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RURAL SURGERY

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IN THIS ISSUE

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Moments of 16th Annual Conference of ARSI

Dignitaries on the dais at inaugural session

Lighting the lamp- Justice C.S.Dharmadhikari (Hon'ble Chief Guest), Dr. K. C. Sharma (president ARSI), Dhirubhai Mehta (President, Kasturba Health Society) in the fore front

Dr. B. D. Patel, Hon. Secretary addressing the audience

Dr. D. Gupta, Prof & head, Dept of surgery receiving fellowship certificate

Dr. R. K. Garyli receiving certificate of fellowship from the president of ARSI

Dr. Sanjay S Shivade was conferred with Rural Medicare Society award

From Editor's desk

New Year's message

On behalf of the entire editorial team and myself, I take this opportunity to wish all of you and your loved ones a very happy, healthy, successful and a peaceful new year 2009.

Beginning of the New Year is also the perfect time to take stock of the situation. Over the years, "Rural Surgery" bulletin has maintained its track record of meeting deadlines and coming out on the pre- established dates. In the last 5 years this publication has been transformed aesthetically and has tried to fulfill the objective of ARSI by striking the right balance between clinical studies and other issues related to the challenges of rural health. At the same time, the addition of an educational module in the form of the CME section has not only put our bulletin at par with similar genre of high quality data available internationally but it has also enhanced our image amongst the rural surgeons and medical community.

Starting with humble beginning, the bulletin today has developed into one of the most important media for promoting the concept of rural surgery along with publishing critical data on research and clinical studies pertaining to this field, not only limited to India but also internationally. It is now registered under press and registration of books act and for the benefit of our members past issues of last 3 years are available on our website that was created 4 years ago.

An old (nearly 2000 years old!) Latin proverb says ***"tempora mutantur, nos et mutamur in illis"*** (times are changing and we are changing with them). As I step into 6th year of my tenure as an editor, I strongly feel that with changing times we need to usher in another kind of change in the form of a new editor for piloting this bulletin safely through the challenges that rural surgeons are facing. This is extremely important as the "Rural Surgery" bulletin is and continues to be, the primary official publication of ARSI; symbolizing the association's hopes, aspirations, ambitions, scientific goals and objectives.

We have a reasonably sound financial state and are optimistic about generating future funding for this publication. This gives me the confidence of proposing further changes to our bulletin with the possibility of increasing the number of pages. For this I would need increased participation from all our readers in the form of contribution of articles, studies, case reports and any other information of interest reaching the editor's office in time.

I take this opportunity to thank all those who are behind the success of our bulletin. For starters, thank you to all our dear readers for their constant support, encouragement, patience and comprehension of our mistakes. Our heartfelt gratitude goes to those who have contributed material for publication and to the executive committee of ARSI for their confidence in us and for allowing us to act independently. Last but not the least, I thank all the "incognitos" without whose help and support the bulletin would not have been published and posted on a timely basis.

To conclude, I sincerely hope that after a year that was marked by such horror, fear and uncertainty, the coming year will be a harbinger of hope and happiness for all of us. Once again we wish you peace, goodwill and joy along with our commitment to serve you better. Happy New Year!

Dr. S. K. Baasu

President speaks

(Presidential address on the occasion of 16th National conference of ARSI)

Hon'ble Chief Guest, Justice C.S. Dharmadhikari, dignitaries on the Dias, distinguished guests, colleagues,

I deem it a great honour to stand before you as president of ARSI on the occasion of 16th annual conference of Rural Surgery, which this institution has organized so meticulously and thoughtfully. It is indeed a rare privilege for me to be in this college twice; first as a member of ARSI to attend its first conference fifteen years back to present a paper on rural surgery in presence of stalwarts like Dr. Sushila Nair- a true Gandhian, Dr. N. H. Antia, Dr Balu Shankaran and very senior faculty members of this college. Today I am here for the second time as the president of ARSI after witnessing its growth for the last 15 years from conception to adolescence.

We all agree that the purpose of surgical care, whether in rural areas or in urban high tech hospitals, is the same and that is to give relief to the patient. The only difference with the rural surgeons is that they deliver this care almost at the door step of the rural population in a most cost effective manner with profound human touch, using their innovative skills and technology suitable to rural population and not the least, working often under tremendous resource constraint. Ignorance, poverty, malnutrition, diseases added with the paucity of resources multiplies the miseries of rural patients. Yet, working in this milieu, rural surgeons save hundreds and thousands of life every year- a heart rendering achievement indeed. All these are besides their ongoing research and innovations to make the technology effective, cheaper and easily accessible for the rural population.

I congratulate and salute all such brave souls for their daring feats, request them to continue their work with more vigor and without any fear of litigation. We have to accept this challenge to alleviate the suffering of rural population for which we are committed.

To highlight few of our achievements, **"Rural Surgery" journal** which was started with a humble beginning as a media for networking amongst rural surgeons and disseminating information about their work, has improved its quality and successfully edited by Dr. S. K. Baasu. I congratulate him for his sincere effort. This journal is now circulated to other part of the world amongst the IFRS member countries.

ARSI believes that there are extraordinary possibilities in ordinary people. **Antia-Finseth award** was instituted with that belief to reward those people, who by their research and innovation could bring a change for betterment in rural India particularly in rural health sector. Four such persons have already been awarded and honoured for their wonderful innovations. This award is open for all; from a common man to a professor of a medical college or even to a rickshaw puller.

Shimoga Jhargram scholarship was instituted by ARSI to help rural surgeons for updating their skills and to learn newer technology suitable to the need of rural people. **Rural Medicare Society award** for the best paper of the year published in "rural surgery" is an effort to encourage more and more rural surgeons to contribute articles, sharing their experience/ innovation with others.

ARSI has also made a good beginning by joining hands with rural surgeons form other part of the world and virtually became the prime mover to form **International Federation of rural surgeons**. Already two international conferences were held at Ujjain in India and Ifakara in Tanzania. The third one will be held in November 2009 at Piplyakalan village of Rajasthan. This has helped us to interact with rural surgeon from other part of the world and share our experience with them.

DNB in rural surgery, started by National Board of Examiners, is another feather in ARSI's cap. Indeed ARSI took the lead to conceive the idea, pursue the National board and gave lot of inputs for its implementation.

As I highlight some of our achievements, I also would like to share with you some of our problems which in spite of all our efforts we have not been able to solve. Non availability of blood in rural area still remains a problem due to non acceptance of UDBT on the part of the Govt. It seems they are totally ignorant about the reality of rural areas. The newly established blood banks are located in the cities and far away from the villages. Quite often desired blood is not available in these blood banks even after substituting donors. To save the precious life during emergencies, human beings are the best blood banks. Their fresh blood should be allowed / legalized to be used in rural areas during emergency conditions after doing necessary tests as per Govt.'s specification. This is the only solution till date than thrusting impractical high profile schemes made in corridors of power.

