

## Cryotherapy treatment of haemorrhoids

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### الخلاصة:-

دراسه منظوره لمئه واثنين وثلاثون مريض مصابون ببواسيد برشد رجييه من الدرجه الاولى والثانيه والثالثه. عولجت بواسطه التجميد في مستشفى الديوانيه العسكري للفترة من اذار 1996-2003

اجري تحليل للمعلومات كدرجة البواسيد التجميد والاعراض قبل وبعد العملية مع المضاعفات لنتائج الجيد ولعل على نتائج جيدة في 100% مريض من المجموع. تساءل عن طريقه في اصابه ببواسيد برشد رجي عولجوا بتوسيع الشد اثنتان من المرضى اصابوا بنضيق فتحة الشرج. وعانى (15) مريض من بواسيد راجعه عولجوا بعملية رفع البواسيد جراحياً بالطريقة بسطهم خلفاً، من الإلحاح من اجرائه في العيادة الخارجية وواظمة الكلفة ونسبة رجوع والمقايير اذا احسن اختيار المرضى.



## **Summary :**

A prospective study of one hundred and thirty two patient with first. Second and third degree haemorrhoids (prolapsed haemorhoid were excluded from the study) were treated by cryotherapy in Al-Dewaniya military hospital. For the period from March1996-through March 2003. Analysis was done for all relevant data such as degree haemorrhiod. Freezing time. Pre and postoperative symptoms and any complications.

Good results were obtained in 109 patients out of 132. 6 patients developed anal fissure and treated by anal dilatation. 2 patients developed anal stenosis. Recurrence occurred in 15 patient and treated by formal haemorrhiodectomy.

The method has the following advantages:

Simple. Easy to perform. Painless. Done at the out patient department and cost effective.

To minimize complications such as pain and haemorrhage. The ice-ball should be limited to the mucosal part of the haemorrhiod.

The method will produce good results and low recurrence rate when careful selection of the patients is done. The ideal patient is the one with second and third degree haemorrhiod without any external or skin component.

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## **Cryosurgery**

The freezing of diseased tissues as a treatment is called cryosurgery. There are three commonly used methods of freezing living human tissue:-

1. Applying a spray of liquid nitrogen:

## **Introduction**

This method produces tissue temperature around -190c it has mostly used on the surface lesion by dermatologist and is of little value in the body cavities. Areas surrounding the lesion should be packed of with paraffin gauze for their protection.

2. Applying a closed probe in which either liquid nitrogen or nitrous oxide is allowed to boil off.

3. Applying a closed probe in which pressurized gas is allowed to expand rapidly after passing through a narrow orifice.

-Macroscopic appearance of tissue after the use of cryotherapy : Tissue once frozen become white and solid . To achieve freezing tissue temperature below  $-4^{\circ}\text{C}$  are necessary : to achieve tissue necrosis . temperature around  $-20^{\circ}\text{C}$  are required . The white solid mass rearms at a variable rate . depending upon the heat flow and vascularity of the surrounding area the size of the area frozen and the temperature of the ice ball itself . Usually the time taken is from two to five minutes . Immediately after rearming the frozen tissue looks exactly the same as unfrozen tissue . within the first 15 minutes of rearming . swelling of the frozen area accrue . with oedema and increase in vascularity . Thrombosis and infarction of the frozen area ensue and over the next 24 hours the tissue become dark and necrotic . sloughing and absorption of the dead tissue takes from 10- 14 days . and during the first 10 days there is a profuse serous discharge .

- Mechanism of cell death from freezing :

As a result of freezing, cell death may be mechanical due to cell membrane destruction . or chemical due to hyperosmolarity . other factors is thrombosis of the micro circulation . Leading to cellular anoxia and death.

### **Patients and method** :a-patients:

During from march 1996 – March 2003 , cryotherapy was performed on 132 patients with hemorrhoids ( All were male ). Patient's age ranged between 20 – 52 years with a mean age of 36 years . The duration of the complaints ranged from 6 months – 7 years with a mean of 3.7 years . These patients were referred to the out-patient dept . of AL-Dewaniya Military Hospital from local medical units and from near by military units All patients were interrogated and details of symptoms was recorded full general and local examination was performed with preliminary proctoscopy and sigmoidoscopy . No investigations was needed .

