COMPARISON OF EFFECTIVENESS OF NO-SCALPEL VASECTOMY WITH FASCIAL INTERPOSITION OF THE STUMPS OF VAS WITH NON-INTERPOSITION

Ajay Kumar[1], Deepa Mathews[2]

[1]Associate Professor, Department of Obstetrics and Gynaecology, Government Medical College, Kottayam.
[2]Associate Professor, Department of Obstetrics and Gynaecology, Government Medical College, Kottayam.

ABSTRACT

BACKGROUND

In contrast to female sterilisation in India, a very less percentage of the couples opt for male sterilisation. This is in spite of male sterilisation being a shorter, simpler procedure fraught with lesser complications, having a shorter recovery time and has less failure rate. The barriers to adoption of male sterilisation in India are profound with reasons ranging from unfounded fears among males characterising vasectomy with physical weakness, loss of virility, manhood and inability to enjoy intercourse.

The aim of the study is to compare the effectiveness of No-scalpel vasectomy (NSV) with fascial interposition of the stumps of vas with non-interposition

MATERIALS AND METHODS

The study was conducted in the family planning unit of the Department of O & G, Govt. Medical College, Kottayam. The period of study was one year from November 2015 to October 2016. The number of vasectomies during this period was 46. Acceptors posted for vasectomy were divided into 2 groups on a one-to-one basis. Hence, 22 were without fascial interposition and 24 with fascial interposition of the stumps of vas. After the vas is excised to 1 cm, the ligature of the testicular end is cut. The cut ends are passed into the scrotum. The uncut ligature of the prostatic end is pulled out through the wound. With the dissecting forceps, the fascial sheath of the vas deferens is grasped. The fascial membrane is tied below the tie of the prostatic end and then the stump of the prostatic end is slipped back into the scrotum. Hence, the stump of the testicular end is inside the fascial sheath, while the prostatic end is outside. During followup, satisfaction with the procedure was measured on the following domains - pain involved, time required to return to work after the procedure, problems in sexual life, by a questionnaire. A semen analysis was also done after 3 months.

RESULTS

No significance in the acceptor's satisfaction between the two groups in terms of pain, return to work or sexual life. No significant difference in the failure rates ($p > 0.05$).

CONCLUSION

Both techniques of vasectomy had no significant difference. However, there was a slight increase in the operating time in the fascial interposition technique.

KEYWORDS

No-scalpel Vasectomy, Fascial Interposition, Failure Rate.

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BACKGROUND

After decades of family planning programme in the country, sterilisation, particularly female sterilisation is the predominant method of choice among couples. Vasectomy is the only permanent method of male contraception available at present. This surgery had been used to sterilise men since the late nineteenth century and gained popularity as a contraceptive method after World War I.[1] Vasectomy is a relatively safe, effective and easy to perform simple procedure, usually done under local anaesthesia.[2,3] In spite of the above advantages, vasectomy is not the method of sterilisation among the couples.[4] Currently, female sterilisation accounts for about 85% and male sterilisation 10-15% of all sterilisations in India, despite the fact that male sterilisation is simpler, safer and cheaper than female sterilisation. This trend is the same worldwide.

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Corresponding Author:
Dr. Ajay Kumar,
'Krishanjali', Thellakom,
Kottayam-686630, Kerala.
E-mail: ajaymanju2001@gmail.com
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Historical Aspects

NSV was first performed by Dr. Li Shunqiang in 1974 at Chongqing Family Planning and Scientific Research Institute in Sichuan Province in China. Before that, vasectomy was very unpopular with Chinese men and tubal occlusion was

predominant in Sichuan Province in the ratio of one vasectomy to four tubal ligations.

No-Scalpel vasectomy presents the clear advantages of a single, virtually bloodless puncture with no sutures, over the more invasive incision (s) used in conventional vasectomy.[5,6] NSV has fewer side effects, results in less pain, and provides a quicker return to sexual activity and can take less time as surgeon's skill develops.[7] As there is no incision, no-scalpel vasectomy is believed to decrease the men's fear about vasectomy.

