

## Original Article

### Comparison of Standard and Modified Technique of Vasectomy- A Clinical Study

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#### ABSTRACT:

**Background:** Vasectomy is a surgical procedure for male sterilization. Standard and modified no scalpel vasectomy is widely used methods. The present study was conducted to compare standard NSV and modified NSV. **Materials & Methods:** The present study was conducted on 50 males requiring vasectomy. All were divided into 2 groups. Group I (control group) had 25 males in which standard NSV procedure was carried out. In group II (study group), modified NSV was carried out on 25 males. In all groups, operative time, need of analgesia, complications education status etc was compared. **Results:** The mean age of subject in group I was 31.9 years and their spouse was 29.6 years. In group II, mean age of subject was 32.3 years and their spouse had 29.6 years. The difference was non-significant (P>0.8). In group I, 40% subjects and 38% spouse had primary education. Only 40% were graduates. In group II, 38% subjects and 42% spouse had primary education. Only 10% were graduates. The difference was non-significant (P>0.05). Self motivation was 6% in group I and 76% in group II. Operative time was 9.12 minutes in group I and 6.36 minutes in group II. Number of swabs used was 28 in group I and 35 in group II. Need of analgesia was seen in 84% in group I and 100% in group II. 1 case of infection was seen in both groups. Bruising was seen in 4 cases in group I. Sperm granuloma was seen in 2 cases in group I and 1 case in group II. The difference was non-significant (P>0.05). 36% of subjects had <5 years of marriage at the time of vasectomy while 54% had 5-10 years of marriage at the time of vasectomy. 2 children were seen in 44% couples in group I and 60% in group II while 3 children were seen in 45% in group I and 46% in group II. The difference was non-significant (P>0.05). 56% subjects and 44% subjects were from urban and rural area respectively in group I. 64% and 36% subjects were from urban and rural area respectively in group II. The difference was non-significant (P>0.05). **Conclusion:** The modified NSV technique appears superior in terms of number of attempts required for catching the vas, time taken for vasectomy and incidence of bruising.

**Key words:** Sperm, Vas, Vasectomy.

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#### INTRODUCTION

Vasectomy is the only permanent method available for male contraception. Vasectomy is a surgical procedure for male sterilization. In this procedure, the male vas deferens are cut and tied or sealed so as to prevent sperm from entering into the urethra and thereby prevent fertilization. In this process, ligation and excision of a 1 cm segment of vas with fascial interposition is done. Local anaesthesia involves raising an intradermal wheal at the site of fixation of vas and injection of lignocaine 2% perivasally to block both the vasa. This blind method of injecting local anaesthetic is not free of complications like injury to

testicular artery leading to bleeding and haematoma or at times testicular atrophy and intravascular injection leading to systemic intoxication.<sup>1</sup>

To help reduce anxiety and increase patient comfort, men who have an aversion to needles may consider a "no-needle" application of anesthesia while the "no-scalpel" or "open-ended" techniques help to accelerate recovery times and increase the chance of healthy recovery.<sup>2</sup>

No Scalpel Vasectomy (NSV) was introduced in 1973 by Li Shun Qiang. The prevalence rate for male sterilisation is 2.4% and female sterilization is 18.9% in all over the world. NSV has become the gold standard of male sterilisation. No

needle jet injection technique has been in use since the last decade and has been found simple and safe technique with immediate onset of profound anaesthesia and high patient satisfaction as reflected by low pain scores.<sup>3</sup>

Short-term possible complications include infection, bruising and bleeding into the scrotum resulting in a collection of blood known as a hematoma. The stitches on the small incisions required are prone to irritation, though this can be minimized by covering them with gauze or small adhesive bandages. The primary long-term complications are chronic pain conditions or syndromes that can affect any of the scrotal, pelvic or lower-abdominal regions, collectively known as post-vasectomy pain syndrome.<sup>4</sup> The present study was conducted to compare standard NSV and modified NSV.

## MATERIALS & METHODS

The present study was conducted on 50 males requiring vasectomy. All were informed regarding the study and written consent was taken. Ethical clearance was taken from institutional ethical committee. General information such as name, age, etc. was noted on case record file.

All were divided into 2 groups. Group I (control group) had 25 males in which standard NSV procedure was carried out. In group II (study group), modified NSV was carried out on 25 males. In all groups, operative time, need of analgesia, complications education status etc was compared. Results were tabulated and subjected to statistical analysis using chi-square test. P value less than 0.05 was considered significant.

## RESULTS

**Table I** Distribution of patients

Total- 50		
Group I (Standard NSV)	Group II (Modified NSV)	P value
25	25	1

Table I shows that group I (25) standard NSV procedure was carried out. In group II (25) modified NSV was carried out. The difference was non-significant (P=1).

