A YEAR'S SURGERY IN FIJI

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This account of surgical work in Fiji may give some idea of what a surgeon can expect in any tropical area. Since my arrival I have kept records of every operation I have performed in the general theatre. These cover such an interesting and satisfying range of surgery that others may be stimulated to forsake the rather limited surgical scope offered to the average surgical registrar in the United Kingdom and go to the Tropics, even with all the drawbacks.

The records exclude all cases dealt with in the minor-operations theatre (average 28 a month) and the plaster-room (average 105 a month), and all surgical cases which did not come to the theatre. All elective chest surgery was dealt with in another unit by another surgeon, and gynaecological and ophthalmological operations were done for only six months of the year under review. Otherwise the figures represent the whole field of surgery as seen in Fiji in one year. To my knowledge no patient needing treatment has been turned down for any form of surgery, of whatever magnitude. For six months of the time I was the only specialist surgeon (apart from the gynaecologist) for the whole population.

There are three main hospitals in Fiji serving a multi-racial population of 387,646. The surgery was carried out in the two largest, six months in each. There are numerous rural hospitals with reduced facilities run by an assistant medical officer (A.M.O.). These A.M.O.s are trained in a five-year course at the Central Medical School, Fiji, and graduates of recent years are not greatly behind graduates of United Kingdom medical schools in either knowledge or ability. Students come to the Central Medical School from Papua/New Guinea, New Hebrides, Eastern and Western Samoa, United States Trust Territories (which include the Marianas, Carolines, Marshall group, Guam, Yap, and Truk), Cook Island, Niue, Gilbert and Ellice Islands Colony, British Solomon Islands, and Tonga, as well as from Fiji. The surgical cases from the rural hospitals and dispensaries are referred to the three base hospitals.

In Fiji the only tropical diseases that have come to my notice are: (1) filariasis, producing filarial hydrocele and massive enlargement of the limbs; (2) amoebiasis, with liver abscess (may be empyema) and amoeboma of bowel; (3) leprosy, with trophic ulcers and nerve lesions, for which the surgeon may be required to undertake diagnostic ulnar-nerve biopsy and nerve decapsulation, and reconstructive surgery for deformed hands (as yet not fully developed in Fiji); and (4) yaws, with inflammation and ulcers of the legs and cracked feet (crab yaws).

Medical cover in Fiji is very good, with one trained medical practitioner to every 2,000 of population.

Types of Operation Performed

During my first 12 months in Fiji I performed 890 operations. These were divided into arbitrary groups as follows:

Urology (other than prostatectomy), 76. Mostly cystoscopy and ureteric catheterization (45), but also nephrectomy (4), nephro-ureterectomy (2), uretero- and pyelo-lithotomy (4), orchidectomy (2), excluding three orchidectomies with complete closure of inguinal canal for large and recurrent hernias in the elderly.

Haemorrhoidectomy, 28.

Evacuation of uterus, 30.

Ophthalmology (iridectomy and enucleation), 5.

Prostatectomy, 26. All were retropubic prostatectomies apart from two transurethral resections for carcinoma of the prostate.

Orthopaedics/Trauma (excluding burns but including all amputations), 92. This figure is a very small proportion of all the injuries treated, for these patients were almost entirely dealt with in the plaster-room.

Gynaecology (excluding evacuation of the uterus but including caesarean section), 53 (includes four Wertheim's hysterectomy).

Appendicitis, 66 (all except three acute or after abscess).

Tonsillectomy (with or without adenoidectomy), 75.

Inguinal hernia (some bilateral), 95.

Hydrocele, 26.

Fistula in ano, 19.

Plastic surgery (including burns, excision of skin lumps, and cleft lip and palate), 79.

Cholecystectomy, 16 (including common bile-duct drainage).

Varicose veins, 7 (all dealt with by stripping).

Paediatric surgery (other than tonsils, cleft lip and palate, and hernias), notably myelomeningoceles, imperforate anus, Hirschsprung's disease), 16.

Otolaryngology (other than tonsils), 7.

Breast (abscess and carcinoma), 22.

Colon (procedures including colectomy and colostomy), 19.

Thyroidectomy, 8.

Gastric operations, 14 (perforations, 4; gastrectomy, 6; gastro-enterostomy, 2).

Empyema (drainage of chest), 7.

Others, 70 (in this category are most of the "interesting" operations).

