A short history of the treatment of cancer in Northern Ireland

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SUMMARY

The development of cancer treatment has been discussed. The progressive provision of the service in the province is described with emphasis on the place of the Belfast City Hospital in the overall plan.

INTRODUCTION

Cancer is not a single disease with a single cause and a single cure. Rather, it is a family of closely related diseases and has probably been present from the beginning of life. Sarcoma has been found in the bones of dinosaurs, while cancerous tissues have been found in Egyptian mummies.

Celsus, one of the fathers of medicine, classified and treated breast cancer in 30 BC. His treatment was purgation and blood letting! Another famous pre-Christian doctor, Galen, is reported to have performed the first mastectomy for this condition. The first radical operation was performed by Cabrol in France in 1590. The radical operation which is still performed in some centres was originally described in 1867 by an English surgeon, C H Moore. He himself never performed the operation which was popularised during the 1890's by Halstead and Mayo in the USA, and by Bilroth in Germany.

At that time much progress was being made in medicine. In January 1896, Roentgen reported his discovery of x-rays, and in the following year x-ray therapy was used to treat skin cancer. In 1898, Pierre and Marie Curie discovered radium. In 1902, together with Dr. Bequerel who had recognised the radioactivity of radium, they were jointly awarded the Nobel Prize. In 1911, Marie Curie was awarded a second Nobel Prize for further work. This award had been given to her at a time of great personal distress.1

In 1903, Dr. Gernord in Montreal treated three patients suffering from breast cancer with x-rays. This treatment was soon used throughout the world but it was not until 1952 when Professor McWhirter of Edinburgh combined simple mastectomy with radiotherapy that the cure rate began to improve. Since that time better equipment has been provided. The x-ray machine was superseded by the deep x-ray machine which was followed by the Betatron and more recently the Cyclotron.

The third form of treatment was the use of cytotoxic drugs – chemotherapy. The discovery of the first of these drugs was made in unfortunate circumstances. Nitrogen mustard gas had been used during the First World War with devastating effect. It was not used during World War II, but an American cargo ship loaded with cylinders of the gas was bombed in the port of Barato, Italy. A few crew members survived the explosion but they were soon found to be suffering from leucopenia. In 1946, Gilman and Phillips began to treat cancer of the lymphoid tissues with a derivative of the gas.2 A large number of newer chemotherapeutic agents is now available for use.

DEVELOPMENTS 1841-1921

The Belfast Workhouse opened in 1841. Three years later, Dr. Lamont wrote to the Board of Guardians from the General Hospital in Frederick Street informing them that the charge for treating one of their inmates suffering from breast cancer would be three shillings per week. There is no record of patients with cancer being treated in units on the Workhouse site. Dr. J. Lynas was appointed to the Union Infirmary in 1899 as its first surgeon.

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In the General Hospital (now the Royal Victoria) chloroform was first used as an anaesthetic in 1850. Prior to that only a few surgical procedures could be carried out because of a lack of anaesthesia. In 1869, only 69 operations, including six for the treatment of cancer, were recorded. The first defunctioning colostomy was performed in 1884; the patient died. Five years later, in 1889, three such operations were performed and the patients survived.

In 1896, Mr. Forster Green donated £500 to provide a new wing in the Samaritan Hospital for cancer patients. The ward was opened on 28th May 1897 by Miss Benn, sister of the founder of the hospital, and Mrs. Forster Green. As there are no medical records, details of any treatment are not available. At that time gynaecological surgeons treated women suffering from cancer of the breast in addition to their other work (Armstrong MJ, personal communication).

**PROGRESS IN TREATMENT 1921-1948**

Northern Ireland was established as a state in 1921. In 1924, Dr. (later Sir) Frank Montgomery was appointed as a consultant radiologist to the Royal Victoria Hospital. He persuaded the Hospital Management Committee to purchase 0.75 mg of radium at a cost of £15,000. Patients were treated in the King Edward Building which then housed the x-ray department. The treatment was given by x-rays from the standard diagnostic machine or by the insertion of a radium needle. Cancers of the skin, tongue, breast, uterine cervix and rectum were treated by these means.

In 1941, Dr. Montgomery was also appointed as a Visiting Medical Officer to the Union Infirmary (now Belfast City Hospital). At the request of the medical staff in 1923 a decision was taken by the Board of Guardians to build a new hospital for cancer patients and this was erected between the Workhouse and the Infirmary. The foundation stone was laid on 24th May 1923 by the Duchess of Abercorn who gave permission for the hospital to be named ‘The Abercorn Hospital’. There were 80 beds on two floors, the wards on the lower floor being used for the observation of patients while those on the upper floor were devoted to the care of cancer patients. The building had a flat roof so that patients would be able to enjoy the advantage of fresh air and views over the city roofs to the hills beyond! Mr. Andrews, then Chairman of the Board of Guardians, said he hoped that the Abercorn Hospital would assist in the great campaign being waged throughout the land in an endeavour to discover the deadly secret of the disease.

