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**Cancer of the Bladder:
Achievements and
Limitations of Radiotherapy**

Over the past thirty years cases of cancer of the bladder referred for radiotherapy have increased sevenfold; at the Christie Hospital an average of 330 new cases are seen each year. Of these, approximately three-quarters receive some form of radiotherapy, interstitial implantation and external irradiation being the two main types of radiotherapy used. Until the introduction of megavoltage therapy interstitial implantation was the principal radical treatment of choice; since then the percentage of cases so treated has fallen from 41.5% in 1953 to 3% in 1969. The decline in use of this treatment may be attributed to (1) more aggressive endoscopic management of superficial lesions; (2) megavoltage therapy for infiltrating lesions achieving results at least equal to those of implantation techniques.

With the introduction of megavoltage therapy the five-year crude survival rate has risen from 12% (250 kV) during 1932-44, and 21.7% (500 kV) during 1957-62, to 27% (4 MV) during 1957-65.

Among factors analysed, multiplicity, macroscopic type, and histology have not been shown statistically to influence the results of radiotherapy. The principal local contraindications to radical radiotherapy of bladder cancer are: (1) contracted bladder, (2) multiplicity of tumours, (3) involvement of urethra, (4) tumour in a diverticulum, (5) associated pelvic disease, (6) previous pelvic irradiation.

The main complications have been contracted bladder, bleeding from telangiectasia, and injury to the bowel. The complication rate was 7.8% in a series of 592 cases treated by 4 MV therapy (1957-65).

The high incidence of metastases in T3 tumours makes comparison of differing methods of primary control difficult. Adequate clinical trials require such large numbers of cases as to be beyond the scope of a single centre. Under these conditions, present trials of radiotherapy under hyperbaric oxygen conditions and preoperative radiotherapy are unlikely to show any statistically significant improvement over orthodox radio-

therapy. X-ray therapy remains the principal method of palliation of advanced carcinoma of the bladder, giving satisfactory palliation in over 50% of cases, with a five-year survival rate of 6%.

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**Screening for Bladder Cancer
in the Rubber Industry**

Special problems are involved in the implementation of a cytological screening programme for men exposed at work to a carcinogenic hazard. Provision of an effective diagnostic service is expensive in terms of manpower and medical facilities as well as money. Serious anxieties may be aroused in the population due to be screened. There is a strong case for selectivity in screening, and the following criteria should be adopted before any decision is taken to implement such a programme:

- (1) Screening should be offered and advised only for those under 70 years of age at the date of first screening.
- (2) Exposure to a known or strongly suspected carcinogen should be clearly established.
- (3) There should be epidemiological evidence of an enhanced risk of cancer resulting from such exposure.
- (4) It should be demonstrable that screening would result in significantly improved protection for employees at risk.

While screening may also be advised, exceptionally, for groups of men working with new and untested materials, the long latent period to be anticipated between exposure and onset of disease must inevitably raise serious doubts about the value of such a procedure.

The following paper was also read:

Results of Recent Clinical Research
Professor Edward H Cooper
(Department of Experimental Pathology and
Cancer Research, University of Leeds, LS2 9NL)

REFERENCE
Cooper E H (1972) *Annals of the Royal College
of Surgeons of England* 51, 1-16