Gynaecology and Ophthalmology

During the first six months, when I was working on my own in a district hospital, gynaecology took up a considerable portion of the time, and this was in circumstances that excluded any investigation of cases of uncertain pathology: thus there were comparatively few diagnostic D. and C.s, for there was enough to do trying to cope with the flood of gross lesions such as massive fibroids, carcinoma of cervix requiring Wertheim's hysterectomy (and two cases which needed uretero-colic anastomosis on account of malignant fistula), and large chronic inflammatory masses of the appendages. To a general surgeon unused to the manoeuvre, hysterectomy is a rather exciting exercise, and I had much greater peace of mind after I made a routine of putting catheters up both ureters preoperatively.

Caesarean section is likely to fall to the lot of anybody undertaking surgery in an outpost of the Empire, and the average general surgeon is quite unprepared for this exercise. The little I had seen of the operation had been conducted in an atmosphere of extreme haste and urgency, an attitude which I presumed must be "the done thing." I conducted my first few cases in this manner and rather surprised myself by delivering the first baby through a lower-segment incision in a matter of minutes. But it was not long before there was trouble in delivering the child, and in this atmosphere of indecent haste I lost the baby. After seeing an expert in action I reduced the tempo to that of an elective surgical operation—with relief to all concerned.

At the district hospital I was also responsible for the emergency ophthalmology, but any patient who could and would travel 150 miles to the specialist A.M.O. ophthalmologist was sent on.

Fractures and Trauma

Fractures and trauma in general took up much time. There were some characteristic traumatic lesions. Indians use cane knives in their arguments, so that there are an unusual number of ulnar-nerve lesions with clean

division of the ulna, or the pisiform, when a protective forearm is struck. Fijians use sticks, so that the equivalent lesion is a transverse fracture of the ulna without displacement. Accidental division of the tendo Achillis is another common cane-knife injury. The subjects of some of the cane-knife attacks are of interest only to the morbid anatomist.

There is much florid osteomyelitis, and sequestrectomy is a fairly common operation. Talipes takes up quite a lot of time, and at the time of writing there are seven patients under treatment (by weekly manipulations and plaster according to the Kite technique) at the main hospital. Above-knee amputations are commonplace owing to the large amount of gross diabetic sepsis.

Many more appendices could have come out if chronic pain in the right iliac fossa had been regarded as an indication for appendicectomy. Tonsils also were removed with great reluctance, or else the tonsillectomy figure would certainly have been much higher. Only one Fijian had this operation, compared with 55 Indians, who are not much more numerous in the population. The Fijians appear to come to no harm from their habit of tonsil retention.

I have done only two femoral hernias and four incisional hernias in Fiji, which emphasizes the preponderance of inguinal herniation (95). Hydroceles, due to filariasis, are thought to be very common in the Pacific islands, but 26 in a year does not seem a tremendous number, and it would be interesting to know how many the average surgeon in the United Kingdom operates on in a year.

Plastic Surgery

Cleft lip and palate surgery is quite a trial to the uninitiated, and this work (16 cases) has taken up a lot of time, notably in intensive preparatory reading—repeated and reassessed between cases. This type of surgery was quite unintelligible to me as an undergraduate, and to a less extent as a Fellowship candidate, but the complexities largely resolve when one case has been done and the three-dimensional nature of the condition appreciated. It is certainly a condition that does not lend itself to teaching by the written word, or even diagrams. Plastic surgery in general is an important part of the work (79 cases), there being much call for skin replacement, especially after extensive burns. Further, there is need for elective skin transfer in radical excision of malignant growths of the head and neck—for instance, laryngo-pharyngectomy and extensive oral cancer. No radiotherapy is available in Fiji.

Although only 19 cases of fistula in ano were seen, it is, I think, an unusually common condition in Fiji, possibly because of the frequent neglect of ischio-rectal abscesses and the prevalence of tuberculosis in the colony.

Biliary surgery has been largely confined to Indians (12 Indians, 3 Europeans, 1 Fijian). Fijians live largely on a vegetable diet, whereas Indians take much more fat in their diet, in the form of ghee, a derivative of butter. Varicose veins form a much smaller proportion of the surgery than they do in the United Kingdom. It may be that the venous pump as a whole is kept in better order by the greater physical activity of the population of these islands.

In paediatric surgery Hirschsprung's disease (2 cases) has been a worrying problem, and it is now clear to me that for the occasional paediatric surgeon a three-stage operation is the safest: (1) laparotomy, with marking of

the aganglionic segment and transverse colostomy; (2) rectosigmoidectomy; and (3) closure of transverse colostomy.

