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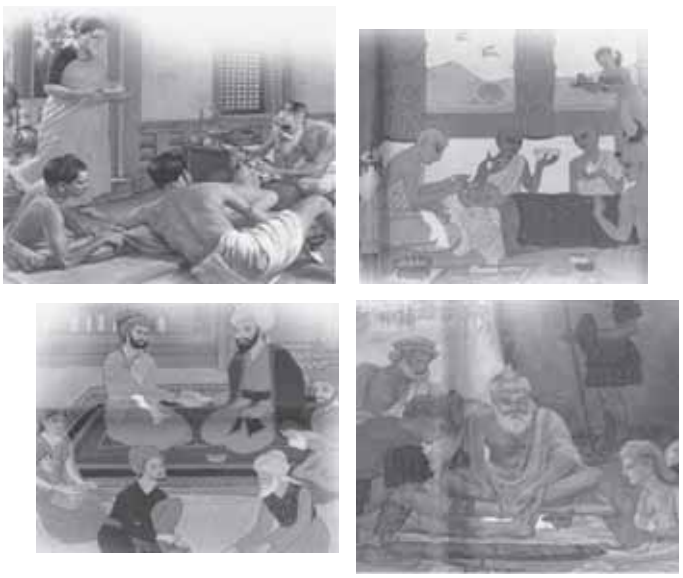

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Dr.R.D.Prabhu
President, IFRS

Our ancient sages said some 5000 years ago that the whole world is one family. I would not know how and why they said that. But a British geneticist, Walter Bodner also said some thing like that, "***we are all descended from Africa***". That obviously is a scientific conclusion. And now last month I read that another geneticist Spencer Wells, working on a project for the National Geography and IBM also stated that ***people in Europe, Central Asia, India, Far East, Australia etc migrated from Africa some 50,000 to 60,000 years ago***. That means we from India have come to our place of origin. That idea makes me very happy indeed.

Our wise old sages from India used to pray

सर्वे भवन्तु सुखिनः सर्वे सन्तु निरामयाः।
सर्वे भद्राणि पश्यन्तु मा कश्चिद् दुःखभाग्भवेत्।

Sarve Bhavantu Sukhinaha Sarve Santu Niramayaha,
Sarve Bhadrani Pashyantu Ma Kashchid dukhbhagbhavet.

"***May all be happy, may all be healthy, may all see good things, may no one ever have to suffer***". Unfortunately this prayer has never been fulfilled for all these centuries.

United Nations High Commissioner for Human Rights declared in 1968 that "***highest attainable standard of health is a fundamental birth right of every human being***". That has not made a lot of difference to the poor either.

Then came the Declaration of W.H.O. **"Health for all by 2000 AD"** in 1977, and of Alma Ata conference declaration in 1978. None of these have been effective as far as the health care of the poor is concerned. On the other hand, the medical fraternity, whose duty it is to look after the health also has been indifferent in this area. Dr. Banoo Koya from Maharashtra, India very correctly said that *"we are happy with excellent health care of the 5%, mediocre care of the 15% but we are not at all concerned with the health care of the remaining 80%!" As a result of all this in India, in 1995, not more than 30% of the population had any access to the basic surgery*. (Dr. Takavale1995). The situation in other developing countries may not be very different.

The developments and advancements of health sciences have no respect for the cost factors. To add to this is the present context of globalization and everything that comes with it. As a result, the noble profession that medicine was has now become an ignoble commerce. In stead of simplifying it the practice of medicine and surgery is becoming more and more complicated, day by day, even to the practicing surgeons, leave alone the patients. Perhaps that is why Austrian philosopher Ivan Illich exclaimed that "*…medical doctors have expropriated health from public*". A number of newer gadgets and protocols are being introduced all the time. These may be affordable by the developing countries and the top 5 to 10% of Indian population but they are certainly not within the reach of nearly 70-80% of the rest. How relevant or irrelevant these protocols are is difficult to say. In such a state of affairs, I believe, making health care affordable is far more important than trying to follow the academics or the latest standards.

Perhaps that is also the reason why in Declaration of Alma Ata they opted for

"acceptable level of health" and not the "highest attainable standard of health". The Alma Ata conference in 1978 said that Primary Health Care is the key to achieve the goal of "Health for All by 200 AD." I believe, Rural Surgery or what you call Primary Care Surgery is the key to the surgical care of the people.

Some surgeons from rural India got together nearly 20 years ago and focussed attention of all on to surgery as they practised it. They called it Rural Surgery. To paraphrase what is said of the Primary Health Care in the Alma Ata declaration, rural surgery is "*based on practical, scientifically sound and socially acceptable methods and technology, made universally accessible to individuals and communities at a cost that community and country can afford*...." In other words it is the appropriate multi-disciplinary surgical care. 80% of the surgeons in India are concentrated in urban areas and the remaining 20% surgeons practice rural surgery to serve the nearly 70% of rural population and urban slum dwellers. Dr. Halfdan Mahler the past Director General of W.H.O. had said something to the effect that only that technology is important which is useful to the majority. Obviously, our new concept of rural surgery was and is certainly one such useful technology.

But this truth was unacceptable to the academicians. Arthur Schopenhauer had said: "*All truth passes through three stages. First it is ridiculed, second it is opposed violently and third, it is accepted as being self evident*".

Association of Rural Surgeons of India has literally experienced all these three stages. Now the very concept has been accepted as being obviously important for our nation. A separate section of Association of Surgeons of India on rural surgery has been started. The Indian Government has started a Rural Health Mission. Thanks to Dr. Shyamprasad, National Board of Examinations has started Diplomate of Rural Surgery, a post graduate course too. We hope that very soon this post-graduate qualification in rural surgery will give it the rightful status of a speciality.

When a technology has to be made affordable, people innovate to cut costs and to overcome the constraints. You have the wonderful example of Prof. Awojobi inventing a bicycle driven centrifuge. We in India too have some great innovations that have made health care more affordable.

1. Jaipur foot. It is a low-cost lower limb prosthesis, with which an amputee can work in wet fields and even climb trees.
2. Low cost Ventilator introduced by Dr. Ghaisas does not need the costly oxygen as operating force.
3. Mosquito net introduced by Dr. Brahma Reddy for hernia repairs is a very cheap alternative.
4. Our past president of India, Dr. Kalam gave light alloy of space technology to reduce the weight of prosthesis for poor children.