Rural India needs many physicians and surgeons. I sincerely feel the time has come that senior rural surgeons should be invited by the teaching institutions to share their experience about the working conditions among the students and inspire fresh graduates and postgraduate doctors with their own examples to serve villages. Involving both urban and rural doctors for training of graduates and post graduates will be complimentary to each other and most useful to coming generation of medical professionals.

Here is a couplet for the people in power:

"Fakat doosron ko na updesh do tum
Yeh aadat buri hai, yeh aadat na dalo,
Watan ko hai agar khoon ki zaroorat,
To hissa zara kutch apna bhi dalo."

Also remember

"Yeh dabdaba, yeh hakumat, yeh nasha, yeh Daulat
Kiraydar hai sab, ghar badalte rehte hai "

During all our ventures of life, let us not forget the advice of ages and sages. Charaka says "That a physician, who for the sake of his lively hood sells treatment as an article of trade, throws away hips of gold and collects clods of mud in return. He, on the contrary who devotes himself to living creatures attains the highest happiness- for there is no other gift equal to the gift of life."

Charaka also says at convocation: There is no limit to the science of life. The entire world is teacher to the intelligent and foe to unintelligent. Hence knowing this well, we should not hesitate to listen and if necessary act according to the instructions of even an unknown ordinary common man when they are worthy. It may enrich our knowledge and experience. Wisdom is not confined to any individual, race, region and time - It is god given gift.

A Chinese proverb says:

Go to the people
Live among them
Learn from them
Love them
Start with what they know
Build, on what they have.

At the end I may tell you that in spite of all handicaps rural surgery is pleasing, rewarding and gratifying.

With best wishes

Dr. K. C. Sharma
President, ARSI

On Rural Surgery

Speech by Sri Dhirubhai Mehta, President Kasturba Health Society

Hon'ble Chief Guest Shri Chandrashekhar Dharmadhikriji, Dr. K. C. Sharma President of Association of Rural Surgeon's of India, Guest faculty, delegates and friends.

I join my colleagues in extending to you all a very warm welcome, I am very happy that after 15 years we have once gain got the opportunity to host this conference. The 1993 conference was the launching step and I am delighted to note that over the last 15 years the association has grown not only in numbers but also in thought and action. I extend my congratulations to all those who have contributed towards it's success story.

Medical education today

Medical education and healthcare is passing through a tumultuous phase. Despite more than a half century of proclamations on primary healthcare, most rural facilities in India continue to lack enough providers, equipment and infrastructure to offer effective and efficient care.

There is no doubt that the imbalance of doctors in rural and urban areas needs correction. Although 281 medical colleges in the country produce 30,992 doctors each year and there are 683,582 registered allopathic doctors in the country, only one in 10 doctors work in a rural area. A fraction of rural health centers have the necessary physicians, surgeons and other personnel.

Medical students complain that the MBBS degree has lost its value because of the way in which medical practice works today. The pressure to get a postgraduate seat is intense. Entrance examinations for postgraduate programmes are extremely competitive (only one in three students gets into a clinical postgraduate programme). Thus, even during internship, preparation for the MD entrance examination takes precedence over acquiring and honing clinical skills. Students fear that the time taken by rural postings hinders their efforts to achieve their career goals.

At the same time, during their training medical students are seldom taught how to identify, diagnose and manage health problems in resource-poor settings. Students quickly imbibe the elite culture of the medical profession through the role models provided by their teachers. Classroom or bedside teaching does not inculcate empathy or compassion among students. Nor does it sensitise them to the real needs of the rural community. Young doctors posted in rural areas often lack insight into the socio-economic determinants of diseases and do not know how to treat these diseases economically and effectively.

At least at MGIMS, we have designed several interventions to ensure that medical students are sensitized to the problems rural people. First, our 8 MBBS seats are reserved for students who belong to rural areas. Second, under-graduate students adopt a village soon after they are admitted and over the five years become friends, philosophers and guides to the families they look after. Third, obtaining a MBBS degree, students spend two years in NGOs and primary health care centers where they acquire and hone skills to be able to practice in resource restrained settings.

But the problem is that medical education is getting extremely commercialized. Of the 281 registered medical colleges in India, half are private. Most students admitted to these medical colleges are required to personally finance their expensive education. Can we really expect students who have made what is essentially an investment to forget about money and think of their professional ethics

and social obligations? After all, if students pay a fortune for their education they are going to be interested in recouping that investment at the earliest. By encouraging private medical colleges the government is sending the signal that medical practice is for personal profit. Health activists ask: is it realistic to demand social commitment from young doctors when nothing else in the system encourages them to think and act along these lines?

And therefore, of the 30,000 students who graduate from medical colleges each year, most tend to cluster in cities, where they have better living conditions, schools for their children, social recognition, higher incomes, promotion opportunities and greater job satisfaction.

In contrast, doctors fear that rural postings distance them from their friends, families, professional colleagues and teachers, lead to physical and social isolation and lower their professional standing. Rural settings may lack appropriate mentors and students complain that they can neither acquire nor hone technological skills in a village. Unsatisfactory working conditions, lack of adequate staff and equipment, and primitive living conditions add to their woes. In essence, doctors believe that not only does rural medical service fail to improve access to healthcare in these areas, it also requires personal sacrifice. And they ask: why are medical students expected to make grater sacrifices than other professionals?

Social obligations created by medical education

I do not agree with these biased arguments. I would argue that medical students, at least in government medical colleges, get a highly subsidized education. But there are no mechanisms in place to ensure that the beneficiaries of this subsidized education repay their debt in kind. After all, the government spends 20 lakhs on educating every MBBS graduate. And this is not a small amount. Since medical education is primarily aimed at providing benefits to society, doctors surely have a moral obligation to provide healthcare to the society that paid for their education. In addition, medical professionals have an essential ethical obligation to help distribute equitably the life-enhancing opportunities affordable by healthcare. Medical students owe their education and training to the society and they should not hesitate to re-pay that debt.

We need to move away from the western mode of high-cost high-investigative medicine and ensure that students leaving the portals of our medical colleges practice medicine that is affordable and approachable. They must know how to diagnose and treat surgical conditions in settings where people cannot afford or access costly diagnostics or interventions.

To be able to achieve these objectives we need programmes specifically designed to fulfill the concern of rural patients. I am happy to learn that courses and fellowships in Rural Surgery and Medicine have been started. MGIMS is also a part of national family of DNB rural surgery. Surgical residents passing out today are only partially equipped to practice surgery in rural areas but under this DNB course, I am happy to note that they are being trained in subspecialties like ENT, Orthopaedics, Gynaecology and Obstetrics also. Further, they are being posted for 1 year under the tutelage of recognized rural surgeons so that at the end of the course they will be well versed with all types of surgical skill that would be required to handle problems in any rural setting.