Unfortunately, his hopes were not to be realised as there are no records showing treatment of the disease. There were no operating theatres in the unit, nor was there a supply of radium. It would appear that this was a unit for nursing care only - either terminal or for postoperative management following surgery in the main Infirmary.

In 1929, Mr. T. S. S. Holmes, Visiting Medical Officer in Obstetrics, spent one month studying the use of radium in women in several of the London teaching hospitals. On his return, he persuaded the Guardians to purchase 1.0 mg of radium, pointing out that as time passed it would increase in value! The radium was stored in a safe in the basement of Ivy Cottage and was used in the treatment of the same forms of cancer as in the Royal Victoria Hospital.

The Mater Infirmary Hospital offered a limited service using both x-ray equipment and radium. The equipment had been purchased in 1932 by a partnership of the Board of Management and Mr. John O’Doherty, an honorary surgeon to the hospital (Gormley P., personal communication). In 1945, officers of the Ministry of Health carried out a survey of cancer treatment in the province. They found that some district hospitals had supplies of radium but stated that the quantity available was insufficient for major treatment and that the number of patients treated each year in any one of these hospitals must be small.

The stimulus for the development of the use of radium for the treatment of cancer in the province was directly due to events in Great Britain. The Government had been concerned about the lack of treatment available to anyone with cancer. In 1929, King George V recovered from a serious illness and as a form of thanksgiving a national radium fund was established to receive donations from the public. Donations amounted to £150,000 and the Government gave £100,000 to augment this figure. Twenty grams of radium were purchased by the new National Radium Trust and distributed to those hospitals who agreed to treat cancer patients. A Royal Commission was later established to consider the problem. This led to the Cancer Act which was passed and became law on 29th March 1939 but was held in abeyance at the onset of World War II. The Act did not apply to Northern Ireland.

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A Ministry of Health was established in the province in 1944. Officers of the Ministry and members of the Local Health Advisory Committee visited several cancer hospitals in England during 1945, and in 1946 published a memorandum entitled ‘Treatment of Cancer in Northern Ireland’. Their main recommendations were:

1. All patients suffering from cancer should be treated free of charge, the cost being borne by the County Council of the area in which the patient lived.

2. An administrative centre should be built at public expense in the grounds of the Royal Victoria Hospital.

3. One hundred and fifty beds should be provided for treatment – 100 for surgical treatment and 50 for radiotherapy. A new hospital should be built for this purpose but, in the interim, patients requiring surgery should be treated in the Royal Victoria Hospital and a radiotherapy unit should be located in the War-time emergency hospital built in Musgrave Park.

4. The care of cancer patients declared untreatable should form part of the cancer scheme. Both institutional and domiciliary care should be provided.

**FURTHER ADVANCES 1949-2001**

These recommendations were not carried out as preparations were being made for the introduction of a new free National Health Service which began on 5th July 1948. In 1949, the Northern Ireland Hospitals Authority advertised for a radiotherapist but there was no applicant. Medical staff at the world-famous Christie Holt Cancer Hospital in Manchester were approached to provide a service in the province on a rota basis but declined to do so. In 1950, Dr. Ralston Patterson from that hospital was invited by the Hospitals Authority to assess the needs for the treatment of cancer patients in the province. One of his proposals was that Corry’s building (now part of the laboratory) on the City Hospital site should become a radiotherapy centre. As this was a very strong proposal the Chairman of the Hospital Management Committee, Mr. H. I. McClure, and the chief hospital engineer travelled to Manchester to study that hospital and to make recommendations to the Hospitals Authority for future development on the City Hospital site. Dr. John Millen was appointed to the vacant radiotherapy post in 1950.

Following much discussion and in view of the reduced need for ‘fever’ beds, the Hospitals Authority decided that, as a temporary measure, the new Radiotherapy Centre should be based in Purdysburn Fever Hospital. Two pavilions were converted into a 70-bed unit for inpatients and another as a treatment centre. This centre contained an operating theatre, four deep x-ray machines and one ordinary voltage machine. Conversion work began in August 1951 and the unit, named in honour of Sir Frank Montgomery, was opened in December 1952. All supplies of radium in the province were sent to the new unit in 1954. Dr. Millen established outpatient clinics in the Royal Victoria and Jubilee Hospitals during 1953. Outpatient clinics were not held in Montgomery House.

