ARTIFICIAL INSEMINATION*

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For some years now this subject has been in the public eye and every so often it captures the attention of the lay press. It is a subject which certainly deserves to be thought about earnestly and to be widely discussed, for the opinion of every thinking person is important and relevant. It is not a matter for doctors, clerics and lawyers alone, although they can all give essential guidance. It is also a matter of the heart—is this thing right or is it wrong? We all commiserate and would like to help the childless couple, but the question arises whether this remedy may not possibly be worse than the ailment? Every intelligent man and woman must decide. What follows are the random observations of a gynaecologist.

History

In old Jewish literature there appear to be several oblique references to the possibility of artificial insemination.[1, 2] However, there is no real evidence that AI as we know it was ever practised in those olden times; and artificial insemination with a donor's semen (AID) is certainly rejected by the Jewish religion today.

It is said that in the 2nd century Rabbi ben Zoma debated the question whether a high priest, who by law was allowed to marry only a virgin, could in fact marry a pregnant one! He considered the possibility amongst others that such a pregnancy could have resulted not by ordinary sexual intercourse but by a fortuitous conception. He decided that a virgin who was with child in this particular way was innocent and could therefore become the wife of a high priest.[2]

In the 13th century Rabbi Peretz ben Elijah, of Corbeil in France, bade women beware of lying 'on linen' on which a man other than their husbands had lain lest they become pregnant. If a woman became pregnant in this way the Rabbi decreed that the child should not be regarded as the product of an adulterous union.[2]

According to an old Arab document of the 14th century an inhabitant of the town of Darfur who owned a mare introduced a wad of wool into the genitals and left it there for a day. At night he made his way into the camp of a hostile tribe, who had an excellent stallion, and held the wool under the stallion's nostrils whereupon the horse came into heat and ejaculated. The semen was collected and without delay the mare was successfully inseminated—for she subsequently came into foal.[3]

Another legend of the 14th century has it that an Arab sheikh, who was at war with a tribe who had superior horses, sent his men into the enemy camp to fertilize their mares with the semen of an inferior stallion.[3]

Don Pinchom, a monk in the Abbey of Reame in the 15th century, is credited with the experimental fertilization of fish. In 1780 or thereabouts Spallanzani successfully fertilized fish, an insect, a frog and a dog, while approximately 10 years later the inevitable John Hunter first recorded artificial insemination in the human with the husband's semen (AIH). Marion Sims in 1866 was successful in America with AIH. Other 19th-century practitioners of AIH included Harley in England, Girault and Gautier in France, and Mantegazza in Italy.[3]

The first publication on AID appeared in the *Medical World* (New York) of April 1909, where Hard reports that AID was performed by Professor Pancoast at Philadelphia in 1884.[4]

Indications

AID should never be forced upon a couple and certainly not if the marriage is an unhappy one. As a Dutch writer recently put it, 'Artificiële inseminatie bedoele nooit een kapot huwelijk op te lappen'.[5]

The usual indications are the following:

1. An infertile husband (the commonest).
2. Hereditary disease on the husband's side.
3. Rhesus incompatibility which has already resulted in repeated stillbirths.
4. Repeated miscarriages in the presence of a high percentage of abnormal spermatozoa.
5. Repeated malformed children.

Medical Preliminaries

A complete investigation of the couple with regard to infertility must be carried out.

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The husband. The investigation of the husband is usually undertaken by a urologist. His medical history must be gone into and a complete physical examination and semen analysis carried out. It has been stated by some authorities that on the presumption that the fact that the child is an AID child is to remain a secret the husband's ABO blood group must be known so that it may be arranged that the donor's blood group shall be the same as the husband's lest future blood-group tests should lead to disclosure or dispute. But since also the M and N, Rhesus, Duffy, Kell and other factors are used in cases of disputed parentage it seems unrealistic to try to find a donor whose blood group is such that in any future litigation the paternity of the husband could not be disproved. At a practical level therefore I think it rather pointless to limit the choice of a donor in this way.

The wife. Before artificial insemination is carried out it must be shown that the wife is normally fertile. The gynaecologist takes a full history. He carries out a general physical examination and, of course, pays particular attention to the pelvic organs. He then establishes the patency of the Fallopian tubes by insufflation or salpingogram. The histology of an endometrial biopsy in the second half of the menstrual cycle, aided by a study of the cervical mucus and a basal temperature chart, will establish whether ovulation is taking place and when it occurs. Histological examination and culture of the endometrium will also aid in the detection of a possible tuberculous endometritis, a condition relatively common in the infertile woman. It is important to ascertain her Rhesus blood group, because this should be identical with that of any prospective donor if she is Rhesus negative.

