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# No scalpel vasectomy in promoting male sterilization

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***Abstract:***
***A total of 50 cases of NSV were studied with aim to evaluate the advantages of NSV vis a vis conventional vasectomy, its' advantages, complications, motivating factors, time taken for the operation, age at operation, number of children at operation, failure rate and follow up. The cases were informed about the procedure and choice given, before taking consent. Pre- operative preparation and counseling was done. The findings were recorded and interpreted according to WHO guidelines . The average age of operation was 37 years, , while most people were motivated to undergo the procedure because of completion of family. Most cases had three viable children at operation, and the mean operating time was recorded as 16 minutes per case. Complication rate was 0.2% and 64% people came for follow up . The sperm positivity rate of the follow up cases was 2%, recording a failure rate of 2% and the procedure effective rate was 98%. Certain special conditions of the scrotum of desirable cases like inguinal hernia, hydrocoele, varicocoele, Diabetes mellitus, scrotal injury were also detected during the study.***

***Key words : vas deferens, sharp pointed dissecting forceps, ringed forceps, population control, semen analysis.***

## 1 INTRODUCTION:

Vasectomy is widely accepted as a safe , effective , simple and inexpensive method of permanent contraception for males. Worldwide, vasectomy protects more than sixty million couples from unwanted pregnancies. However vasectomy lags far behind female tubectomy sterilization by a ratio of 1:3. The main reasons for this pattern are a) cultural patterns of male dominance, b) fear of surgery on the male genitalia, c)fear of ability to perform after surgery and impotency, d)weakness after vasectomy and e) lack of knowledge about newer techniques available.[1]

Vasectomy when performed with the conventional technique involves making one or two incisions of 1 to 2 cm in the scrotal skin exposing, isolating and dividing the vas, remov ing a 1to 1.5 cm segment from each side, sealing the vas ends with non-absorbable suture and finally closing the scrotal incision.This method has been used for over half a century, and has proved to be a simple, inexpensive and effective method of vas occlusion. This method however accounted for most of the complications , in particular bleeding, haematoma and infection.

Over the past three-four decades, a variety of vasectomy techniques have been developed, like, electro-coagulation, percutaneous chemical vas occlusion, embedment of thread in the vas deferans, but popularity of these techniques and acceptance by the masses were shortlived.[2]

In 1974, a modified technique, which doesn't' require the use of a scalpel was developed and performed in Sichuan province of China, by Dr. Li Shunquing.The technique was introduced in North America in 1988 and in European countries, a year later. This technique first came to India in the late 1990s. The technique of no scalpel vasectomy has significantly increased the acceptability of vasectomy by reducing men's anxiety about incision.[3]

In a country like India, with a male dominated society and a burgeoning population of over a billion , use of permanent male sterilization procedures can bring about far reaching fruitful changes to limit population growth and change the

demographic structure.China is the world's most populous country, accounting for nearly 22% of the world's population , but by implementing population limitation programmes which are safe, quick and male-oriented , it has been successful in harnessing the population boom, resulting in all round growth and ushering in development and prosperity in that country.On the other hand ,India with a world land mass of 7.5% and a fast paced population growth rate is set to overtake China and have the dubious distinction of being the world's most populous country by 2025-30.

The need of the hour for India, is to have a safe , effective and acceptable male sterilization programme which will be successful in halting the population growth.

## I. METHODOLOGY

The present research is based on a study group of 50 consecutive cases, selected from the patients who came from the Kamrup Dist. Of Assam during the period of 10th July 2012 to 11th May 2013, and the last case followed up to October 2013. Written and informed consent was taken . The particulars of the patients were recorded in detailed format . The reasons for undertaking NSV were evaluated and systemic and contagious diseases were excluded by laboratory tests. A detailed examination of the genito-urinary system was undertaken and pre-operative counselling of the procedure, other methods available and client fears and doubts and misconception identified and addressed.[4] All clients were screened for psychological assessment and emotional stability for vasectomy was determined.Preoperative antiseptic dressing of the male genitalia is undertaken and NSV performed in a warm room that is free of environmental contamination.The no scalpel vasectomy technique requires the use of two specially designed instruments i.e- the extracutaneous fixation(ringed) clamp and the dissecting clamp. The extracutaneous fixation clamp is used to encircle and stabilize the vas without injuring the skin.[5] The dissecting clamp is a sharp curved mosquito haemostat used to puncture the scrotal skin, to spread tissues, to dissect the sheath and to deliver the vas deferens[6].

