Cryosurgery in Haemorrhoids

Ms. JANAKI, M.K.

History

About 300 years ago, Robert Boyle reported that cells can be killed by freezing. Some 150 years ago, James Arnott described the beneficial effect of applying 'severe' cold in treatment of a variety of conditions. Since 1960, after the introduction of modern cryosurgical equipments, it has been used in many diverse surgical conditions and Lewis first introduced it in the treatment of Piles in 1969.

Principle

Cryosurgery aims at inducing intra-cellular death by freezing rapidly to form the ice-ball, wherein the ice crystal formation induces intra-cellular death by damaging enzyme systems, producing intra-cellular dehydration, denaturation and alteration of membrane lipoproteins.

The Apparatus

It consists chiefly of a cryo-probe connected to freezing gas supply controlled by a switch. The usual freezing agent is liquid nitrogen or nitrous oxide. The latter is delivered from a gas cylinder which is attached to a pressure gauge showing the pressure which is usually kept at 750 lbs/sq. inch.

Instruments

No special instruments are required but some surgeons use little modified proctoscope, Sim's vaginal speculum etc,. to protect other tissues while applying cryo-probe.

Sterilisation

It varies with different surgical procedures. For haemorrhoids, most surgeons prefer to use disinfectant like hibitane or cidex. The tip and upper shaft of the probe can be immersed for some time before use in either of the above solutions.

Preoperative Preparation

Routine check-up of blood, urine, screening, etc. is done as usual besides proctoscopy and sigmoidoscopy to assess the rectal pathology. Whenever necessary barium enema may be done. Preparation consists of cleaning and shaving of the part and laxative tablets on previous night followed by simple enema on the day of operation. Psychologically, patient can be readily prepared by Nursing Attendant since she can assure the patient that the operation is devoid of any cut or incision and post-operative painful dressings.

Position of the Patient

Left lateral or lithotomy.

The author is Nursing Tutor, School of Nursing, Irwin Hospital, Jamnagar.

Anaesthesia

Local 2% lignocaine supplemented with Inj. Diazapem 2 ml. or Inj. Pethidine 100 mg. Some people use low spinal anaesthesia also.

Operation

Painting the part with hibitane or cetavelex and applying little amount of Ky Jelly or Xylocaine Jelly to achieve good thermal contact between cryoprobe and tissues. Cryoprobe is applied to each 3, 7 and 11 O'clock positions haemorrhoids successively for 2½ to 3 minutes. The simple pad is given as a dressing which requires to be changed frequently since the whole frozen haemorrhoid separates out as a foul smelling liquified product containing large amount of potassium. This discharge continues for about a week or 10 days.

Post-Operative

Patient can be discharged on the same day, though he may require mild analgesics at home at night. Laxatives are prescribed for five to seven days though post-operative defacation is quite painless. A rectal digital examination is gently done on the next day. The necessity to change the pads frequently is the only major drawback of the operation. Otherwise, it is quite safe and the usual complications of other operations like mortality, haemorrhage or infection and postoperative painful dressings etc. are absent or almost nil in this operative procedure.

Summary

I have selected and discussed only one clinical application of cryosurgery, viz., its use in the treatment of haemorrhoids but it would be interesting and fascinating to know that it is applicable to many branches of surgery like general, gynaec and ophthalmic conditions, E.N.T. surgery and also in the treatment of Haemangiomas and benign and localised malignant growths. Thus it is of equal interest for all of us whether working in any of the above disciplines.

There are innumerable methods and surgical procedures to treat Piles : (1) traditional operation of excision and ligation (2) Lord's dilatation (3) rubber band application, etc. But it would be interesting to know that cryosurgery is one of the most modern additions to the surgical armamentarium to treat one of the oldest maladies the mankind has suffered viz. the Haemorrhoids.

References

1. Selwyn Taylor (1973) : Recent Advances in Surgery
2. H. B. Holden (1975) : Practical Cryosurgery
3. Lloyd Williams, K (1973) : Crodestruction of Haemorrhoids—British Medical Journal 1 666.8.