Unit. The way the above case was managed is called "Silent CPR" and is designed to manage a patient in emergency situation until the full "code blue" team converges.

The concept of "Silent CPR" was first introduced at United Hospital Emergency in July 2015. Three step approach is followed to perform "Silent CPR"

Step 1: *Preparation:* During every nursing shift a group of nurses will be pre-selected for code blue; a "code blue nursing roster" will be maintained according to the nursing priority of code blue management.

Step 2: *Understanding* the "Nursing Priority" of Code Blue management: It is important to recognize the priority of management during code blue situation. Here is the task list of nursing priority during code blue.

- 1st Nurse: Chest Compression.
- 2nd Nurse: Airway Assistant.
- 3rd Nurse: Monitor and suction.
- 4th Nurse: DC shock and drug preparation
- 5th Nurse: IV access and drug pushing.
- 6th Nurse: Data Management.
- 7th Nurse: Standby for CPR.
- 8th Nurse: Standby for procedures like ABG if needed.

Step 3: *Leadership:* A team leader must be predetermined per shift. A leader's job is to give orders and correct team mistakes. All code blue orders must go through him/her.

So, to perform Silent CPR in UHL, the total manpower needed is ten (two doctors and eight nurses). The nursing Unit Supervisor must maintain a code blue roster for nurses per shift and a Shift In-Charge doctor is needed as a team leader.

Dr Farook Abdullah, Senior Emergency Medical Officer at United Hospital, has put in a tremendous effort and introduced the "Silent CPR" concept in the hospital Emergency Department in July, 2015

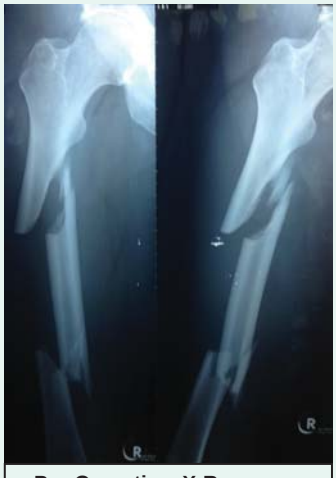
Treatment of Segmental Fracture Shaft of Femur

Dr Aminul Hassan, Dr Masum Billah

Segmental fractures of long bones are prone to non union or delayed union because of devascularization of the segmental fragment at the time of injury (usually high velocity injury) or during internal fixation (due to soft tissue injury). Usually in this kind of fracture both the endosteal and periosteal blood supplies are interrupted during injury or surgical procedure. Most of these fractures need primary bone graft or bone graft later on. So it is advisable to try to preserve the blood supply of the segmental fracture during internal fixation.

A 43 years old gentleman was admitted via Accident & Emergency department with history of road traffic accident followed by pain & swelling in right thigh & right hand with abrasion in multiple sites of body. On X-Ray comminuted segmental fracture of right femur with fracture of base of right 1st & 2nd metacarpal bone was seen.

On examination there was tenderness, swelling & deformity of right femur with external rotation of right lower limb. Movement of right lower limb & right hand was painful & restricted, there was swelling of right palm over 1st metacarpal bone, multiple abrasions over forehead and no neurovascular deficit. He was able to move all toes of right foot and fingers of right hand actively. He was a known patient of hypertension, DM and S/P PTCA with stenting done on 2012. Initially patient was immobilized by skin traction on right lower limb with 2 kg weight and below elbow volar cast was given on right forearm. Other vital parameters were within normal limit.



Pre-Operative: X-Ray

Post-Operative: X-Ray

After proper evaluation and counseling with the patient and patient's attendant about the fracture condition and outcome of treatment he underwent open reduction & internal fixation of right femur by plate & screws (16 holes broad DCP & 15 screws) under epidural anesthesia. His post operative period was uneventful. During his post operative hospital stay he took physiotherapy under direct supervision of surgeon and physiotherapist to improve the power of muscles and range of motion of all joints of right lower limb. He was on non weight bearing movement for twelve weeks and was on regular follow up periodically. He continued the muscle building exercise and active joint movement exercise at home regularly. Now he can stand without any supports and can walk independently, he is enjoying his daily life and performs his daily functional activities as before with confidence.

Proper operative management and fixation of long bone fracture may reduce the hospital stay and patient can move freely without plaster cast or any support. It also significantly reduces the need for pain medications. Patient can go back to his workplace earlier with improved quality of life.

Steroids: The Magic Drug!

Md Anisur Rahman

When we hear the word "Steroids", what comes to our minds are illegal drugs.

There are two types of steroids - anabolic steroids & corticosteroids. Anabolic steroids are artificially produced hormones which are same as or similar to androgens (male hormones). The most powerful of these is testosterone. Anabolic steroids can be taken in the form of pills, powders or injections. Doctors prescribe anabolic steroids for treating problems like late puberty as well as significant muscle loss in patients with cancer and AIDS. But they are often used illicitly by athletes. These drugs give them an unfair advantage against others who trained and practiced without using steroids.

