Results of the Cryosurgical Treatment of Prostate
According to Sesia

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The experiences obtained in 131 patients with 200 cryosurgical treatments according to Sesia are described. Surgical technique and consecutive treatment are discussed. Indications and results are outlined.

After the neurosurgeon Cooper [2] stated for the first time in 1961 the usefulness of congealing sounds in neurosurgery, Gonder, Soanes and Smith [3] made in 1964 an instrument fit for the congealment of the prostate. In this apparatus liquid nitrogen is used and a temperature as low as $-196^\circ$C is reached. Considering the palliative character of this operation with liquid nitrogen, the incidence of serious complications is high (total incontinence, infections by putrefaction, fistulas of urethra, of rectum and of bladder). Therefore we prefer the instrument made in 1966 by G. Sesia in Turin, called Criotom R 89 (R. and M. Turin). In this apparatus, instead of liquid nitrogen, nitrous oxide ($N_2O$) is used, which, evaporating in the sound, chills it to a temperature of $-89.7^\circ$C. At this temperature there is congealment of the surrounding tissue, leading to necrosis, the extension of which depends on the duration of congelation. The scar which remains after the soft-crumbly elimination of the necrosis does not contract and remains as a stift pipe.

Surgical technique and postoperative treatment

In the 200 cryosurgical operations discussed here a double congealment, lasting five minutes each, has been effected, intercalating a phase of decongelament for ten minutes. The operation is performed after evacuating the bladder and after filling it again with about 200 ml of air without the necessity to control the temperature of rectum and perineum. In order to avoid congelation of the orifices of the ureters, the handle of the sound itself is lowered, so that inside the bladder the latter may be far from the orifices. It has never been necessary to employ general anaesthesia. The indwelling catheter was removed on the 14th day. The necrosed fragments were so small that they rarely obstructed the catheters and, consequently, it has never been necessary to give proteolytic enzymes. The majority of operations were performed ambulatorily. If some patients were kept
in hospital, this was due to their general condition and not to congealment. The postoperative treatment did not present any problem or difficulty. There were no acute pyelonephritic attacks with high temperatures, so that long-term chemotherapy combined with sulfonamides and nitrofuranes was sufficient.

Since February 1972 we have slightly modified our method. We adopt now a cycle of 3 congealments of 5 minutes alternate to a phase of decongealment of 3 minutes. In the case of small adenomas two cycles at intervals of one to three days are sufficient, in the case of greater adenomas 3—4 cycles at similar intervals are necessary. The indwelling catheter is removed 14 days after the last operation.

Results

From July 1970 till February 1972 we executed 200 cryosurgical treatments on 131 patients with the apparatus of Sesia. In this period there were under treatment: 64 patients with adenoma of prostate of medium and large size, 27 patients with carcinoma of prostate and 40 patients with a high sclerosis of the bladder-neck in a small adenoma of prostate (see Fig. 1).

![Fig. 1](image_url)

The average age of our patients was 67 years; the youngest was 28 and the oldest 87 years old.

In 31 patients (23.6\%) there was before the operation a retention of urine, in 94 patients (71.7\%) there were remarkable difficulties in urinating, some of the latter ones had a urinary residue. 6 patients (4.5\%) were under cryosurgical treatment even if there were no cases of dysuria in the anamnesis. These latter were patients with carcinoma of prostate.

In 67 patients (51.1\%) one cryosurgical sitting, in 59 (45\%) two sittings, in 5 patients (3.8\%) three sittings were necessary.