## II. RESULTS AND OBSERVATIONS.

In this present series ,a total of 50 consecutive cases of no scalpel vasectomy was done between 10-07-12 to 11-05-13 and observations noted with regard to their incidence of age, motivating factors, number of children at operation, operating time, complications and semen analysis and follow up visits.

### *A. Table showing age group distribution and %.*

| Age group | No. of cases | Percentage. |
|---|---|---|
| 26-30 yrs | 06 | 12% |
| 31-35yrs | 14 | 28% |
| 36-40yrs | 27 | 54% |
| 41-45yrs | 03 | 06% |
| Total: | 50 | 100% |

The highest number of cases were recorded in the 31-35 and 36-40 yrs age group. In this present series the youngest patient was aged 26yrs and oldest was 45 yrs.

### *B. Motivating Factors.*

| Factor | No. of cases. | Percentage. |
|---|---|---|
| 1.Self motivation | 08 | 16% |
| 2.Family completed. | 20 | 40% |
| 3.For monetary awards | 10 | 20% |
| 4.Sense of duty | 02 | 04% |
| 5.Avoid unwanted preg. | 10 | 20% |

Most people were motivated because of completion of family (40%), the next best most common reason being that to avoid unwanted pregnancies (20%) and awards/job perks(20%).

### *C .Information about NSV.*

The cases came to know about the NSV procedure from the following sources.

| Source | No. of Cases. | Percentage |
|---|---|---|
| 1.Govt Advt. in N/paper | 05 | 10% |
| 2.Radio | 10 | 20% |

| | | |
|---|---|---|
| 3.Counselling in Hosp. | 15 | 30% |
| 4.Friends in Workplace | 18 | 36% |
| 5.Internet | 02 | 04% |
| Total ; | 50 | 100% |

The maximum source of information was from friends in workplace(36%) , counselling coming in next at 30%.

***D.Number of children at operation :***

| Children | No. of cases. | Percentage |
|---|---|---|
| 2 children | 12 | 24% |
| 3 children | 27 | 54% |
| 4children | 08 | 16% |
| >4 children | 03 | 06% |

Most cases had three children (54%) and 24% had 2 children.

***E. Operating time:***

The chart below shows the operating time in minutes against the number of cases.

| Minutes. | No. of cases. | Percentage. |
|---|---|---|
| 10-15 | 03 | 06% |
| 16-20 | 26 | 52% |
| 21-25 | 15 | 30% |
| 26-30 | 04 | 08% |
| 31-35 | 02 | 04% |

The maximum no of cases took 16-20 mins (52%), the average being 16mins.

***F..Complication Rate:***

There were no complications noted amongst the cases operated upon, no wound infection, haemotoma or granuloma were noted.

***G. Follow up visits :***

Follow up of the patients were encouraged and the cases who came forward for one or two visits are given.

| No. of visits | no. of cases. | Percentage |
|---|---|---|
| One visit | 32 | 64% |
| Two visit | 18 | 36% |
| Total | 50 | 100% |

SHARP POINTED VAS DISSECTING CURVED HAEMOSTAT

EXTRACUTANEOUS VAS FIXATION RINGED FORCEPS

LIGATING THE RIGHT VAS.

REMOVAL OF 1-1.5cm OF VAS.