Minor pain and bruising are to be expected which do not require medical attention. He is advised to seek medical attention if he has fever, blood or pus oozes from puncture site, or if he experiences excessive pain or swelling. He may resume normal activities and sexual intercourse with temporary contraception within two to three days, if he feels comfortable.[6]

The client or his partner will need to use another method of contraception during the first twelve weeks following vasectomy to avoid unplanned pregnancy. Semen analysis is advised at the end of three months.[1]

Scenario in India

While implementing the family welfare programme, the government of India has always adopted a cafeteria approach i.e. all contraceptive methods are offered to the eligible couple with the choice left to them. Vasectomy which has been practised in India received a great official impetus during the fourth five year plan (1968-74) Dr. D.N. Pai established a vasectomy clinic, described as one of the most successful programmes at Mumbai Victoria Terminal to cater the railway passenger traffic of the order of 2,000 or more people every day. [7]

1976-77 was a disgraceful period in history of Indian Family Planning Policy. During the emergency period, the then Prime Minister seized dictatorial rights, and a massive sterilisation campaign was launched. During the most frenzied six months of emergency around 6.5 million men were sterilised and 700 men were estimated by the government to have died as a result of sloppy operations, unhygienic conditions and rioting against family planning programme. Men en-mass were bribed or coerced to vasectomy booths regardless the age, medical, marital status or the number of children they already had. Same people were operated repeatedly just to fulfil the quotas dictated by government. The vasectomy camps were later discontinued after 1977. Afterwards the family planning programme continued with the same principles in a low key only, the target group changed from men to women. The notoriety that emergency gave vasectomy made the new government, turn to female sterilisation, in spite of increased risk and financial commitment.[8] The invention of the laparoscopic technique for carrying out female sterilisations came as a boon to the government to fulfil the targets.[8]

The current situation is that men place upon women the entire burden of preventing unwanted pregnancies. Women have been asked to take on all of these responsibilities without thinking critically about how to encourage their male partners to share these burdens equally. Furthermore, by assuming that family planning and reproductive health are solely women's issues, men have not been educated adequately about their own reproductive health needs and availability of family planning services for males. Both the 1994 International Conference on population and Development in Cairo (ICPD) and the 1995 Fourth World Conference on Women in Beijing provided a foundation for expanding family planning and reproductive health services to include men.[9]Recently, women's organisations have pronounced loudly that the entire burden and responsibility of family planning is on women alone and the husbands are not concerned about birth control, although vasectomy is the easiest, cheapest, safest way of family planning and the logical solution. Keeping in view the popular concern raised by various organisations, the government of India in the recent years has introduced no-scalpel method of male sterilisation to promote male participation in the family welfare programme.

The facilitating factors identified were as follows. [10]

A. Education and occupational status.
B. Knowledge and prior use of family planning methods.
C. Sources of information regarding NSV.
D. External factors.
E. Other influences.
F. Wife's role in decision making.

The inhibiting factors in the acceptance were

A. Fear of surgery.
B. Heard of any complications of NSV.
C. Fear of losing general health.
D. Fear of losing potency.
E. Fear of losing work days.
F. Wife or relative not allowing to go for NSV.

In the research study by Centre for Operations and Training, Vadodara about attitude toward male and female sterilisation in Uttar Pradesh, knowledge of modern methods provided in the Family Planning Programme was universal, while only 15-30 percent knew about newer methods like NSV. Misconception about vasectomy prevail among both men, and women repeatedly mentioned that being the main breadwinners of family, men could not afford a long period of rest, whereas women, who generally remain at home, could afford to take rest.

Women's fears about vasectomy were mostly rooted in economic concern, that vasectomy would weaken men and would affect their ability to work and in turn affect the family's income and women would be blamed for letting their husbands take the risk.[9]

For men loss of virility was the major concern. They feared that vasectomy would make them impotent and that they would lose their masculinity. They also believed that after vasectomy they would not be able to do heavy work.

In spite of all these misconceptions prevailing in the community, a few men have come forward to undergo no-scalpel vasectomy. In this study, a qualitative evaluation and descriptive study of no-scalpel vasectomy has been conducted to determine the factors which determine acceptance, adequacy of publicity, quality of service provided, failure rate, complications and subjective feelings of the client.

