

Fertility Outcome of Vasectomy Recanalization: A Review

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Abstract

Non Scalpel Vasectomy (NSV) is used extensively for male sterilization by the family planning industry in Bangladesh. But if NSV needs a reverse procedure (recanalization), variable rates are observed in different studies. We collected articles from Hinari, Pubmed and Banglajol with extensive searches. We compared these results between articles and recommended the best vasectomy reversal (NSV) procedure for male clients.

Keywords: Non Scalpel Vasectomy (NSV), Vas Deferens, Recanalization, Male Fertility, Male Sterilization

Introduction:

Vasectomy for male sterilization for family planning is an established permanent method. No Scalpel Vasectomy (NSV) is being widely practiced by Family Planning sector of Bangladesh. Each Family Planning Centre of Bangladesh Govt. at Upazila level are doing lots of NSV as a national program. Father of two or more children with eligible couple are being selected randomly for NSV. But there are new problems with this national NSV program. Two factors are responsible: 1) Death of child of eligible NSV client, 2) Divorce or death of wife with new marriage. In both conditions, the young NSV client become frustrated and hugely affect the family harmony. Therefore, many vasectomized clients are eagerly searching for reversal procedures. But no national center or way are available. Moreover, many individuals inquire about the possibility of future recanalization and restoration of fertility. The traditional reply to this question has been that it is difficult to "reverse" NSV and that the success rate of reversal procedure is so small than the operation (NSV), for all practical purposes, should be considered permanent and irreversible.¹ The psychological anxiety of the vasectomized

person as well as the approach of Family Planning personnel have seriously limited the acceptability of NSV. Moreover, social anxiety are being spreaded which are influencing an enormous negative impact to national NSV program. The traditional views have been persisted in spite of the many reports of highly successful vas recanalizations during last few years.¹ Early studies of surgical recanalizations reported success rate in about 35% to 45% of cases.²⁻⁴ More recently, it has been shown that it is possible to attain recanalization in as many as 70% to 80% of cases.⁵⁻⁸ In Bangladesh, Roy et al⁹ published an article and found success rate in 91.9% cases. The new procedure adopted were key to the highest success of this study.

Review of literatures:

Many eligible vasectomy candidates have expressed concern about their ability to father children when existing children die or when there is a separation in the current marriage that requires remarriage.⁶ In addition, the accidental death of a spouse is a reason for remarriage. It is widely believed that if a man who has had a vasectomy wishes to remarry in the future, it can be difficult to

have one or more children with his new wife.⁶

The common belief is that it is a permanent method and also limit sexual ability. These beliefs seriously affect the national NSV program and limiting the success of the family planning project. So this review is intended to overcome this situation by successful recanalization of vas deferens and thus assure the candidate that successful reversal is possible with high success rate. Therefore, it will have a positive impact on the national NSV program.

Vasectomy (NSV) should no longer be considered an irreversible procedure.¹ Pardnani et al¹ published an article of 20 unselected recanalization of which result of 17 were given. Of 17 clients, 13 (76.5%) had successful recanalizations and 5 (29.4%) wives became pregnant. In this study, a medical grade silastic tube was used to stent the Vas Deferens externally for the procedure and 17 cases were divided into two groups. In Group 1 (satisfactory) of 13 patients, 12 (92.3%) were successful, of whom 4 of their wives were pregnant. In group 2 (unsatisfactory), four were included of which one (25%) was successful whose wife was pregnant. Thus overall success and pregnancy rate were 76.5% and 29.4% respectively. Roy et al⁹ did not make such groups and out of 37 NSV cases 34 (91.9%) were successful and 27 (72.9%) of their wives became pregnant. Of 34 successful cases 7 (18.9%) of their wives did not become pregnant though sperm counts were satisfactory. The causes of failure were not clearly identified. But age (>50 years) of individuals, anti-sperm antibody, female partner problems might have possibilities. So, there is clear better result found in this study. This better result indicate clear superiority of this technique over silastic tubing. Another cause of better result in this study may be that all of this cases were NSV clients rather than conventional open surgical vasectomy. In this study, ⁹ they used No-1 prolene internally to stent Vas Deferens and anastomised it by 7/0 vicryl.

