Organisation de la chirurgie privée et publique de l'Inde

Organization of private and public Indian Surgery

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Mots clés

- Chirurgie publique
- Chirurgie privée
- Inde
- Organisation

Résumé

Les hôpitaux privés et publics (gouvernementaux) en Inde sont aussi différents les uns des autres que la « craie et le fromage ». Un bon hôpital privé dans une ville métropolitaine offrira des soins chirurgicaux à un standard assez élevé pour rivaliser tout hôpital du meilleur niveau à Paris. Cependant, la plupart des hôpitaux publics n'est ni bien financée ni bien pourvue en personnel. Je présenterais surtout mon expérience dans des hôpitaux publics dont les ressources sont pauvres et les conditions de travail non optimales. J'ai modifié les outils pronostiques et les techniques chirurgicales de telle sorte qu'ils ne nécessitent pas un équipement coûteux. C'est la « *technologie abordable/appropriée* » pour les pays en voie de développement. Cela inclus de simplifier les systèmes de score pronostique pour l'usage quotidien, un test biochimique simple et économique pour évaluer la dysfonction hépatique, l'usage d'alternatives économiques pour l'habillement et les accessoires, simplifier les opérations pour l'hypertension portale par une procédure de dévascularisation, pour le cancer de l'œsophage, utiliser une technique facile de résection trans-hiatale et, pour le cancer du rectum, choisir une résection antérieure basse.

Notre devise est « *modifier, simplifier, appliquer* ». Travaillant avec un budget restreint nous essayons d'obtenir des résultats standards avec l'aide d'innovations simples dans la science plutôt que d'utiliser une technologie inabordable et nous essayons d'équilibrer « la vraie balance entre la science et la technologie ». J'essaye aussi d'enseigner l'autosuffisance en matière de technologie en indiquant comment travailler contre l'adversité, ce que j'aime appeler « *la formation géographique* ». Ma philosophie peut se résumer par ma citation favorite :

« *Attitudes are more important than abilities;*
Motives are more important than methods;
Character is more important than cleverness;
and stick-to-it-iveness is more important than the starting place ».

Keywords

- Private surgery
- Public surgery
- India
- Organization

Abstract

Private and public (government) hospitals in India are as different from each other as chalk and cheese. A good private hospital in a metropolitan city will offer surgical care of such high standard so as to rival any top hospital in Paris. However, most public hospitals are neither well funded nor well staffed. I will mainly present my experience of working in resource-poor sub-optimal working conditions of public hospitals. I have modified prognosticating tools and surgical techniques in such a way that they do not need expensive equipment. This is 'affordable/ appropriate technology' for developing countries. These include simplifying prognostic scoring systems for daily use, simple and economical biochemical test to assess liver dysfunction, usage of economical alternatives for dressings and accessories, operations for Portal hypertension (Devascularization procedure), Cancer of esophagus (Easy technique for trans-hiatal resection) and Cancer of rectum (Low Anterior Resection). Our motto is to "Modify-Simplify-Apply". Working on a shoestring budget, we try to provide standard results with the help of simple innovations in science rather than using unaffordable technology, and by striking the "right balance between science and technology". I also try to teach self reliance in technology by teaching how to work against odds, what I like to call "Geographical training". My philosophy can be summed by my favorite quotation:

"Attitudes are more important than abilities;
Motives are more important than methods;
Character is more important than cleverness;
and stick-to-it-iveness is more important than the starting place"

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Private and public (government) hospitals in India are as different from each other as chalk is from cheese. A good private hospital in a metropolitan city will offer surgical care of such high standard so as to rival any top hospital in Paris. And that is why India is among the top destinations for 'Medical Tourism', as most of these 'tourists' go to private hospitals. However, most public hospitals are neither well funded nor well staffed. As the cost of medical treatment spirals up, even developed countries are struggling to provide free medical treatment to all the population. This resource crunch is even more acute in a developing country like India. This problem is compounded by the fact that large number of deaths continue to take place due to infective diseases like respiratory infections, diarrhea and tuberculosis. I would like to focus my presentation on how working on a shoestring budget, we try to provide standard results with the help of simple innovations in science rather than using unaffordable technology, and by striking the "right balance between science and technology".

