Original Article

Surgeries at rural hospital: From "Chekmate" to solutions

Ajay D Subhedar[1*], Shakuntala L Shelke[2], Sangita M Gavit[3]

{[1]Associate Professor, [3]Assistant Professor, Department of Surgery} {Associate Professor, Department of Radiology}
SBH Government Medical College, Dhule, Maharashtra, INDIA.
Email: subhedarajay74@gmail.com

Abstract

What a Rural Surgeon can do in his small place totally depends on his personal ability and facilities available to him. The Technical problems can be due to non-availability of good and adequate equipment, facilities for investigations, non-availability of qualified paramedical personnel staff, including qualified anaesthetist and many others. But if one wishes, all these can be easily overcome. Building can be modified, at least internally using false roofs and false walls. Minimum required investigations can be done at small setup. Most of the operations can be done on simple operation tables, with ordinary light and minimum standard equipment. Similarly any major surgery can be done using Oxford type of bellows and air ether mixture. As regards scope in Rural surgery , he can do anything and sky is the limit. But there are many limitations, which can be broadly divided into three, namely technical problems, professional skill and legal problems .To work in situations where most of the things are lacking, is like fishing without net. But this was our story of fishing with fishing hook. The working of a surgeon in rural India can be a 'CHECKMATE'. Due to lack of necessary basic requirements the surgeon may surrender to adverse conditions and may become a reffering physician only. Condition may worsen if the surgeon is working in government rural hospitals. So Government system should improve in rural surgical area. The surgeons who are Working in government hospitals in rural areas and giving justice to needy and poor population should be appreciated and praised, as in our case.

Keywords: district hospitals, general practice, health services, paramedical personnel, prizes and awards, rural health, rural hospitals, rural population.

[*]**Address for Correspondence:**
Dr. Ajay D Subhedar, Associate Professor, Department of Surgery, SBH Government Medical College, Dhule, Maharashtra, INDIA.
Email: subhedarajay74@gmail.com
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INTRODUCTION

(Even after half a century of independence, "*not more than 20 percent of the population has any access to….. Basic surgical services like life saving caesarian section, or a life saving repair of typhoid perforation….*" (National Human Development Report 2001)[1]. This situation can be improved only if there is adequate number of rural surgeons in India whose surgery is affordable and available near the homes of the patients. Realizing the vital role of rural surgeons in the nation's health care. The concept of rural surgery has been developed in India in the last twenty years to make modern surgical care accessible to the rural world. Only one billion out the total of six billion population of the world has any access to the type of surgical care seen in the hospital of Western Europe and America. In India, out of the population of more than one billion as of today, not more than 10% has any access to this type of surgical care.

What a Rural Surgeon can do in his small place totally depends on his personal ability and facilities available to him. As regards scope in Rural surgery he can do anything and sky is the limit. But there are many limitations, which can be broadly divided into three, namely technical problems, professional skill and legal problems. The single most limiting factor is the professional skill of the surgeon, which depends on the training he has received during his postgraduate studies

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and his desire and ability to implement them. Rural Surgery or Surgery in Rural area is no way different or inferior to surgery carried out anywhere in the world except that it is done by a single handed Rural Surgeon under resource constraints.[2]

How much to do and how far to do, totally depends on the surgeon himself, his capability, his training, ambition and desire to learn and do as many surgical procedures as he can, in his small set up. No body can prevent him from doing anything he wants to do. Sky is the limit. Besides routine surgical procedures one can certainly do all types of major surgeries like cholecystectomies, nephrectomies, hemicolectomies, intestinal resections, thyroidectomies, radical mastectomies and repair of big Incisional hernias. One can do all gynaecological and obstetrical procedures including caesarean sections and hysterectomies.[7]

The single most limiting factor probably is the professional knowledge, skill and expertise of the operating surgeon. If the surgeon is not properly trained and does not have enough experience of doing various procedures on his own and does not take special efforts to learn new techniques, he is afraid to undertake any major or complicated surgery alone in a remote place and becomes only a referring doctor. This exemplifies the truth that if a rural surgeon desires he can do anything, anywhere, under any circumstances and any settings. Dr.T.E. Udwadia also agrees to this fact. Limitations in Rural Surgery can be broadly divided into three, viz.