Corticosteroids are mainly used to reduce inflammation and suppress the immune system. The most common corticosteroids are hydrocortisone, prednisolone, betamethasone, dexamethasone, beclomethasone, budesonide, triamcinolone etc. They are used to treat conditions such as asthma, allergic rhinitis, hay fever, urticaria (hives), atopic eczema, chronic obstructive pulmonary disease (COPD), painful and inflamed joints/muscles & tendons, lupus, inflammatory bowel disease, multiple sclerosis etc.

Corticosteroids can also be used to replace certain hormones that are not produced by the body naturally - for example in people with Addison's disease. When inflammation threatens to damage critical organs, steroids can be organ saving and in many instances life-saving. Low doses of steroids may provide significant relief from pain and stiffness for those with rheumatoid arthritis. Temporary use of higher doses of steroids may help a person to recover from a severe arthritis flare-up.

So steroids are legal magic drugs for doctors but illegal magic drugs for athletes.

Origins of The Zika Outbreak and Its Potential Threats

Dr Md Nadim Mahmud, Dr Sharmin Jahan Quader

Zika virus is flavivirus (+ ssRNA) related to Yellow fever, Dengue, West Nile and Japanese Encephalitis. It is mainly transmitted by mosquitoes and was first identified in Africa, the Zika Forest of Uganda in 1947. In 1952, the first human case of Zika fever were detected and since then sporadic cases were reported across equatorial Africa and Asia before the first major outbreak took place in Yap Island, Micronesia, in 2007. In May 2015, the Pan American Health Organization (PAHO) issued an alert regarding the first confirmed Zika virus infection in Brazil and on Feb 1, 2016 the World Health Organization (WHO) declared Zika virus a public health emergency of international concern (PHEIC).

Explosion of cases: Following outbreak in Pacific, the virus then spread to Americas, where large number of people became infected and possible link to microcephaly and Guillain-barre syndrome have been identified.

Epidemiology:

Transmission: The main route of transmission for Zika virus is through the bite of an infected mosquito mainly in day time by active female Aedes aegypti, which also transmits Dengue, Chikungunya and Yellow fever. The mosquito has distinctive white markings on its legs and thorax and breeds in clean standing water. As of February 2016, Zika virus could possibly be transmitted sexually also.

Symptoms and Diagnosis: Symptoms develop 2-10 days after infection and are usually mild headaches, maculopapular rash, Zika fever, malaise, conjunctivitis and joint pain and further strongly complicated by miscarriages and microcephaly which are though not yet scientifically proven but evidence is mounting. Moreover a link has been established with neurological condition in infected adults including Guillain-Barre' syndrome.

Treatment and Prevention: There is no vaccine or preventive drugs available till date for Zika fever but symptoms can be treated with rest, plenty of fluid to rehydrate and acetaminophen to relieve fever and pain; prevention of Zika fever by taking measures to avoid day time mosquito bites.

Role of Diagnostic Laparoscopy in Abdominal Trauma

Prof Dr Anisur Rahman

Penetrating and blunt injury of the abdomen are common surgical admission in the emergency department. Most of these patients are poly trauma victims with multiple injuries involving several anatomical areas. Abdominal injury can be immediate life threatening due to bleeding and hypotension. Ultra sonogram and CT scan may point to the extent of blood loss and/or injury to solid organs. But at times the source of bleeding can be difficult to ascertain from CT scan.

Diagnostic Laparoscopy is a useful tool to determine the extent of injury and to detect the source of bleeding. Since minor injury to liver or spleen at times may be treated conservatively, Diagnostic Laparoscopy is an important step in avoiding a Laparotomy. This spares the patient from unnecessary Laparotomy with its associated morbidities.

The following case shows how a Diagnostic Laparoscopy helped in avoiding Laparotomy.

A 23 year old male patient was stabbed several times in the abdomen and came to Emergency Department from a rural area after about 5 hours from the time of incidence. On examination he had three sharp injuries on anterior abdominal wall, one of which in midline looked deep. He was semiconscious, tachypnic with a pulse of 130/min and BP of 90/60mm Hg with no history of passage of urine since the assault. The abdomen was distended and tense, bladder was empty and bowel sound was sluggish. Intravenous fluid and antibiotic was started on patient and blood bank was alerted. Urgent CT of abdomen reported large volume of fluid in abdominal cavity and no apparent injury to the solid organs or to the GI tract. Patient was shifted to OT with the plan to do Diagnostic Laparoscopy and Laparotomy if required. A 30 degree scope was introduced through umbilical port. There was huge volume of clotted and fluid blood in the peritoneal cavity which was aspirated out. Saline wash was given. No injury was seen in liver and spleen. Small gut was also normal. There was no apparent injury to the mesentery. Blood was seen spurting from the inner entry point of abdominal wall in midline. The other two stab injuries had not penetrated inside the peritoneal cavity. Obviously the superior epigastric artery was transected by the stab injury in midline and the patient had been bleeding inside the abdomen profusely. After adequate wash of the peritoneal cavity the scope was taken out and pneumoperitoneum was reversed. The midline injury was extended a little and the epigastric artery was ligated. The patient stabilized after two units of whole blood transfusion. The patient had uneventful recovery and was discharged from hospital two days later.