**Table II** Age wise distribution

Mean age	Group I		Group II		P value
	Subject	Spouse	Subject	Spouse	
	31.9 years	29.6 years	32.3 years	29.6 years	0.8

Table II shows that mean age of subject in group I was 31.9 years and their spouse was 29.6 years. In group II, mean age of subject was 32.3 years and their spouse had 29.6 years. The difference was non-significant (P=0.8).

**Table III** Education status of subjects

Education status	Group I		Group II	
	Subject	Spouse	Subject	Spouse
Primary education	40%	38%	38%	42%
Graduates	40%		10%	

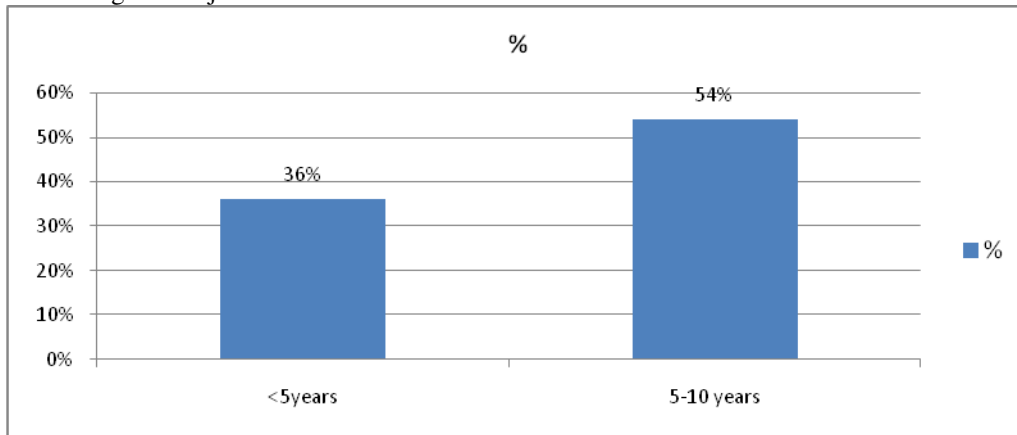
Table III shows that, in group I, 40% subjects and 38% spouse had primary education. Only 40% were graduates. In group II, 38% subjects and 42% spouse had primary education. Only 10% were graduates. The difference was non-significant (P>0.05).

**Table IV** Parameters in both groups

Parameters	Group I	Group II	P value
Self motivation	68%	76%	0.32
Operative time (mins)	9.12	6.36	0.4
No. of swabs	28	35	0.1
Need of analgesia	84%	100%	0.08
No. of attempts	66	54	0.06
Infection	1	1	0.5
Bruising	4	0	0.037
Sperm granuloma	2	1	0.55

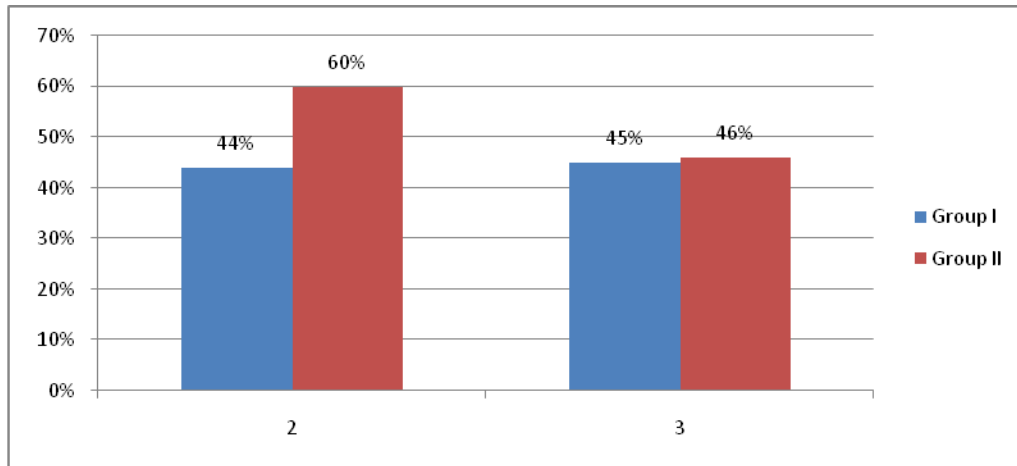
Table IV shows self motivation was 68% in group I and 76% in group II. Operative time was 9.12 minutes in group I and 6.36 minutes in group II. Number of swabs used was 28 in group I and 35 in group II. Need of analgesia was seen in 84% in group I and 100% in group II. 1 case of infection was seen in both groups. Bruising was seen in 4 cases in group I. Sperm granuloma was seen in 2 cases in group I and 1 case in group II. The difference was non-significant (P>0.05).