With all these and many more, rural surgery in India is gradually becoming popular, more patient friendly and also effective.

International Federation of Rural Surgery was an idea put forth by Dr. Thomas Moch, our present Secretary and Dr.J.K. Banerjee, present president of ARSI. The main purpose of I.F.R.S. is to pass on the message, that rural surgery is best suited to the developing countries. I feel that each of your countries needs to modify surgery to suit its people and its health problems. It is by no means a quick fix solution. What Dr. Halfdan Mahler said for Primary Health Care is true for Rural Surgery too. He said "*What we need most of all is singleness of purpose, absolute determination to overcome obstacles, trial and error and retrial, and refusal to retreat in frustration if progress is slower than we would like*". At the

end of it all you will be proud of the rural surgery you developed for your country.

It is said that men and nations act wisely when they have exhausted all alternatives. You do not have to wait till you exhaust all your alternatives. Develop your surgery keeping your alternatives. Innovations need only the God given wisdom. Such wisdom is seen in almost all communities and I am sure you too have wise people in your countries and you too may create many useful innovations. By all means use all the help from abroad, it will be unwise to start from the beginning; but develop your own surgery best suited to your people and your country. Aim for self-dependence. Self-dependence will make you proud of yourselves. We are proud of all our innovations and the mosquito net, which is symbolic of our attempts to reduce the cost of surgery, and a dignified and very effective alternative to the imported proline mesh.

It is my sincere hope and the hope of I.F.R.S. and A.R.S.I. that this meeting will stimulate the desire in the hearts of all surgeons and nations of Africa to work for the health care of the poorer section of each country. By the time we meet in two years for the next conference, we hope that we will have many more associations or societies of rural surgeons in from different parts of Africa. May God bless you all.

(Proceedings of IFRS general body meet will be published in the next issue)

A section of the Indian delegates with dignitaries

This issue has been sponsored by Dr. Laila E Chandy, California, USA

Memoir of 2nd international conference of IFRS at Ifakara: A tribute

Dr. S. K. Baasu

Our journey from Dar es Salam to St. Francis Designated district Hospital at Ifakara – venue for 2nd international conference, took more than 12 hours. Prior overnight plane journey added to our fatigue and somnolence.

On reaching St. Francis hospital we were met by Dr. Kibatala and his entire team who were eagerly awaiting our arrival. Their joyous and sweet greetings of ***"Karibu"*** (welcome in Swahili), the grand feast that followed and each & every team members' readiness to solve our problem with a beaming face and passionate ardor; melted away our weariness. Feelings of tiredness were gone, lethargy long forgotten, only to be replaced by a new found feeling of warmth and being so wholeheartedly welcomed.

The conference was inaugurated the next day, 27th September with a theme that is of perennial interest to all of us: "Challenges of practicing surgery in rural areas". Dr. R. D. Prabhu, President of IFRS, in his opening speech, spoke at length in his impeccable style about the philosophy of rural surgery, background of the formation of ARSI and IFRS. Quoting the prayers of ancient Indian sages "*Sarve Bhavantu Sukhinaha Sarve Santu Niramayaha…*" he emphasized on the importance of universal access to affordable surgical care even if they do not follow the academics or the latest standards. He also highlighted various innovations that have been made by Indian rural surgeons and others in reducing costs and making surgical care affordable.

There was representation from all over the world, Indians being the second largest contingent (32 in number) after Tanzanians. Rural surgeons converged from every part of the globe- east, west, north and south. It became a meeting place of great minds: of people with vision and many vocations with one uniting concern i.e. efforts to make surgery accessible and affordable for the common mass. The discussions took on purpose and intent grew into something significant since they dealt with the issues that needed to be taken care of. Every aspect of rural surgery was discussed: Philosophy, challenges, innovations, creating work force, cost reduction strategies and many more. Perhaps we may describe this as exchange of dialogues with rural surgeons from world over.

Presence of His Excellence Vice President of the United Republic of Tanzania Ali Mohamed Shein, Hon'ble Minister for Health and Social Welfare Prof. D. Mwakyusa and Rt. Rev. Bishop Agapiti on the day of inauguration validated their support, genuine interest and enthusiasm about the event. Their deliberations were inspiring. It reiterated the need of propagating the concept of rural surgery for today's world for the benefit of humanity at large.

In the end, this event gave an opportunity to renew old friendships and make many new ones for bringing the world together.

For the Indian delegates safari tour across Tanzania (arranged by themselves) for the next 9 days was a bonus and a truly enchanting and exciting experience.

Dr. P. Kibatala, Vice President of IFRS and organizing chairperson along with his team deserves kudos, a big applaud and highest level of appreciation for their unmatched hospitality, meticulously organized scientific program, our comfortable stay and not to forget for giving us a rare opportunity to witness the incredible Masai dance. Let us all say to them ***"Ashante sana"*** (thank you very much).

Surgery on the Doorstep

Dr. Sitanath De

What does the phrase really mean?

For a middle class urban community, the idea of "surgery on the doorstep" is one that is taken completely for granted and which requires no thought at all. However for the vast majority of population in rural India, "surgery on the doorstep" represents a deep felt need which is still beyond the reach of far too many.

The phrase expresses an ideal scenario in which effective, affordable and safe basic surgical care is made accessible to the rural poor, even in the remotest corner of our country. The urban dwellers need to stop and think about the acute suffering endured by so many rural based patients. Imagine a case of perforated appendix occurring in a spot where there is no electricity, no supply of running water, no *pucca* roads and no doctor capable of giving at least basic emergency surgical care, within a radius of fifty miles or more!

How I became aware of the plight of the rural surgical patients!

I myself joined medical college in Calcutta from a small town in south-west Bengal, where my uncle was an established physician. Every time I returned home, my uncle would confront me with yet another needy patient requiring urgent treatment. Calcutta was the nearest available centre and getting there involved five hour journey by the local passenger train. If the patient required admission, the relative would have to sleep on the pavement outside the hospital as they had no other option. It became my regular duty to escort such patients to my own teaching hospital and see that they received necessary treatment. Thus I was forced to witness their ordeal first hand. Not only did they face a heavy financial burden, including the loss of their daily earnings, there was also the anxiety of leaving family, land and live stock inadequately protected. Finally there was the mental and physical trauma of experiencing a huge city, possibly for the first time of their lives. It was this early experience which inspired me to become a rural surgeon.