The case illustrates the importance of Diagnostic Laparoscopy in abdominal trauma. The patient was spared a conventional Laparotomy and he left the hospital with minimum morbidity. In case of Abdominal Trauma, the trauma surgeon in a hospital with laparoscopy setup should use Diagnostic Laparoscopy in conjunction with imaging technique to provide a better and safer alternative to Laparotomy.

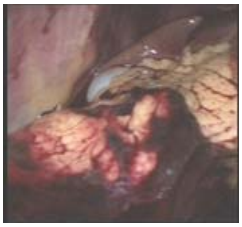


Figure 1 Blood in peritoneal cavity

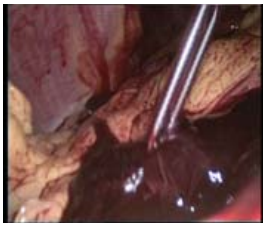


Figure 2 Blood being aspirated from peritoneal cavity

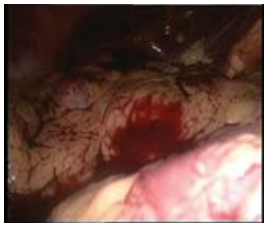


Figure 3 Blood trickling from superior epigastric artery

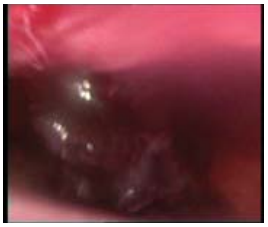


Figure 4 Inside of the penetrating wound in anterior abdominal wall

United Hospital Intensive Care Unit (ICU)

The Support for Critical Patients

The Intensive Care Unit of United Hospital is a specialized section of the hospital that provides comprehensive and continuous care for individuals who are critically ill. The ICU of United Hospital with all modern facilities and equipments is operational since October 2006.

The purpose of the ICU is simple even though the practice is complex. Healthcare professionals who work in the ICU provide round-the-clock intensive monitoring and treatment of patients 24/7.

United Hospital General ICU (GICU) facilities include a 16 bed unit with 4 negative air pressure facility cubicles to keep highly contagious diseased patients seggregated for the prevention of infection. 24 hours trained nursing staff are available for individual patient. Each bed has a high tech vital sign monitor. Invasive arterial line and CVP monitor are also available. United Hospital ICU also has BIS monitor which has been introduced for the first time in Bangladesh to monitor the level of unconsciousness and the amount of sedatives to be used. Portable X-ray machine, bedside echocardiogram and ultrasonogram can be done anytime as well as instant ABG analysis and electrolyte assessment.

Each ICU bed has modern ventilator with monitoring facilities for patients' breathing effort. There are Non-invasive BiPAP and CPAP for COPD and obstructive sleep apnea patients. Blood warmer and bed warmer are available to prevent hypothermia. Speaking valve with bed side tracheostomy facilities are available for tracheostomy patients Besides, 24 hours haemodialysis support and CRRT support are also available for patients who need dialysis but can not sustain conventional haemodialysis due to low BP or for correction of severe metabolic derangement. Automated sequential compression sleeves are used for prevention of DVT

Proper documentation and filing system are maintained for all procedures. Written protocols are followed for all procedures and drug administration.

Patients who can benefit from this unit are - Patients who need artificial ventilation, cardiovascular support and renal support, patients with major metabolic disturbances, post traumatic and post surgical patients.

ICU requires a multidisciplinary team that consists of ICU Consultants, Intensivists, SHOs, Nurses, Dieticians, Physiotherapists, PCAs, PCS as well as other medical Consultants who are experts on a range of specialties and sub-specialties.

With 24 hours supervision under the guidance of a highly trained Consultant having vast overseas experience, we ensure the smooth running of ICU management.

Apart from patient management, ICU regularly arranges Continuous Medical Education (CME) every 2 weeks covering all updated management of critical care medicine. Regular Morbidity and Mortality meetings are also arranged by the department. Clinically interesting cases are discussed thoroughly in these meetings in the presence of all ICU doctors and Consultants from other specialties under supervision of the ICU Chief.

ICU of United Hospital as the only hospital from Bangladesh, participated in the Mosaic study which focuses on management of severe sepsis among ICUs of Asia. This was organized by CRASH (Clinical Randomization of an Antifibrinolytic in Significant Haemorrhage). It was a large placebo controlled trial on the effects of early administration of a short course of tranexamic acid on vascular occlusive events.

