SURGERY TODAY TOWARDS TOMORROW

FERNANDO L. LOPEZ
Regent
Philippine College of Surgeons

Surgery started with the first successful operation under anesthesia on October 16, 1846. Since then, there has been an extraordinary explosion of scientific information leading to the advancement in the field of Surgery.

Today, surgery can best be described as both aggressive and minimally invasive. We are witnessing an awesome development in surgical technology and technique. Present day surgeons have also realized that they need to work together to be able to correct and help patients suffering from serious injuries and illnesses.

With a better understanding of the nature of diseases, surgeons are developing and perfecting newer and bolder techniques in almost all field of surgical specialization. Twenty years ago, patients with advanced malignancies would constitute a contra-indication to definitive surgery. Today, many surgeons are working together as a team; they offer procedures that would address the problem and give a chance to adjuvant therapy to work, thereby prolonging survival.

The most common cancer among women is still breast cancer. Two decades ago, once a stage III breast cancer is diagnosed, surgery was no longer advised. Presently, the same patients can be given induction chemotherapy thereby downgrading the stage of the disease and allowing surgeons to perform local control surgically. This is followed up by completion of chemotherapy and hormonal therapy giving the patient a better chance of survival.

Hilar-malignancy of the biliary tree was considered in the past, as a death certificate. Today we are able to perform respective procedure because of a better understanding of the physiology and anatomy of the affected organs. Again, giving the patient a chance to survive.

General surgeons are working very closely with Plastic & Reconstructive Surgeons, allowing them to perform radical resection of tumors of the skin and subcutaneous tissues, including the face, with minimal disfigurement. The advent of microvascular surgery has tremendously contributed to a more acceptable outcome. These and many more attest to new aggressive efforts that pervade surgery today.

We are also swept by a storm called surgical endoscopy. Today endoscopy is no longer limited to diagnosis. It is now being used more and more for therapy. Newer fiberoptic scope that are smaller, more manageable and with better vision are being developed to answer the need of surgeons with regards minimal access surgery.

In general surgery, the current state of the art is laparoscopic surgery. It started with laparoscopic cholecystectomy but today a surgeon gains experience and expertise in the use of the instrument; it's application is being extended to other procedures such as herniorrhaphy, colectomy, fundoplication, and others. Laparoscopic surgery definitely has an edge over open conventional surgery. For one, it has very little post-operative pain thereby reducing the number of hospital stay and allowing early return to work. It used to be said that surgeons loved to see and touch what they are doing. Today, surgeons are contented with watching their own operation on the monitor which is actually a magnified field. Currently, this technology could be used for just about all procedures in general surgery.

There are newer instruments being developed in general surgery. One of them is the harmonic scalpel. This device uses the earlier knowledge of ultrasonic wave. It allows surgeons to cut through tissues with minimal bleeding. It can also coagulate vessels. This device heralds a new era in which procedures can be done expeditiously with less bleeding.

Thoracic and cardiovascular surgeons are now using the technology of laparoscopic surgery. They are now performing Video-Assisted Thoracic Surgery (VATS). The procedure can be used to diagnose and manage different chest diseases with less post-operative pain and pulmonary dysfunction.

In cardiac surgery, the current favor is the MIDCAB or the minimally invasive coronary artery bypass grafting wherein up to 2 vessels can be done through right mini-thoracotomy on a beating heart. This obviates a long median sternotomy and the use of the heart-lung machine.

The advent of the operating microscopic has given plastic & reconstructive surgeons more room to practice their specialty. It is now said that what general surgeons destroy through their surgical aggressiveness can now be repaired and reconstructed by the plastic and reconstructive surgeons. They can now literally transfer tissue (from skin to muscle) freely from one area of the body to another with a very high rate of success. They are no longer inhibited by the length of the vessel. Their greatest success is in limb salvage. Fingers and toes following trauma need no longer be disarticulated or amputated. They can now be reconnected resulting to functional organs. Plastic surgeons are also using endoscopy for procedure like face-lifting and augmentation mammoplasty.

Pediatric surgeons are now performing fetal surgery. Fetal surgery was first conceived to treat unborn babies with anomalies gastroschisis. Today, new developments have been made to correct congenital anomalies before a child see the light. Babies are now undergoing surgical correction while still inside their mothers' wombs.

Laser surgery is now occupying a very important role in the field of urology. Ureterolithiasis no longer requires open surgical removal. They can now be crushed with the combined used of endoscopy and laser. This same procedure is used to operate on prostate making the procedure almost blood-less and obviating the use of continuous bladder irrigation.

Stereotactic neurosurgery is presently occupying the limelight in neurosurgery. Together with the Gamma knife and linear accelerator, neurosurgeons are able to accurately remove brain tumors without performing a craniotomy. Neuro-endoscopy is also being utilized especially for placement of ventricular catheters and resection of intraventricular tumors.

Finally, we don't see any new procedures in orthopedic surgery. What we have are new implants or prothesis. A good example is the rod used for patients with scoliosis, which before was very rigid but the newer ones allow more degree of flexibility.

What is in store for surgery in the next millennium?

The next millennium will see further development in minimal access surgery. The scope will be finer, more flexible and more user-friendly. We will also see more and more genes being tagged and identified as the culprit in many diseases which will eventually lead to gene therapy wiping them out even before they can manifest themselves.

We are also looking into tissue engineering especially in the field of organ transplant. A diseased organ can be replaced by a healthy organ from the patient himself after undergoing tissue engineering thereby obviating the need for donors and tissue reactions.

The next millennium will definitely be an exciting period for medicine in general and surgery in particular.