In 1961 the Hospitals Authority took the decision to re-develop the City Hospital site and the final plans were produced in 1965. These included a Radiotherapy Hospital to be built on the site of Jubilee Maternity Hospital and adjacent to the proposed Tower Block. In passing, it is of note that the Jubilee Hospital was the brainchild of Mr. T. S. S. Holmes and he used the first radium implant in the City Hospital in the gynaecological theatre. The report of the Chief Medical Officer (1996) confirmed that the City Hospital was to be the main centre for the treatment of cancer in the province. The hospital was to be supported by facilities provided in the Ulster Hospital, Dundonald, and the three area hospitals. As a first step forward, management of Belvoir Park Hospital was transferred to the City Hospital Trust in March 1998.

During this time further developments took place (Houston RF, personal communication) New equipment was installed in Montgomery House (later known as Belvoir Park Hospital). In 1962, the first megavoltage cobalt teletherapy units were installed, and a linear accelerator was provided in 1977. The first CT scanner in the province, purchased by funds provided by public subscriptions following an appeal by the late Dr. G. A. Lynch, was installed in 1983. Two more linear accelerators were installed in 1989. A Selectron remote after-loading device for the treatment of gynaecological cancers was installed in 1992. Many improvements and alterations to the buildings were carried out. The centre for the administration of chemotherapy was extended in 1989. Outpatient clinics for cancer patients were held in all the acute hospitals in the province.
In 1968, Professor J. H. M. Pinkerton established a gynaecological cancer unit in Jubilee Hospital, and a colposcopy service commenced in 1971. This unit was the regional centre for gynaecological cancer. Jubilee Hospital has recently been demolished.

A new chemotherapy unit under the charge of Dr. R. Atkinson was opened in Gardner Robb Hospital in 1976. This was transferred to the Tower Block in 1986 and was recently upgraded to meet the needs for modern therapy. The official opening of the unit was performed in 1998 by Dame Deirdre Hine, Chief Medical Officer for Wales.

Other aspects of cancer care mentioned in the 1946 memorandum have not been neglected. These include education, prevention, early diagnosis, research, support and terminal care.

Cancer education has been made a responsibility of the County Medical Officers of Health when the Health Service was established. As the subject was ‘taboo’ among the general public and there were so many other pressing needs the education service to the public did not commence until the mid-1970’s. Two cancer charities, the Ulster Cancer Foundation and Action Cancer, also provided speakers to attend meetings throughout the province. Some of this work has previously been described.

Prevention has been tackled in two ways:

I. a) Education about the dangers of smoking which is the cause of most cancers of the lung, and b) the dangers of long periods of exposure to sunshine as a cause of skin cancer.

II. The finding of premalignant cells in tissue. This mainly involves the cervical smear service which has been available since 1963 to all women in the province over 35 years of age.

Early diagnosis involves the cervical smear service, mammography and self-palpation of the breasts, the use of radiological tests, and routine invasive procedures, eg colonoscopy. The introduction of the PSA test in the diagnosis of carcinoma of the prostate is also currently being urged by Action Cancer.

Research. In 1974, The Queen’s University of Belfast appointed the first Professor of Oncology and now both Queen’s and the University of Ulster have very active research units. Much of the funding for this work is provided by the cancer charities in the province. In addition to their many other activities fund-raising for research is a prominent part of their work. These charities include the Cancer Research Campaign, the Ulster Cancer Foundation, Action Cancer, the Malcolm Sargeant Fund and the Leukaemia Research Fund Group.

Part of any ongoing research is the epidemiology of the disease. A cancer register was established in 1949 but was abandoned in the mid-1960’s because of failure by consultants to notify their findings to the officers of the Hospitals Authority. A new cancer registry has been established under the directorship of Dr. Anna Gavin and is being funded by Queen’s University, the Ulster Cancer Foundation and the Department of Health.

Support for patients and relatives is most important and the majority of the cancer charities have phone-in help-lines. The Gerard Lynch Centre at Belvoir Park Hospital offers counselling to patients and relatives. Practical help to patients can be obtained from the Mastectomy Association, the Laryngectomy Group and the Ileostomy Group, among others.

Terminal care recommended in the Memorandum is unfortunately not a full part of the National Health service. This is provided by the hospice movement – the Northern Ireland Hospice and the Marie Curie Centre in Belfast, the St John of God Hospice in Newry and the Foyle Hospice in the city of Derry. In addition, an excellent domiciliary service is provided by MacMillan nurses who are based in various hospitals and health centres. All these facilities rely very heavily on the various charitable organisations.

THE FUTURE

Cancer is no longer regarded as the dreaded disease of the last generation. Despite a more open attitude to the disease, earlier diagnosis and better treatment, much work has still to be done. This is already taking place in the province. It is fitting that the new treatment centre is about to be built on the site of Jubilee Hospital where radium was first used in the City Hospital. In a modern ‘high-tech’ environment one can only wish the new unit every success and hope that it takes as its motto the words enscribed on the Jubilee foundation stone “Here at whatsoever hour you come, you will find light, and help and human kindness.”
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