In the end I am very happy to note that your association is addressing specific concerns of the rural surgeons. It is important that we do not allow the doctors in the villages to feel depressed and deprived. Here I may mention that when Dr. Sushila Nayar

established this Medical College, she first ensured that there was an English Medium School for children. Otherwise she would not have got the faculty. Dr. Dilip Gupta, sitting on the dais today is a product of that school and Dr. Narang's children who are also doctors, also studied in that school. The Government Primary Health Care system is providing for basic preventive, promotive and curative services but primary surgical care facilities are grossly inadequate. Ability to cope with surgical emergencies is limited because of shortage of equipment, anesthetic facilities and lack of expertise. It is heartening to note that under the National Rural Health Mission, the Government has started a programme on emergency obstetric care where Medical Officers are getting training and in which our gynaecology and Obstetric Department is one of the 3 nodal training centers, but much is yet to be achieved in surgical field particularly in overcoming the obstacles in recruitment of personnel.

There is no doubt that general surgeon is an absolute necessity to the viability of rural health care but let us stop looking to the West for solutions. Gandhiji said services must be as local as possible and only as specialized as necessary. In the garb of globalization and high cost culture of medical treatment, let the surgeons not lose their clinical acumen. Let them be conscientious and dedicated, with high moral performance. Conferences of this kind can help medical students and residents get inspiration and motivation. At least some of them might follow the long and honourable tradition of service to poor and socially disadvantaged people living in rural areas.

I once again welcome you all and wish the conference healthy and fruitful deliberations with positive outcome.

Thank you!

Dhirubhai Mehta

Inflammatory Fibroepithelial Polyposis

Dr. Sitanath De F.A.R.S.I, F.R.C.S

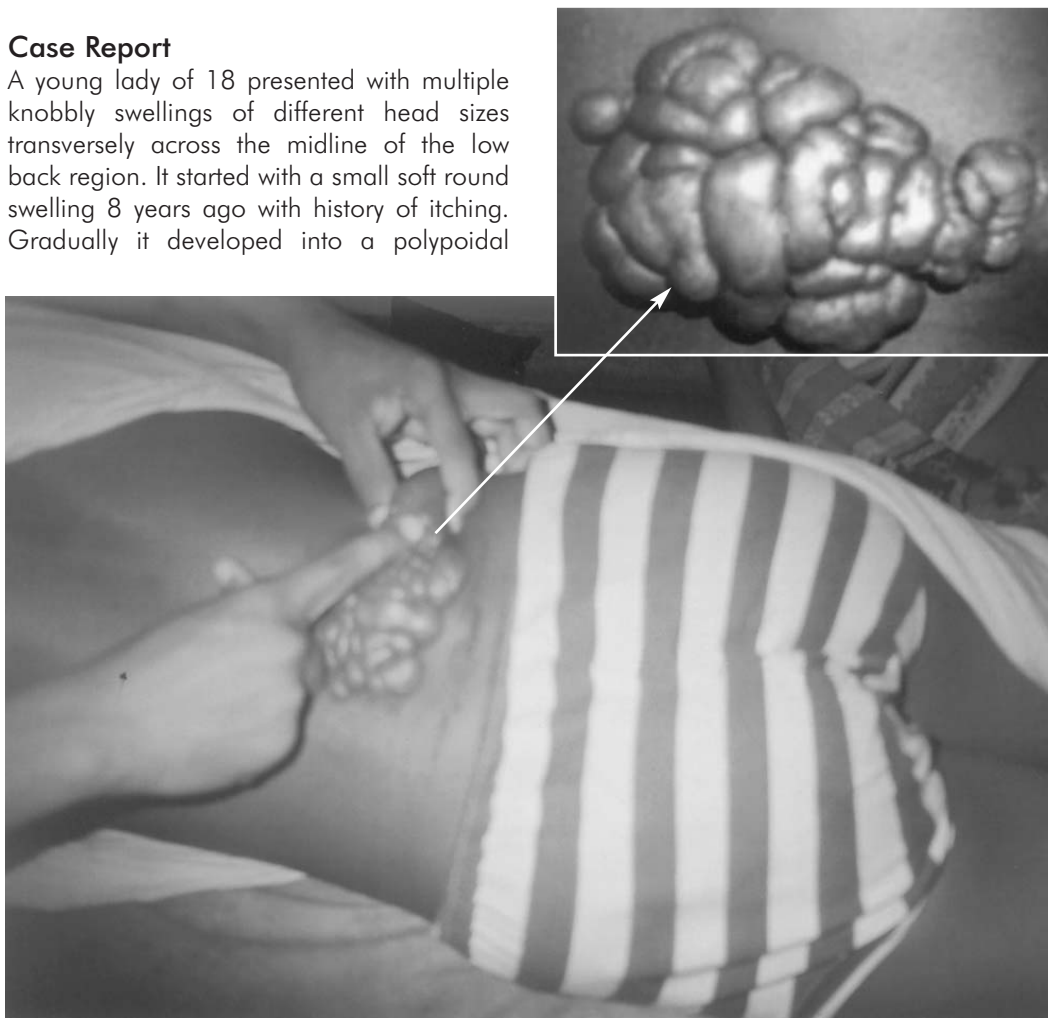
Abstract

Inflammatory Fibroepithelial Polyposis (I.F.L) is a histopathological diagnosis. Its clinical presentation in rural surgical out patient is rare. The unusal presentation and rarity of the case posed a problem in making a clinical diagnosis. It is the unfamiliarity of the disease and the mystery of its origin that has prompted the author to report this case.

Key wards: Fibro epithelial polyposis (F.E.P): Gardener's Syndrome (G.S)

Case Report

A young lady of 18 presented with multiple knobbly swellings of different head sizes transversely across the midline of the low back region. It started with a small soft round swelling 8 years ago with history of itching. Gradually it developed into a polypoidal swelling. Further swellings appeared on both sides which turned into polypodial lesion all in transverse line across midline, about 13cm in length. The whole swelling could be lifted from the back with the pedicle formed by skin on both sides. On the extreme right end of the lesion, a small round subcutaneous lipomatous swelling could be palpated, which in time will turn, according to the patient, into a polypoid lesion with a small stalk. (2 to 2.5cm in length) (Photograph)



There was no family history of this kind of growth. Patient did not have any history of bleeding per rectum or malaena. She also did not have any history of local injury or surgical operation.

On Examination, her general condition was satisfactory. There were several polypodial skin lesions of varying shapes and sizes. The surrounding skin made a thin linear skin pedicle. Provisional diagnosis of Keloid, Sarcoid Granuloma, and Epidermal Cyst were made.

