

NO SCALPEL VASECTOMY: AN EMERGING OPTION IN FAMILY PLANNING PRACTICE

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ABSTRACT: BACKGROUND: Both spacing and permanent birth control methods are the need of the hour. The popularity of male sterilization i.e. vasectomy is low compared to female sterilization (Tubectomy). However, being safe, effective, cheap, and having less surgical complications no scalpel vasectomy (NSV) is emerging as good option. **AIMS:** To study the various demographic and behavioural factors of NSV acceptors. **SETTING & DESIGN:** This is institution based retrospective study conducted in Department of Obstetrics and Gynaecology, Medical College, Kolkata during the time period of 1st April '2009 to 31st March' 2015. **METHODS AND MATERIAL:** The patients who accepted NSV for family planning were analysed with respect to their age, residence, occupation, literacy, number of issues and complications. **STATISTICAL ANALYSIS:** Data were represented as simple proportions or percentages and graphs by using micro soft excel. **RESULTS:** Out of 13, 048 sterilization operations, there were 3737(28.64%) vasectomies and 9311(71.36%) tubectomies. 67.08% of the couples selected sterilization for contraception. Tubectomies accounted for 2.5 times the vasectomies. The number of NSVs as a percentage of total sterilizations were 28.78% in 2009, rising to 36.96% in 2011 and gradually falling to 21.36% in 2015. Most of the clients (84%) were ≥30 years of age. In 2009-10, only educated (71%, primary education) accepted NSV. However, 74% were illiterate acceptors in 2014-15 and 83% were labourers. In last 2 years the trend is NSV after the 3rd child. **CONCLUSION:** NSV is emerging as a socially and culturally acceptable method of contraception in our society.

KEYWORDS: No Scalpel Vasectomy, Tubectomy, Spacing methods, Permanent Sterilization, Contraception.

ABBREVIATIONS:

1. NSV: No Scalpel Vasectomy.
2. OPD: Out Patients Department.
3. LEFI: Ligation and excision of vas with fascial interposition.
4. COCP: Combined Oral Contraceptive Pill.
5. Cu IUCD: Copper Intra Uterine Contraceptive Device.
6. PPIUCD: Post-Partum Intra Uterine Contraceptive Device.
7. MTP: Medical Termination of Pregnancy.

INTRODUCTION: India, the 2nd most populous country in the world has been projected to have a population of 1.4 billion in 2026. It seems that our country is going to explode. Thus, availability of family planning services that provide a cafeteria of choice for both spacing and permanent methods of contraception is the need of the hour.¹

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Permanent methods of contraception i.e., sterilization operations in both female (Tubectomy) and male (Vasectomy) account for only 14.37% of all family planning practices of which vasectomy comprises of 4.4% (2009-2010) - 5.4% (2010-2011)¹ of all sterilization operations.

Thus, it seems that vasectomy is a less accepted option compared to tubectomy. This is probably due to various misconceptions related to this operation like interference with manhood, physical weakness, cultural taboo and even fear of cancer of prostate gland.

However, vasectomy is safer, simpler, about half the cost of female sterilization, and equally effective. Moreover with the advent of no-scalpel vasectomy (NSV) by Dr. Li Shunqiang in 1974 in China² fears related to the knife, tissue trauma or blood vessel injury have been eliminated in most parts of the world. It has a low surgical complication rate especially bleeding, haematoma, infection,^{3,4} less pain both intraoperative and postoperative, and early resumption of sexual activity.^{5,6} It does not require a costly set up with expensive and cumbersome instruments as in laparoscopic tubal ligation, and can be performed almost anywhere -health centres, health camps and even in very remote villages. It is upto 98% effective at 24 months postoperatively ⁷ i.e. almost as effective as tubectomy.

Efforts are being made to popularize this simple, effective, safe and cost effective procedure. There has been a perceptible shift in focus on male sterilization in recent years with the number of procedures performed in the public sector nearly doubling between 2006–2007 and 2007–2008, and vasectomy's contribution to the sterilization mix rising from 2.5% to 4.5%.¹

In this study we have examined the trends in family planning practices with special reference to male and female sterilization acceptance in our population. The various demographic and behavioural factors of NSV acceptors were studied which may help in identifying problems relating to popularizing widespread use of this procedure.

MATERIALS AND METHODS: Study Design: This is an institution based retrospective study conducted in Department of Obstetrics and Gynaecology, Medical College, Kolkata during the time period of 1st April '2009 to 31st March' 2015.