In otolaryngology the most common procedures apart from tonsillectomy were antral puncture or antrostomy (12) and tracheotomy (9). Included were laryngo-pharyngectomy with block dissection of neck (2), a laryngo-fissure, and excision of the left upper jaw and orbit *en bloc*. It appears that tracheotomy is undergoing a renaissance in the surgical world, and we have found it a life-saving procedure, particularly in severe head injuries (Maciver *et al.*, 1958). Tracheotomy was also performed for tetanus, laryngeal papillomata, tracheobronchitis, diphtheria, and "stove-in chest."

Florid Lesions

In any tropical area pathological lesions probably tend to be more fully developed than in Britain when the patient comes for treatment. For instance, all except one patient with carcinoma of the colon presented in a state of obstruction. Similarly, the enlarged thyroids were massive adenomata with gross tracheal narrowing, with or without intrathoracic extension; the one toxic case was grossly toxic and vascular to the extent that there was a diffuse thrill all over the gland with an accompanying bruit throughout. Again, peptic ulceration occurs in the most florid state, and it is worthy of comment that patients commonly put on weight after gastrectomy: two have put on more than 2 stone (12.7 kg.) each within four months of the operation (all antecolic Polya/Hofmeister type operation).

The category labelled "others" includes much unusual and time-consuming surgery. There were two extensive mandibulectomies for large adamantinomata, a radical parotidectomy and block dissection of the neck for a carcinoma of the parotid (with facial-nerve palsy), an intradural transfrontal removal of pituitary adenoma, a hopeful block dissection of the neck for Hodgkin's disease confined to this group of glands, a mixed parotid tumour, forequarter amputation for a massive squamous epithelioma involving the brachial plexus, burr-holes for head injury, and obliterative endo-aneurysmorrhaphy of femoral aneurysm.

Deaths

The total of 31 deaths (occurring in hospital) in this series of 890 operations is made up as follows:

Palliative cholecyst-enterostomy, 1; laryngo-pharyngectomy (and block dissection of neck), 2 (four and two weeks after operation). Nephrectomy, 1. Appendicectomy, 2. Laparotomy, 1 (abdomen apparently normal at operation). Impacted common bile-duct stone, 1. Transurethral resection prostate, 1. Retropubic prostatectomy, 2. Death during manipulation of fractures, 2 (one possibly a fat embolism). Hirschsprung's disease, 1. Myelomeningocele, 1. Bilateral hare-lip, 1. Biliary atresia, 1. Evacuation of uterus, 1. Gastric perforation, 1. Resection of upper jaw, 1. Suprapubic cystostomy, 1. Massive melaena (regional enteritis), 1. Gall-stone ileus, 1. Carcinoma of rectum (palliative colostomy), 1. Fulminating pancreatitis-laparotomy, 1. Gastroenterostomy, 1. Suppurative pericarditis (from subphrenic abscess), 1. "Stove-in chest," 1. Tetanus, 1. Tuberculous pyopneumothorax, 1. Amoebic liver abscess and empyema, 1.

Some of the deaths were inevitable—indeed, merciful; others were tragedies. Modifications of technique might have saved lives in the following cases.

(1) Laryngo-pharyngectomy. Unnecessary ligation of one external carotid artery producing necrosis of a skin flap and consequent sepsis. Both patients were over 70 and had large

lymph-node metastases on presentation—in fact, one was in asphyxia. I think now that a two-stage operation would have been better.

(2) Impacted stone in bile-duct. In the presence of deep jaundice this patient would have lived if surgery had been limited to removal of the stone and drainage of the common duct. He died from a continued ooze from the gall-bladder bed after the added cholecystectomy.

(3) The patient who had transurethral resection for carcinoma of the prostate and the two who had retropubic prostatectomies should not have died.

(4) In the case of Hirschsprung's disease leakage occurred at the suture line after one-stage rectosigmoidectomy.

(5) The deaths of the patient with bilateral hare-lip and of the patient who underwent resection of the upper jaw were failures of immediate post-operative care and supervision.

(6) In the case of regional enteritis, the area in the upper jejunum should have been resected.

(7) "Stove-in chest." This case was dealt with by an early tracheotomy and external traction, but early wiring of the fractures would probably have been more effective.