Is "Surgery on the Doorstep" a workable concept?

After almost forty years of successful practice in a small surgical clinic in my home town, I will have to say that the concept is not only workable but also immensely rewarding. It requires hard work, courage, innovation and as much practical exposure to the relevant branches of surgery as possible. The young surgeons need to build up his own confidence in his practical skills and learn to rely on his clinical judgment, so that he is mentally and physically fit to tackle whatever difficulties he may encounter. He must make himself a "General surgeon" in the most literal sense of the word "General".

What has actually been achieved during my years of practice?

After almost forty years of attempting to provide "Surgery on the Doorstep", I have seen many improvements in the infrastructure available. Anesthesia techniques are now much easier and reasonably cost- effective. The spread of mobile phones in the rural areas have made communications possible, even in inaccessible areas. The improved transport system means that travel is easier, and less hazardous to the patient, in most areas. It has been a constant learning experience. I have been gratified to discover other likeminded surgeons, some of them practicing in remote and isolated areas. Together we formed our own Association of Rural surgeons of India with the specific aim of promoting the development and growth of rural surgical practice in India.

Our success has been limited. New innovations aimed at reducing cost have been introduced and ARSI is actively promoting training schemes to assists young surgeons planning to work in the rural areas. However the imposition of Clinical Establishment A it has had an adverse effect on small surgical clinics. The implementation of the act has caused the escalation of treatment cost to beyond the reach of common people. The small scale peripheral surgical clinics, responsible for carrying 60% of the total surgical load of the local area, at an affordable price, are now almost extinct.

What still needs to be done?

The government's current concern with the problem of rural health care, as illustrated by rural health mission, is encouraging. However I believe the authorities and planners have failed to utilize the infrastructure which is already in place across the rural area. I believe the existing block hospitals could easily be upgraded to provide a good standard of basic surgical care, within a reasonable distance for most rural areas. Medical education needs to be reorganized so that would-be surgeons are actually exposed to the experience of operating out the shelter of the urban teaching hospitals. They would thus develop necessary confidence to handle the responsibility of surgical care in the rural areas.

In spite of the many difficulties encountered around the way, practicing rural surgery is a challenging and rewarding profession. I hope as we move further into the twenty first century, "Surgery on the Doorstep" will finally become a reality for all.

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Trichobezoar: Presenting as Acute Intestinal Obstruction

Dr. R.K.Garyali
Dr. Punitee Garyali

Abstract

The authors present two cases of Trichobezoar intestine, without gastric connection, presenting as acute intestinal obstruction.

Introduction:

Trichobezoars are concretion of foreign materials found in the stomach and intestine, occurs infrequently in the humans, is very common in animals particularly goats and sheep. For centuries bezoars were considered to be a potent antidote against snake venom and other poisons, however at present clinical application is very limited.

Bezoars are classified as Trichobezoar (hair balls), and Phytobezoar (vegetable material).

Trichobezoars are conglomerates of ingested hair, mostly located in the stomach, on occasions may project into the duodenum and rarely extends throughout the bowel, known as Rapunzel Syndrome. The mass is dark greenish brown or black in color has a shining surface with a very offensive odor. This is common in children and adolescents with 90% patients being females. Many patients have a psychiatric problem as well.

It is very rare to find Trichobezoar in small intestine without gastric component.

Case Report

Patient was a young 15 years old female who attended the emergency department with colicky abdominal pain, constipation, vomiting off and on and distension of abdomen. On examination she was averagely built young girl, ill looking, dehydrated and visibly in pain. Her abdomen was distended

Trichobezoar being removed from the intestine

and tender. There was no rigidity or rebound tenderness. She had visible coils of intestine with high pitched bowel sounds. Her investigations were essentially normal with low hemoglobin. X-Ray abdomen in standing posture showed multiple air fluid levels with no free gas under the domes of diaphragm, suggesting a small bowel obstruction.

A diagnosis of Acute Intestinal Obstruction was made and patient was put on drip, suction and antibiotics, and was subjected to a laparotomy under GA about 24 hours after admission. Laparotomy identified one big 4"x 2" size Trichobezoar near the terminal ileum as the cause of obstruction. It was removed by Entrotomy and the intestine was decompressed. There was no evidence gastric bezoar. Post operative period was uneventful.

The 2nd case was a 12 years girl, presented almost with the same clinical picture. She also underwent a laparotomy and Entrotomy for Trichobezoar terminal ileum.

Conclusion

Intestinal Trichobezoar without gastric connections is very rare and small bowel obstruction due to Trichobezoar, though rare, is reported in the literature. A careful history should accompany all patients presenting with acute intestinal obstruction. The cause remains doubtful as possibility of a primary Bezoar in the intestine seems improbable. The Most likely cause seems a fragmentation and subsequent migration from stomach to intestine.

In both the cases a preoperative diagnosis was not possible; however one of the two girls did accept chewing of hair post operatively

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The July 2007 issue of "Rural Surgery" bulletin was sponsored by Mr. Suheim Sheikh, Secundrabad. Editor regrets the inadvertent mistake of not printing the same in July issue.

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Laparoscopy Guided Feeding Jejunostomy: A low cost technique

Dr. J. Gnanaraj

Introduction

Enteral feeding devices have gained popularity since the beneficial effects of enteral nutrition have been clarified. Laparoscopic placement of a feeding jejunostomy is the most recently described enteric access route (1). Most of the experience is with total laparoscopic placement with expensive catheters designed for this purpose. Laparoscopy aided procedures have been described (1). We describe a laparoscopy aided procedure that uses the easily available Foley's catheter.