Study Population: All patients attending Family Planning clinic of Gynaecology and Obstetrics OPD and seeking contraception were counselled for the available options i.e. combined oral contraceptive pills (COCPs), Intra Uterine Contraceptive device (CuIUCD), male condom and sterilization either female (Tubectomy) or male (NSV). NSV was offered to those between age 21-60 years with at least one living issue and those without diabetes, previous scrotal surgery, hernia surgery, filarial thickening, filarial funiculitis or any other scrotal pathology. Those who accepted NSV voluntarily were included in the analyses with respect to their age, residence, literacy, occupation, number of issues and complications of procedure. The period of study was from 1st April 2009-31st March 2015.

Study Methods and Statistical Analysis: After proper counseling NSV was performed in the acceptors by the standard technique as described by Li Shun Qiang i.e., the ligation and excision of vas with fascial interposition (LEFI) as a short OPD procedure. At the time of the sterilization procedure the socio-demographic and family characteristics of the NSV acceptors was recorded. These were analysed with respect to age, residence, educational level and profession of the acceptors. Postoperative complications if any were recorded. Data were represented as simple proportions or percentages and graphs by using Microsoft excel.

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RESULTS: During this period a total of 13,048 sterilisation operations were performed in our institution. Amongst the total number of patients seeking permanent sterilisation there were 3737 (28.64%) vasectomies and 9311 (71.36%) tubectomies (Table 1).

The proportion of couples opting for the various methods were-16.32% for NSV, 50.77% for tubectomy, 14.98% for male condom, 10.43% for combined oral contraceptive pills, and 7.51% for Cu IUCD including PPIUCD insertion. (Fig. 1) A total of 67.08% of the couples selected sterilisation operation for contraception.

The socio-demographic characteristics of the NSV acceptors in year wise breakup are computed in table 2.

Most of the clients (av 84%) were of ≥ 30 years of age.

More than 70% of NSV acceptors hailed from urban locales.

In the first 4 years majority (i.e. 71%) of the acceptors had primary education, however, in the last 2 years around 74% of the acceptors were illiterate. Very few of them had secondary education or even graduation.

Regarding their profession around 83% belonged to the labour class. However, in the last 2 years an increased proportion of acceptors were working in private firms/non-government organisations/businessmen.

Maximum acceptors had 2 living children. However, in last 2 years the trend is for NSV after the 3rd child. (Table 3, Fig. 2)

In our 51/2 years' experience there were only two cases of scrotal haematoma and 3 cases of wound infection.

DISCUSSION: This retrospective study shows that the overall acceptance rate of NSV in our institution is high compared to the national figures. There is however a declining trend over 2013-15.

Sterilization is the most widely used contraceptive method worldwide. In our hospital it accounts for a whopping 67.08% amongst all available methods used with 16.32% male and 50.77% female sterilization. This appears to be much higher than the United Nations estimates. It shows that in 2005, 262 million women of reproductive age were using sterilization as their method of contraception. Of these, 225 million relied on female sterilization and 37 million on vasectomy, accounting for 34% and 5.6%, respectively, of all contraceptive use.⁸

The analysis of sterilization trends in our study population shows that female sterilisation accounts for 2.5 times the vasectomies (Fig. 3). 2009 onwards NSVs' popularity increased, so much so that 36.96% sterilizations in 2011 were NSV compared to 28.78% in 2009. This was due to the shift from open vasectomy to NSV. However, since then there is a declining trend with only 21.36% vasectomies being performed in 2015. This may be due to a decline in sterilization practices 2012 onwards, with a huge dip in the trend curve in 2013. This may be merely a reflection of altered attitude towards contraception. The population at large is now increasingly using Medical Termination of pregnancy by both surgical and non-surgical (Over the counter formulations of mifepristone and misoprostol for medical abortion) methods and emergency contraception pushing contraceptive practice to a back seat.

The national trends are available till 2011, where it is seen that vasectomy acceptors were only 5.4% in 2010-11, and 4.4% in 2009-10 showing a rise in numbers from previous years. Thus, our performance is far better compared to national levels.

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The most widely used method of contraception (Fig. 1) in our study population was sterilization (67.09%) whereas this accounted for only 14.33% of our national population. Thus, in our study population permanent method rather than a spacing method was more preferred. This may be due to the fact that many couples in our region practice the coitus interruptus or the safe period technique and are reluctant to use spacing methods of contraception. Thus, in our study only 14.98% use male condom, 10.43% COCP and 7.51% use Cu IUCD. Our national census showed better acceptability of spacing contraceptives - 45.85% were male condom users, 0.24% used COCP and 16.05% used Cu IUCD.¹

Thus if we are able to make NSV freely available in our region it is bound to be successful as permanent method of contraception is most widely accepted in this part of our country.

