MATERIAL AND METHOD
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Preparation of insulated cataract knife:

Insulation of cataract knife was done by using a well known dental material, stellon cold cure acrylic resin powder and liquid.

A cataract knife (Narrow Von Graefe Knife) was coated with cold curing dental compound which consisted of stellon cold cure acrylic resin powder and liquid. A paste was made and painted over the blade of knife except at its' tip. After setting for five minutes, the excess was removed by sand paper, so that only a thin layer remained and the layer was made tapering, so that it could easily penetrate through the skin.

Sterilization of insulated cataract knife:

Various methods like boiling, autoclaving, chemical sterilization by spirit, lysol and savlon were tried for sterilization of knife. Ultimately oxidex (R) which consists of 2% glutaraldehyde with activator was selected for sterilization for 15 minutes, was found to be most suitable as it did not damage the insulated coating of the knife.

Percutaneous fixation of vas

The vas was fixed in this study using a
towel clip. The sterilization of the instrument was done either by boiling or by autoclaving.

**Electro Surgical Cautery**

An electro surgical cauterity was used to cauterize the vas and to coagulate the ends.

**Patients**:

The study was carried out on 8 patients of benign prostatic hyperplasia (group 1) not associated with diseases like hernia or hydrocoele etc. admitted to the hospital for definitive surgery as vasectomy is preliminary requirement for prostate removal. After having standardized the technique this procedure was used for vas occlusion on 14 healthy men (group 2) who volunteered for permanent fertility control. Ten healthy men similarly volunteering for permanent fertility control were subjected to standard open vasectomy (group 3).

**Preoperative preparation**

The informed consent was obtained in each case. The part was prepared by shaving the area. Lignocaine sensitivity was determined. Anti tetanus immunization was also done and the patient was shifted to operation theatre.

**Operative Procedure**

Complete aseptic techniques were used.
The part was cleaned and draped. Infiltration by 1% lignocain hydrochloride was used as local anaesthetic. In some cases, along with local anaesthesia, diazepam (10 mg) and pentazocine (30 mg) was also administered intravenously very slowly. Immediately patient went to sleep and did not feel any pain during the procedure.

The Technique

The vas was palpated and brought to the surface between thumb and fingers. The local anaesthesia was infiltrated on the upper end of vas and it was fixed using a towel clip. The towel clip was first opened and then the grip was taken on the skin by it so that vas was held by it in it's tip. Now the lignocain was similarly injected (1 cc) on the lower end of the vas which was also fixed using a towel clip.

Now an area was infiltrated by lignocain in between the two towel clips. The insulated cataract knife was inserted into the skin so that its' sharp edge faced upward. The tip of the blade was brought under the vas. Vas was pressed upon it's sharp edge. Now the cautery was applied through the cataract knife (a high frequency current of very short duration) and thus the vas was cauterized and cut, which was clearly felt (the two ends were felt separately). The cut ends of vas retracted and
gap between two ends was about 2.5 cm. The cataract
knife was removed and the area was sealed by tincture
benzoin. No dressing was applied. Similar procedure
was carried out on the opposite side.

**Post operative treatment:**

Patients were given only analgesic
tablets for 1 to 2 days. No antibiotics were needed
routinely. The patients were followed for pain, tender-
ness, haematoma, swelling, pus formation fever and
epididymo-orchitis, for 5 to 7 days.

At the time of definitive surgery for
benign prostatic hypertrophy, just before doing
prostatectomy, vas was exposed through longitudinal
incision over the scrotum. The cauterized ends of vas
were dissected and the upper and lower ends of vas,
were removed. Similar procedure was carried out on
opposite side. The wound was sutured and sealed with
tincture benzoin before starting prostatectomy in
order to avoid contamination of wound by urine.

Methylene blue was injected through one
end of the removed vas to see the patency of cauterized
ends. Histopathology was done of all vas segments thus
removed.
The same technique was used for patients who came for voluntary vasectomy to this hospital. A proforma was prepared which enlisted full details of the patient (appendix 1). Under local anaesthesia, vas was cut and cauterised. The patients were sent home on the same day and were advised to use analgesics for 1 to 2 days. Post operatively patients were called daily for follow up for pain, tenderness, swelling, haematoma, pus formation or fewer and epididymo-orchitis for 5 to 7 days. Post operatively semen examination was done after 2, 4, 6, 8 and 12 weeks. Condomes were supplied for 3 months and patients were instructed not to indulge in sexual intercourse without condom till instructed otherwise.

**Method for open vasectomy**

The method of open vasectomy was employed in patients coming for vasectomy who had associated scrotal pathology e.g. Hydrocoele, varicocele, hernia etc. and who were not considered fit for percutaneous vas fulguration.

The preoperative preparation was same as in percutaneous vas fulguration. The procedure was carried out using full aseptic techniques. The part was cleaned and draped. For anaesthesia, only local infiltration with 1% lignocaine hydrochloride was used.
The spermatic cord was palpated and vas isolated between thumb and index finger. Local infiltration of 1% lignocaine hydrochloride on the skin of scrotum was done. An incision was made over the skin. The vas was held in Allis forceps and incision over it was made, to cut fascial layers. After clearing the vas from fascial layers for about 2.5 cm the vas was held using an artery forceps, cut and ends ligated with fine silk. A small segment of vas was removed. The spermatic cord was again placed in the wound and one or two stitches were applied on skin after complete haemostasis was achieved.

Postoperative management

The patients returned to bed. Some antibiotic and analgesics were given for 5 to 7 days. The patients were looked after for pain, tenderness, haematoma or swelling pus formation, fever and epididymo-orchitis. The stitches were removed after 7 days.

Post operative, semenograms were done after 2, 4, 6, 8 and 12 weeks. Condoms were supplied for 3 months and patients were instructed not to indulge in sexual intercourse without condoms till instructed otherwise.
Fig-1

Showing instrument used in percutaneous fulguration of vas

a. Narrow Von Graefe Knife
b. c. Insulated Narrow Von Graefe Knife
d. e. Towel clips

Fig-2

Showing electro-surgical cautery, 1% lignocaine in syringe, insulated

Cataract knife (two)

Towel clips (two)
Fig-3

Showing fixation of vas by towel clips

Fig-4

Showing infiltration of lignocaine 1% into the skin in between the towel clips
Fig. 5

Showing insulated Cataract knife inserted into Scrotum & placed under Vas

Fig. 6

Showing cutting & cannulation of Vas by electric surgical cautery
Fig-7

Showing Skin of Scrotum after Percutaneous fulguration of Vas

Open Vasectomy

Fig-8

Showing Isolated Vas from Spermatic Cord
**Fig-9**

Showing vas in between artery forcep

**Fig-10**

Showing ends of vas in artery forcep after removal of small segment
Fig-11

Showing ligated ends of vas by non absorbable Suture material.

Fig-12

Showing Skin of Scrotum after open Vasectomy.