**Graph I** Year of marriage of subjects



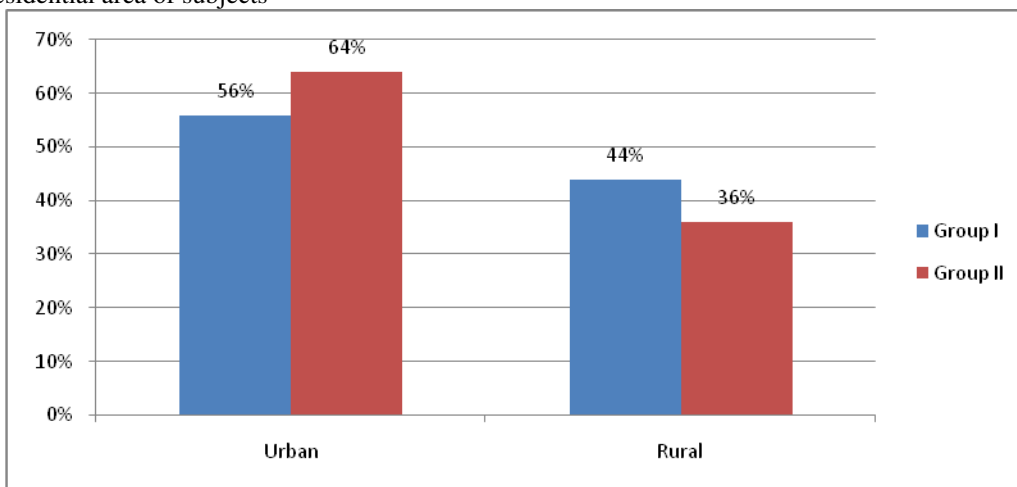
Graph I shows that only 36% of subjects had <5 years of marriage at the time of vasectomy while 54% had 5-10 years of marriage at the time of vasectomy.

**Graph II** Number of children in both groups



Graph II shows that 2 children were seen in 44% couples in group I and 60% in group II while 3 children were seen in 45% in group I and 46% in group II. The difference was non- significant ( $P>0.05$ ).

**Graph III** Residential area of subjects



Graph III shows that 56% subjects and 44% subjects were from urban and rural area respectively in group I. 64% and 36% subjects were from urban and rural area respectively in group II. The difference was non-significant ( $P > 0.05$ ).

## DISCUSSION

Vasectomy is the most effective permanent form of contraception available to men. In nearly every way that vasectomy can be compared to tubal ligation it has a more positive outlook. Vasectomy is more cost effective, less invasive, has techniques that are emerging that may facilitate easier reversal, and has a much lower risk of postoperative complications. Early failure rates, i.e. pregnancy within a few months after vasectomy, typically result from unprotected sexual intercourse too soon after the procedure while some sperm continue to pass through the vasa deferentia.<sup>5</sup>

The conventional incisional technique involves the use of a scalpel to make one or two incision, the no-scalpel technique uses a sharp, pointed, forceps-like instrument to puncture the scrotum. The no-scalpel technique, which was developed in China, aims to reduce adverse events, especially hematomas, bleeding, bruising, infection and pain, and to shorten the operating time. This method generally requires more training and skill than the conventional incisional method.<sup>6</sup> The present study was conducted to compare standard NSV and modified NSV.

In this study, mean age of subjects was 31.9 years and that of spouses was 29.6 years in group I while it was 32.3 years in subjects and that of spouses was 29.68 years in group II. In group I, 16% of acceptors and 32% of spouses were illiterate. In group I, 40% subjects and 38% spouse had primary education. Only 40% were graduates. In group II, 38% subjects and 42% spouse had primary education. Only 10% were graduates. This is in agreement with Bennet et al.<sup>7</sup>

We found that 36% of subjects had <5 years of marriage at the time of vasectomy while 54% had 5-10 years of marriage at the time of vasectomy. 44% couples in group I had 2 children and 60% in group II while 45% in group I and 46% in group II had 3 children. This is similar to Munshi et al.<sup>8</sup>

We observed that the percentage of rural subjects was 44% in group I and 36% in group II. The percentage of urban clients was marginally higher in both the groups i.e. 56% and 64% respectively. Majority of the clients in both the groups i.e. 68% and 76% were self motivated. The average operative time was 9.12 minutes in control group as compared to 6.36 minutes in study group. This is similar to Zsigmond et al.<sup>9</sup>

Total number of swabs used in control group was 28 and in study group was 35. In present study, no other complication was seen. Majority of clients needed analgesia for one to two days in both control (84%) and study (100%) groups.

Only one client needed analgesia for more than 3 days in control group. Overall 66 attempts were made to fix the 50 vasa in control group as compared to 54 attempts in study group. Mild infection was seen in one case each in control and study group. Moderate infection was seen in one case in control group. Bruising of skin was observed in 4 cases in control group but none in the study group. There was no failure in any group at three months in the present study. Sperm granuloma was seen in two cases in control group and in one case in study group. This is in agreement with Cooper JA.<sup>10</sup>

## CONCLUSION

The modified NSV technique appears superior in terms of number of attempts required for catching the vas, time taken for vasectomy and incidence of bruising. However, it results in more bleeding making it look messy. Since the number of cases in each group is quite small, therefore further study involving more cases is recommended to draw reliable conclusions.

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