Analysis of the demographic characteristics show that number of persons undergoing NSV in the age group ≥ 30 yrs is the highest and increasing. However there are a rising number of clients in the age group 21-25 yrs. This finding points to a favourable future as the younger population seems to be motivated for NSV.

In 2009-2012, a proportionately higher number of literate population was convinced about the procedure and accepted it. This was probably due to their knowledge of the procedure from the print media. However, in 2013-15 more illiterate people accepted NSV. This may be a reflection of a motivational result of government and health care workers rather than a personal choice by the educated population. This might help in breaking the vicious cycle of poverty, illiteracy and increased family size.

The acceptance of NSV appears to be more in the working class specifically the labourers. Despite the professional increments given by the government for those undergoing NSV, the number of government employees was less than those working in the private sector and labourers. This suggests that the salary increments are too small to attract someone to undergo NSV.

Since this is an urban based study most of our clients belonged to the urban localities.

There has been a rise in the NSV acceptance amongst clients bearing 2 living issues. However, there is a rising trend in the number of clients with ≥ 3 living children. This is a bit of concern as these couples are gradually going away from our national norm of 2 child family size.

Amongst the clients who underwent NSV most were aware that it was easy, no cut, no pain, no rest and safe.

The major limitation of this study is that the study population is restricted only to the catchment area of our hospital i.e. the Southern districts of West Bengal and Kolkata and is hence, not representative of either our state or national figure.

CONCLUSION: Since sterilization is the most popular method of contraception in our population, motivation of the males to undergo NSV a safe, easy, painless and reversible method seems a very good option. After an initial success in promoting NSV, there seems to be a lull in this success story in the last 2 years, which is proportionate to the reduced number of sterilisation acceptors in our study group as a whole. However, it is encouraging to see that more young clients and illiterate are accepting this procedure. Thus a proper and effective usage of the existing healthcare infrastructure along with the mass media will definitely result an increase in acceptance of NSV in future.

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	NSV	Tubectomy	Total
2009-2010	705(28.78%)	1745(71.22%)	2450
2010-2011	768(30.24%)	1772(69.76%)	2540
2011-2012	889(36.96%)	1516(63.04%)	2405
2012-2013	873(29.57%)	2079(70.43%)	2952
2013-2014	234(16.33%)	1199(83.67%)	1433
2014-2015	268(21.36%)	1000(78.86%)	1268
TOTAL	3737(28.64%)	9311(71.36%)	13048

Table 1: Number of NSV and tubectomies performed during 2009-2015

		2009-2010 (n=705)	2010-2011 (n=768)	2011-2012 (n=889)	2012-2013 (n=883)	2013-2014 (n=234)	2014-2015 (n=268)
AGE	≤25yrs	2%	1.3%	1.8%	1.4%	2.99%	1.87%
	26-30yrs	28%	10.1%	9.2%	10.3%	13.24%	14.93%
	≥30yrs	70%	88%	89%	88.4%	83.76%	83.21%
RESIDENCE	Urban	67%	66.40%	69.20%	77.23%	74.36%	73.13%
	Rural	33%	33.60%	30.80%	27.77%	25.64%	26.87%
EDUCATION	Illiterate	34%	24.4%	20.1%	18.3%	69.23%	79.48%
	Primary education	64%	69%	71.9%	79%	11.54%	10.45%
	Secondary education	-	0.4%	2%	0.7%	9.83%	5.97%
	Graduate	2%	6.2%	6%	2%	5.13%	2.24%
OCCUPATION	Government	5.2%	5%	5.8%	4.2%	3.85%	2.24%

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employee						
Labourer	90%	88.2%	81%	88.2%	74.79%	73.51%
Others	4.8%	6.8%	13.2%	7.6%	21.37%	24.25%

Table 2: Socio-demographic characteristics of the NSV Acceptors

No. of living children	2009-2010 (n=705)	2010-2011 (n=768)	2011-2012 (n=889)	2012-2013 (n=873)	2013-2014 (n=234)	2014-2015 (n=268)
1	12%	0.2%	0.4%	0.84%	3.42%	7.46%
2	75.88%	85.8%	88%	86.96%	66.67%	63.06%
≥3	24%	14%	11.6%	12.21%	29.91%	29.48%