### *H. Semen Analysis :*

Semen analysis were undertaken at 12 weeks interval after surgery. The results are given below.

| Result. | No. of cases. | Percentage. |
|---|---|---|
| Sperm positive | 01 | 02% |
| Sperm negative | 49 | 98% |

98% of cases registered a negative sperm count (less than 2 non –motile sperms per HPF was being taken as a negative count, as per international norms.) while 2% of cases registered a positive count on sperm analysis.[8, 11 ,12]

## III. DISCUSSION.

In this series, the incidence of age ranged from 26 to 45 years, the average age being 37 years. The highest number of cases were recorded in 36-40 years age group. In this study, the persons who came forward for NSV were mostly motivated because of completion of family(40%), the next reason being that to avoid unwanted pregnancies(20%). The cases came to know about the NSV procedure from friends in the workplace(36%), counselling in the hospital came next at 30%.It was noticed that higher the education level, lesser is the number of children in a family.[12]

Most cases(54%) had three children and 24% cases had two children at operation. The average operating time was 16 min. in the present study, which was comparable with that of Li Shunqiang, M.Goldstein et al(11 mins, 1992) and V.Kumar, R.M.Raza et al (10 min, 1999). The complication rates of 0.2% in the present study is comparable with other studies like, A.Nirapathpongporn et al, Thailand( 0.4%, 1992), Li Shunqiang et al,USA (0.09%, 1992), M.Filshie, U.K.( 0.4%, 1996), P.M.Alderman et al, Canada (0.7%,1999), V.Kumar et al,U.K. (0.07%,1999).[10] Most common complications were bleeding ,wound infection, haemotoma, sperm granuloma and pain. Infection(0-0.91%) and haemotoma(0-2.2%) were[12] the commonest complications in various studies. In this study, the complication rate was0.2% and included bleeding in 1 case(0.2%) , haemotoma in 1 case(0.2%) and superficial wound infection in 1 case(0.2%) .Cochrane reviews of two randomized controlled trials showed less bleeding and pain in NSV than in conventional vasectomy.[13]. There was less post-operative pain and infection in the NSV group. Satisfactory results can be obtained by good surgical techniques and liberal use of anti microbials. [14] In this series 64% of men came for only one visit, towards the end of 12 weeks , and only 36% of men came for two visits at 06 and 12 weeks.

Conclusion :

No scalpel vasectomy is an easy, safe and effective method of male permanent sterilization. It is cost effective and complications are low. It does not need hospital stay and normal activities can be resumed in 48 hours time. Motivation for NSV is achieved by extensive publicity and by fellow workers at the workplace. It does not hamper sexual activities and is a quick procedure. In a highly populous country like India, it can work wonders as a tool for family planning and should be actively encouraged by both the Govt. and socio-cultural organisations.

References :


[1] Family planning, a global handbook for providers.Baltimore and Geneva(2007): WHO and John HopkinsBloomberg school of Public Health(CCP) INFO Project.

[2] Waites GMH. Regulaton of male fertility : the research strategy of the WHO task force . Runne baum B, Rabe T, England, UK, 1991.

[3] Li Shunqiang Zhu Jinbo, No scalpel vasectomy.Chin Med J.1976, 213-4.

[4] Shunqiang, Goldstein at al The no-scalpel vasectomy. J Urol 1991.145:341-344.

[5] AVSC International. No-scalpel vasectomy—An illustrated guide for surgeons. New York. 1992.

[6] AVSC International, no-scalpel vasectomy curriculum trainer's manual New York 1997.

[7] WHO Technical and managerial guidelines for vasectomy services.Geneva, WHO, 1988.

[8] Pathfinder International . Module 2.Infection prevention MA 1997.

[9] Family planning and population div of WHO . Vsectomy- what health workers need to know.. 1984.

[10] Kumar V, Kaza RM et al. An evaluation of the no scalpel vasectomy technique BJU Int.1999. Feb;83(3):283-4.

[11] Pant PR, Sharma J,Subba S (2007) Scrotal haemotoma: the most common complication of no scalpel vasectomy. Kathmandu Univ Med J. 5:279-280.

[12] Bhuyan K, Ali I, Barua SJ. No scalpel vasectomy. Indian J Surg (july-aug2012) 74(4) 284-87.

[13] Cook LA, Pun A, Gallo MF(2007) Scalpel vs NSV. Cochrane data syst rev.Issue no 2.Art No.CD004112,doi:10.1002/14651858.CD004112.pub3.

[14] Alderman PM(1991)Complications in a series of 1224 vasectomies. JFamPract33:579-584.