Selection of a Donor

I do not think that a donor should be paid for his services. He should be under 40 years of age and should himself be married with two healthy children. He should not be a relation of the couple. He should be a man of good character and of the same race, religion, background and emotional make-up as the husband. His physical appearance, stature and colouring should as far as possible be similar to those of the husband. The donor's general health must be good and there should be no history of epilepsy, psychosis or alcoholism. His family history should be clear. His Wassermann reaction must be negative, while his Rh grouping should be the same as that of the wife if she is Rhesus negative. Finally his semen must be normally fertile and his wife must know and agree that he acts as a donor.

On the question whether a semen bank should be operated or not, the following disadvantages of such a bank may be mentioned:[6]

1. The doctor never sees the donor.
2. Secrecy is less certain.
3. The semen has to be kept for a longer time before insemination.
4. The running and maintenance of the bank will certainly add much to the expense.
5. An organization such as this brings with it the greater risk of mistakes.
6. It may be difficult to find the same donor for a repeat insemination.
7. It is difficult to record successful insemination (i.e. the name of the donor) without sacrificing anonymity and secrecy.

Legal Preliminaries

Eight people are involved, viz. (*a*) the donor, his wife, and the witness to their signatures of consent, (*b*) the husband and wife and the witness to their signatures of consent, (*c*) the doctor, and (*d*) the child.

The legal implications must be explained to everybody concerned and each one of the couples concerned must sign a suitable consent form. The legal validity of such consent has been questioned.

There must be complete secrecy about everything. The donor must not know who the recipient is and *vice versa.* Neither must the donor know whether the artificial insemination was successful or not.

Technique of Insemination

This is very simple. The time of ovulation is determined from a study of the basal temperature chart and the cervical mucus, and insemination is performed within 24 hours of this time.

The semen is collected from the donor by masturbation and should be used within 1½ hours. The patient is placed in the lithotomy position. The semen is drawn up into a dry cool syringe with an intravenous cannula attached. An unlubricated sterile speculum is placed in the vagina. No douching or wiping of the cervix is done and the semen is deposited round the external os. The speculum is withdrawn and the patient allowed to remain lying down for 30 minutes.

Insemination is performed two or three times at the time of ovulation during each menstrual cycle. It is advisable to instruct the couple to have normal intercourse at about this time. Some practitioners advise the mixing of the donor's semen with a little of the husband's if the latter does contain a small number of spermatozoa (where the indication for AID is an infertile husband); fertilization with the husband's spermatozoa is then always a possibility albeit a theoretical one. Insemination is carried out on an average for about 6 months but can of course be continued for longer.

Medical complications. These are few, but presumably pelvic infection could occur if the semen were deposited in the uterus, and the transmission of syphilis or gonorrhoea is certainly possible.

Results. Pregnancy ensues in 50-60% of cases if insemination is carried out for about 6 months, and success rates of 75% have been reported. The abortion rate and stillbirth rate in these pregnancies are no higher than normal, and the number of malformed babies is also no greater than the usual.

Psychological reaction. Practitioners who employ AID are all agreed that when AID has been successful the husband and wife have always been extremely happy and in many instances have returned for another baby. The frightful domestic difficulties and problems which are written about hardly ever arise in practice.

Some Objections that are Raised

(*a*) *Too much power in the hands of the doctor:* It is said that by allowing the practice of AID too much power is placed in the hands of a doctor, who may abuse the power. The answer to this objection is that medical practitioners are entrusted with no less power and responsibility in many fields, and that the profession has shown itself worthy of the trust that is placed in it.

(*b*) *Masturbation.* Objections to this are understandable. Possibly the semen could be collected by coitus interruptus instead, but urologists consider that it is safer to use a masturbation specimen of semen. Many feel that the fundamental moral objection to masturbation disappears if it is done without a feeling of guilt and with the definite object of helping an infertile couple.

(*c*) *Separation of the reproductive from the sexual function.* This again is understandable, but the objection equally applies to contraception, which most people are prepared to practise.

(*d*) *Adoption versus AID.* Adoption may certainly be the solution for many infertile couples, but there will always be the woman with a very strong maternal instinct who will prefer AID; it is an obvious benefit that the mother knows that she herself has conceived and given birth to the child. In adoption the parents of the child are often unknown, whereas in AID the mother at least is known and the donor is most carefully selected. It should also be remembered that the demand for babies to adopt far exceeds the supply—there are just not enough babies to go round.

(*e*) *Marriage of siblings.* This is a possibility, albeit very small, especially in a small community. But of course it also applies to some extent to adoption.

(*f*) *A tantalizing question.* If the wife of a sterile husband is allowed to have a child by AID should the husband of a sterile wife be allowed to produce a child by having AID performed with his semen on another woman (if such can be found!) and then bring the child into the family?

Legal Complications

Although this aspect does not strictly fall within the medical realm one cannot help mentioning a few points.