Table 3: The number of living children of NSV acceptors

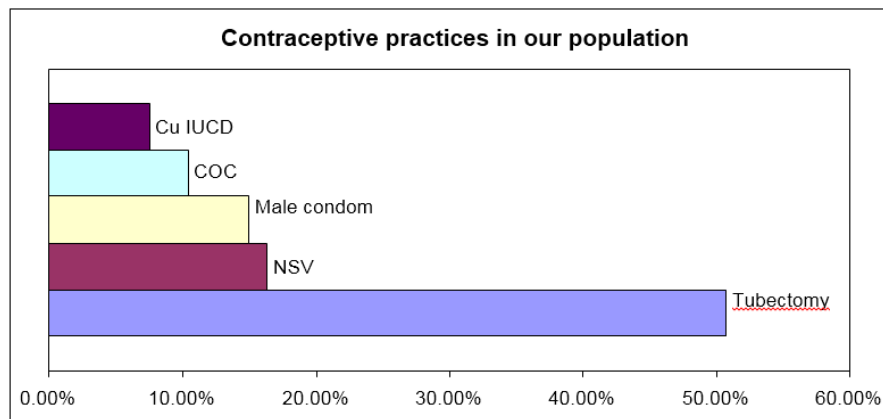


Fig. 1: Contraceptive practices in our population

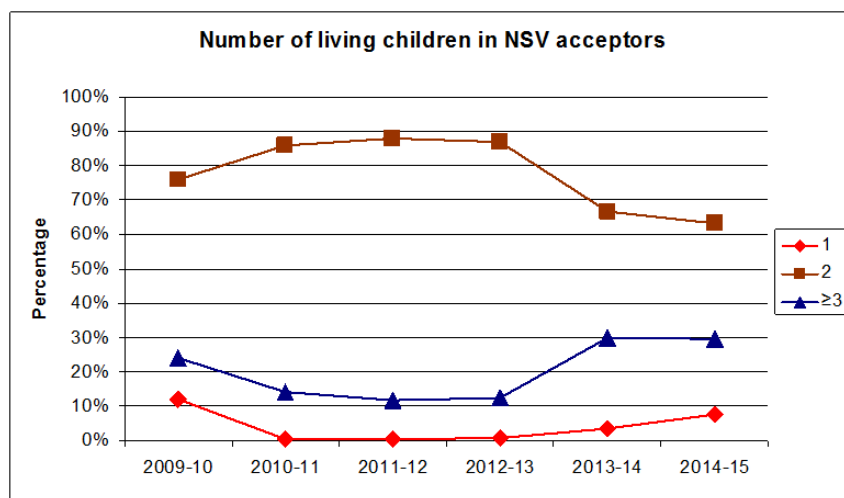


Fig. 2: The trends in NSV practices regarding number of living children

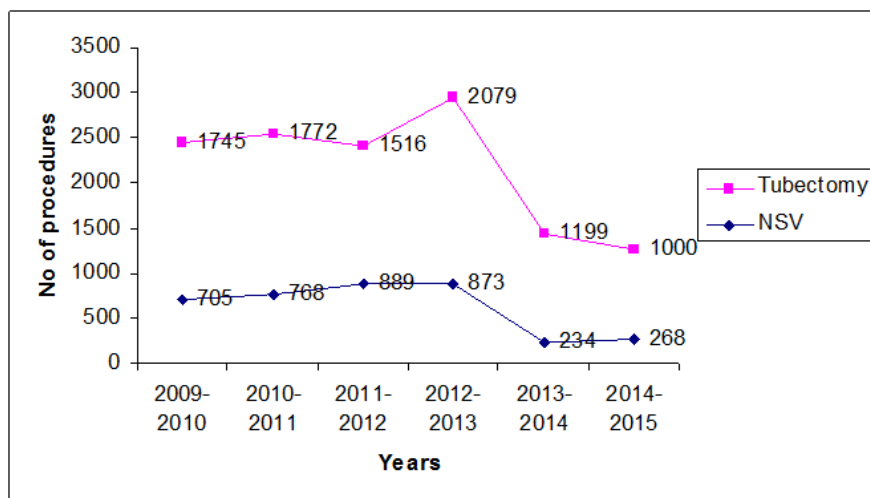


Fig. 3: The trends in sterilization practices during 2009-2015

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