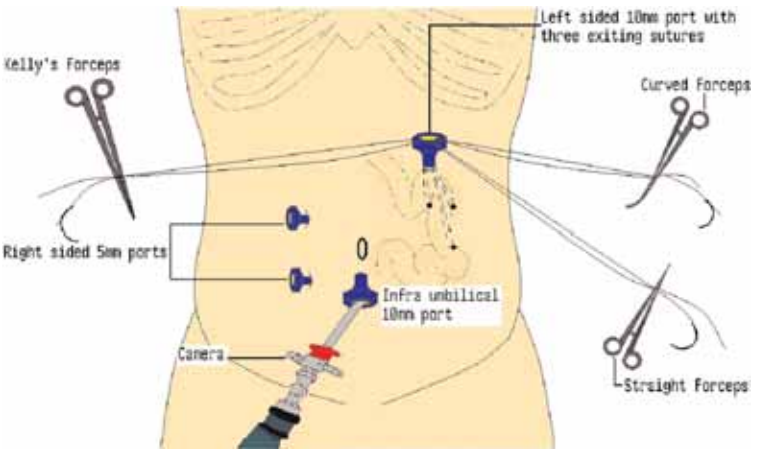
Method

The patient is positioned with the legs separated and head end slightly elevated. The ports are placed as follows

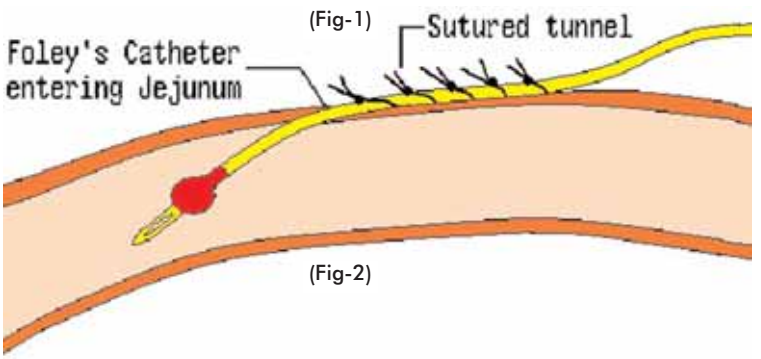
1. The 10 mm port for the camera is placed at the umbilical region infra umbilical.
2. The second 10 mm port is placed at the proposed site for feeding jejunostomy on the left side near the lateral wall of the rectus abdominis few inches superolateral to the umbilicus.
3. Two 5 mm ports are placed on the right side of the patient at convenient places along the lateral border of the rectus muscle.

Three sutures are taken inferolateral to the feeding jejunostomy site as follows. Figure 1 illustrates this.

- ✦ Three zero sized round bodied needle silk sutures are passed inside the abdomen through the lateral 10 mm port



(Fig-1)



(Fig-2)

- ✦ The first suture is place about 3 inches inferolateral to the port on the anterior abdominal wall. Both the ends along with the needle are pulled out long and kept by holding it with a straight artery clamp.
- ✦ Two more sutures are placed one on either side about two inches inferolateral to the lateral 10 mm port. These sutures are also held long along with the needle and are identified by holding one with a curved artery clamp and the other with Kelly's clamp.

These sutures are later used to fix the jejunum along the anterior abdominal wall. A part of the jejunum is held with an atraumatic forceps and the 10 mm lateral port is removed taking care to pull the correct threads and reapply the corresponding clamps that are used for identification.

If necessary the port site is extended to comfortably pull out the jejunal loop and the proximal and distal ends are once again verified by pulling it. The proximal end is attached at the Duodeno Jejunal (DJ) flexure and hence offers resistance to pull.

The site for jejunostomy is chosen. A foley's catheter (20F) preferably a sialastic one is placed inside the jejunum through a small sub muscular tunnel and a purse string suture is placed to tighten the opening (fig 2). About 3 ml of saline or distilled water is used to fill the balloon of the catheter. There should be sufficient space for the proximal contents to flow around the balloon. About an inch of the catheter is again placed in a tunnel created by taking interrupted sutures from either side on the jejunum.

The sutures that were left long are used to take sutures at the appropriate place on the jejunum. The jejunostomy site is then carefully placed inside the abdomen and the sutures are tied so that the jejunum is anchored to the anterior abdominal wall. The laparoscopic camera could be used to visualize the correct placement of these sutures.

Discussion

Laparoscopic, laparoscopy guided and per-cutaneous placements of feeding jejunostomy have been described (2, 3, 4, and 5). These are often carried out at centers where special tubing that is used or the cost involved might not be a consideration. However in a rural area the cost involved is a very significant consideration. The above technique is convenient and uses low cost easily available materials and is well suited for rural areas.

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Use of Human Placenta in generation of Biogas

Dr. Sanjay S. Shivade

(Paper presented in 2nd IFRS conference at Ifakara, Tanzania)

Introduction

With the time, it has become an absolute necessity to search for new or non conventional energy sources available in our country. We are all aware of 'Greenhouse effect' and the 'global warming' and its effects resulting in drastic change or shift of seasons, increase in city temperatures, melting of the ice caps on the globe, creation of deserts, the rising sea levels. All these cause a potential threat for the thickly populated metropolitan coastal urban dwellings. These changes are mainly due to excess production of CO_2. The concentration of CO_2 allows the visible sunlight to pass through them on the earth. But these greenhouse gases absorb and trap infrared light radiated outward from the earth and convert it into heat. This is the impact of our modern technology, our so called changed life style and high speed and, rapid deforestation.

Indian Biogas technology is more than four decades old now. Govt. of India launched a National Biogas project for Biogas Development in 1981 in 6th Five year plan (1980 to 1985). Biogas technology by recycling and making scientific use of organic, municipal, agricultural waste, yields manifold benefits. To these, in a rural set up, Hospital biowaste (all except the plastic) can be added. Maternity homes additionally have placenta as a regular and abundantly available source of energy. Disposing organic degradable waste of a Hospital is a tiresome job. It is a nuisance for others and can pose public health litigation. Hospital cotton, gauge, human excreta, pus, blood, operated specimen, placenta, food stuffs, etc. which are all but biodegradable and can be recycled in the Biogas digester to obtain fuel for burning and high quality fertilizers. Even a small biogas plant can reduce loss of forest wealth and misuse of agriculture and cattle wastes. India has world's largest cattle life. Biogas, as is good to a farmer, is equally good to a Rural Surgeon. In this project, biomedical waste (except plastics) were used as input in the Biogas plant (Fixed Dome Model) for last 15 years and has been found to be extremely useful, economical and eco-friendly. Set up like 30-35 bedded hospitals, rural govt. hospitals, maternity homes in the suburb can surely draw benefits from this project.

