



PERSPECTIVE

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Use of Cryosurgery in Treatment of Internal and External Malignancies

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Description

Cryosurgery is the use of extreme cold in surgery to destroy abnormal or diseased tissue; thus, it is the surgical application of cryoablation. The term comes from the Greek words cryo (κρύο) which means “icy cold”.

In addition to treating bone cancers, cryosurgery is also utilised to treat internal and external malignancies. A hollow tool called a cryoprobe is used to contact the tumour and treat interior tumours. The cryoprobe is purged with liquid nitrogen or argon gas. The cryoprobe is guided by ultrasound or MRI, which is also utilised to track the cells’ freezing progress. This aids in preventing further harm to nearby healthy tissues. The probe is surrounded by a ball of ice crystals, which causes cells in the area to freeze. Multiple probes are used when it is necessary to deliver gas to various tumor-related locations. In the case of internal tumors, the frozen tissue is either naturally absorbed by the body after cryosurgery, or it dissolves and forms a scab for external tumors.

Uses

Candidates for cryosurgical therapy include warts, moles, skin tags, solar keratoses, molluscum, Morton’s neuroma, Morton’s neuroma and minor skin malignancies. Cryosurgery is also used to treat a number of internal diseases, such as liver cancer, prostate cancer, lung cancer, mouth cancer, cervix abnormalities, and, more frequently in the past, haemorrhoids. Cryosurgery can be used to treat soft tissue disorders like plantar fasciitis (jogger’s heel) and fibromas, which are benign excrescences of connective tissue.

Utilizing the damaging effects of freezing temperatures on cells, cryosurgery works. Ice crystals start to form inside the cells when their temperature falls below a certain point and eventually rip those cells apart

because of their lower density. Malignant growth will suffer additional damage as soon as the blood vessels supplying the affected tissue start to freeze.

Cryosurgery is used to treat a variety of benign skin lesions including:

- Acne
- Warts (including anogenital warts)
- Dermatofibroma
- Hemangioma
- Keloid (hypertrophic scar)
- Molluscum contagiosum
- Myxoid cyst
- Pyogenic granuloma
- Seborrheic keratoses
- Skin tags

Low risk skin malignancies like basal cell carcinoma and squamous cell carcinoma can also be treated with cryosurgery, but a biopsy is required first to confirm the diagnosis, gauge the extent of invasion, and identify additional high risk histologic characteristics.

Results

Because of its safety, convenience of use, minimum pain and scarring, and low cost, cryosurgery is frequently chosen over other types of surgery. However, as with any medical process, there are dangers associated, chiefly that of harm to neighbouring healthy tissue. Although uncommon, nerve tissue damage is particularly concerning. Cryosurgery cannot be used on lesions that would subsequently require biopsy as the technique destroys tissue and precludes the use of histopathology.

The more frequent and temporary side effects of cryosurgery are blistering and edoema. Complications from cryosurgery could result from the under-

lying structures being damaged. Scarring could result from the breakdown of the basement membrane, and alopecia, or hair loss, could result from the destruction of hair follicles. Hypopigmentation can occasionally happen in the area of skin that has had cryosurgery; however this problem is often brief and normally goes away when melanocytes migrate and repigment the area over several months. Because the underlying arteries and arterioles have been damaged, bleeding can also happen, either immediately or after a delay. If cryosurgery is performed over bony prominences,

tendon rupture and cartilage necrosis are particularly likely to occur. These complications can be avoided or minimized if freeze times of less than 30 seconds are used during cryosurgery. Most of the time, modest analgesics like ibuprofen, codeine, or acetaminophen can be used orally to sufficiently relieve minor to severe localised discomfort experienced by patients having cryosurgery (paracetamol). Cryosurgery can cause blisters, however these often scab over and peel off within a few days.