Aspirated material for F.N.A.C was a) Fatty material, b) Fluid like material. However Cytomorphological features were suggestive of fibro-epithelial polyp with a focus of Lipometosis & multiple epidermal cysts (Gardner's Syndrome).

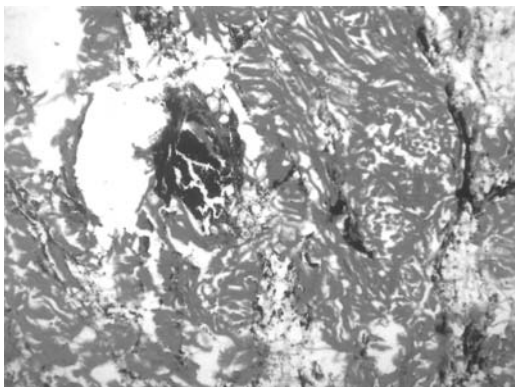
Excision Biopsy was performed under Ketamine anaesthesia. Subcutaneous vascularity was a notable feature. She had a primary wound healing.

Histopathological examination of the excised specimen showed features, consistent with Inflammatory Fibro-Epithelial polyp. (Photograph)

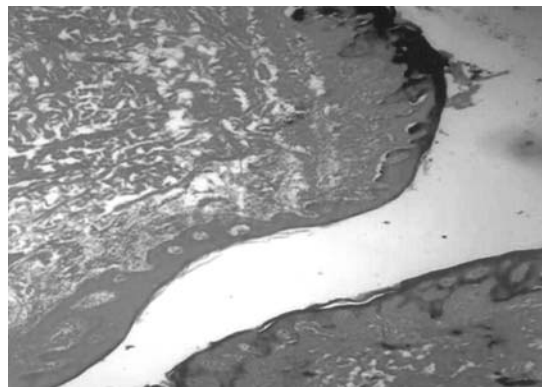
Discussion

This is the first case of Fibro-Epithelial Polyposis that I have seen in my surgical career. On first sight, it was a mistake to jump to conclusion in favour of Keloid, which was proved not to be.

It is known that the cutaneous and subcutaneous lesion like epidermoid cysts, fibromas, lipomas may be seen as an extra intestinal manifestation of Gardner's syndrome, which is inherited as an autosomal dominant trait. However in this case, there is no family history or any feature of intestinal polyposis. Mistry of its origin still remains. It would be interesting question wheather she should have endoscopic examination of her intestine in near future!



Section reveals fibrous tissue and neovascularisation along with congested blood vessels.



Stratified squamous epithelium with subcutaneous bleed and fibrovascular tissue.

Address for correspondence: "Banashree", PO Jhargram Paschim Midnapur, West Bengal

All about blood transfusion

R. K. Garyali M. S.

A) Blood typing and cross matching

Donor and recipient blood is typed in the red cell surface ABO and Rh system, and screened for antibodies to other cell antigen.

Cross matching involves directly mixing the patient's plasma and donors red cells to establish that haemolysis does not occur from any undetected antibodies.

Individual's red cells have either A, B, AB or no surface antigens. If the patients red cells are lacking either surface antigen A or B, then antibodies will be produced against it. Patients who is type B will have anti A- antibodies in the serum and a type O individual (having neither A nor B surface antigen) will have circulating anti A and anti B antibodies, type AB will have neither A nor B antibodies, usually called universal recipient and type O has neither A nor B surface antigen is referred as universal donor.

Rh surface Antigen

These are either present i.e. Rh positive or absent i.e. Rh negative.

Rh negative individuals will develop antibodies to Rh factor when exposed to Rh positive blood. This is not a problem with initial exposure, but subsequent exposures will lead to haemolysis. This can be a particular problem during pregnancy.

Anti Rh antibodies are IgG and freely cross the placenta. In Rh negative mothers who have developed Rh antibodies, these antibodies are transmitted to fetus, if the fetus is Rh positive resulting in massive haemolysis termed as 'hemolytic disease of the new born".

Rh immune globulin, an Rh blocking antibody, prevents the Rh negative patient from developing anti Rh antibodies.

Rh immune globulin is routinely administered to Rh negative women pregnant with a Rh positive fetus and should be given to Rh negative individuals who receive Rh positive blood, especially women of child bearing age

B) Indications for transfusion therapy

Transfusion is performed because of decreased production, increased utilization, destruction or loss or dysfunction of specific blood component (redcells, platelets, or coagulation factors)

1. Anaemia

a) Haematocrit: Reason for transfusing RBCs is to maintain oxygen carrying capacity to the tissues. Healthy people with chronic anemia can tolerate a haemocrit Hct of 20% to 25% assuming normal I.V. volume.

b) In patients of anemia, the causes need to be clarified. It may be secondary to:

- ✦ Decreased production (Marrow suppression)
- ✦ Increased loss (hemorrhage)
- ✦ Destruction (haemolysis)

c) Estimating the volume of blood to be transfused can be calculated as:

Volume to transfuse = (Hct desired - hct present) x BV/Hct transfused blood. BV (blood volume) of an adult is appx.7% of lean body mass or 70ml/kg

2. Thrombocytopenia

Causes are: Decreased bone marrow production, (chemotherapy, tumour, infiltration, alcoholism)

- Increased utilization or destruction (hyperspleenism, ITCP. Drugs like heparin, H2 blockers, ticarcillin, and massive blood transfusions)

3. Coagulopathy

Bleeding associated with:

- documented factor deficiencies
- prolonged clotting studies, [prothombin time(PT), partial thromboplastin time (PTT)]

C) Blood component therapy

1. Whole Blood:

Largely replaced by component therapy-due to storage impediments and no demonstrable superiority, exception for example children under 2 years of age undergoing complicated cardiovascular surgery.

Whole blood must be ABO and Rh identical.

2. Red Blood Cells (RBC)

a) One unit of RBCs (haemocrit-70% volume 250ml) usually raises the haemocrit of euvolaemic adult by 2% to #5 once equilibration has taken place. RBCs must be ABO compatible

* If type- specific blood is unavailable type O Rh negative red cells should be transfused.

3. Platelets

- One unit of random donor platelets increases the platelet count by 5000 to 10,000/uL
- If thrombocytopenia is caused by increased destruction i.e., from development of antiplatelet antibodies, platelet transfusion will be less efficacious.
- ABO-compatible platelets are not required for transfusion
- Single donor platelets are obtained from one individual by platelet pheresis, one unit is equal to approximately six random donor units.
- In case where alloimmunization causes platelet refractoriness, HLA matched platelets may be required for effective transfusion
- Rh negative women of child bearing age should receive Rh-negative platelets, if possible, because some RBCs are transfused with platelets.

4. Fresh Frozen Plasma: (FFP)

15ML/KG will generally increase plasma coagulation factors to 30% of normal.