The contents of biogas are 55-70% methane, 0-10% hydrogen and rest carbon dioxide. The biogas is produced through a biochemical process in which some bacteria convert biological waste into useful biogas consisting of methane. It is suggested that hospital waste like placenta along with other hospital waste can be used to produce the biogas.

One of the problems faced in rural area is disposal of placenta. The placenta is demanded by rural people for disposal. They dispose the placenta by burying it. Domestic animals like cat, dog searches the placenta to fulfill their hunger. Placenta is not consumed fully by these domestic animals. Hence, disposing the placenta like this is unscientific, unhygienic. This may result in creation of health problem.

The biomedical waste generated from the other health care institutions needs to dispose carefully as it may contain infectious materials to cause consequences. Government of India has made it mandatory to all hospitals, clinics, animal houses, pathological laboratories to dispose biomedical waste according to the rules without any adverse effect on human health and environment. Due to some or other reason, it may not be possible to dispose the biomedical waste safely. One of the biomedical wastes, placenta can be disposed

by utilizing it as raw material in generation of biogas. It was observed that addition of placenta in digester of biogas plant increases the quality and quantity of biogas.

Generation of biogas:

The gas is generated in a digester. Digester is an airtight tank filled with the organic waste. To this digester all the latrine outputs are also connected. There is one inlet through which all the waste is put in, along with water. Biogas flows through a small hole made in the roof of the dome. Pipes are used to carry the gas to the hospital to the burner or lamp. .Biogas generated in anaerobic digester is collected in the dome, having capacity to store 2500 cubic cm gas. A non return valve is employed to prevent flow of biogas back to the digester so that the activity of bacteria is not stopped. The returning of biogas inside the digester restricts the activity of bacteria which result in the blocking of generation of gas. The biogas does not contain pure methane. It contains several impurities like carbon dioxide, Nitrogen, Hydrogen, Carbon monoxide etc. The calorific value of the biogas is about 4713 Kcal/m3. However it gives useful heat of 3000 Kcal/m3.

Biogas plant features:

The present biogas plant is "fixed dome" type. The shape of digester is cylindrical and it is under grounded partially. Bricks, cement material are employed for building of digester. It holds slurry for digestion. The constituents of slurry are human excreta, hospital waste including contaminated blood, body fluids including cotton dressing solid plaster linen and other material contaminated with blood, cow dung and placenta along with water. The generated biogas passes through the outlet provided in the digester. Back valve is provided for non return of gas. (Illustration 1)

Materials and methodology:

Generally the raw materials used for generating the biogas are cow dung, human excreta etc. Along with hospital waste contaminated with blood and body fluids like cotton dressings, solid plaster, linens, bedding, and amputated parts of body, placenta in particular was used .Placentae from six different nursing homes were collected and put into the plant.

The capacity of digester tank is 2500 liter. The raw material used for generating the gas was about40 Kg of human excreta, 10 kg hospital waste contaminated with blood and body fluid weighing 1 kg, near about 0.5 kg of placenta. On an average, ½ ton waste is the input every day. The quantity of placenta added to digester tabulated date wise in the table.

Hydrolytic Bacteria

Consortia of anaerobic bacteria break down complex organic molecules (proteins, cellulose, lignin, and lipids) into soluble monomer molecules such as amino acids, glucose, fatty acids, and glycerol. The monomers are directly available to the next group of bacteria. Hydrolysis of the complex molecules is catalyzed by extra cellular enzymes such as cellulases, proteases, and lipases. However, the hydrolytic phase is relatively slow and can be limiting in anaerobic digestion of waste such as raw cellulolytic wastes, which contain lignin. The use of BZT ® Waste Digester can complete this breakdown faster because it contains the necessary bacteria and enzymes groups.

Fermentative Acidogenic Bacteria

Acidogenic (acid-forming) bacteria convert sugars, amino acids, and fatty acids to organic acids (e.g.: acetic, propionic, formic, lactic, butyric, or succinic acids) alcohols and ketones (e.g.: ethanol, methanol, glycerol, and acetone), acetate, CO_2 and H_2. Acetate is the main product of carbohydrate fermentation. The products formed vary with the type of bacteria as well as with culture conditions (temperature, pH, redox potential.)

Acetogenic Bacteria

Acetogenic bacteria convert fatty acids (e.g.,

propionic acid, butyric acid) and alcohols into acetate, hydrogen, and carbon dioxide, which are used by the methanogens. This group requires low hydrogen tensions for fatty acid conversion: and therefore a close monitoring of hydrogen concentrations is necessary. Under relatively high H_2 partial pressure, acetate formations are reduced and the substrate is converted to propionic acid, butyric acid and ethanol rather than methane.

Methanogens

Anaerobic digestion of organic matter in the environment releases 500-800 million tons [453.6 - 725.75 metric tons] of methane per year into the atmosphere and this represents 0.5% of the organic matter derived from photosynthesis. These fastidious methanogenic bacteria occur naturally in deep sediments or in the rumen of herbivores. This group is composed of both gram-positive and gram-negative bacteria with a wide variety of shapes. Methanogenic microorganisms grow slowly in wastewater and their generation times range from 2 days at 35^0 c [950 F] to as high as 50 days at 10 0 c (500 F). About two thirds of methane is derived from acetate conversion by methanogens. The other third is the result of carbon dioxide reduction by hydrogen.

Microorganisms, mostly bacteria, are involved in the transformation of complex high-molecular-weight organic compounds to methane. Furthermore, there are synergistic interactions between the various groups of bacteria implicated anaerobic of wastes, though some fungi and protozoa can be found in anaerobic digesters.

Date	Quantity of feedstock (10 kg of raw material* + placenta)	Water
20/03/2007	250 gm placenta	10 lit
21/03/2007	300 gm placenta	10 lit
22/03/2007	400 gm placenta	10 lit
23/03/2007	500 gm placenta	10 lit
24/03/2007	650 gm placenta	10 lit
25/03/2007	750 gm placenta	10 lit
26/03/2007	1000 gm placenta	10 lit

Observations:

The addition of placenta and blood contaminated hospital waste like cotton dressings, solid plaster, linens, etc. along with regular raw material increases the quantity and quality of biogas. It was observed that biogas generated lasts for six to seven hours. The digester consuming the regular raw material generates the biogas that lasts for 5-6 hours. For first two hours the flow of gas is fast. The flame of the gas is blue. The calorific value of biogas is higher if percentage of methane is higher. Placenta is a good culture media for the growth of Methanogenic coliform bacteria The quantity of placenta added to digester and the additional time for which the gas is burned is tabulated date wise in the table.

