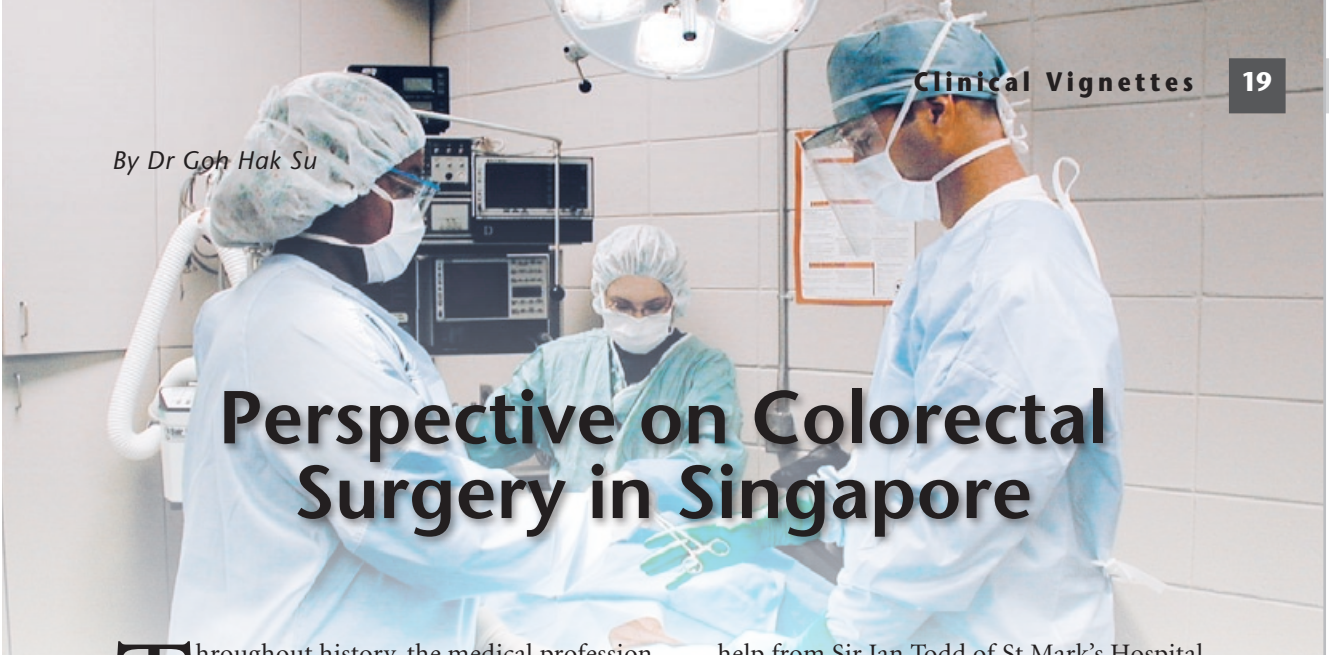

By Dr Goh Hak Su

Perspective on Colorectal Surgery in Singapore

Throughout history, the medical profession universally is a bastion of conservatism most unwilling to accept change. Yet "change", like professional medical ethics and good doctor-patient relationship, is a "constant" in medical practice. It is brought about by individual champions within the profession, economic realities, patient demands or political forces. The trials and tribulations faced by Dr Elizabeth Blackwell[1], the first woman doctor in America, because of non-acceptance of a woman by the profession is an example; development of colorectal surgery as a subspecialty is no exception.

In 1983, I approached Professor Shanmugaratnam, Professor of Pathology, National University of Singapore (NUS), and expressed a desire to do research on colorectal cancer in Singapore. He was most helpful and encouraging, and that cemented my interest in colorectal surgery.

The person who was most instrumental in establishing colorectal surgery in Singapore is Dr Kwa Soon Bee, then Permanent Secretary for Health and Director of Medical Services. In 1989, he offered me the opportunity and gave the mandate to start a Department of Colorectal Surgery in the Singapore General Hospital (SGH), with the mission of making it a centre of excellence. To me, a centre of excellence must adopt the best clinical practice with scrupulous audit, actively conduct research, offer sought-after teaching and training programmes, disseminate knowledge to fellow doctors and the public and be regarded by colleagues at home and abroad as a leader in the field. To achieve these, I recruited staff locally and from overseas; negotiated training opportunities in the United Kingdom and the United States; developed a computerised medical record with IBM for audit and research; established the Polyposis and Hereditary Colorectal Cancer Registry, the anorectal physiology laboratory and the molecular biology laboratory.

In building the Department of Colorectal Surgery, I was fortunate to have the support and help from Sir Ian Todd of St Mark's Hospital for Diseases of the Colon and Rectum, London and President of the Royal College of Surgeons, England, Professor Stanley Goldberg of University of Minnesota, Minneapolis and Dr Victor Fazio of the Cleveland Clinic, Cleveland. They provided expertise and staff for the department as well as training opportunities for our staff in their respective institutions. Most important of all, the new departmental staff gave their all as they were all fired up with enthusiasm to build the new department.

Today the Department of Colorectal Surgery in SGH provides excellent service to a large number of patients. A good way to gauge the quality of practice in colorectal surgery is to assess the operative mortality, rate of sphincter-saving and local recurrence rate for rectal cancer. A recent publication by Chuwa and Seow-Choen[2] shows that out of 791 cases of rectal cancer, the post-operative mortality was 2.6%, the proportion of abdominal perineal resection was 12.1% and the local recurrence rates for AP resection, anterior resection with straight anastomoses and anterior resection with pouch anastomoses were 5.4%, 3.6% and 3.8% respectively. These are very good statistics. The department now attracts trainees not only from Singapore, South East Asia, China and India but also from developed countries such as the United Kingdom and Australia as well. To date, the department has published 276 articles in referred journals[3], a rate of 16 research papers per year, a respectable number by any standard. The department also actively conducts courses, workshops as well as public forums to disseminate knowledge, especially on colorectal cancer.