Pardnani et al¹ declared unsatisfactory candidates in which very low and long segment (>1.5 cm) vasectomy. In other study,⁹ they also found too much difficulty in these cases but not absolutely impossible. They performed satisfactory recanalization even with occupancy of 2.5 cm (1 inch). Even where there were apart segment

double knot, they kept the intervening normal segment in situ with excision of fibrous nodular knots with double anastomosis at same side. Very low vasectomy is really difficult for recanalization.⁹ It exposes convoluted tubule of epididymis and make anastomosis tough which they experienced in their study. So their ⁹ recommendations are: to do NSV at least one inch above the upper pole of testis and to avoid double knots. Accidental spontaneous recanalization is a rare possibility, rather scope of future reversal surgery is more important.⁹ Most of the studies ¹⁻⁶ showed recanalization unsuccessful in cases of more than 7 years interval from vasectomy. Roy et al⁹ found it unsuccessful in clients of recanalization who had NSV more than 7 years back. So it is a critical decision and matter of much concern and counseling in these cases and should be explained clearly to each individual. Though, counseling of no warranty should be told to every candidate of recanalization.

Conclusion:

Recanalization of Vas Deferens by Roy et al⁹ procedure found to be acceptable with higher success rate and other centers of Bangladesh may take steps for further study and evaluation. If we could assure the NSV candidates for the scope of future reversal, it would be a positive impact on family planning (NSV) and enormously contribute to the progress of Family Planning Campaign of Bangladesh Government.

Recommendations:

Recognized recanalization Centre should be established to attain confidence of eligible male for successful NSV project. NSV procedure should also be refined with orientation of experts. Family Planning personnel at all level should be concerned about the good result of recanalization and publicize in that way.

References:

1. Pardnani DS, Kothari ML, Pradhan SA, Mahendrakar MN. Surgical restoration of vas continuity after vasectomy: further clinical evaluation of a new operation technique. *Fertil Steril.* 1974 Apr;25(4):319-324. doi: 10.1016/s0015-0282(16)40331-6.
2. Cameron CS. Anastomosis of vas deferens: restoration of fertility five years after bilateral vasectomy. *J Am Med Assoc.* 1945 Apr 28;127(17):1119-1120. doi: 10.1001/

- jama.1945.92860170001007.
3. Dorsey JW. Anastomosis of the vas deferens to correct post vasectomy sterility. *J Urol*. 1953 Sep;70(3):515-519. doi: 10.1016/s0022-5347(17)67941-2.
 4. O'CONNOR VJ. Anastomosis of vas deferens after purposeful division for sterility. *J Am Med Assoc*. 1948 Jan 17;136(3):162. doi: 10.1001/jama.1948.02890200016004.
 5. Phadke GM, Phadke AG. Experiences in the re-anastomosis of the vas deferens. *J Urol*. 1967 May;97(5):888-90. doi: 10.1016/s0022-5347(17)63143-4.
 6. Kar JK. Surgical correction of post-vasectomy sterility. *Journal of Family Welfare*. 1969 Jan 1;15(3):50-53. https://scholar.google.com/scholar_lookup?title=Surgical%20correction%20of%20post-vasectomy%20sterility&publication_year=1969&author=J.K.%20Kar [Accessed 15 November 2022]
 7. Jhaver PS: Conception and contraception. *J Family Welfare* 1962; 9(47).
 8. Adongo PB, Tapsoba P, Phillips JF, Tabong PT, Stone A, Kuffour E, et al. "If you do vasectomy and come back here weak, I will divorce you": a qualitative study of community perceptions about vasectomy in Southern Ghana. *BMC Int Health Hum Rights*. 2014 May 8;14:16. doi: 10.1186/1472-698X-14-16.
 9. Roy HR, Islam N, Islam SS. Fertility Outcome of Surgical Recanalization of Vas Deferens in Individuals with Non Scalpel Vasectomy (NSV). *J. Bangladesh Coll. Phys*. 2021 Jun;39(3):167-170.doi:<https://doi.org/10.3329/jbcps.v39i3.54159>.