- Factor V and VIII are most liable and quickly depleted in thawed FFP.
- Fibrinogen levels increase 1mg /ml of plasma transfused.
- Acute reversal of warferin requires only 5 to 8 ml/kg of FFP.
- ABO compatible FFP is required.
- 6 units of platelets contain the equivalent of 1 unit of FFP.
- Volume expansion in itself should not be an indication for FFP transfusion.

5. Cryoprecipitate:

Material formed by thawing FFP at 1 degree C to 6 degree C

- Each unit of cryoprecipitate contains a minimum of 80 iu of factor VIII, and approximately 200 to 300 mg of fibrinogen

- Also contains factor XIII, Von-willerbrands factor and fibronectin.

Indications for cryoprecipitate:

- Hypofibrinogenemia
- Von- willerbrands disease
- Hemophilia A (when factor VIII is unavailable)
- Preparation for fibrin glue.

Dosage: - The dosage of cryoprecipates is 1 U/7 to 10kg, which raises the plasma fibrinogen by approximately 50mg/dl in a patient without massive bleeding.

ABO compatibility, though not required, should be preferred because of the presence of 10 to 20ml plasma per unit.

6. Factor concentrates:

Individual coagulation factors are available, can be derived from pooled human plasma or synthesized by recombinant gene technology. In intractable coagulopathy some clinicians use factor IX complex (containing factorII, VII, IX and X in a smaller volume). Use with caution in hepatic disease, for fear of wide spread thrombosis.

Techanical considerations:

- Blood products should not be infused with 5% dextrose solutions or ringer lactate. Dextrose solution causes haemolysis. Ringer solution contains calcium and can induce clot formation.
- Sodium chloride (0.9%), albumin (5%), and FFP are compatible with RBCs.
- Blood filters (80u) should be used for all components except platelets to remove debris and micro aggregates.
- Leucocytes filters can be used to remove WBC in order to prevent transmission of cytomegalovirus, to immunocompromised patients, to prevent alloimmunization to foreign leukocyte antigen and to diminish febrile reactions.
- Platelets should be transfused through 179u blood filter.
- All blood/ blood components should be infused as early as possible after they are being issued from the blood bank.

D) Complications of blood transfusion therapy

a) Transfusion reactions:-

1. Acute hemolytic transfusion reactions, estimated to be 1 of 30,000.

Symptoms include:

- Anxiety
- Chest pain
- Agitation
- Flank pains, headache
- Dyspnoea and chills
- Non specific signs include fever, hypotension, unexplained bleeding (DIC) and haemoglobinurea

Management:

- Stop transfusion.
- Do cross matching with the remaining blood.
- Send blood samples for free Hb, hepatoglobin, coombs test and DIC screening (pink plasma in a spun sample indicates at least 20mg/dl of free Hb)
- Fluids and vasopressors for hypotension
- Corticosteroids
- Preservation of renal function by increasing renal blood flow and maintaining brisk output (IV fluids, Frusemide, Mannitol
- Be alert for DIC

2. **Non hemolytic transfusion reactions:-**

Caused usually by, antibodies against donor WBC or plasma proteins. Clinical findings are anxiety, purities or mild dyspnoea, fever, flushing, hives, tachycardia, mild hypotension.

Management:

- Stop transfusion
- R/O hemolytic transfusion reactions
- Anti histaminic, like (diphenhydramine, 25-50mg i.v, hydrocortisone 50-100mgi.v)
- Patients with known febrile or allergic transfusion reactions, leukocyte-poor red cells (leukocytes removed by filtration and centrifugation) can be given and patient pretreated with antipyretics like acetaminophen 650mg and an antihistamine.
- Anaphylactic reactions occur rarely and may be more common in patients with an IgA deficiency. These reactions usually caused by plasma protein reactions
- Patients with history of transfusion anaphylaxis should only be transfused with washed red cells, i.e. plasma free

b) **Metabolic complications**:

1. Potassium concentration changes often seen with rapid transfusion. K+ leak from RBC occurs with storage. It can be rapidly corrected with transfusion and replenishment of erythrocyte energy stores.
2. Calcium is bound by citrate (being used as anticoagulants) in stored blood.

Rapid transfusion of 1 unit of RBC in 5 mits may decrease ionized calcium levels.

An equal amount of FFP transfusion more likely to cause citrate toxicity as compared to packed RBCs, because citrate tends to concentrate in plasma during processing.

Severe hypocalcaemia manifests as:

- Hypotension
- qt segment prolongation in ECG
- Narrowed pulse pressure.

Monitor ionized calcium levels during transfusion and replace calcium intravenously with calcium gluconate 30mg/kg or calcium chloride 10g /kg.

3. Acid -Base status

Though banked blood is acidic due to anticoagulant citrate and accumulated red cells metabolites, the actual acid load due to this is minimal.

Acidosis in severe blood loss more likely results from hypo perfusion and improves with volume resuscitation.

Alkalosis from metabolism of citrate to bio- carbonate is common following massive transfusion.

c) **Infectious complications**:

i) Hepatitis:

Hepatitis -B risk decreased due to pretesting, current risk being1 in 60,000 units, though asymptomatic, long term morbidity is significant.

Hepatitis C (HCV) - risk is about 1 in 100,000 units transfused.

Pooled products like cryoprecipitate have increased risk proportional to number of donors

ii) HIV:

Improved screening is gradually reducing the incidence, recent studies give an estimates of 1 case per 450,000 units transfused

iii) Cytomegalo virus CMV.

Prevalence of antibodies to CMV in general public is approx.70%; incidence of transfusion associated CMV infection in previously non infected Patients is high. Infection usually asymptomatic could however be very severe in immunosupresed cases and neonates, CMV negative blood may be available on request or leukocyte reduction filter can be used.

iv) Lymphotropic viruses

- Retroviruses have been implicated as causative agents for some leukemia's.
- Human T-cell lymphotropic virus-I (HTLV-I) is associated with tropical spastic paraperisis, chronic myelopathy and adult T-cell malignancies, transmission by transfusion chances are 1 case per 640,000 units.

v) Bacterial infections:-

Exclusion of donors with infectious diseases and storage of blood at 40 C reduces the risk of transmitted bacterial infections

- Occasional contamination by organisms that can grow at 4 degree C eg, yersina entrocolitica and pseudomonas aeruginosa, rarely occur.
- Bacterial contamination of warm blood is a matter of concern
- Platelets are particularly problematic and must be stored at room temperature. Organisms infecting platelets are staphylococcus aureus, coagulase negative staphylococcus and diphthroids

vi) Parasitic infections:-

Though uncommon in the west is common in our subcontinent, commonly transmitted diseases are Malaria, Tick-borne babesiosis, Filariasis, trypanosomiasis (chagas disease), and toxoplasmosis, though asymptomatic in immunocompetant adults.