1) Technical Problems
2) Professional Skill
3) Legal Problems

The availability and optimal utilization of medical equipment is important for improving the quality of health services. Significant investments are made for the purchase, maintenance and repair of medical equipment. Inadequate management of these equipment will result in financial losses and deprive the public of the intended benefits.

This analysis is based on the conceptual framework drawn from the WHO recommended – lifestyle of medial equipment. Today the pressure of the healthcare industry of the developed world is enormous on developing countries to sell their products in the when we professionals set the right type of priorities for the benefit of the majority population of the world name of "development". We, who are working amongst poorer people and without any health care development will take place only.

MATERIAL AND METHOD

This was observational problem oriented study. The problem oriented observations were noted during year 2005 to 2007. At Rural Hospital Chopda all the major and minor surgeries were performed and the problems related to manpower, material and resources were noted. We have done total 1699 surgeries. Out of these 184 were major and 1515 were minor operations.

OBSERVATIONS

Table 1: Staffing pattern of the rural hospital Chopda

Sr. No.	Sanction Staff	Sanction	Existing
1	Hospital Superintendent	1	1*
2	Surgeon	1	0
3	Anaesthesia	1	0
4	Gynaecologist	1	1
5	Pediatrician	1	0
6	Orthopaedic surgeon	1	0
7	Physician	1	0
8	Medical officer	4	4
9	Staff Nurse	27	16*
10	Class IV	10	10*

*Regular

Table 2: Total no OPD/IPD patients during April 2006 to March 2007

Sr. No	Months	OPD	IPD
1	April	3634	273
2	May	3925	364
3	June	4699	284
4	July	5907	653
5	August	5728	484
6	September	4511	362
7	November	3431	338

8	December	3309	249
9	January	2992	219
10	February	2763	213
11	March	3095	218
	Total	**47134**	**3745**

Table 3: Surgries at rural hospital

Sr. No	Months	Minor	Major	Total
1	April 06 and 07	97	15	112
2	May 06 and 07	137	14	151
3	June 06 and 07	122	10	132
4	July 06 and 07	127	11	138
5	August 06 and 07	141	10	151
6	September 06 and 07	119	16	135
7	October 06 and 07	113	11	124
8	November 06 and 07	126	21	147
9	December 06 and 07	106	17	123
10	January 06 and 07	146	18	164
11	February 06 and 07	133	22	155
12	March 06 and 07	148	19	167
	Total (2006 and 2007)	**1515**	**184**	**1699**

Table 4: List of major surgerise done

Sr. No.	Name of Surgeries	No. of cases
1	Appendectomy	32
2	Inguinal Hernia	20
3	Inguinal Hernia with mesh repair	12
4	Hydrocele	07
5	Abdominal Hernia with Anatomical Repair	06
6	Abdominal Hernia with mesh repair	08
7	Hysterectomy for D.U.B.	20
8	Hysterectomy for Fibroid Uterus	15
9	Ovarian Cyst	09
10	Vault Prolapse	01
11	Vaginal Hysterectomy	03
12	Undesended testis	02
13	Orchidectomy	02
14	Bladder stone	12
15	Kidney stone	02
16	Frayer's Prostatectomy	02
17	Modified Radical Mastectomy	04
18	Cholecystectomy	01
19	Exploratory Laprotomy	22
20	Amputations	04
	Total	**184**

DISCUSSION

A questionnaire was circulated among the members of the Association, association of rural surgeons of india (ARSI),151 of whom responded (142 practising in rural areas)[3]. Half were in Government hospitals and half in private practice. The survey showed that:

- 45% worked without a specialist anaesthetist
- 63% had no blood bank facilities.
- 68% worked without a qualified radiologist
- 68% worked without a qualified pathologist and

32% had none of the above facilities. Analysis of the work done showed

- 96% did abdominal operations
- 68% did orthopaedic operations
- 80% did obstetric and gynaecological work
- 81% did urological operations
- 30% did thoracic operations
- 16% did ENT operations and
- 66% did three or more of these types of operations.