Regular hands on training is provided by ICU doctors amongst ICU staff as well as for the staff of other departments.The on-call Intensivists of ICU play a leading role in management of cardiac arrest patients during code blue outside the ICU including ER and other departments.

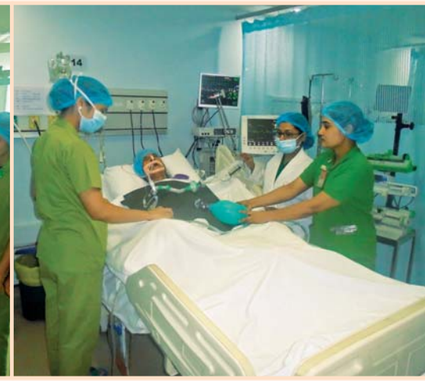
The doctors of ICU perform different types of IV access outside the ICU including CV line, PICC etc. The senior nurses are important members of the cannulation team. They are trained nurses who draw samples for arterial blood gas analysis outside the ICU.

Pumped hand scrub jar in front of each bed for regular hand wash ensures religious practice of hand wash each time before and after touching patient. Regular fumigation is ensured and regular changing and dressing of all I/V lines or catheters are practiced.

The ICU visiting hour is two times a day. Due to the complex care and rest needed for critical care patients, only one visitor is allowed at a time. To protect the patients as well as children, no one under the age of 14 is allowed to visit the ICU. At the entrance of ICU, for visitors there is Hexisol hand rub facility to disinfect the hands.

Patients are admitted under all specialties as it is a semi-open ICU. Coordination of different sub-specialties is done by the ICU Consultant immediately. Consensus management is provided for every patient.





Effect of Long-Term Use of NSAID

Dr C Asif Mahmud Dr Mir Atiqur Rahman Dr Md Maniruzzaman

Mr Azad Khan a 29 year old normotensive, non-diabetic gentleman was admitted in United Hospital with complaints of generalized weakness for a month & pain in both limbs for six months. He was a known case of multiple drug abuser with a history of physical assault and thus taking NSAIDs (Non-Steroidal Anti-Inflammatory Drugs) for a long time.

On admission the patient was conscious, oriented, afebrile & haemodynamically stable. There was no anaemia or jaundice but leg oedema was present. All other systemic examinations were normal. Routine lab investigations were done which revealed mild renal impairment. Chest X-ray showed bilateral consolidation. The following day the patient developed severe respiratory distress with hypotension and his urine output gradually declined.

The patient was then transferred from cabin to ICU with impending cardiac arrest. He was immediately intubated and put on mechanical ventilator. All three Ionotropes were subsequently initiated. Patient was oliguric (extremely low urine output) & his serum creatinine level was 4 mg/dl with severe metabolic acidosis (pH 7.0, HCO_3 8 mmol/l). Patient had another episode of cardiac arrest but he revived after resuscitation. After consultation with a Nephrologist, it was decided to put the patient on CRRT (Continuous Renal Replacement Therapy). Chest X-ray showed diffuse patchy opacity and he was then diagnosed as having ARDS.

CRRT was continued for three days and the metabolic acidosis gradually got corrected. Tracheal aspirate C/S initially showed Klebsiella then later on Acinobacter. He was treated with Inj. Meropenem, Inj. Tigecycline & Inj. colomycin according to the culture sensitivity. Patient received several sessions of SLED (Sustained Low-Efficiency Dialysis) which is dialysis for critically ill patients. This was followed by few sessions of conventional haemodialysis. Inotropes were gradually tapered down & after weaning of ventilator, he was extubated.

Rest of the hospital stay was uneventful. Regular nutrition, breathing, exercise, physiotherapy & mobilization was maintained. Patient was discharged in stable condition a month later & advised psychiatric consultation for drug abuse.

Use of Amorphous Silicon Electronic Portal Imaging Device for Relative Dosimetry and Quality Assurance for Linear Accelerator

Samiul Alim, Karthick Raj Mani, Anisuzzaman Bhuiyan, Ramaa Lingaiah, Faruk Hossain, Anamul Haque, Rashid Un Nabi, Ashim Kumar Sengupta & Saumen Basu

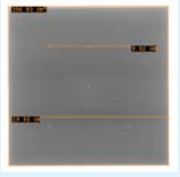
Introduction: Quality assurance plays a vital role in precision radiotherapy. In this study we intended to use the electronic portal imaging device (EPID) for relative dosimetry and routine quality assurance procedures on a linear accelerator.