The Surgical Technique

The client must receive appropriate information and counselling. The scrotal area is cleaned and penis anchored at 12 o'clock. The vas on both sides are isolated by the three-finger technique. Local anaesthesia with lignocaine to block the vasal nerve is given. The right vas is flex in position by the ringed clamp. Using the vas dissecting forceps, an incision is made on the skin. The incision is extended on to the vasal sheath. The vas is separated from the sheath. It is then occluded by ligation and excision of 1 cm of the vas. After ensuing haemostasis, the stumps are pushed back into the scrotum through the wound. Then, the left vas is dealt with through the same wound. The wound is not sutured and a sterile gauze dressing is given.

In the fascial interposition technique, after the vas is excised to 1 cm, the ligature of the testicular end is cut. The cut ends are passed into the scrotum. The uncut ligature of the prostatic end is pulled out through the wound. With the dissecting forceps, the fascial sheath of the vas deferens is grasped. The fascial membrane is tied below the tie of the prostatic end and then the stump of the prostatic end is slipped back into the scrotum. Hence, the stump of the testicular end is inside the fascial sheath, while the prostatic end is outside.

Objective of the study

To compare the effectiveness of no-scalpel vasectomy with fascial interposition of the stumps of vas with non-interposition.

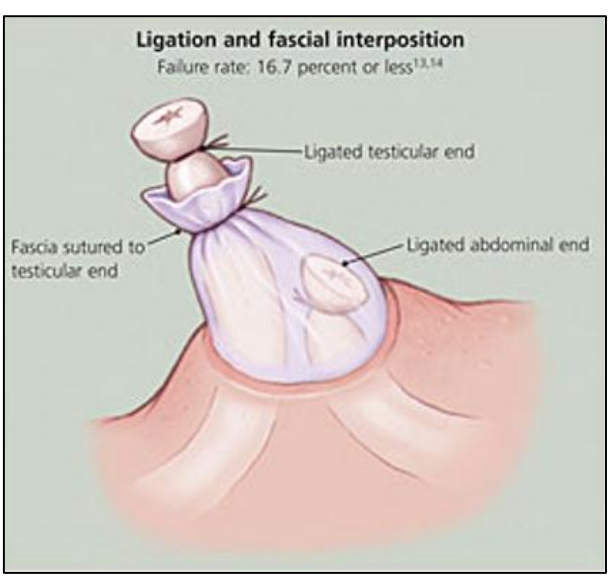

Figure 1. Ligation and Fascial Interposition

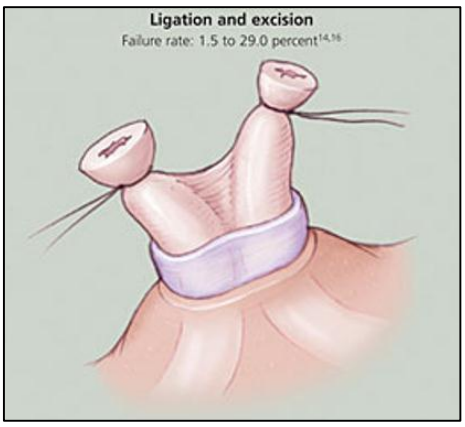

Figure 2. Ligation and Excision

MATERIALS AND METHODS

The study was conducted in the family planning unit of the Department of O & G, Govt. Medical College, Kottayam.

The period of study was from November 2015 to October 2016 for a period of one year.

The number of vasectomies during this period was 46.

Acceptors posted for vasectomy were divided into 2 groups on a one-to-one basis. Hence, 22 were without fascial interposition and 24 with fascial interposition of the stumps of vas.

The acceptors were previously counselled by the health worker about the procedure highlighting the benefits, risks and complications.

Informed written consent is obtained for the procedure. They are once again counselled by the surgeon.

Those undergoing fascial interposition of the vas stump are explained about the additional step of the surgery.

After the vas is excised to 1 cm, the ligature of the testicular end is cut. The cut ends are passed into the scrotum. The uncut ligature of the prostatic end is pulled out through the wound. With the dissecting forceps, the fascial sheath of the vas deferens is grasped. The fascial membrane is tied below the tie of the prostatic end and then the stump of the prostatic end is slipped back into the scrotum. Hence, the stump of the testicular end is inside the fascial sheath, while the prostatic end is outside.