Date	Quantity of feedstock (10 kg of raw material*+ placenta)	water	Additional burning time due to placenta
20/03/2007	250 gm placenta	10 lit	15 minutes
21/03/2007	300 gm placenta	10 lit	18 minutes
22/03/2007	400 gm placenta	10 lit	22 minutes
23/03/2007	500 gm placenta	10 lit	33 minutes
24/03/2007	650 gm placenta	10 lit	45 minutes
25/03/2007	750 gm placenta	10 lit	50 minutes
26/03/2007	1000 gm placenta	10 lit	70 minutes

Slurry obtained was used in the garden as farm yard manure. It was observed that farm yard manure obtained in this way is rich in NPK which is more than ordinary manure. NPK values for slurry manure are tabulated below.

Constituent	N	P2O5	K2O
Biogas slurry	1.4	1.0	0.8
Farm yard manure	0.5	0.2	0.5

It was observed that use of slurry as manure increases the fertility of soil which results in improvement in the yield of the crop.

Factors affecting output:

1) Quantity of Placental tissue - more the no. of placentae, more is the output.
2) PH in the digester is best at 7.0-7.2
3) Temperature - optimum at 350c; however hotter temperatures up to 420c, the yield is higher.
4) Quality of other ingredients- Vegetable waste (either dry or wet) may be added. Addition of dung improves output as the intestinal floras in cattle have high percentage of E coli bacteria.
5) Volatile acids kill bacterial flora and hence should be pre treated
6) Type of model used - dome shaped fix model delivers gas initially at a constant rate but later on the output lowers down.

Biogas produced from different sources:

Input material Rest of kitchen oil	Biogas produced per ton of dry substance 1083 m^3
Grass	520-700 m^3
Sugarcane	550 m^3
Pig manure	370-480 m^3
Vegetable waste	450 m^3
Chicken manure	450 m^3
Cattle manure	250 m^3
Biomedical waste	300m^3

Exact role and advantages of placenta:

Placenta is protein plus CHO. It is an excellent media for culture of coliform bacteria, which produce methane gas. When added to other waste, it acts synergistically to digest other biomedical waste. The output is increased quantitavely and qualitatively; hotter the climate, more the production. It cannot be stolen / digged from the gas plant by animals. Placenta is energy and not a waste.

Conclusion:

1) Established in 1992 by Panchayat Samittee Khandala. as a fixed model, dome shaped in R.C.C. [Investment cost initially was Rs. 5000 only for the author.]
2) Measurements are 12 feet diameter, 5 feet deep.
3) All the W.Cs are connected to it.
4) Additional cow dung, operative specimen, cotton, household vegetable waste, Tree leaves are dumped in it. Addition of placenta made surprising results qualitatively and quantitavely.
5) On an average, it works for 6 hrs, No foul smell is felt.
6) Hospital Autoclaving / Boiling sterilization is done on Biogas, which is supplied via blue pipe.
7) After every 3 months, excess slurry is removed and put in the garden around the Hospital as manure. Excess water is also re-circulated, re-used for the trees around the Hospital.
8) About 100 different trees are planted around the Hospital in which Tulsi and Nimb are predominantly planted which clean the air and create ozone atmosphere.
9) Biogas has served as an example for Hospital in Rural places like Lonand.
10) The Government of India launched a Central Sector entitled the National Project for Biogas Development (NPBD) in 1981-82 for the Sixth plan period. The broad objective of the project was to conserve and use organic materials as fuel and fertilizer through the Biogas

system in order to reduce increasing pressure on the demand for firewood and commercial fuel and supplement and optimize the use of chemical fertilizers.

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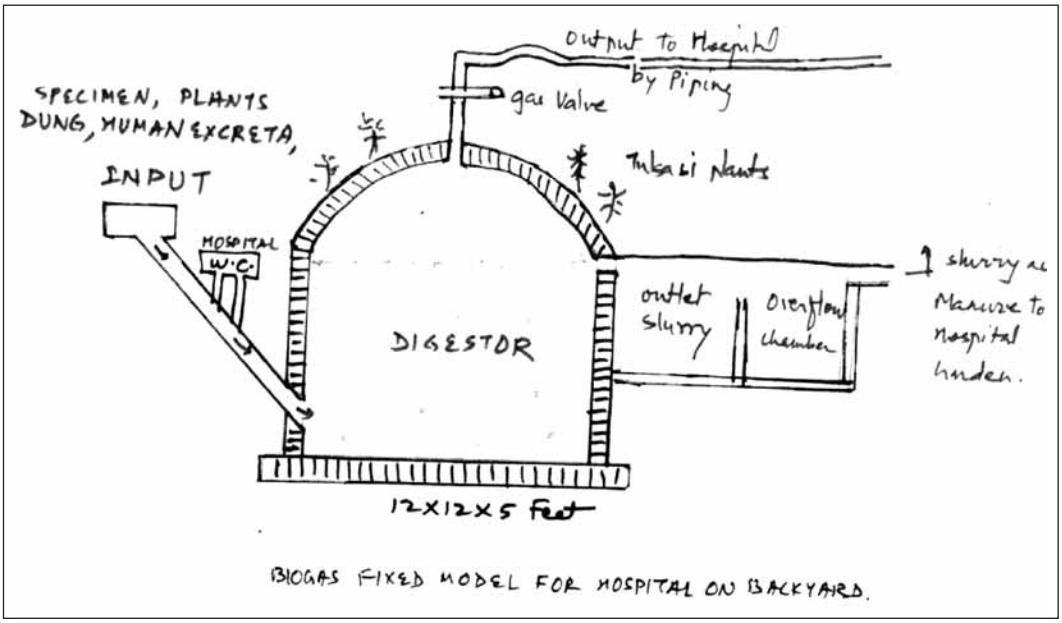

BIOGAS FIXED MODEL FOR HOSPITAL ON BACKYARD.