In a society, where millions survive on less than 2 Euros per day, first obligation of a Doctor/ Surgeon is *Noblesse oblige* (The obligation/ duty/ responsibility of those with special talent to be honorable and generous towards the underprivileged). It is imperative to perform clinically relevant research which will benefit the largest number of patients and to innovate when technology is not affordable. Our commonest surgical admission is Perforation peritonitis. As expansive investigation like blood gas analysis, arterial ph are not available for prognostic purposes; we found that these are not essential and prognostication is still possible, reliable and objective for prediction of outcome in perforation peritonitis without them (1). The success of this idea was a morale booster for us and we went on to simplify prognostication scoring system by including only Age, Heart rate, Systolic Blood pressure, Serum Creatinine, Perforation-Operation interval and Co-morbid illness (2). This simple scoring system can be used in smallest of district hospitals. It is simple and user-friendly as it uses only six routinely documented clinical risk factors. Another problem was lack of availability of expansive antibiotics, TPN (Total Parenteral Nutrition), ventilator support and ICU (Intensive Care Unit) care. In cases of Typhoid perforation, a leak of repair usually resulted in fistula, leading to certain death; this prompted us to switch to performing temporary ileostomy in all cases. This simple change in philosophy brought the mortality down from 30% to less than 3% (3). We were also able to simplify the prognostication in these patients by devising a simple scoring system for Typhoid perforations (4).

We also found that it is not mandatory to keep haemoglobin level at or >10 g/dL or PCV (Packed Cell Volume (hematocrit)) value at or >30% for skin graft take, as mild to moderate anaemia *per se* does not cause any deleterious effect on wound healing; provided perfusion is maintained by adequate circulatory volume. This resulted in saving many prophylactic blood transfusions to increase the oxygen carrying capacity of the blood for the purpose of wound healing (5).

Success of these simple ideas only confirmed that we have to see things from the perspective of the people whose lives we impact, and we can be proud of our research as small things can also make a big difference! Even Nobel Laureates have often remarked that *"You can do research on what is interesting or what is important"* (Alan Heeger, Nobel Laureate Chemistry; 2000); *"The only worthwhile problems are the ones you can really solve, the ones you can really contribute to."* (Richard Feynman, Nobel Laureate Physics 1965).

Appropriate technology for developing countries must have the following pre-requisites:

- It should be need based for locals
- It should be available at grass root level
- It should be affordable (cost effective)
- It should be easy to maintain
- It should be '*transparent*' (understood by locals)
- It should involve locals in its '*co-creation*' (skills transfer)

In a resource-poor setting, it is the duty of surgeon to optimize resources - -constantly, by using the most cost-effective option. Many examples are available: use of indigenous skin grafting knife, skin mesher, light source, endo-camera, port closure needles, external fixators, prostheses for joint replacements, operating loops/ microscopes, fiducials for image -guided surgery etc. As a teacher working in developing country, it is my duty to teach the same to all my students: what I like to call "Geographical surgery". Every student must be trained as per local needs and taught to think on his feet, the right attitude to be able to overcome limitations of resources. It is important, in the quest of innovation to have plenty of brain-storming-idea-seeking sessions. A fact underlined by redoubtable Marie Curie: "Be less curious about people and more curious about ideas!" (Nobel Laureate Physics 1903 and Chemistry 1911) Judgment must be suspended for these idea-seeking sessions and younger minds should be encouraged to think with their right half of brain as it deals with imagination and creativity.

As poet and philosopher Tagore suggested: Ideas can come from anywhere and everywhere, and minds should be open to new ideas (R N Tagore, Nobel Laureate Literature 1913). In one of our brain-storming sessions our plastic surgeon suggested the use of Rectus abdominis musculo-peritoneal (RAMP) flap for surgical treatment of duodenal fistula; as ICU care/ TPN is not available (6). RAMP flap for closure of duodenal defect is a simple, technically easy and dependable procedure, which can be performed quickly, even under local anesthesia in critically ill patients. It can be used for repair of large duodenal defects with friable edges when omentum is not available or when other conventional methods are impractical. We were asked to simplify this technique by our residents as it was technically very demanding to insert sutures in the right hypochondrium – so we started doing pull-in of the RAM flap by tying it to naso-gastric tube (7). A simple technique of Trans-Hiatal Esophagectomy evolved from an idea by a post-graduate resident, utilizing a ring stripper, which is safe, easy and quick. The correct plane of dissection minimizes the risk of intra-mediastinal bleeding and inadvertent trauma to neighboring structures (8). Our pediatric surgeon suggested using the abdomino-anterior sagittal approach for low anterior resection as an alternative option for sphincter-saving resection in female patients as it defines the sphincteric anatomy, and minimizes the risk of sphincter injury (9). The biggest advantage was avoiding staplers, which are expansive and often not available.

