Sex preselection: an aid to couples or a threat to humanity?

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Whenever there is a new technological tool that pries into the secrets of life the majority reacts with caution, if not negatively altogether. On 10 September 1998, the Italian press gave the news of the discovery of a method to predetermine the sex of a new baby with 90% accuracy (Fugger et al., 1998) in sensational terms: ‘A little boy or a little girl? Soon children by order!’ (La Repubblica); ‘The new method (of sex preselection) is under accusation’ (Il Corriere della Sera); ‘Science without limitations; alarm and polemics’ (Il Messaggero).

Although we are no exception to the rule of skin-deep reactions and see the obvious reasons for this type of behaviour, we also believe that bioethics teaches us, before we pass a moral judgement, to ask ourselves a few fundamental questions, the first two being: is the new tool going to harm the individual(s) to whom it is to be applied and is it going to harm a community, a country, or humanity at large. This is because, after 800 years, we still believe in the moral imperative laid down by the Schola Salernitana: ‘Primum, non nocere’ (first, do no harm).

Therefore, in trying to evaluate the new frontier of reproduction, sex preselection, we would like to limit ourselves to applying this, and only this, general principle. At the same time, we are aware that there are a number of important philosophical and religious considerations which also form an integral part of the foundation of any judgement on this matter. These are, however, arguments that people other than us are better qualified to develop.

Obviously, in the case of reproduction, the situation is always complicated by the presence of three separate ‘actors’, with sometimes conflicting interests: the two members of the couple and the child to be conceived. Therefore, the questions become three-fold, the first being: ‘Is sex preselection harmful to the future child?’ There seems to be an obvious answer to this: ‘no’. At the same time it has to be stressed that those who (like Barry Zirkin of Johns Hopkins) caution against potential harm, because ‘it has not been established that the technique of selecting chromosomes through fluorescence staining and laser illumination is without risk for the product of conception’ (La Repubblica, 10 September, 1998), need to be proven wrong. Evaluating safety poses difficult problems, the first being the feasibility of testing this method in animals with a good predictive value for humans. Is this possible? I believe it is and therefore every attempt should be made to do so.

Assuming that we could obtain data on long-term safety, the next question is: ‘Can sex preselection be beneficial for the couple, in all those families where there is a clear genetic defect linked with sex?’ Obviously, in this case the answer is ‘yes’. To apply the new technology and achieve pregnancy
with a fetus of the unaffected sex is a good strategy to avoid agony for all those couples, where a ‘chance conceived’ baby would have (depending on the type of inborn error) a 50 or 25% probability of possessing the defect. In this connection, I do not agree with the statement attributed to Zirkin: ‘Since I see no useful application of this technique, I must be against. Useless science is by definition dangerous’ (La Repubblica, 10 September, 1998). At least in a minority (granted small) of couples, the method can be definitely useful.

It seems, therefore, that there are no ethical impediments to sex preselection when the technology is seen from the point of view of the new individual to be conceived, or of the couple requesting the preselection for strictly medical reasons. This, however, is only part of the issue.

The third, and in many ways more important, ethical question concerns the possibility that sex preselection requested by a couple because of preference for a baby of a specific sex, may create injustice, discrimination and bias at the level of a community, a country or the world as a whole.

Here, the situation is different and history teaches us that, in large parts of the world, sex preselection will result in great discrimination against the birth of female offspring. Ironically the article by Fugger et al. reports ‘the world’s first deliveries of normal babies’, ‘who were of the desired female gender in 92.9% of the pregnancies’ (Fugger et al., 1998). The problem is that, if applied on a large scale, couples will use the new technology not to have a female baby. Today, female infanticide is a fact of life in countries where more than two billion people live, mostly in Asia. As Fathalla pointed out in a very well documented article, female infanticide ‘has not been abolished. It has taken new forms. It has been brought earlier with the utilization of new technologies for the selective abortion of the female fetus’ (Fathalla, 1994a). It is a reality in China, where the male to female ratio has increased in recent years from 1.05 to close to 1.20 (Zeng et al., 1993); and a similar situation exists in South Korea where the male to female ratio at birth grew from 1.07 in 1982 to 1.15 in 1991 (Korean newsletter, 1993).

Official Indian statistics (Figure 1), indicate that, in that country, since 1900, the female to male ratio has invariably been below unity, with particularly alarming ratios of less than 0.85, in urban areas (Registrar General of India, 1992). Not only is the situation not improving, but the availability of ultrasound/in-utero sex determination has made things worse, with the recourse to selective abortions in the event of a female fetus. The United Nations Children’s Fund (UNICEF, 1996) has calculated that, in India alone, there are 40–50 million women missing.

Another way to look at the problem is to examine life expectancy: it is a well known fact that, in most countries women outlive men by several years, as indicated in Table I. The table however, shows that there are noticeable exceptions to this rule and, again the figures point at the Indian sub-continent. There, life expectancy for women is either very similar (India) or identical (Pakistan) to that of men (United Nations, 1995). Since this is not due to a higher incidence of diseases affecting women in those countries, the explanation is, again, that women die for reasons different from classic diseases.

Even more striking, if we try to evaluate the consequences of an ‘easy and accurate sex preselection test’ is the observation that, in South Korea not only was the overall male/female ratio already biased in favour of boys, but in 1991 (Figure 2), the sex ratio for children born to a couple in sequence, went from 1.06 for the first child, to 2.12 for the fourth (National Statistical Office of the Republic of Korea, 1992).

Sen, who has just been awarded the 1998 Nobel Prize for Economics, has calculated that, globally, on the planet some 100 million women are missing, due to a variety of discriminations that result in their premature death (Sen, 1990). An editorial presenting the First World Report on Women’s Health,
(Fathalla, 1994b) maintains: ‘The 100 million missing females are dead. Let it happen never again’.

These brief considerations show very clearly that a readily-available sex predetermination test will inevitably worsen the already terrible situation existing in various parts of the world, in terms of women’s rights, in particular the very right to existence. As humanity reaches the so-called fertility transition and quickly moves towards two children families, the easy access by couples to a sex preselection test is bound to foster the already existing bias against the female child, and create an overall imbalance in the male to female ratio worldwide. This consideration alone seems sufficient to conclude that, from a global point of view, sex preselection is detrimental to the cause of women in general, to the battle to reach equality between sexes and to humanity as a whole.

The only conclusion we can draw from real life experience is to submit sex preselection to severe limitation, through binding guidelines designed to prevent its use for an ad libitum selection of a child of a ