

RECANALISATION OF VAS DEFERENS UNDER MAGNIFICATION

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SUMMARY

A total of forty vasectomised cases were treated by recanalisation of vas deferens under ophthalmic loupe magnification. Semen analysis has been the criterion for evaluation of success or failure of recanalisation in our series. Clinical success was noticed in 86% of our cases. The interval between vasectomy and recanalisation does not substantially affect the results.

If azospermia persists for about 3 months after recanalisation, the operation was considered a failure. The sperm count, motility and morphology gradually improves with the passage of time after recanalisation. Conception usually takes place after an interval of 1½ to 2 years after recanalisation of vas deferens.

Vasectomy as a measure of Family Planning is widely used in our country because of its ease, safety and reversibility. Very often a large number of vasectomised persons come back with a request for recanalisation for familial or social problems.

The first plastic operation on vas and testicles was done by Bardenheuer in 1886. O'Connor published a detailed paper covering the whole field on this subject (1948, 1953). The modern method of recanalisation of vas deferens under magnification or operating micro-

scope has increased the chances of success over the conventional methods. The purpose of the present paper is to assess the results of recanalisation of vas deferens under ophthalmic loupe magnification in post vasectomy cases.

Material and Methods

This work of recanalisation on 40 vasectomised patients was undertaken in the Department of Plastic Surgery, Medical College Hospital, Calcutta and S. S. K. M. Hospital, Calcutta from September 1979 to December 1983. The

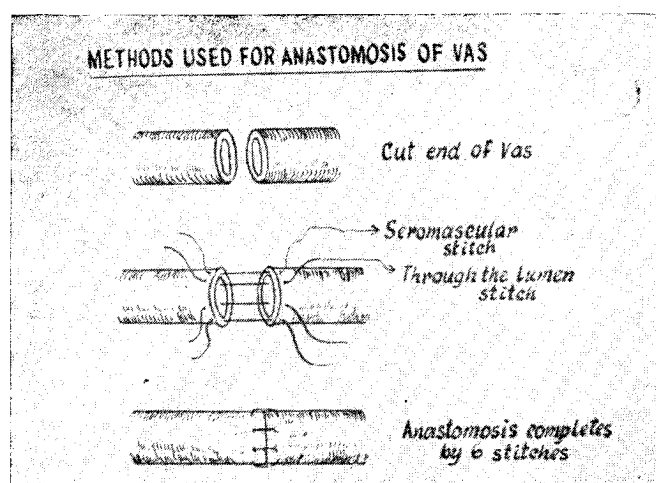


Fig. 1

age group of cases ranged between 20 to 60 years. The maximum number of patients were between 20-40 years of age. The youngest was 20 years old and the oldest 60 (Table I).

The time interval between vasectomy and recanalisation ranged from 1-15 years. The largest number of cases (20 patients) had an interval of 6-10 years (Table II).

The reasons for recanalisation are shown in Table III and the maximum number of cases were due to death of only male child.

Table I. Showing the Age Group of cases in the present study

Age Group in years	No. of cases	Percentage
20—30	15	37.5
31—40	17	42.5
41—50	6	15
51—60	2	5
Total	40	100.0

Table II. Showing the time interval between vasectomy & recanalisation

Time interval in years	No. of cases	Percentage
1—5	16	40
6—10	20	50
11—15	4	10
Total	40	100

Table III. Showing the reasons for recanalisation

Reasons	No. of cases	Percentage
Remarriage	5	12.5
Death of only male child	20	50.0
Forceful vasectomy	8	20.0
Death of all children	7	17.5
Total	40	100.0

Operative Procedure of Recanalisation

The operation was done under general anaesthesia in all the cases after a thorough pre-operative evaluation. An incision was made at the site of the previous vasectomy scar. All the scar tissue of previous operation was excised. The two obliterated & fibrosed cut ends of vas were identified and gently separated from scar tissue and brought out. The gap between the two cut ends and level of proximal cut end from convoluted part were noted. In 5 cases the proximal cut ends were just above the convoluted part. In 4 cases where gaps were more between two cut ends, in order to avoid tension at the site of anastomosis, wide mobilisation of the cut ends of the vas was necessary taking care to preserve its blood supply both at proximal and at distal ends. After dissection, two stay sutures were put through the sheath around the vas, both at proximal and at distal cut ends. The obliterated fibrosed cut ends of vas were gently held and dissected free. Then the ends of the vas were excised with sharp knife till the normal lumen was seen. The lumen of the vas was cannulated by 1-0 nylon thread to break the fibrinous adhesion within the lumen and to facilitate free oozing of semen. The nylon thread was withdrawn, the testis was gently squeezed to pour out semen. The character of the semen, watery or milky was noted. The semen was washed out with normal saline and both cut ends were brought together for anastomosis.

The Ophthalmic loupe having magnification of 2.8 and convenient working distance of 30 cm with field of 8 cm was used for anastomosis. The anatomical reunion of the vas ends were done by suturing the two cut ends by 8-0 monofilament nylon. The sutures were passed first at two points one anterior and another posterior i.e. 180° apart, through all coats of the vas and brought out through the lumen of proximal vas (Fig. 1) and then passed through lumen of distal vas and brought out through its wall. Then four more seromuscular sutures were put in between two through and through.

sutures and all sutures were then tied. Anastomosis was completed by a total of 6 sutures. The anastomosis was done meticulously to make it leak-proof for semen and to prevent post-operative sperm granuloma and ultimately stricture formation at the site of anastomosis. The same procedure was carried out on the opposite side. In 5 cases an end to end vaso-vasostomy was not possible because the proximal cut end of the vas was at the level of the convoluted part and in these 5 cases epididymo-vasostomy was performed. Testicular biopsy was taken from both testes in all the cases and wound was closed in layers.

Results

The semen analysis is the main criterion to evaluate the results of the recanalisation. Out of 40 cases only 36 cases attended the follow-up clinic, four cases were lost to follow-up. So results were analysed only in 36 cases. Semen analysis was done in all the cases with regard to sperm count, motility and morphology, after 1 month of recanalisation operation and then repeated every month for 3 months and subsequently when required. An interval of 1 month was given after operation for post-operative recovery and also to ensure proper establishment of semen flow after years of suppression. The results of semen analysis after 1 month of recanalisation and after 3 months have been

shown in Table IV, V and VI with regard to sperm count, motility and morphology.

The final result obtained from semen analysis after 3 months of recanalisation showed that the sperm count of 26 cases improved to 40-120 million/ml.

Motility immediately after voiding in 25 cases (69.5%) were between (31-90%) motile sperm, which after 4 hours of voiding came down to 21 cases (58.3%) having 21-50% motile sperm.

Regarding sperm morphology 26 cases showed 31-75% complete morphology.

Results of 10 cases out of 36, showed low sperm count, out of which 5 cases had 20-40 million/ml count and in other 5 cases no sperm appeared even after 3 months of recanalisation. Out of these 5 sperm negative cases, three had epididymo-vasostomy done.

The testicular biopsy report in all the 40 cases has been shown in Table VII.

The testicular biopsy showed that in spite of mild, moderate and severe peritubular fibrosis the spermatogenesis was present in all the cases, even after 5-15 years of vasectomy and obstruction to the flow of semen.

A minimum time of 1½ to 2 years is required for conception provided there is no complication in the female partner. In our series of 36 cases the period of follow-up was between 3 months to 4 years. The sperm +ve

Table IV. Showing the results of semen analysis (sperm count) after 1 month and after 3 months of recanalisation

Sperm count (Normal sperm count 80-120 Mln/ml)	Mln/Ml	1 month post-recanalisation		3 months post-operative	
		No. of cases	Percentage	No. of cases	Percentage
80—120	Mln/ml	0	0	14	38.9
40—80	Mln/ml	0	0	12	33.3
20—40	Mln/ml	10	27.8	5	13.9
0—20	Mln/ml	26	72.2	5	13.9
Total		36	100.0	36	100.0

Table V. Showing the results of semen analysis (sperm motility) after one and three months of recanalisation

Sperm Motility	After 1 month of Recanalisation		After 3 months of Recanalisation	
	No. of cases	Percentage	No. of cases	Percentage
Immediately after voiding				
Normal (50-90%)				
51-90%	0	0	12	33.3
31-50%	0	0	13	36.2
11-30%	6	16.7	6	16.6
0-10%	30	83.3	5	13.9
Total	36	100.0	36	100.0
After 4 hours of voiding				
Normal (25-50%)				
21-50%	4	11.1	21	58.3
0-20%	32	88.9	15	41.7
Total	36	100.0	36	100.0

Table VI. Results of semen analysis (sperm morphology) 1 and 3 months post-recanalisation

Sperm Morphology (Normal 75% complete)	After 1 month of recanalisation		After 3 months of recanalisation	
	No. of cases	Percentage	No. of cases	Percentage
51-75%	0	0	12	33.3
31-50%	0	0	14	38.9
11-30%	9	20.0	4	11.1
Less than 10%	27	75.0	6	16.6
Total	36	100.0	36	100.0

Table VII. Testicular Biopsy Report in 40 cases

Histology & Spermatogenesis	No. of cases	Percentage
Normal Histology		
Spermatogenesis (++)	20	50%
Mild Peritubular fibrosis		
Spermatogenesis (+ +)	10	25%
Moderate Peritubular Fibrosis, Spermatogenesis (+)	6	15%
Severe Peritubular fibrosis with Hyperplasia, Leydig cells & disorganised tubular epithelium, Spermatogenesis (+)	4	10%

cases were 31 (86.1%). Out of this 31 successful cases, 26 cases were in satisfactory group and 5 cases in poor response group. Pregnancy was reported in 14 cases i.e. 45.1%. In the

remaining 12 satisfactory cases since the period of follow-up is less than 1 year, chances of pregnancy in due course of time can not be ruled out.

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