Adultery. That AID constitutes adultery has been held, for instance, by certain religious authorities and in the South African text-book *Medical Jurisprudence* (Gordon, Turner and Price[7]). Adultery has been defined as 'voluntary sexual intercourse between a married person and a person of the opposite sex, not the other spouse, during marriage'. If one accepts this definition it is difficult to see how AID can be an act of adultery.

Legitimacy of the child. It is generally agreed that in South Africa the child is illegitimate.[7] But this may be impossible to prove when the husband not absolutely sterile has had intercourse with his wife during the same menstrual cycle as when AID was performed or if some of his semen was mixed with that of the donor. One wonders, however, whether the child cannot be legally adopted by the husband and wife.

Registration of the child's birth. If in registration the husband declares that he is the father he is committing a punishable offence.[7] This issue, however, may be subject to the consideration mentioned in the preceding paragraph.

Doubtful or Dangerous Uses of AID

The following contingencies may call for special consideration:

1. The production of an heir from a donor with some particularly outstanding ability.

2. It may be possible now to separate male-producing from female-producing spermatozoa and therefore to use this knowledge to alter the sex ratio in a particular community.

3. AID may be used to reverse the falling birth rate in a particular community or country.

4. By physical or chemical treatment of the spermatozoa, e.g. X-rays, it may be possible to induce certain genetic modifications which can then be propagated by AID.

5. AID may enable a spinster to have a child of her own.

Some of these propositions may seem to be far-fetched but are they really so in this our age of lunar lunacy?

CONCLUSION

It has been said by a wise man that if something must be kept secret it is probably wrong, and I think I feel this way about AID.

I fear that AID and all that goes with it may rock the very foundations upon which our family life and society are based. To me it spells a mockery of marriage and a marriage of mockery. There are a great many difficulties and probably too much is risked by its practice. Perhaps, therefore, AID is better prohibited by law altogether. Such prohibition, however, may drive the practice underground, with even more serious consequences should it then fall into the hands of unqualified practitioners. But if AID is not prohibited by law, then the doctor, the couple concerned, the donor, and the child born after insemination, must be protected by the law in every possible way. The present state of legal uncertainty should not continue.

The selection of couples must of course be done most carefully. The alternatives (remaining childless or adopting a child) and all the implications and possible difficulties of AID must be carefully discussed and considered with the couple. Psychiatric assessment of the couple may be advisable.

I would also insist that a suitable panel of responsible medical men and scientists should be created, comprising *inter alia* a gynaecologist, urologist, psychiatrist and geneticist, for the selection of donors. Naturally most careful attention would have to be paid to secrecy. I realize that such a panel might have its disadvantages, particularly in regard to secrecy and anonymity. Perhaps it would also be wise to insist on a second specialist opinion in every case where AID is contemplated.

That we are dealing here with something that can bring happiness to a number of people is quite certain; but equally there can be no doubt that if this thing is not properly controlled by the law, and by suitably constituted bodies of responsible men and women, it may be charged with risk and danger of the highest degree (particularly if it gets out of hand and is practised by unskilled or unscrupulous people)—danger to the individuals immediately concerned (including the doctor), to their families, to their race, and to humanity in general.

My own feeling about AID is summed up in a poem which I would like to quote. It is called *Die Beiteltjie* (The Little Chisel) and is by N. P. van Wyk Louw,[8] one of the foremost poets in the Afrikaans language. Perhaps it is only fair to say I am sure that AID was far from the poet's mind when he wrote it:

DIE BEITELTJIE

Ek kry 'n klein klein beiteltjie,
ek tik hom en hy klink;
toe slyp ek en ek slyp hom
totdat hy klink en blink.

Ek sit 'n klippie op 'n rots:
— mens moet jou vergewis:
'n beitel moet kan klip breek
as hy 'n beitel is —

ek slaat hom met my beiteltjie
en dié was sterk genoeg:
daar spring die klippie stukkend
so skoon soos langs 'n voeg:

toe, onder my tien vingers bars
die grys rots middeldeur
en langs my voete voel ek
die sagte aarde skeur,

die donker naat loop deur my land
en kloof hom wortel toe —
só moet 'n beitel slaan
wat beitel is, of hoé?

Dan, met twee goue afgronde
val die planeet aan twee
en oor die kranse, kokend,
verdwyn die vlak groen see

en op die dag sien ek die nag
daar anderkant gaan oop
met 'n bars wat van my beitel af
dwarsdeur die sterre loop.

SUMMARY

Artificial insemination with a donor's semen (AID) is discussed from the point of view of a gynaecologist.

The historical aspect of the subject is surveyed, beginning with references to ancient Jewish and Arab writings.

The technique of AID is described, with mention of the medical and legal precautions to be taken.

Reference is made to some of the moral and legal objections to the practice of AID.

In drawing his conclusions the author feels that, all things considered, the practice of AID is undesirable, but that if it is not legally prohibited greater protection should be given to the individuals directly concerned.

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