A follow up for 6 months was done at different intervals .

- The four symptoms most often experienced are listed in Table I
- together with their frequency .
- The degree of hemorrhoids in the patients with their frequency are

- listed in Table 11 .

**TABLE I Preoperative Symptoms**

Symptom	Never	Occasionall y	Frequent y	Regularly
Bleeding	12	72	31	17
<i>Discharge</i>	82	25	17	8
Irritation	42	36	40	11
pain	45	38	27	22

**TABLE II Degree of Haemorrhoids in 132 patients**

DEGREE OF HAEMORRHOIDS	NUMBER OF PATIENTS
First Degree	21
Second Degree	82
Third Degree	29

**B-Method:**

The procedure was done in the out-patient of the surgical gastro-entriology Department . Cryotherapy was performed using a keeler – Amoils Acu22 system . Nitrous oxide from a standard cylonder .at a pressure of above 40 kg/cm2,was used to produce a temprature of –80c . A plastic proctoscope with obturater in which a 1.5 cm cut has been made in one side was used .The plastic proctoscope acts as a theramal insulation and the slit allows the haemorrhoid to prolapse in to the lumen with the patient in the knee –elbow postion or left lateral position. The plastic proctoscope is introduced to the anal canal . the obturator of the proctoscope removed . and the pile prolapses in to the lumen. The cryoprobe is applied with its tip at the apex of the pile at the anorectal ring.The foot switch depressed and freezing begins .After a few seconds the probe will stick to the mucosa and gentle traction can be exerted .Freezing of pile is continued by the probe in contact untill all of the pile tissue becomes white and solid . This will take 2-4 minutes . This probe should be moved to ensure that the frozen heamorrhoid is free on the underlying muscle .when freezing is complete the switch should be turned off and allowed to rewarm and detached itselwlf . It should not be broken off the tissues . other –wise the mucosa will be torn and bleeding will result . After freezing the heamorrhoid .the proctoscope should be withdrawn .the still solid tissue

sliding along the slit of the proctoscope – The obturator should then be replaced in the proctoscope which is re introduced into the anal canal. And rotated so that the slit coincides with the next haemorrhoidal area to be managed. All the piles were treated at one session in each case. The length of time ( Freezing Time ) the cryoprobe was applied is shown in Table III. in which 2-3 minutes being the usual time needed.

**Table III haemorrhoid freezing time**

TIME IN MINUTES	NUMBER OF HAEMORROIDS TREATED
1	21
2	292
3	105
4	15
5	8

### **Results :**

The postoperative follow up were recorded on days 1.5.10 and also on the first .third and sixth months .after management . As shown in Table Iv .

**Taele IV postoperative Symotoms**

Dain none milc sever	Discharge none mild sever	Bleeding none mild sever	Swelling none mild sever	No.
Day 95 39 6	76 52 2	81 46 -	108 22 -	130
Day5 90 8 -	56 38 4	71 27 -	73 23 2	98
Day10 95 16 1	92 18 2	107 5 -	109 3 -	112
Month1 105 17 3	99 26 -	119 6 -	- - -	125
Month3 80 - 2	41 10 1	80 2 -	- - -	82
Month6 35 1 -	32 4 -	31 5 -	- - -	36

Out of 123 patients 130 were seen on the first postoperative day . of those 39 patients ( 34.6 % ) complain of mild pain ( 6 patients complain of sever pain ) . 38 patients ( 41.5 % ) with slight discharge . 46 patients ( 37.3% ) presented with mild bleeding and 22 patients ( 16.9% ) with mild swelling .

On the fifth postcryotherapy day only 98 patients presented to be examined .out of those 8 patients ( 8.2% ) with mild pain .38 patients (42.9% ) with slight discharge . 27 patients ( 27.6% ) with mild bleeding and 23 patients ( 23.4% ) with mild swelling and 2 patients with sever swelling . On the tenth post cryotherapy day 112 patients presented to the out patient departement for follow up .of those 16 patients ( 15.2% ) with mild pain .18 patients ( 17.9% ) with slight discharge .5 patients ( 4.5% ) with mild bleeding and only 3 patients ( 2.6% ) with mild swelling .