Surgical bypass for the palliation of dysphagia in patients with unresectable esophageal carcinoma continues to be an option in developing countries, as the cost of a good quality endoprosthesis is well beyond the means of most patients. We perform in-continuity fundic bypass (without resection of the lesser curvature and cardia, thereby not disconnecting the oesophago-gastric junction) with gratifying results with regard to quality of life. Awareness of this previously unreported procedure is important because it adds to the armamentarium of surgeons wanting to provide palliation for dysphagia and aspiration in patients with unresectable carcinoma of the esophagus (10).

It is not possible to master any technique, without mastering its history, logic, philosophy, anatomy, physiology and pathology. As *"Only the man who is familiar with the art and science of the past is competent to aid in its progress in the future."* (Theodor Billroth, 1829-1894; Father of modern Abdominal Surgery). When I wrote a book on Evolution of History of G I Scene in India, it made me realize how much wisdom is available in the history (11). We continue to use omental plug for closure of giant duodenal perforations and posterior approach to safe and under vision anastomosis of rectum: two of

the techniques which are no longer mentioned in modern textbooks (12, 13).
In depth analysis of anatomy of portal venous system allowed us to simplify the operation for Devascularization for portal hypertension (14). This technique is a simple, straightforward, safe and effective modification of the Sugiura procedure in controlling bleeding, providing good quality of life with minimal porto-systemic encephalopathy. Similarly, physiological and pathological correlation of serum and ascetic fluid albumin allowed us use SAAG (Serum Ascites Albumines Gradient) for diagnosis of esophageal Variceal bleeding in the absence of endoscopes (15). Estimation of SAAG is possible even in a small, modestly equipped laboratory, and provides a simple means for the identification of high-risk patients for GI bleeding and define patients in optimizing prophylactic therapy and improving the cost effectiveness of screening endoscopy.
These small ideas may appear trifles to some readers but *"Trifles make perfection, and perfection is no trifle"*(Michelangelo, 1475 – 1564, Italian painter, sculptor, architect, poet and engineer). And one has to remember that when we spend time on the small things, we are actually practicing excellence. Finding simple and economical solutions to complex problems can be a vey satisfying and rewarding intellectual exercise. We regularly use Linseed oil as very cost-effective indigenous agent in preventing peri-ileostomy skin excoriation (16). Use of nylon mosquito net for Hernia Mesh repair, where Prolene mesh is not available; has been around for quite some time. Similarly, use of drainage bags as bags for auto-transfusion of blood can save a lot of money. Our motto is to "Modify-Simplify-Apply". We believe "When solution is simple, GOD is answering"(Albert Einstein, Nobel Laureate Physics 1921). And "Simplicity is the ultimate sophistication" (Leonardo da Vinci, 1452-1519; Italian painter, sculptor, architect, musician, scientist, mathematician, engineer, inventor, writer)
Finally, we found many ideas and philosophies need validation in our own settings, where modifications are needed for their usage. Our anatomical study on lymph node counts in Indian patients addressed the dual issues of determining the number of dissectable lymph nodes in a particular population as well as assessing the quality of nodal dissection by providing quantitative surgical guidelines (17). Trauma severity indices need to be modified in developing countries as the weight of small bowel injury in these scoring systems has to be increased for it to be effective (18). Similarly, POSSUM is not a good predictor of low-risk patients and needs risk adjustment with the help of correcting factor for accurately predicting the mortality and morbidity. We identified such a correction factor with the help of multiple logistic regression analysis and prospectively validated this idea. Modified POSSUM (called Jabalpur-POSSUM) can successfully predict the outcome in low-risk patients (19).
Working on a shoestring budget, we try and provide standard results with the help of simple innovations in science rather than using unaffordable technology, and by striking the "*right balance between science and technology".*
I would like to conclude with my favorite quotation; which sums up my philosophy:
"Attitudes are more important than abilities;
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Discussion en séance

Question de F Dubois
Is it possible to proceed "low-cost" surgery if avoiding inappropriate regulations, such as disposable instruments, staplers machines and expensive installations developed by the manufacturers?
Réponse
It is certainly possible; in fact it is the need of the hour in a resource-poor setting. I am in complete agreement with Professor Dubois.

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