All the acceptors were advised about the postoperative care including the instructions to use condoms for three months postoperatively, to wear tight underwear to provide support and prevent bleeding, provision of analgesics. They were advised to come for followup after 3 months with a semen analysis report.

During followup, satisfaction with the procedure was measured on the following domains - pain involved, time required to return to work after the procedure, problems in sexual life, by a questionnaire.

Postoperative experiences and complications were recorded among NSV acceptors. The occurrence of postoperative complications including excessive bleeding or haematoma formation, infection, persistent pain and failure of contraception were recorded. Respondents were asked whether they would recommend NSV to others.

Statistical analysis for qualitative data was with t test and chi square for quantitative data.

Group	Mean	Std. Deviation	T	Significance
Fascial interposed	37.13	5.488	.399	.692
Non-interposed	36.55	4.228		

Table 1. Age Distribution

	Group				Total	
	Interposed		Non interposed			
	Count	Percentage	Count	Percentage	Count	Percentage
Primary	2	8.3	2	9.1	4	8.7
Secondary	4	16.7	3	13.6	7	15.2
SSLC and above	9	37.5	9	40.9	18	39.1
College education	9	37.5	8	36.4	17	37.0
Total	**24**	**100.0**	**22**	**100.0**	**46**	**100.0**

Table 2. Education of the Subjects

Chi-square=.115. p= .990 (Not Significant)

	Group				Total	
	Interposed		Not interposed			
	Count	Percentage	Count	Percentage	Count	Percentage
Hindu	14	58.3	14	63.6	28	60.9
Muslim	2	8.3	0	0.0	2	4.3
Christian	8	33.3	8	36.4	16	34.8
Total	**24**	**100.0**	**22**	**100.0**	**46**	**100.0**

Table 3. Religion

Chi-square= 1.9, p=.384 (Not Significant)

	Interposed	Non-interposed	Significance
	n (%)	n (%)	
Failure	0	1 (4.20)	NS
Complications	3 (13.6)	4 (16.7)	NS
Severe pain	4 (18.2)	2 (8.30)	NS
Difficult in daily work	2 (9.10)	4 (16.7)	NS
Sexual problems	3 (13.6)	4 (16.7)	NS
Concern on future sexual health	0	2 (8.30)	NS

Table 4. Satisfaction of Procedure

DISCUSSION

The low acceptance of male sterilisation in comparison to the number of women undergoing sterilisation has been continuing despite attempts through National Health Programs providing health manpower and training, political commitment and more effective surgical techniques.

The mean age of the acceptors in the interposed and non-interposed group were 37.13 years and 36.55 years respectively. A similar trend was observed by Khokar et al[11] who studied acceptance of NSV in a public sector hospital in Delhi. While this reflects a desire for hassle-free contraception after completion of the family, the lesser acceptance among men in the reproductive age group suggests that there is still a need to promote acceptance in a younger age group.

The educational class shows that majority are SSLC and above (higher secondary). A similar proportion was obtained by Khokhar et al[11] with increasing acceptance of NSV in people who had completed higher secondary education. This may be explained by a greater health awareness and better understanding and adoption of advice from health workers in general among groups with higher literacy.

Considering the various religious groups, Hindu community had the maximum acceptors. So more effective counselling should be done in the communities having less participation.

There was only 1 failure rate in the study group. It was in the non-interposed group. However, it is not significant.

The complications of procedure like pain during surgery, bleeding were similar in both groups. No haematoma formation was seen in either group.

There was no significance in their difficulty to carry out daily activities. All were able to start work early.

There were no serious sexual problems in either of the groups. Moreover, they were not concerned about their

future sexual life. This may be due to effective counselling by the health workers.

All were satisfied with the procedure. The satisfaction is also reflected by the fact that most would recommend the procedure to their peers.

CONCLUSION

Acceptance of NSV increases with age and literacy. Suggestion by a health worker or peer is a motivating factor in obtaining vasectomy and most acceptors are satisfied with the short duration of the procedure and rapid recovery. Complications are less with this procedure and a majority would recommend the procedure to others.

Either of the two methods is effective as a contraceptive except for the slight increase in operating time for the interposed group.

Limitation

The sample size of the study is small. A large sample size is needed to assess the efficacy of the technique. Moreover, satisfaction regarding NSV was solely the respondent's subjective perception.

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