

SURGICAL TREATMENT OF INFERTILITY IN THE MALES

(Vaso-epididymal Anastomosis)

BY

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The title of this paper suggests that there is another line of treatment, namely medical, for the malady. It is so, but I am afraid I shall not be able to describe that in detail to-day in the short time at my disposal. However, I shall make a few comments about our experience in that form of treatment later on.

That conception is a joint responsibility and that the man is as responsible as the woman to produce a child is very well recognised by the gynaecologists. But it was since 1913 that regular investigations were made in the males and factors of infertility were found out. However these attempts were sporadic and were carried out by very few interested in this field. As a result, information available is very meagre and there is still a general belief, that as long as the man is potent, he is fertile and if he needs any treatment at all, after the semen studies, a few injections of hormones will correct the fault.

During the investigations of the male, a great deal of stress is laid upon the history of past illness, any

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evidence of septic focus and constitutional disturbances in general. Amongst the past illnesses severe conditions like typhoid, pneumonia, septicaemia, small-pox and mumps etc., are more likely to destroy and disturb the testicular functions than the venereal diseases.

A thorough physical examination of the party may reveal any hypogonadal condition, defective development of secondary sexual characters or abnormalities in the external genitals, congenital or acquired. The vas may be absent congenitally. It is interesting to note, that in spite of this, the testicle may show normal spermatogenesis, as proved by testicular biopsy. A small and flabby testicle is a definite evidence of poor gonadal function, but a normal feel and size of the testis, does not mean that its function is normal. We have many cases in which testicular biopsy showed evidence of poor spermatogenesis and peritubular fibrosis in such testis. As a rule, candidates for sterility are apparently healthy, without any gross abnormality and the defect in them is recognised by the examination of the semen. This part of the investigation is the first to be carried out, and later on, is useful to gauge the effect of treatment.

Dr. Pradhan has already dealt with this aspect very ably.

The semen examination will show that it contains no spermatozoa at all (azoospermia) or the number of these is below normal (oligozoospermia). We are mainly concerned with the former condition to-day.

An azoospermia may be an expression of absence of spermatozoa in the testicle or if they are being produced, their appearance in the semen is prevented by an obstruction somewhere in the passage from the testis to the ejaculatory duct. Thus azoospermia may be non-obstructive or obstructive in origin. This is easily found out by testicular biopsy. The technique and information gained from this important investigation have already been dealt with fully by Dr. Kar.

I am afraid there is no treatment available so far for a non-obstructive azoospermia. This shows a very advanced degree of defect in the morphology and incidentally in the physiology of the testis.

An obstruction in the passage may be corrected by surgery and this is the only treatment for obstructive azoospermia.

A block may be present in the vasa-efferentia in the epididymis (globus-minor) in the vas, or in the ejaculatory ducts through the prostate.

Clinically, an enlarged globus-minor, thickened beaded or irregular vas, nodular seminal vesicles or prostate, as examined per rectum, are suggestive of possible sites of obstruction. The seminal vesicles are the only structures in the body which secrete fructose; therefore absence of

this reducing substance in the semen is suggestive of obstruction in the ejaculatory ducts. Epididymal aspiration was resorted to, to find out whether obstruction is above or below by the absence or presence of spermatozoa respectively. Needling of the vas through the skin may be carried out to find out its patency. Similarly, openings of the ejaculatory ducts may be explored through an urethroscope. As the results are unreliable and the procedures difficult even in the hands of experts, and are likely to do more damage than good, the only safe and certain method to find out the site of obstruction is by an open exploratory operation. An obstruction in the extra-abdominal portion of the vas or at the globus-minor are the only ones amenable to surgery by an anastomosis operation—Vaso-vasostomy or Vaso-epididymostomy.

A vaso-testicular anastomosis is possible but the number of spermatozoa obtained is so small or nil that this procedure for obstruction at vasa efferentia is given up. Luckily enough in the majority of cases obstruction is present in the globus-minor and a vaso-epididymostomy operation is possible.

This operation can be done under local, spinal or general anaesthesia. We have done all the operations under spinal. I shall mention only the steps of the operation.