Surgeons have innovated laprolift equipment out of towel clips, coat hangers, water pipes to permit the penetration of gasless laparoscopy to rural India[10,11] and quality M.A.S. has been taken into small town rural India.[12] The care of the patient with burns has been simplified and made almost cost-free by various methods like self-care[13] and potato peel dressing.[14] Innumerable similar innovations, which can be seen in almost every Taluka in India, are not flashes of genius but the inspired result of working over many years under conditions of necessity and deprivation. Some of these contributions are documented in a recent Special Issue of the Indian Journal of Surgery devoted to rural surgery.[15] Nor are innovations in rural surgery India's prerogative. Similar improvisations are seen in almost every developing country. For example in rural Nigeria rain water is harvested in nursing homes for year around water supply, a charcoal furnace powers the autoclave, large windows which catch sunlight compensate for interrupted electric supply, all hospital equipment is fabricated by the village blacksmith, the rear wheel of a bicycle doubles as a haemotocrit centrifuge.[16]

To Operate a major case in a rural hospital is always a major problem, till today. This is due to many problems, but to highlight some of these are non availability of

1) Well equipped operations theatre
2) Trained anesthetics
3) Qualified Physician for pre operative fitness, intra and immediate post operative care, if needed
4) Blood bank
5) Trained operation theatre and nursing staff.

To work in situations where most of the things are lacking, is like fishing without net. But this is our story of fishing with fishing hook. We will discuss our problems in short.

Well equipped operations theatre: Rural Hospital, Chopda district Jalgaon,Maharashtra is constructed under M.H.S.D.P.(Maharashtra Health System Development Project) construction quality of Government Hospitals in this program is good. And we got adequate instruments and equipment of the minimum quality to run a operation theatre complex. Thus we have operation theatre complex fulfilling our basic requirements. But rest 4 out of 5 was lacking and our story starts now.

Traind anaesthetic: Availability of trained anaesthetic was always a major problem at Govt. Hospital, even at district level hospitals in Maharashtra. So, we were paralysed. To start with by our continued follow up and personal care of our civil surgeon, Jalgaon, we managed to get an anaesthetic from jalgaon, once a week on deputation. But soon, again there was shortage at Civil Hospital Jalgaon and his deputation was terminated. Then after continuos follow up by civil surgeon, our respected deputy director, Nashik arranged one anaesthetic from rural hospital Shirpur, Dist. Dhule and other from rural hospital Sakri, Dist. Dhule on deputation basis. They use to come every Thursday and Friday respectively. We used to keep all our planed cases on the said days. We were fortunate when one anesthetic joined our rural hospital Chopda and we got full time anaesthetic. So automatically deputation orders of both previous anaesthetic were cancelled. But once again we were paralysed when our anaesthetic resigned medical officer post after few days. Now here we are covered by N.R.H.M. (National Rural Health Mission).in chopda tahasil , only single anaesthetic was available freely in private sector.To start with,he was not willing to join Govt. Hospital as anaesthetic for case basis. But with social relations we Succeeded to join him with us on anaesthetic on case basis. National Rural Health Mission was proved as a boon for our operation theatre complex and rural hospital Chopda.

Qualified physician: Qualified physician is also a part of operative procedure. Physician is for pre operative fitness and intra and post operative care, if needed. But we were unfortunate to get a physician till the end. At rural hospital Chopda, since last five years the post of physician was vacant. In last two years Govt. transferred two M.D. Physicians from Civil Hospital, Beed and Civil Hospital, Nashik. But the physicians resigned their permanant post, as private practice was disturbed at their respective places. Under National Rural Health Mission , we are unable to join any physician due to shortage in the Chopda tahasil. No one responded our advertisement of Contractual post of physician under National Rural Health Mission. So sad to say our problem of physician was not solved till the end. Though I am proud to say, the responsibility of physician was taken on our head, it was risky job. We have to manage pre operative fitness, intra and post operative care too. We were lucky as we did not face any problem. More over pre operative medical fitness was having medico legal aspect too. So we are on high risk.

Blood bank: While operating a major case one should have adequate units of crossmatched blood ready. Not in operation theatre but it should be available within few minutes. The rural hospital Chopda was not having blood storage unit or blood bank till the end. In Chopda tahasil, one Red Cross Blood Bank was working in private sector. So we were having psychological support to obtain blood if needed in dire emergency. Out of 184 operated major cases only once we required one unit of blood and it was for the case of frayer's prostatectomy for benign enlargement of prostate. Rest 183 surgeries did not

required blood. We kept the requirement of blood to almost zero and the problem of blood bank was over.

Trained O.T. and nursing staff: Trained staff is also a key factor in operative patient management. Our existing staff was used to only for family planning operations. Now this was our job. To start with, we teach them the number and names of instruments for the respective operative procedures. Then gradually by experience our staff is trained enough. O.T. staff is now trained enough to work in district hospital too. And the same story is with nursing staff too. We had to take sciencere and continues efforts to achieve the minimum skills among all operation theatre staff.

