Surgical advances 50 years ago

The art and science of medicine has changed at remarkable and increasing speed over the last half century. Medical textbooks these days may contain out of date material between the manuscript going to the publisher and the book appearing in the hospital library. New diseases have appeared, some in a frighteningly epidemic manner, requiring enormous efforts by scientists and public health workers to get them under control. Other clinical entities have diminished in frequency or all but faded away, either as the result of brilliant advances in therapeutics or else (e.g. cancer of the stomach) for some as yet unknown reason.

I can readily answer the question 'what were some of the many advances of interest to surgeons 50 years ago?' For many years, I wrote the chapter on general surgery in the annual volume 'Medical Progress' which was an addendum to the weighty 'British Encyclopaedia of Medical Practice'. Below are some of the topics that I covered 50 years ago.

End-stage arteriosclerotic disease of the leg, almost confined to heavy smokers, then as now, was all too common and all the more serious if the patient had diabetes. In cases where run-off could be demonstrated below the occluded artery, reasonable limb salvage could be achieved by arterial reconstructive surgery. However, all too often major amputation was necessary. For practical purposes, this meant an above-knee amputation. Almost every young surgeon would have been tempted to amputate below the knee, only to find at the first dressing that the below-knee stump was already necrotic.

It was just now that we came to realize that much of the blood supply of the skin and superficial tissues comes from penetrating vessels from the underlying muscles. The skin of much of the anterior flap of a below-knee amputation overlies the subcutaneous surface of the tibia and, of course, it was just this area of skin which rapidly became necrotic. Edward Burgess, surgeon at the Veterans Administration Hospital in Seattle, USA, devised the long posterior below-knee flap, incorporating the stumps of the posterior calf muscles, which enabled satisfactory healing of the flaps to occur. This, combined with immediate fitting of a prosthesis and mobilization of the patient, revolutionized the operation. His excellent results were published 50 years ago, in 1967.

At Westminster Hospital, we promptly carried out a trial of the Burgess long posterior below-knee flap operation, with immediate fitting of a temporary prosthesis. With mobilization of the patient the day after surgery, in collaboration with the limb fitting centre at Queen Mary's Hospital, Roehampton, we obtained similar pleasing results.

Since the publication of Joseph Murray's first successful human identical twin kidney transplantation in Boston in 1954, clinicians dreamed of the possibility of treating patients in end-stage renal failure by renal grafting, if only the problem of the immunological barrier to foreign protein could be overcome. Fifty years ago, Roy Calne, recently appointed foundation Professor of Surgery at Cambridge, summed up the current position of human transplantation in his masterly Cecil Joll Lecture at the Royal College of Surgeons. Calne had used azathioprine to induce immunological tolerance to the foreign protein of a kidney harvested from an unrelated dog in a series of animals in 1960, and showed that survival of a year or more could be achieved. He could now report on a series of humans, in end-stage renal failure, in whom renal transplantation from cadaver donors had been performed. Of his 43 patients treated over a 2-year period, 25 had a functioning graft – 12 of these for more than 1 year and the longest 2.5 years post-surgery. Twelve patients had died. Worldwide Calne could report 1189 patients. Of these, 41 were identical twins (longest survivor 10 years), 492 kidneys had been harvested from cadavers and the remainder were from unrelated or close blood relative donors; of the last, the longest survivor was alive 7 years post-transplant. This paper marked an optimistic opening to modern organ transplantation.

Fifty years ago, peptic ulcer disease, especially duodenal ulcer, was endemic. Chemists' shops were full of antacids, GPs spent much time advising their patients on the use of these, the medical wards were full of patients with stubborn symptoms being treated on milk fed through a nasogastric tube and surgeons spent many hours dealing surgically with refractory cases or the acute complications of this disease. There was therefore much interest in the reports in the early 1960s from Owen Wangensteen's surgical unit in Minneapolis USA on the use of gastric hypothermia in this condition. Preliminary studies in dogs showed that perfusing an intragastric rubber balloon with super-cooled alcohol at -12°C produced marked depression of acid secretion. Wangensteen and his group applied this to patients with peptic ulcer disease and claimed excellent results – his apparatus sold well in the new world but attracted little interest in this country.

In 1967 JB McFarland gave a brilliant Hunterian Lecture at the Royal College of Surgeons reporting his own experience of gastric hypothermia at the surgical unit at Liverpool. Eighty five patients with duodenal ulcer had been treated. No serious untoward complications were reported. At 6 months, 54 patients were free of symptoms but 31 had relapsed; 13 of these had been given a further freeze and no less than a further seven had already required surgery for severe recurrent disease. His sad conclusion was that 'gastric freezing has no place in current clinical practice'.

Yet another of the bright ideas of 50 years ago that has disappeared from today's clinical practice! **BJHM**

Conflict of interest: none.

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