Materials & Methods: *Open beam and wedge profiles:* The images were acquired for open and wedge beams in the integral mode for 100MU and all the frames were averaged to obtain the final image. The EPID images were calibrated using commercially available Dicom software to obtain the pixel values, normalized to the central axis pixel and the off-axis profile was obtained. The profiles generated from radiation field analyzer (RFA) were transferred on ASCI data. A graph is plotted between the RFA and EPID data for open and 15, 30, 45 60 degree wedge beams. The profiles were also analyzed for the penumbra characteristics of RFA and EPID data.

Spoke shoot test: In order to study the accuracy of the collimator and MLC rotation axis, images were obtained for various collimator angles of 0^0, 45^0, 90^0 and 315^0 with a field size of 0.5 x 40 cm^2. Each collimator angle image is recorded in the high quality mode (0.74 MU / frame, averaged over 4 frames and doserate of 240 MU/min) with the detector positioned at the isocenter. These Dicom RT images were converted into a Tiff format image with the same pixel value. Using a standard imaging software (Paint shop pro) all the pixel values were arithmetically summated to obtain the spoke shoot pattern. The same procedure was repeated with the MLC.

MLC leaf positional accuracy: Various MLC leaf positions were designed in the shaper software module and transferred to the 4D treatment console. The EPID images were acquired in the high quality mode and analyzed using Image software. The images were calibrated and the obtained MLC leaf positions were compared with that designed in the shaper module.

Optical and radiation field coherence: To verify the optical and radiation field coherence, images were acquired in the integral image mode for 100 MU with a field size of 20 x 20 cm^2 positioning the EPID at the isocenter. The field edges were marked for field sizes of 10 x 10 and 20 x 20 cm^2 with the lead markers to identify the optical field edges. The image obtained was calibrated and analyzed for coherence of the optical field and radiation field.



Results: The profiles obtained for open and wedge beams were compared with the RFA and observed to be within a maximum 2.4 % in the non dose gradient region and variation of 2 to 5mm in the penumbral region. This deviation could be because the EPID does not exactly simulate the water equivalent material for builup. The rotational axis accuracy of the collimator, MLC and mMLC using spoke shoot were in agreement with the film measurements. All the routine quality assurance procedures carried out using EPID were found to be in agreement with the film and ionization chamber measurements. The EPID is independent of energy and has a pixel resolution of 0.384 mm and so found to be adequate in using it for routine quality assurance procedures and proves to be an useful tool.

Liver and Nutrition

Chowdhury Tasneem Hasin

Liver is the seat of metabolism in the body. Whatever food we eat, after digestion it passes through liver and after proper inspection, the liver processes the food into various parts. Also they halt the entry of bacteria and virus into our body. Liver diseases such as hepatitis and cirrhosis may change the way our body uses nutrients from food.

Most of the patients of cirrhosis of liver (replacement of damaged liver cells by fibrous scar tissue) are severely malnourished and require a high calorie and high protein diet. A diet containing approximately 2000 kcal which can be provided by 20-25 gms fat (unsaturated fats like MUFA & PUFA), 80-90 gms proteins and 400 gms carbohydrate is suitable. However, too much protein will result in an increased amount of ammonia in the blood; too little protein can reduce healing of the liver. For ascites patients, a high protein diet which is low in sodium would be most suitable.

When the liver fails as in hepatic encephalopathy, 20 gms of protein is recommended in the diet. This should mainly be derived from skimmed milk.

Diet tips for liver disease patients:

- Foods that contain vitamins C (cauliflower, red cabbage, strawberries, papaya, spinach, mangoes, peppers, broccoli) and E (Almonds, sunflower seeds, walnuts, tomatoes, whole grains and green leafy vegetables) are important as antioxidants to protect and treat a damaged liver.
- Methionine and cysteine (Egg yolks, red peppers, garlic, onions, broccoli, Brussels sprouts, sesame seeds, whole grains and beans) are known to protect the liver and aid in converting fat-soluble toxins to water-soluble substances that can be eliminated through the urine.
- Choline (Soybeans, egg yolks, nutritional yeast, fish, peanuts, cauliflower, lettuce, cabbage, lentils, chick peas and brown rice) is needed to metabolize fats in the body
- B-complex is very important for liver as well.
- Coconut water is excellent in liver cirrhosis.
- Long gourd, bottle gourd, round gourds, bitter gourds and turnips, radish, carrots, and potatoes are good in liver failure.
- Junk food, drugs, chemicals, preservatives, alcohol, soda, soft drinks should be avoided at all cost.
- Small meals served separately will be better tolerated than three large meals a day.
- Drinking water is very important if there is no water retention or ascites, as water helps the liver to clean the toxins more effectively.