*vii) **Transfusion induced Immunosupression*** through impaired cell mediated immunity and increased prostaglandin-E production can occur but clinical significance is uncertain.

* *Senior Consultant, Surgery*

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IFRS Section

Open IM fixation of forearm fractures in children; Our experience in a rural setting

P, Kibatala, P. Freitag, P. Mseti, B. Kwelu, G. Fassil

(Abstracts)

(Based on presentation at 2nd IFRS conference)

Introduction

This is a retrospective study done at St. Francis Designated District hospital at Ifakara, Morogoro region in Tanzania during the period between January 2005 to June 2007. The series includes 25 patients between 4 and 17 years of age with a mean of 11.3 yrs. Follow-up period extended between 3 months- 29 months (avg: 10 months)

General concepts

Fracture in children may result in greenstick or complete pattern. Complete fractures may range from non-displaced to overriding deformity. Falling on outstretched hand is the usual cause of injury, but occasionally may be due to direct trauma. Diaphyseal fractures of the forearm account for approximately 13% of all paediatric fractures. The majorities (96%) are minimally displaced or incomplete and are thus treated conservatively by immobilization with or without manipulation. A small proportion (3% - 4%) is unstable and requires operative manipulation.

Anatomical considerations

The widest diameter of the medulla is obtained proximally in the ulna and distally in the radius. These are the optimal entry points for intramedullary nailing.

Procedure

Through 1.2-1.5 cms incision an oblique hole is made by avoiding the epiphysis. Smooth Krischner wires 1.6 - 1.8mm or Rush pins is inserted at 30 degree inclination. The wire, held with a cannulated T-handle or a forceps, is driven into the medulla. In all cases, a small skin incision (3 cms) is made above the fracture site; thus open reduction was the method applied. Above elbow immobilization cast was applied for an average period of 4 weeks.

Case series

Within the2½ year's period there were 864 cases of bones of forearm fractures. Conservative management was done to 835 (96.6%) cases. The remaining 33 (3.8%) patients presented with unstable ulnar, radial or both bones fractures and were subjected to operative methods of which 25 were available for this review. All were closed fractures.

Distribution according to sex and side

SIDE	Male	Female	Total
Right	6	-	6 (24%)
Left	15	4	19 (76%)
Total	**21(84%)**	**4**	**25**

Distribution by bone fractured

Bones	Male	Female	Total
Radius	2	1	3
Ulna	2	1	3
Both	17 (68%)	2	19 (76%)
Total	**21(84%)**	**4**	**25**

Distribution by age

Age	Male	Female	Total
0-4	2	-	2
5-10	7	2	9
11-17	12	2	14
Total	**21 (86%)**	**4 (14%)**	**25**

Evaluation of outcome was done by the following criteria:

- Alignment
- Union
- Delayed union, Non union
- Angulations
- Range of motion
- Refractures
- Skin infection
- Osteomylitis

Evaluation of outcome

Outcome	Cases	Percentage
Union	25	100
Delayed	-	
Nonunion	-	
Angulations	3	12
Re-fracture	-	
Complete function	25	
Skin infection	1	4J.

Literature review

According to a study conducted by Kucukkaya M et al[1], of the 31 patients (aged between 7 and 17 years) treated surgically by open reduction and K-wire fixation, union was obtained in all cases except two (6.4%).

In addition Lee S et al[2], observed that in 49 patients which included twenty four cases of bone IM, twenty two cases of single ulnar and three cases of single radius, a limited open approach was necessary in 10 of the 43 closed

fractures. This, we believe, suggests both bone stabilization by IM because they have encountered angulations and reoperations.

A further study was conducted PR Myers GJ et al[3]. The sample included 25 patients with one bone fixation and 25 patients with both bone fixations. 36 of these were boys and the remaining 14 were girls. In addition, 30 of the cases were treated for left arm fractures, while the remaining 20 for right arm fractures.

It was observed that in the 25 pts aged between 4.6 - 15.9 years, single bone fixation (18 radiuses and 7 ulnas) produced a good functional outcome in all cases. Thus, we believe that in selected children, it is a suitable method.

Surgeons in the Prince of Ales Hospital[4], performed Krischner wire fixation in 72 children and 57 were reviewed. In 45 cases both the ulna and the radius were fractured in 45, while 8 cases only had the radius fractured, and the remaining 4 only had the ulna fractured. Of these K-wiring/closed reduction was performed in 42 patients while open reduction was necessary before K-wiring in the remaining 15. It was observed that in the mean follow-up of 20 months, all had good functional results.

A further study conducted in the St Mary's Hospital in London[5], examined a set of 23 children which included a mix of patients that had been treated using Nancy nail and IM fixation. Over a 12 month period, a 100% rate of union was achieved in both groups suggesting that K-wire is equally effective.

Advantages of IM Fixation

Many children require IM fixation depending on the severity of fracture. We find the method has the advantage of easy applicability and removal. It is less invasive and child-friendly. It needs 2-5 days of admission and has minimal complications.

Conclusions

Our findings suggest that IM fixation Safe, effective and child friendly. It is applicable even in absence of fluoroscopic intra-op. imaging facility. It is reloadable in rural surgery as well as part of essential surgical care.

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Anorectal malformation: Challenges to paediatric surgeons in Tanzania

Dr. P. J. Ngiloi

(Abstracts)

(Based on presentation at 2nd IFRS conference)

Introduction

A retrospective study was done on children with Anorectal malformation (ARM.) to highlight challenges facing pediatric surgeon in Tanzania. A total of 99 pts within a period of 30 months.(Jan 2003 - Jun 2005) with age varying between 7 months to 20 years, the peak age being 0 to 2 years (48.4%) (Table 1) The causes of late presentation among other groups were either due to economic problems or ignorance about the condition. One patient in this series had major heart problem and thus reported late.

Table 1: Age and sex wise distribution of no. of patients

Age	Male	Female	Total	%
<1	7	18	25	25.2%
1-2	7	16	23	23.2%
3-4	1	7	8	8.1%
5-6	8	11	19	19.2%
7-8	2	5	7	7.1%
9-10	4	3	7	7.1%
11-12	2	1	3	3.0%
13+	3	4	7	7.1%
Total	**34**	**65**	**99**	**100%**

Table 2: Outcome of patients who had anorectoplsty

Age yrs	soi-ling	%	consti-pation	%	Nor-mal	%
<1	0	0	4	5.3	2	2.6
1-2	1	1.3	8	10.6	9	12
3-4	1	1.3	2	2.6	2	2.6
5-6	4	5.3	5	6.6	7	9.3
7-8	3	4	2	2,6	1	1.3
9-10	3	4	2	2.6	2	2.6
11-12	2	2.6	1	1.3	0	0
13+	4	5.3	1	1.3	2	2.6
Total	**18**	**24**	**25**	**32**	**25**	**32**

Outcome of Patients who had undergone anorectoplsty (Table 2)

Out of 75 patients 7 were lost from follow up. 18 patients (24%) had problem of soiling. 25 patients (33.3%) suffered from constipation. 2 patients of 12 and 20 years age was noted to have large rectum. They were both continent of feces. The 20 yr old had true VACTERL syndrome; deformed lumbosaccral vertebral, TOF, colonic atresia and imperforate anus.