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E-mail:- drshivade@rediffmail.com

Giant Vesical calculus

(A case report)

Dr. P P Muchhadia

Abstract

An unusual case of bladder stone is presented. The mere size of stone and the method of removal were exceptional in the urologic literature. The stone could be palpated on physical examination. The stone was removed in Toto with the help of an obstetrics forceps. The stone weighed 1.088Kg.

Introduction:

Giant vesical calculus weighing more than 100 g is a rare entity. [1] Very few cases have been published in the literature. Less than 30 reported cases are available in the English literature having weight of the stone more than 100 gm. [1] The largest vesicle calculus is of 6294 gram reported by Arthure et al. [2] We report a case of solitary vesical calculus weighing more than 1000 gm.in a female patient without any predisposing factors.

Care Report:

A 45 years old female, working as laborer presented with H/O severe dysuria and frequency of micturition for last 15 years. She has no history of passing stone earlier.

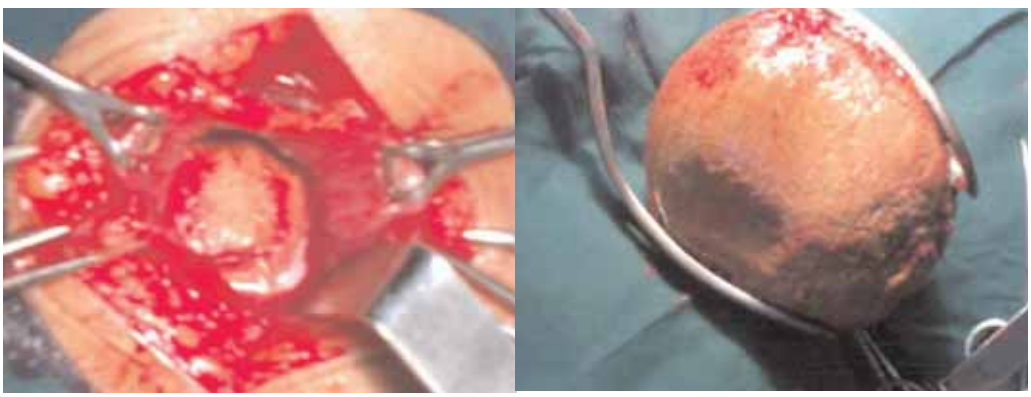
P/A examination revealed a hard lump palpable in suprapubic region.

Investigations management:

On investigation her complete haemogram was normal. Urine sugar was absent; HIV-non reactive; Plain X ray Abdomen- A large radio opaque shadow in the pelvis measuring around 72mm size suggestive of bladder stone; USG- a 7.5 cm sized stone in bladder 19-3-2003 and 10.9 cm on 13-1-06. Both Kidneys were normal. Suprapubic cystolithotomy was done under spinal anesthesia. The stone was too big to be removed by any stone forceps. Hence an outlet obstetric forceps was applied and a solitary stone weighing 1.088 KG delivered out. The closer of the bladder was done in layers. The patient had a smooth recovery

Discussion:

Calculus disease of the urinary system is known since a long time. Though commonly found, giant vesical calculi are rare. Vesical calculi are commonly secondary to the renal



stones or to the bladder outlet obstruction and bladder diverticulum. [3] Bladder stones are reported around a foreign body, sutures, catheters or other objects introduced in the bladder.

These giant calculi are thought to develop from a single ureteric calculus or from the nidus of the infected material with a progressive layering of the calcified matrix. Lewi et al have reported formation of a large vesical calculus as a result of coalescence of 2 or more calculi. [4] Patients with giant vesical calculus usually present with recurrent urinary tract infection, and retention of urine. Our patient presented with inability to pass urine, and frequeney of mieturitron.

Surgical treatment of vesical calculi has evolved over years from 'blind' insertion of crushing forceps into the bladder to open surgical removal or extracorporeal fragmentation. Open surgery has been the best-recommended modality for large stones. [5] In our case, due to its huge size the stone had to be taken out with "outlet obstetric forceps".

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TENTATIVE SCIENTIFIC PROGRAMME
ARSICON 2007- PUNE. 16TH TO 18TH NOV. 2007

DAY 1	Friday 16th Nov 2007
9 - 9:10 am	Remembering Padmashri Dr. N.H. Antia - "A Tribute" Dr. Swarn Arora
Session I :	Anaesthesia.
9-15 to 10 am	Lecture Session -1 1. Anaesthesia under Difficult Conditions. **Dr S. D. Palnitkar**. 2. G.A with Relaxants for Major Surgeries."Without Using Boyle's Machine" **Dr. Tongaonkar Jyotsna** 3. Rural Surgeon & Management of Anaesthesia. **Dr Masurkar. A. K** 4. Discussion 10 minutes
10 am to 12 noon	Video Session -1 (5 presentations)
12 noon to 1.30 pm:	Symposium I. "Rural Health Care Systems" Speakers: 1. **Dr Shyam Ashtekar**, Director, School of Health Sciences, Yashwantrao Chavan Maharashtra Open University, Nashik. 2. **Dr. Meenakshi Gautham**, a Public Health consultant specialising in Human Resources for Health 3. Reaching out to Tribals: **Dr D. B. Shirole**. 4. Community Health Service. **Dr. Ratna Magotra** 5. Emerging Roles for Rural Medical Practitioner. **Dr. Nerges Mistry**.
1-30 t0 2-15:	LUNCH
2-15 pm to 3:30 pm.	Video Session - 2 (5 presentations)
3:30 pm to 5:00 pm	Video Session - 3 (5 presentations)
6:30 pm onwards	INAUGURATION Followed by Dinner

DAY 2	Saturday 17th Nov 2007
9 am to 10 am:	GENERAL SURGERY 1. Setting up of Cardio thoracic Care for Rural Needs. **Dr. Pankaj Shrivastav**. 2. Pediatric Surgery- **Dr. Govind Datar**. 3. "Rural Surgery" bulletin: A need based change to medical journalism - **Dr Basu. S. K**
10 am to 11 am:	FREE PAPER SESSION -1 GENERAL SURGERY