Renal Biopsy: A Close Look at the Glomeruli

Dr Tanveer Bin Latif

Renal disorders of many different causes stem from glomeruli, the small microscopic unit of kidneys which perform a hectic job 24/7. Directly looking at them view under microscope helps to understand renal pathologies and help to decide treatment options or to know about prognosis. Renal biopsy is the procedure to pick up tissue from kidneys. It remains to be is an important diagnostic tool but underutilized for lack of skills and assumed fear of complication. A study published in 1994 in official publication of European Dialysis and Transplant Association shows that renal biopsy positively impacts patient management in more that 60% of cases. A list of drugs used in various glomerular disorders could be: steroid, cyclophosphamide, cyclosporine, MMF, rituximab etc but their different and most effective combinations are based on available scientific evidence which depend on findings in renal histopathology. So there is no scope anymore for use of steroid for all, in any clinical suggestion of glomerulonephritis as practiced often in our country!

In healthcare institutions where a simple facility like ultrasound is available, Renal Biopsy should be done under sonological guidance which locates exact position for the needle. Under local anesthetic, the lower pole of left kidney is identified and a 14G core biopsy needle is inserted to collect necessary amount of tissue containing at least 10 glomeruli. Usually the tissue is visualized under light and immuno-fluorescence microscope but if facilities are available then the tissue is seen under electron microscope too.

A study report was published in Journal of Uttara Adhunik Medical College & Hospital in 2013 where study was done on 39 renal biopsy procedures performed, the median age of patients was 30 years with main indication being proteinuria (more than 1gm/24 hours of urine) or proteinuria along with haematuria. Number of glomeruli 10 or above was achieved in 71.8% of times with median number of glomeruli 14. Of note is that there was no major complication other than macroscopic haematuria in 28.2% of cases. The two most common histopathological finding was Membranoproliferative glomerulonephritis (MPGN) in 23.1% and Focal and Segmental Glomerulosclerosis (FSGS) in 20.5% of cases. No known diabetic patients were included in the study.

Hence it can be concluded that Renal Biopsy can effectively and safely be carried out on inpatient or outpatient basis in any multidisciplinary and academic hospital having basic facilities like ultrasound and minor surgical procedure room, if skilled personnels are available to perform the procedure.

Undescended Testis

Dr M Zahid Hasan

Many a times we get patients of different ages with one testis in scrotum and the other one in inguinal canal or inside abdomen. Recently one young man, a soon-to-be bridegroom, came to me with only one testis in his scrotum, for correction of his anomaly. Common questions in this regards are:

Where is the other testis?

Can we bring it down into scrotum if remain inside?

Will it produce sperm or can he be father?

Can he be able to perform sex?

Can he develop testis cancer if it remains inside?

What if he does nothing and proceeds for marriage since there will be future attempt for having children?

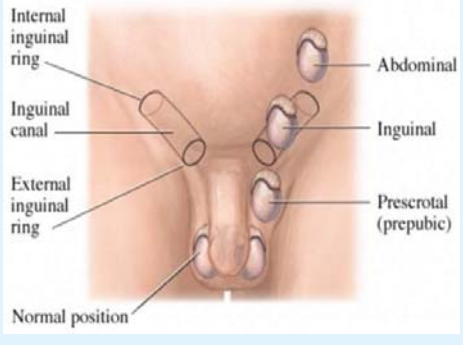
As we are aware that testis develops inside abdomen of the unborn fetus along with Kidneys and gradually come down outside the body into scrotum before the baby is born, sometimes this may not happen and testis may remain anywhere in its path up to scrotum. If it remains near root of penis there is small chance it may descend further in to scrotum within 6 months of age of the baby. This condition is called Undescended Testis or Cryptorchidism.

Testis has two main functions: 1) Sperm production 2) Hormone (Testosterone) production

Inside scrotum temperature is 1 or 2 degree Celsius below body temperature. If testis remains anywhere other than scrotum, higher body temperature will eventually destroy all spermatogonium (stem cell for sperm) within one year of age of the baby though hormone production will remain intact. Furthermore at body temperature Germ cells in testis shows cancerous changes which might lead to increased chance of Testicular Tumor development in undescended testis.

For efficient reproduction and sexual performance, one testis with good blood supply and patent sperm pathway rightly placed into the scrotum is adequate.

After evaluation the above mentioned patient showed normal right testis, left hemi scrotum was empty and USG showed left testis located in pelvic cavity



just behind the deep inguinal ring. Semen analysis and serum testosterone level were found within normal range.

We recommended an Operation (Orchidopexy) to bring down the left testis into the scrotum or at least in the inguinal canal to be palpable under the skin so that he himself can feel any change (cancerous) in that testis early, should it happen at any time. This testis will not produce any sperm but will continue to produce testosterone hormone.

Newly born male babies with undescended testis must go under Orchidopexy surgery before his first birthday to have an ensured healthy sexual reproductive adult life.

Visits to United Hospital

- A delegation from British High Commission Dhaka led by Dr. Andrew Mostyn, Regional Medical Officer & Ms. Ariane von Saint Paul, Nurse Manager, Elizabeth House Medical Centre of British High Commission Dhaka visited United Hospital on Wednesday 13 January 2016.

