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Photo Credit: Mr Tan Hai Yang, Principal Physiotherapist of Rehabilitative Services, Changi General Hospital

Perspectives on Surgery in Singapore: Craft, Science and Ethics

The performance of operative procedures such as trephining and circumcision for treatment or as religious rites dates back some eight thousand years. Medicine had become a fairly well-defined occupation by the 5th century B.C. when Hippocrates rendered ethical guidance to it by the now obsolete Oath. The term surgery comes from *chirurgia* in Latin, meaning work by hand, and it was essentially a craft when the Egyptians practised it 5,000 years ago. It had remained an occupation of artisans through most of the Middle Ages when barbers, known as surgeons of the short robe, went around performing blood-letting and other simple procedures, which eventually gave them the insignia of the red-and-white striped pole symbolising red blood and white bandages as seen today outside barbershops. Surgeons of the long robe distinguished themselves by their knowledge of Latin but were not much different in other respects from their less educated colleagues.

For centuries, surgery did not lift itself from craftsmanship even though the study of anatomy had become common by the 15th century. It eventually embarked on a scientific path when John Hunter blazed the trail to the fields of pathology, physiology and experimental surgery in early 19th century. Science and technology soon began to propel surgery at ever increasing speed.

Nevertheless, even by the first half of the 20th century, surgeons in underdeveloped countries with disadvantaged training background, inadequate staffing and poor facilities continued to lag behind in scientific progress and lean towards practising their profession as a craft. And so it was the case in Singapore.

In the 1950s and early 1960s, the practice of surgery in Singapore was marked by neglect of basic sciences and their applications. In the general management of patients, preoperative diagnosis and preparation and postoperative care took a back seat to handicraft in the operative room. Metabolic aspects of patients such as nutrition and fluid and electrolyte balance, and pathophysiological considerations in postoperative care, were often ignored. In the performance of operations, overemphasis of speed and small incisions often resulted in unnecessary complications.

The late 1960s and 1970s saw Singapore surgery rising from basic mundane procedures to the borders of open-heart surgery and organ transplantation led by such pioneers as Dr Yong Nen Khiong and Professor Chan Kong Thoe, supported on the medical side by Professor Khoo Oon Teik who was the prime mover behind coronary care and renal dialysis. The advanced procedures undertaken necessitated a good understanding of physiological and biochemical



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concepts and led to general awareness of the importance of basic sciences. At the same time, the return and arrival of young surgeons with exposure abroad helped to effectively alter the outlook of our surgical backwater. Surgical management, which formerly might have bogged in empirical assumptions or erroneous concepts, began to tread on sound scientific grounds. It was the period when a congruous merge of modern science and craft brought us out of the third world to within sight of the first world.

Technological advances in the 1980s and 1990s ushered in minimally invasive surgery and later robotic surgery in Singapore. Once again craftsmanship began to reign supreme. The trend is unavoidable in these procedures since at the end of the day what matters most is still the quality of operation received by the patient. At any rate, scientific approach is now too well entrenched in the profession to allow a relapse into mere technical performance in surgery. Furthermore, engagement in biomedical research promoted by our government and emphasis of

basic sciences in the coming new medical school will continue to stoke our progress in the right direction.

Nevertheless, a third factor has now crept into the profession as well as other branches of medicine with medical practice in Singapore fast evolving into pure business. Performance of procedures brings in the most monetary rewards. In a society where a person's worth is measured mainly by his wealth, it is difficult for one not to yield to the overwhelming influence of financial gain. How do we avert the pitfall of conflict of interest between patients and surgeons in situations such as the performance of procedures based on invalid indications? In Western countries, peer reviews fairly effectively check the conduct and ethics of medical practitioners, but such policing is hardly workable in Singapore in view of our small medical community with close interpersonal connections. Surgeons in Singapore still need to be reminded that without the ethical and scientific elements in the profession, we will regress to being craftsmen and tradesmen once again. ■