After I month . the patients presented for follow up were 125 . of those 17 patients ( 16% ) complain of mild pain .3 patients complain of sever pain and examination will reveal and fissure .26 patients ( 20.8% ) with mild discharge .6 patients ( 4.8% ) with mild bleeding .

On the third month 82 patients were seen .of those 2 patients ( 2.5% ) with sever pain .10 patients ( 13.5% ) slight discharge .and 2 patients (2.5% ) with mild bleeding . On the sixth month 36 patients were seen for follow up . of these I patients ( 2.8% ) with mild pain .4 patients ( 11.2% ) with mild discharge and 5 patients ( 13.6% ) with mild bleeding . Of all patients treated by cryotherapy : 109 patients (82.5% ) has good result .6 patients ( 4.5% ) develop anal fissure and treated by anal dilatation .2 patients ( 1.5% ) develop anal stenosis also treated by diltation 15 patients (11.3% ) with recurrence and treated by formal haemorrhoid ectomy .

- The post operative swelling was acomplain of 36 patients .persist for 10 days and subside spontaneously . it was observed that it maily occurred in patients with third degree haemorrhoids .
- Pain is rarely sever and mild analgesia was sufficient to control it ?
- Discharge is worse with third degree hoemorrhids and worse when skin area are involved .
- There is high improvement rate between first and third month after cryotherapy
- There was no relation ship between freezing time and postoperative pain . bleeding or any complications .

### **Discussion :**

Cryosurgical techniques for the management of haemorrhoids were introduced by Lewis et al (1969) (6) and Agin in (1972) (7). When he suggested that it was unnecessary to give any form of anaesthesia. Wilson and Schofield (11) obtained good results in 94 out of 100 patients. Smith LE (1979) (9) compared haemorrhoidectomy with cryosurgery. Both performed on the same patients. It was found that two-thirds preferred the former and that the results were better.

- Goligher (2) commented on the amount of postoperative pain experienced in some patients and it has been suggested that any skin involvement should be treated with liquid nitrogen.

- In our study it was found that:

- 1-cryotherapy is specific as all the tissue included in the iceball will subsequently disappear.

- 2-If any perianal skin is included the patient will complain of severe pain after ward. It was therefore advised that if the pile mass contains a large skin element then formal haemorrhoidectomy should be done

- 3-Drawing the pile into the center of a special non-conducting

- 4-speculum. prevent any freezing of adjacent or deeper tissue so that no case of either necrosis or sloughing occurred.

- 5-Secondary haemorrhage is alarming but can be prevented by applying the probe to the pile mass alone. Great care must be taken to avoid freezing the rectal mucosa above. Which may result in sloughing and bleeding.

### **Inconclusion:**

The management of haemorrhoids by cryotherapy in this study it was found that:

It is simple, painless, no anaesthesia was needed, out-patient treatment, no limitation of age, and cost-effective. There is a low recurrence rate and complication rate provided that the patients are selected with care and the ideal patient is one with second and third degree haemorrhoids without any skin component. If there is any skin element then formal haemorrhoidectomy is indicated. The outcome of cryotherapy was also found to be unrelated to the length of history or any previous treatment.

### **References**



- 1-Berry Ar D costa ef.The treatment of haemorrhoid by cryosurgery.J.R. Coll Sury.Edind 1978:23:37-9.
- 2-Goligher JC. Cryosurgery for haemorrhoids. Dis coior rectum 1976:19:213-18.
- 3-John hadfield and Michael hobsley.cryosurgery and its applications .current surgical practice.1981:14:248-20.
- 4- Kaufman HD. Out patient treatment of haemorrhoids by cryotherapy.Br.Jsurg 1976:1976:63:462-3.
- 5-Lawrence W.Way. current surgical diagnosis&Treatment 1988:33:631-15
- 6-lewis Mi.De la Cruz T.gazzanige DA.Ball TL. Cryosurgical haemorrhoidectomy: preliminary report .Dis colon rectum 1969:12:371-4.
- 7- Lewis mi. cryosurgical haemorrhoidectomy ; a follow up report dis colon rectum 1972
- 8-o, connor jj cryohaemorrhoidectomy: indication and complication 1986:19:41-3
- 9- Simth le goodreau jj operative haemorhoidectom versus cryodestruction 1989:22:10-16.
- 10-Williams kl hag iu elem cryodestruction of haemorrhoids Br. Med j 1990:666-8