

## RECENT DEVELOPMENTS IN SURGERY : CRYOSURGERY

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### CRYOSURGERY:

Cryosurgery means freezing of living tissues for sufficient time to cause necrosis as a treatment of surgical diseases. Improvement in cryogenics have made it possible to obtain tissue temperatures as low as - 190° C.

The mechanism of cellular death involves intracellular crystallization with uniform death of all cells within the frozen solid area - a sort of 'thermal shock' due to physical changes in cell wall and intracellular biochemical changes. It is associated with thrombosis of microcirculation and hence the term 'bloodless knife'. Since intense cooling numbs the sensations, it obviates the need of anaesthesia totally.

Initially used extensively as an ambulatory treatment for haemorrhoids and small benign skin lesions like haemangioma, papilloma etc. the indications of cryosurgery are increasing day by day:

#### 1. Proctology:

- a) Piles - excellent results
  - particularly useful for those patients who are medically-unfit for G.A.
- b) Rectal polyps
- c) Anorectal polyps

#### 2. Ophthalmology :

- Cataract extraction
- Retinal detachment
- Glaucoma.

#### 3. Skin Lesions:

- a) Benign lesions - Verrucas, warts (perianal/ penile), condylomas and infective granulomas, haemangiomas
- b) Intermediate lesions - Carcinoma-in-situ (Bowen's disease), basal cell carcinoma and leukoplakia can be eradicated. Cosmetic results as good as / better than radiography.
- c) Malignant lesions - Skin epitheliomas, fungating tumors of breast -

- Relief of intractable cancer pain.

#### 4. Gynaecology :-Cervicitis

- Cone biopsy
- Urethral carbuncle.

#### 5. Oral : - Malignancies especially recurrent diseases in frail and elderly patients.

- Haemangiomas of mouth and lips, etc.

#### 6. Pharyngeal : - Cryo - tonsillectomy is the method of choice in haemophilic patient.

- Tumors of pharynx

#### 7. Nasal : - Polyp removal

- Control of posterior epistaxis and punch biopsy bleeding.

#### 8. Neurosurgery: - Removal of brain tumors

- Stereotactic trans - sphenoidal hypophysectomy

#### 9. Urology : - Prostatic cancer

#### 10. Cryo - Biopsy: - Tissue architecture is preserved.

#### 11. Advanced Cancer: - Good palliation by producing relief of pain.

Indications for cryosurgery seem to be limited only by the ingenuity of the operator and / or nature of the disease. It is simple, safe, bloodless, a short OPD procedure requiring minimal or no anaesthesia. It can be repeated any number of times without side effects. It produces no scar tissue. It is often cheaper than conventional operations.

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