- A nurse professor team comprising eight members from Republic of Korea came to United Hospital on Wednesday 27 January 2016

- Ms Svetlana Eroshina, Head of Network Department, AP Companies Global Solutions (an internationally reputed Insurance Company operating from Spain & Russia) visited United Hospital on Monday 14 March 2016 regarding the ongoing cashless services for clients at United Hospital.

Corporate Agreement Signing

- Active Fine Chemicals Limited and Associate Companies Group on Wednesday 6 January 2016.
- One Bank Limited on Tuesday 12 January 2016.
- U.S. Bangla Airlines Group on Thursday 14 January 2016.
- bKash Limited on Tuesday 19 January 2016.
- Northern Tosrifa Group on Sunday 13 March 2016.

Antenatal Classes for Expectant Mothers

As part of patient education and consequent value addition to treatment, United Hospital is regular organizing Antenatal classes under the supervision of Obstetrics & Gynaecology Department. The 4th & 5th Antenatal classes were organized on 23 January & 27 February 2016. Dr Afsari Ahmed, Junior Consultant, Obstetrics & Gynaecology Department, Ms Tasneem Hasin, In-Charge, Dietetics & Nutrition Department, Ms Umme Kulsum Laizu, Physiotherapist and Ms Sajeda, Senior Staff Nurse of United Hospital gave deliberation on various topics. Obstetrics & Gynaecology department Consultants inaugurated the session.

CME on Medical Physics

Department of Radiation Oncology, United Hospital and Oncology Club, Bangladesh jointly organised a workshop on Medical Physics titled "Radiosurgery of Multiple Metastases & Electron Beam Therapy" held on 27 March 2016 at United Hospital premises. Prof M Saiful Huq, Director of Medical Physics Division, University of Pitsburgh Cancer Institute, USA, gave a lecture on the above topic. The CME target audiences were Radiation Oncologist, Medical Physicist and students pursuing Medical Physics. There were 35 participants representing different Oncology centers and students from different universities. The objective of the CME was to improve the understanding of the role of radio surgery in multiple metastases and electron beam therapy on superficial tumours.

10th BAUS Con2016 International Scientific Conferences

Bangladesh Association of Urological Surgeons (BAUS) organized an international conference on 6th February 2016 at Hotel Sonargaon, Dhaka where doctors and nurses from all corners of Bangladesh participated in a special session on "Advanced Urological Nursing Care: Present and Future".

Dr M Zahid Hasan, Consultant, Urology, United Hospital Ltd gave a presentation on "Cytoreductive Prostatectomy in Locally Advanced Carcinoma Prostate". He also conducted the Nursing Session where 12 nurses from United Hospital participated. Ms Shahida Parvin, Ms Shafali, Mr Razaul Karim and Ms Sheuli gave presentations and this was highly appreciated.

2nd Advanced Echocardiography Course

organized 2nd Advanced Echocardiography Course 2016 at United Hospital from 21 to 26 January 2016. The aim of this course was to introduce advanced development of Echocardiography such as 3D, Tissue Doppler and Strain Rate. The other purpose was to improve physician's knowledge and technical skills to carry out Echo accurately according to the Echo guideline. Renowned Cardiologist Professor Navin C Nanda, Dr S K Parashar, Dr Rakesh Gupta and Dr Sameer Shrivastva were the instructors of the course. Three Specialists from United Hospital's Cardiology Department Dr Reazur Rhaman, Dr. Afreed Jahan and Dr Samsun Nahar along with other 29 Cardiologists of different hospitals of Bangladesh took part in the course.

International Society of Cardiovascular Ultrasound, Bangladesh Chapter and JROP institute of Echo, Ultrasound and Vascular Doppler, Delhi, India jointly

Seminars & Workshops

- Seminar on "Vitamin D Deficiency, a Concern for Bangladesh's Children" was arranged on Saturday 16 January 2016 in United Hospital. Prof Md Salim Shakur, PhD, Consultant, Pediatrics Department of United Hospital & Principal Investigator of the study was the Key Note Speaker and Dr Anamika Saha, previously a Specialist of United Hospital and Co-Investigator of the study was also a speaker of the seminar.
- Seminar on "Comprehensive Multidisciplinary Cancer Management wtih Focus on Onco Surgery and Radiation Oncology" was arranged in 300 bed district hospital in Narayanganj on Tuesday 26 January 2016. Prof Dr Anisur Rahman, Consultant General & Laparoscopic Surgery and Dr Saumen Basu, Consultant Radiation Oncology of United Hospital were the speakers of the seminar.
- Seminar on "Recent Advances in Oncology & Nuclear Medicine" was arranged on Sunday 27 March 2016 in Tangail Medical College. Dr Md Rashid Un Nabi, Consultant, Radiation Oncology and Dr M A Wahab, Consultant Nuclear Medicine of United Hospital were the speakers of the seminar, Prof Dr Mohammad Ali Khan, Principal, Tangail Medical College was chief guest.