Conclusion

This rather discursive comment on the surgery performed has barely touched on the lessons learned. A more detailed examination of the deaths would have been profitable. Again, there has been no detailed breakdown of the figures into the various racial groups, and this might have proved interesting. But I hope enough has been shown to indicate the volume and range of surgery in the Tropics.

"Keeping the score" of all surgery undertaken, in terms of deaths and results, is accepted throughout the surgical world as a worth-while endeavour, but it has particular value when doing surgery in isolation, for then standards might easily be allowed to drop. For the same reason we aim at a 100% post-mortem rate for all surgical deaths: in fact, the rate is about 75% at present.

Summary

The surgery performed by one surgeon in one year in Fiji is stated in detail with some discussion of results.

The routine keeping of personal operation cards—apart from hospital operation notes—by surgeons is advocated.

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REFERENCE

- Maciver, I. N., Frew, I. J. C., and Matheson, J. G. (1958). *Lancet*, 1, 390.

GERIATRICS IN NEW ZEALAND

During the Commonwealth Medical Conference which preceded the Annual Meeting in Auckland the visitors had the opportunity of learning something about the way New Zealand doctors were tackling the problems of health and disease in a society which provides plenty of scope for voluntary effort within the framework of a Welfare State. New Zealand is paying close attention to the care of the elderly. One of the most remarkable demonstrations of it is Selwyn village—a 40-acre site on the outskirts of Auckland. Already a number of cottages and flats, designed and furnished with taste, are occupied by a number of ageing persons. In the principal building is a lounge which would do credit to

a modern hotel, well-equipped kitchens, a dining-room, and a library. A chapel is nearing completion. A block of flats is at the blueprint stage, as well as a shopping centre. Those fortunate enough to be able to rent a flat or a cottage—at a very low rate—are proud of their dwellings and contented. There are a few hospital beds for those in need of them.

Selwyn village was opened in 1954. It is named after New Zealand's first bishop—Bishop Selwyn. The Anglican Church has been active in its support and development, and it is owned by the Auckland City Mission. Private benefactors have generously come to its aid. The Government provides a subsidy. Full board and lodging can be obtained for £3 12s. 6d. a week. Cottage accommodation is provided at £2 12s. 6d. a week a person, plus the cost of electricity—the rent includes the cost of a daily dinner in the central dining-room.

This, so to say, provided a fitting background for a paper given at the Conference by Dr. J. L. NEWMAN.

Dr. Newman's Address

Here in New Zealand, he said, the old were the section of the community whom life hit hardest. They were more fortunate than other countries in one respect. The over-65s constituted 8% of the population, the under-15s 30%, and the workers made up the remaining 62%. These figures, according to population projections, were scarcely going to vary at all, so that in New Zealand there were not the grave socio-economic problems beginning to cause concern elsewhere.

As a nation, they had deluded themselves into thinking that the payment of various kinds of "benefits" under their Social Security programme was all that was needed. They were only just beginning to wake up to the fact that abolition of actual destitution, which had undoubtedly been achieved, merely brought into greater prominence the no less real hardships from which beneficiaries of all groups suffered, and none more than the old. Rowntree in his excellent study of social conditions in York had found that old age was the most important single cause of poverty and hardship. From his own observations Dr. Newman had no doubt that if Rowntree repeated his work in New Zealand he would come to the same conclusion. The personal charge which many doctors made in addition to the Social Security payment was a hardship to many old-age beneficiaries. But the old were not neglected to-day, at least in the provision of medical attention. It was a pity that there was no allowance for specialist consultations. District Nursing services were mostly provided by the hospital boards; in some centres, by other agencies; in others, by voluntary associations; and so on. But the extent and availability of these services varied greatly from place to place according to the imagination of the local Board and the accessibility of the patient. The coverage in New Zealand was nothing like as good as that of the Queen's Institute of District Nurses in England.

Dr. Newman, continuing, said that some years ago he started providing temporary holiday relief in a few beds at Cornwall Hospital. They were able to help the old patients a lot by a month's stay, and it was a real godsend to those who looked after them. But where hospital care was provided free there was no incentive to the family to keep their part of the bargain and have the old patient home again when the month was up. He believed that the provision of short-stay holiday beds was one of the most valuable services that could be provided. But it should be provided by voluntary bodies.

Accommodation for the Elderly

Accommodation for the elderly was a grievous problem: 8% of the population were over 65. But the State Advances Corporation, which was the country's housing authority,