Patient on the back after spinal anaesthesia.

Inguino—scrotal incision.

Liberal separation of the vas with its blood vessels so that it can be approximated to the epididymis with ease. Cutting the anterior wall of

the vas through half circumference. Introduction of fine needle into the lumen and injection of saline to find out patency. If block is extensive or above the internal abdominal ring, operation is given up. The site of obstruction can be found out by introducing a thin thread of nylon, through the lumen.

Cutting the anterior wall of the vas longitudinally for $\frac{1}{2}$ inch. Making an oval window in the globus-major.

Collecting the juice from cut tubules of epididymis, on a glass slide, for presence of spermatozoa under the microscope in the theatre. If no spermatozoa are seen after a thorough examination, operation is given up at this stage.

In suitable cases, opened out vas is anastomosed with the oval window in the epididymis by a posterior and an anterior row of interrupted stitches of fine arterial silk.

Scrotal contents are replaced and incision in the skin is closed in the usual way.

Patient was kept in the hospital for a week.

Haematoma and sepsis were the only complications noticed, but these also were not frequent and none of them caused any anxiety. We do not give antibiotics as a routine post-operatively, mainly for the reason that such drugs have a mild depressant action on spermatogenesis. When indicated, penicillin or other antibiotics are given. Curiously enough, no local complications took place in a straight-forward case and we have invariably noticed them when there was some local lesion such as blockage of the vas, fibrosis,

thickening of the epididymis etc., as if interference with these lesions caused the spread of the former infection. Apart from this, the operation is a delicate one and needs a great deal of patience. On an average it takes about $1\frac{1}{2}$ to 2 hours.

The spermatozoa begin to appear in the semen from 2 to 12 months after a successful operation. Towards the end of this period it may be taken that the operation is a failure. The lumen of the vas is so tiny, that it gets blocked on slightest provocation. Re-exploration at the end of this period may be tried, but we have had no occasion to do so, as none of such patients allowed us to carry out a second operation.

Another form of obstructive azoospermia is after a vasectomy for sterilization of the males. We feel that a reconstruction of the vas is possible and an operation should be advised in such cases, if they so desire. We have had no opportunity to do so, so far.

TABLE IV

Results of Operation

Testicular biopsy in azoospermia ..	128
Normal report	83
Exploratory operations	62
Satisfactory anastomosis	43
(Vas patent and spermatozoa from the epididymis).	
No anastomosis carried out ..	19
No spermatozoa from epididymis found ..	6
Vas found occluded ..	6
Vas congenitally absent ..	7
	19
Spermatozoa in semen after anastomosis on 43	21
Resulting pregnancies in 21 ..	7

Results

The number is not great, for statistical purpose but appearance of spermatozoa in 21 out of 43 with resulting pregnancies in 7 is encouraging as surgical correction is the only remedy for obstructive azoospermia. A very large number of the other twenty-two cases have been operated upon recently and there is every possibility that some of them will show spermatozoa in the semen in the near future. Some of the 14 of the 21 patients are oligospermic. But only 3 of them are under regular treatment. The others are awaiting to improve spontaneously and take treatment hap-hazardly.

Treatment of such oligozoospermics is engaging our attention at the Kutumb Sudhar Kendra, Bombay. An attempt is made to study such cases and various methods of treatment are being tried. The entire subject is very interesting, but I must admit, that the results are still disappointing.

I am not able to give you the rationale of the treatment to-day but a ray of hope is visible in the vitamin A treatment for such conditions. Drs. Kapadia and Kar under the guidance of Dr. A. P. Pillay at the above Kendra have shown rapid response to vitamin A administration to such cases of oligozoospermia. We do not know how vitamin A acts. The entire matter is under investigation at present. In the meantime I would like to mention the doses suggested by them. The patients with counts of 5 millions or less per c.c., injections of vitamin A 100,000 units two to three times a week, in addition to oral administration of 100,000 units per day and for those with a count higher than the above but less than normal, only oral medication is advised. In passing, I would like to mention, that results of hormonal treatment are not uniform and if such treatment is resorted to, the doses should not be high, as these without a proper control by a testicular biopsy, will do more harm to the testis.