United Hospital Representatives attend Conference on Education and Tourism in the Philippines

A Conference on Education and Tourism in the Philippines was held on 18 February 2016 in The Westin, Dhaka. CNO Dr Monette Barrento-Brombuela, Head of HR Mr Khandaker Md Nurullah and In-Charge, Ancillary Services, HR Mr Humayun Kabir Maruf attended on behalf of United Hospital with other delegates from Philippines and Bangladesh.

The program commenced with a welcoming speech from HE Vicente Vivencio T. Bandillo, The Philippine Ambassador which was followed by remarks from Ms Laura Q. Del Rosario, Philippine Foreign Affairs Secretary and Honorable Secretary (Bilateral and Consular) of Bangladesh Ministry of Foreign Affairs Mr Mizanur Rahman.

Thereafter an open Forum was held where representatives from United Hospital gave a short introduction. The highlight of the event was collaboration on the exchange of foreign students from Philippines more particularly in Healthcare and also Bangladesh focusing on the Paramedical courses and other courses.

International Conference on Paediatrics

Dr Nargis Ara Begum, Consultant Neonatology of United Hospital attended the 15th Asia Pacific Congress of Pediatrics (APCP) of the 53rd Annual Conference of Indian Academy of Pediatrics (PEDICON) & 5th Asia Pacific Congress of Pediatrics Nursing (APCPN) from 21 to 24 January 2016.

The congress was held in the International Convention Centre in Hyderabad, India. Pediatricians from all over India and from different countries attended the congress. Various updated topics and interactive controversial issues of Pediatrics and Neonatology were discussed in the seminar.

Dr Nargis Ara Begum also visited the Neonatology Unit of Kovai Medical Center Hospital (KMCH) in Coimbatore, Tamil Nadu, India from 25 to 29 January 2016. During her visit in KMCH NICU she observed their strict infection control

policy & technique, TPN (Total Parenteral Nutrition) for NICU babies and the disciplined work of NICU Nurses.

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Edu-Health Session on “Child Care: Challenges & Solutions”

As part of patient education and consequent value addition to treatment, for the first time, edu-health session on “Child Care: Challenges & Solutions” was arranged on Saturday 13 February 2016 under the supervision of Neonatology & Pediatrics Department of United Hospital. In this 2 hour session participants were the parents of children aged upto 5 years. Specialists of Neonatology Department of United Hospital delivered the key presentation; respective Consultant of the department inaugurated the session.

Airport Emergency Exercise 2015

Clinical Coordinator Dr Rishad Choudhury Robin and Emergency Medical Officer Dr Md Humayun Kabir along with United Hospital Ambulance Team participated Airport Emergency Exercise 2015 on 24 January 2016 at Hazrat Shahjalal International Airport, Dhaka.

We congratulate the Newly Weds on their marriage

- Staff Nurse Ms Rebeka Aktar Laboni of 5th floor Neuro Ward got married to Mr Mahamudun Nobi Sarkar Masud on 26 November 2015.

Congratulations & Best Wishes to the following staff and their spouses

- IT Officer Mr Md Habib Ullah had a baby boy Abrar Habib on 11 October 2015.
- Staff Nurse Ms Tania Yeasmin of 5th floor Neuro Ward had a baby boy Tanzid Ahmed (Yeamin) on 28 November 2015.

Badminton Tournament 2015

The annual Badminton Tournament 2015 was inaugurated by Brig Gen Shahidul Islam, Ldmc, psc (Retd), Chief of Operation & Admin of United Hospital on Thursday 18 January 2016. The preliminary knockout matches of this year’s tournament began with the participation of 110 players in 55 teams under four groups representing different categories.

The teams were divided according to age i.e. (i) under 40 (ii) 40 to 50 (iii) above 50 and the fourth category comprised of female participants. All the games were played with considerable enthusiasm.

Mr Najmul Hasan, the Chief Executive Officer of United Hospital was present as Chief Guest to watch the final games and distribute prizes amongst the winners, runners-up & other officials on Thursday 11 February 2016.

The winners of the tournament were:

Group Ka (under 40) - Mr Sohel Mridha & Mr Mushfikul Alam Khandaker.

Group Kha (40 and 50) - Dr Mohammed Sajjad Hossain & Dr Biswajit Bhattaharjee.

Group Ga (above 50) - Mr Najmul Hasan & Dr Mahboob Rahman Khan.

Female Group - Ms Fouzia Kuddus & Ms Umme Salma.

In addition to the crests that were given to the winners and runners-up, medals were also given to referees, lines-men and other support staff whose support made it possible to hold the tournament smoothly.

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