Thus on the platform of operation theatre complex of minimum standards, we had to fight a lot. The anaesthetic, the captain of ship of operation theatre, was always missing. We tried every time and succeeded every time to manage the anaesthetic. To operate a case without physicians pre operative fitness was a major issue. It always has medicolegal importance. Many times help of physician is needed intraoperatively and postoperatively too. With the help of anaesthetic and our clinical judgement we managed all the cases successfully. Requirement of blood during any major surgery is many times unpredictable. Only once we required blood. With our best knowledge and meticulous techniques we kept the requirement of blood to almost zero and the problem of blood bank was over. To run a operation theatre daily or routinely, we require trained staff. It is very difficult to have it. With constant efforts and teaching, we trained them up to mark. The Technical problems can be due to non-availability of, good and adequate equipment, facilities for investigations, non-availability of qualified paramedical personnel staff, including qualified anaesthetist and many others. But if one wishes, all these can be easily overcome. Building can be modified, at least internally using false roofs and false walls. Minimum required investigations can be done at small setup. Most of the operations can be done on simple operations table, with ordinary light and minimum standard equipment. Similarly any major surgery can be done using Oxford type of bellows and air ether mixture. The Medical colleges are producing about 600 qualified surgeons every year, but scarcely very few of them take jobs in urban hospitals. Some of the rest gets absorbed in the teaching institutions of the country or super specializing. Others go out and practice in the impoverished district hospitals or voluntary hospitals or set up private practices in small towns, and in semi urban and rural areas. It is this third category of surgeons that reach out to meet the needs of majority of the population of the country. They work under extreme constraint of resource. They combine their western medical and surgical knowledge together with locally available human and material resources and provide appropriate health care to the people. They not only practice multiple surgical disciplines but they also do general practice and preventive and promotive medicine, including maternal and child health. Thus, although they are trained as surgeons they go into total health care to live up to the needs of the community. With this, unavailability of basic requirements prevents most of the rural surgeons from not doing anything major than piles, fistulas, hernias and hydrocele and limiting at the most to appendectomies and referring the patient to a bigger centre as soon as anything else is found. Overall, By overcoming our problems in two years, we had done total 1699 surgeries. Out of these 184 were major and 1515 were minor operations. The most important part was that ,not a single major complication has occurred during and after all these operations. On two occasions the spinal anesthesia had turned in to total spinal and there could be big trouble. But our expert anaesthetic diagnosed within seconds and managed it within minutes. Here again, the role of expert hands shows all or none phenomenon. The post operative situations were smooth and we didn't face even any post operative wound infection case. This might be due to, personal care of the surgeon to do postoperative dressings and stitches removal in operation theatre. For this we used separate minor operation theatre which also we were fumigating routinely. We had done a small museum of some of our operated specimens which was unique of it's kind at rural hospital level. The museum includes 64 specimens and 12 photographs. The museum showed our efforts and also improved image of our Government rural Hospital among common public. We mounted the specimens in formalin as pathologist do in Government Medical College.

This operative and overall other clinical, administrative work was judged by higher authorities and we are honored three times. The prizes and awards were as follows.

First Prize	Dr. Anandibai Joshi Award	Best District Level Hospital	2005-2006
First Prize	Dr. Anandibai Joshi Award	Best District Level Hospital	2006-2007
First Prize	Dr. Anandibai Joshi Award	Best District Level Hospital	2007-2008

The prizes and awards included momento, Certificate and Rs. 50,000/- cash each time. We utilized the amount to make our hospital patient friendly. Overall, qualified doctors are backbone of rural hospitals and overall health services. If multi specialty doctors are available everywhere, situations of rural health will be much better.

RECOMMONDATIONS

1) Rejuvenation of the Operation Theater complex and other equipment related to surgery.
2) Priority should be given to the specialist like anesthesia, surgeon, physician and gynecologist at rural hospital.
3) The entire specialist should be available round the clock.
4) The blood bank facility should be available at rural hospital or atleast in the town.
5) Appointment of regular doctors and other staff should be done at rural hospitals.
6) More monetary fund is needed for upgradation of rural hospitals under National Rural Health Mission and other government schemes too.

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