Soiling (Table 3)

This complication had been noted significantly, mostly in older children of more

than 5 yrs. Bowel programming were done only at hospital and none of the 18 patients had this programming at home. Though 2 of them had accepted the condition and tried to cope with it, 16 of them felt that something could be done to arrest the condition. Most of them hoped for a better future.

Table 3: School attendance of children who had soiling

Age yrs	Yes	No	Total
5-6	0	4	4
7-8	0	3	3
9-10	0	3	3
11-12	1	1	2
13+	1	3	4
Total	**2**	**14**	**16**

Challenges

There are many challenges that the pediatric surgeons are facing. Many patients who report at late age find it difficult to adapt to the new anal opening created by surgery. In an African set up marriage is considered part and parcel of good quality of life. A soiling patient will have difficult to settle for a marriage. This in itself is a challenge to see how best we can help these children. Therefore there is a need to sensitize parents and health attendants to refer the patients at younger ages.

While there is lack of proper operative instruments in most of the centers, there is lack of convenient toilets and adequate water supply in most of the village homes. There is also lack of trained stoma management nurses for home base care. Use of constipating drugs seems to work very temporarily. We need to design a constipating surgical technique to prevent the menace of soiling. All these in an away make the surgical outcome unsatisfactory.

Eruwa biogas plant

Dr. Oluyombo A Awojobi

Principle

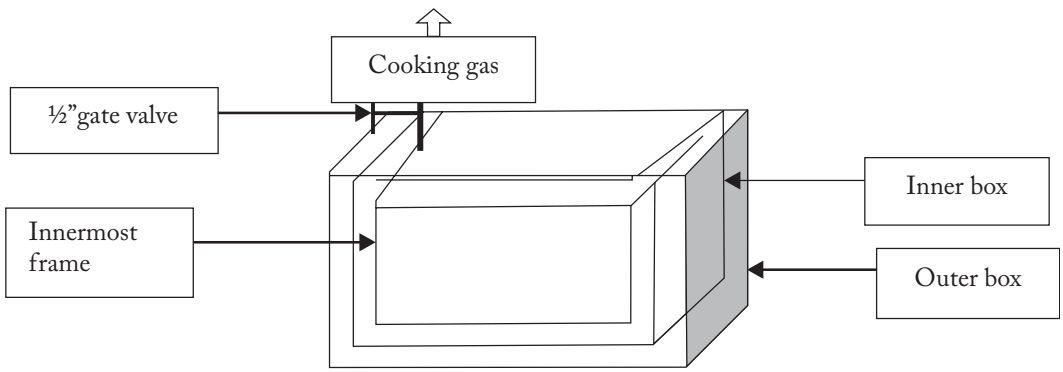
Two types of bacteria are present in biological wastes: aerobes (that require oxygen for metabolism, producing carbon dioxide) and anaerobes (which thrive in oxygen-deficient environment, generating combustible gases like methane and hydrogen). The dung of cattle, being herbivores, contains the highest concentration of anaerobes and should be a more efficient producer of biogas.

At the onset of action in the inner box, the aerobes consume the oxygen dissolved in the water producing carbon dioxide that kills them off after which anaerobes take over.

Boxes are made of gauge 16 metal plates, need not be galvanized and welded to be watertight. They are open at the bigger surface area. Of course, bigger containers could be constructed.

Installation

The innermost wooden frame is filled with poultry droppings. Water is added to fill the outermost box. Insert the inner box with its base up, keeping the tap open to allow escape of air. Two 9" x 9" x 18" cement blocks placed on the inner box will cause it to be submerged in the water. This ensures complete expulsion of air from the inner box. The gate valve is now locked. The cement blocks are then removed



Components of the plant

The plant consists of two metal boxes and a wooden frame arranged concentrically as shown in the figure. The ½" plumbing socket that holds the gate valve is welded to the base of the inner box. The wooden frame will hold the poultry droppings and facilitates the up and down movement of the inner box.

Dimensions:

Outer box: 4' x 4' x 2'.
Inner box: 3' 10" x 3' 10" x 1' 10".

Innermost frame: 3' 8" x 3' 8" x 1' 10".

to allow ascent of the inner box as soon as biogas production starts. But, they are returned to give pressure to the gas when the plant is in use. They need not be removed thereafter.

In the following 24 hours, the inner box is observed to rise from the sludge following generation of combustible gas. The gas burns with blue flame at the end of a tubing with diameter of 1cm.

Preliminary observations

When the inner box had risen 1ft (about 14.5 cu ft of gas) after about 72 hours, it sustained

for two hours a blue flame comparable to the hottest of the four burners in the common kitchen gas cooker. There is no need for a fine jet at the tip of the metal tubing as in the conventional kitchen gas cooker. The setup is completely odorless.

Further development

An inlet duct will be attached to the outer box so that raw materials (maize cobs, garbage etc) could be added for degradation to keep the plant running. My Indian friends use the placenta obtained at the delivery of babies. Culturally, the Yoruba bury the placenta.

The outer box could be buried in the ground so that a higher temperature, which encourages faster metabolism, is maintained in the nighttime.

The metal box is prone to rust with time. Cylindrical plastic reservoirs could be adapted while manufacturers are encouraged to produce customized biogas plants.

When the system is no longer productive, the residue in the outer box is a good fertilizer for the backyard garden and will be odorless.

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Sorry tale of reproductive health

Dr. S. K. Baasu

(Based on the paper presented in 2nd IFRS conference at Ifakara, Tanzania)

Key words: *Reproductive health (RH), Maternal mortality, Sexually transmitted diseases (STDs), Abortion, Family Planning (FP), Reproductive tract infection (RTI)*

This gloomy or cynical title is a factual narration of present status of reproductive health in today's world. One may call it a story of neglect. In spite of the fact that simple, cheap, and effective interventions exist for more than 50 years to prevent unintended pregnancy, provide safe abortions, help women safely to go through pregnancy and treat STDs, they are still not available in many part of the world because Govt do not care enough.

It is about increasing influence of conservative political, religious and cultural forces around the world that threatens to undermine the progress in the field of reproductive health, made since 1994 and arguably provides the best example of the detrimental intrusion of politics in public health.

This is also a story of forgotten issues because the world thinks the problems have been solved or because the problem makes the world feel uncomfortable.