The department is well regarded in international colorectal circles and some of its staff has gone on to take up leadership positions at home and abroad. Bryan Perry was appointed Professor and Head, University of Department of Surgery, Auckland, New Zealand; Ho Yik Hong became the foundation Professor and Head of Surgery, James Cook

Page 20 ►

Dr Goh Hak Su is a Consultant Colorectal Surgeon in private practice based in Gleneagles Hospital. He was the founding Head of Department of Colorectal Surgery, Singapore General Hospital.

◀ Page 19 – Perspective of Colorectal Surgery in Singapore

University Medical School, Townsville, Australia; Adrian Leong was appointed Associate Professor and Head, Department of Surgery at NUS and Charles Tsang became Head, Division of Colorectal Surgery, National University Hospital (NUH).

Today, there are trained colorectal surgeons in nearly every hospital, including private ones, in Singapore. The Society of Colorectal Surgeons, Singapore was formed in 2003 and there are now 32 full members and 13 associate members. However, colorectal surgery is still not accredited by the Specialist Accreditation Board as a subspecialty and is not recognised as such by the Academy of Medicine, the Postgraduate Board or the Ministry of Health (MOH).

Colorectal surgery in Singapore is at a crossroad: it can either advance to a much higher and exciting level or remain in its current status. To realise its potential, it has to capitalise on the promise of molecular biology for colorectal cancer and the development of Singapore as a medical hub stamped with the "brand of quality". The prerequisite for achieving this is for the colorectal fraternity to unite and collaborate. We should have a national computerised data bank for colorectal cancer based on best clinical practice and accurate clinico-pathological and follow-up information. Not only would it improve the quality of patient care, it would support our molecular scientists in the National Cancer Centre, NUS and Institute of Molecular and Cell Biology as well.

While the headline news is on gene and stem-cell therapy, the next impact from molecular biology would probably be from micro-array technology and small-molecules against specific targets in the carcinogenesis pathways. The former is for diagnosis, prediction of individual response to chemotherapy and individualised prognosis; the latter is for novel therapy like PAC-1 in converting procaspase-3 to caspase-3 prompting cancer cells to self-destruct – a process called apoptosis[4]. The larger the number of cases available for research, the easier it is for scientists to win the race of producing marketable products.

1,221 new cases of colorectal cancer are seen annually among Singaporeans and permanent residents[5]. They are treated in different hospitals. As research groups are affiliated with different hospitals, each group could only access limited number of cases. In comparison, the West China Hospital of Sichuan University in Chengdu, China, treats 1,600 cases of colorectal cancer annually[6]. It would be more expedient for our scientists to collaborate with the hospital in Chengdu, provided that they have not already started on their own research. But, collaboration is possible as seen in Scotland with a population of five million. The use of nationwide colorectal cancer material and survival data has enabled molecular biologists in Edinburgh to introduce a technique for diagnosing colorectal cancer with germ-line mismatched repair genes in clinical practice[7].

To be a hub of medical excellence, there must be a critical mass of well-trained professionals and good facilities. Senseless competition clouded by envy and suspicion among hospitals and individuals undermines that critical mass. 32 colorectal surgeons working in concert constitute that critical mass. As a big group, it would be much easier to market ourselves and negotiate for a much greater number of foreign patients. It would also make it easier to establish Singapore medical institutions abroad as there would be enough people to rotate out to service these enterprises. Whilst it is traditionally difficult to get doctors to work together, Norway with a population of 4.5 million people has shown us it can be done. In 1994, the Norwegian Rectal Cancer Group was set up to improve surgical standard with a nationwide implementation of Total Mesorectal Excision, a surgical technique to adequately remove cancer bearing tissues in rectal cancer. Within a short period of time, they were able to reduce local recurrence for rectal cancer from 28% to 8% and improve five-year survival from 55% to 71%[8]. What is needed is a spark of vision and determination not unlike the one seen in the establishment of the first Department of Colorectal Surgery. At that time, there were also a lot of cynics and skeptics.

References:

1. *Tan SY, Tasaki A. Elizabeth Blackwell (1821-1910), America first woman doctor. Singapore Medical Journal 2006, 47:739-740.*
2. *Chuwa EWL, Seow-Choen F. Outcomes for abdominal perineal resections are not worse than those of anterior resections. Dis Colon Rectum* 2006, 49:41-49.
3. *Eu KW. Personal communication.*
4. *Putt KS, Chen GW et al. Small-molecule activation of procaspace-3 to caspase-3 as a personalised anticancer strategy. Nature Chem Biol 2006 Aug 27 (published online).*
5. *Singapore Cancer Registry Report No. 6, 2004. Trends in cancer incidence in Singapore 1968-2002.*
6. *Zhou ZG. Personal communication.*
7. *Barnestson RA, Tenesa A et al. Identification and survival of carriers of mutations in DNA mismatch-repair genes in colon cancer. New England Journal Med 2006; 354:2751-63*
8. *Wibe A, Eriksen MT et al. Total mesorectal excision for rectal cancer – what can be achieved by a national audit? Colorect Dis. 2006; 5:471-477.* ■