	1. Seven years follow up of 408 patients with Hernia Repair using Cheap Mosquito Net Cloth As Mesh. **Dr. R. R.Tongaonkar**. 2. Role of Rural Oncologist. **Dr A. K. Masurkar**. 3. LA'Haouts Operation for Rectal Prolapse. **Dr Medha Vaze**. 4. Cirsoid Aneurism of Scalp: A case Report: **Dr S. Golash**. 5. Thyroid surgery under local anesthesia: **Dr. Sanjay S. Shivade** 6. Extraordinary surgeries under very ordinary surgeons - **Dr. H. M. Wange**
11 am to 11-30 am:	TEA BREAK
11-30 am to 1 pm	**Symposium II: Surgical Training to Meet The Health Care Needs of Rural India** **Speakers:** 1. **Dr Shyamprasad** 2. Introducing the DNB course in Rural Surgery. Prof **A. K Sood**, Director, National Board of Examinations. 3. Reflections on the Practical Training in a Post graduate Teaching Institution. **Prof. R. Narang**, Head Dept of Surgery. MGIMS, Wardha. 4. Reflections on the Practical Training in a Nodal Rural Hospital. **Dr. Mitra Dhanraj**, MGIMS, Wardha. 5. My Expectation, as a student from DNB course in Rural Surgery - **Dr. Aditya Gait**
1pm to 2 pm:	LUNCH
2 to 3:30 pm	SESSION 2 : OBGY
	Lecture Session-3 1. Hysterectomy: **Dr. Suresh Sankeshwari**. 2. Abnormal Uterine Bleeding. **Dr. Jyoti Unni**.
2-30 pm to 3:30 pm	FREE PAPER SESSION - 2 OBGY
	1. Ultra-sonography- Some interesting Obstetric Observations. **Dr. K. C. Sharma & Dr. Veerendra Sharma**. 2. Managing Patients of Eclampsia and severe Pre-Eclampsia in Rural Area. **Dr. R.R.Tongaonkar**, 3. A study of cord prolapse and cord presentation **Dr. Mitra Dhanraj, Dr Shivam** 4. Prescription Practice in Pregnancy. **Dr. S. K. Mukopadhyay** 5. C-Section under Local Anaesthesia **Dr. Neelakantan Subramonium**. 6. Urethral Perforation in Obstetric Labour **Dr. S. Jamir**.
4 pm to 5-30 pm.	**Lecture Session-4** 1. Recent Advances in the Management of Severe Burns. **Dr. Vithal Lahane**. 2. Journey from a Small Broken Clinic towards a Small International Hospital, **Dr Vivek Patne**. 3. Basics of Management of Head Injury. **Dr. Khandelwal**.

	4. Ophthalmic Practice in Rural set up. **Dr. Sadanand Patne**. 5. Basic Dermatosurgical Procedures for Rural Surgeons. **Dr. Dipak Gore**. 7. Biogas - **Dr. Shivade Sanjay** 8. Rare Rugnalaya Unique Community Hospital - **Dr. Suresh Khursale**, Nanded
5:30 to 7pm	AGM
7:30 pm onwards	BANQUET

DAY 3	Sunday, 18th Nov 2007
8:30 am - 9am	ANTIA - FINSCHET INNOVATION AWARD PRESENTATION FELLOWSHIP AWARD PRESENTATION
9 am - 11 am	SESSION 3 - Management of Extremities Lectures Session - 5 1. Hand Injuries- **Dr Pankaj Jindal** 2. Fracture of Lower end of Radius. **Dr. Rajesh Rohira**. 3. Management of Upper limb Fractures **Dr. B. G. Kanaji** 4. Management of Lower Limb Fractures in Peripheral Hospitals. **Dr. Ajit Damle** 5. Problems of skin cover in limb injuries. **Dr. S. S. Daddi** 6. Clubfoot Management by JESS : Dr. Ram Prabhoo
11 to 11-30am	TEA BREAK
11:30 - 12:30 pm	Lecture Session - 6 ENT 1. Foreign Bodies in ENT Practice: Tricks and Tips. **Dr Ravi Sardesai** 2. ENT Services with constraint Resources at Rural Medicare Centre. **Dr. Abha Bhatnagar**
12:30 - 1: 30 pm	Lecture Session - 7 Reconstructive Surgery in Leprosy 1. Facial Deformities: **Dr Swarn Arora**. 2. Claw Deformity: **Dr. P. V. Joshi**. 3. Management of Neuropathic and Diabetic Foot Problems. **Dr Sanjay Sane**.
1:30 - 1:45 PM	VOTE OF THANKS AND LUNCH Poster Papers: 1. Procto Tub Innovation to Enterpreneurship- A Journey. Dr Prasad Vaidya 2. Deformity Correction in the Upper Limb - Dr. Ram Prabhoo, Dr. Rajesh Rohira, Dr. B.G. Kanaji 3. Management of Post Burns contractures - A twenty year experience - Dr. Swarn Arora, Dr. B. G. Kanaji, Dr. Rajesh Rohira

Condolence message from DTC

Dear friends,

On behalf of the DTC members we want to express our very deep compassion that Dr. Antia has passed away. Right from the beginning of our intensive exchange between A.R.S.I. and DTC we appreciated and admired his crystal clear attitude towards the needs of the poor and the causes of poverty. He was a hard-liner with a heart of gold and I am sure that many of us and of our colleagues followed the political background of Rural Surgery because of his uncompromising and deeply humanitarian analysis.

At the same time very sad to have lost his presence, we are very thankful for all meetings, all laughter, all train trips all across India with him and his wife, for his modest outfit - telling us without many words how to behave and how to act to remain reliable.

We all from the DTC who met him will never forget him and we will use every day what we could learn from him.

Good feelings that come from lasting friendships are, in themselves, great spiritual blessings

RNI No. DELENG/ 2005 / 16240

ARSICON, PUNE 2007

(15th National conference of ARSI)

Venue

J. P. Naik Center,
128/2, Kouthrud, Karve Road,
Off. J. P. Naik Path, Pune

Dates

16th, 17th & 18th of November, 2007

16th of Nov - Live surgical demonstration at KEM hospital

17th & 18th of Nov - Short papers, symposium, guest lectures, Panel discussion etc.

Organising Secretary: Dr Swarn Arora MS, FRCS, LLM, PGDHA
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