It is also the tale of deadly reluctance to consider sexuality because in many countries the very discussion of the issues like sexual intercourse and sexuality make people feel uncomfortable.

Surprisingly, despite the call for international access to reproductive health 14 years back at the 4th International Conference on Population and Development (ICPD) in Cairo, this issue has been utterly marginalized for the global conversation and was omitted from Millennium development Goal (MDG) agenda - centre stage of International efforts to defeat poverty and preventable illness and remained neglected. No wonder that "reproductive health" quite often has been labeled as missing agenda. Fortunately during the past 5 years, this glaring omission has been redressed to some extent.

Notion of reproductive health (RH) was born in 1994 at International Conference on Population and Development held in Cairo. In presence of thousand of policy makers, activists, health specialists, donor communities Cairo conference put forward the ideas of comprehensive sexual and reproductive health rights, choice, women's empowerment and gender equity at the centre of its international agenda. Goal was to achieve universal access to safe, affordable, and effective reproductive health care and services, including those for young people and promoted a gender perspective.

The package of services that were also incorporated in the agenda was:

International access to:

- ✦ Family Planning (FP) information and contraceptives
- ✦ Skilled care at pregnancy and child birth
- ✦ Safe abortion services
- ✦ Treatment and management of STD and HIV/AIDS

Like the definition of health, WHO has defined reproductive health as - ***not merely absence of disease or disorder of the reproductive process, function or system among all age groups but is a condition in***

which reproductive function and process can be accomplished in a state of physical, mental and social well being.

What does that imply? It implies that people should able to have responsible, satisfying and safe sex life. They should have the right, ability, opportunity to regulate their fertility to their choice with no risk to their health. Mothers should be able to go through pregnancy and child birth safely with successful outcome ensuring survival and proper growth and development of the child. And finally, though unwanted pregnancies are to be avoided, its consequences must be managed safely and humanely.

Before I initiate discussing some of the important components of RH, let us have a look at the raw statistics presented below, representing the shocking burden of RH in today's world. This is in spite of the fact that 14 years back a pledge was taken by most of the countries for universal access to FP information and contraceptives, skilled care at pregnancy and child birth, safe abortion services and treatment and management of STD and HIV/AIDS.

Shocking burden of reproductive health

Unmet need for contraception	-	120 Million
Unintended Pregnancy	-	80 Million
Ended in Abortion	-	45 Million
Preg. Related Death	-	½ a Million
New STDs	-	340 Million

According to WHO reproductive health account for 18% of all disability adjusted life years (DALY) lost. For Reproductive age it is 1/3rd of DALY lost.

Maternity care and maternal mortality

In spite of some accomplishment, MMR remained static for the last 15 years though the causes are known to us. Half a million maternal death still takes every year; worldwide 210 million women suffer from disability due to pregnancy related complications; 1/3rd of all Preg. Women receive no health care; 60% of deliveries take place outside health facilities. According to2003 statistics only 28% pregnant mothers had hospital delivery in India.

While death due to obstructed labour, PPH and infection associated with pregnancy are more or less consigned to history in developed countries, they account for substantial proportion of maternal death in Asian and African countries.

Therefore there is an urgent need for strong political commitments in developing countries to draw and implement effective strategies for increase attendance of skilled personnel at birth, to provide emergency obstetric care and promote institutional deliveries. Without this maternal mortality morbidity cannot be reduced.

Abortion

It is a well known fact that most of the abortions that take place around the world are the consequences of unsafe sex / failed family planning. Out of 80 million women with unintended pregnancy, 45 million end in abortion of which 19 million are unsafe abortion. This accounts for 30% of maternal death. Even today in most of the countries though abortion is legalized, access to safe abortion is limited.

A recently published map by WHO showing geographical distribution of incidence of unsafe abortion indicates that while 3/4th of the human kind is living in countries where abortion is legal, 2/3rd of the countries in the world have very high incidence of unsafe abortion. So Provision of safe abortion is quite another matter. Therefore It is much more meaningful to consider unsafe and safe abortion rather than legal and illegal abortion.

In order to fight with this preventable pandemic there should be an effective FP program worldwide with universal access to it. There can't be any second opinion that abortion services need to be legalized in every country irrespective of their cultural, religious belief. Even that will not be sufficient unless it is truly implemented with the easy availability to legal abortion services.

Restrictive legislation to abortion is usually associated with a high incidence of unsafe abortion. In Romania, for example, maternal mortality rate (MMR) in the year 1966 was 20 / 100000. Unfortunately thereafter when laws were imposed restricting access to abortion, MMR went up to 100 / 100000 in 1974 and further moved to 150 / 100000 by 1983. After the law was revoked (1989), maternal death rate fell rapidly

Family Planning

We all know that effective FP services have many potential benefits. While it prevents unwanted pregnancy and unsafe abortion, by spacing and limiting the family size, it also reduces poverty, maternal and child mortality and thus improves maternal and child health. And as it reduces the burden of child birth, indirectly it also helps in empowerment of women and enhancement of environmental sustainability by stabilizing the population (Cleland J et al, Lancet 2006).

Indeed investment in family planning services, together with development of modern method of contraception in the second half of twenty century led to a striking increase in contraceptive use in many countries. Contraceptive prevalence rate which was less than 10% in 60's, became 60% in 2003.

As a result there was spectacular fall in total fertility rate, so much so that in some of the European countries fertility rate fell below the replacement rate.

Ironically this very success subsequently led to reduced funding for contraceptive research and most importantly investment in family planning services. Probably the world thought the population problem is over. This irresponsible act led to disaster for countries with low prevailing rate of contraceptive use, causing high population growth resulting in economic, political, social and environmental strain.

However the reality check says that every year still we have120 million cases of 'unmet need' for contraception. Provision of effective contraception would have prevented 23 million unplanned birth, 22 million induced abortions and 14000 pregnancy- related deaths every year. HIV epidemic has further added complexity to the promotion of FP and contraceptive development. Today other contraceptives than condom are receiving less attention.

(to be continued in the next issue)

Moments of 16th Annual Conference of ARSI

A section of the audience at the conference venue

President Dr. K.C.Sharma addressing the delegates

Justice Dharmadhikari, chief guest, with his inspiring speech made audience spell bound

Cultural events by the Staff Children

A section of the audience in the Cultural event organized on the occasion

Participants in the panel discussion on experience on developing paramedical workers (from Lft -Dr. Nergis Mistry, Dr. Lalitha Regi, Dr. Sushil Sharma, Dr. Sanjay S Shivade & Dr. Shyam Prasad)

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"Reaching the Unreached"

लोकाः समस्ताः सुखिनो भवन्तु

Combined
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International Federation of Rural Surgeons (IFRS)

&

17th Annual Conference of
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6th, 7th, 8th November, 2009

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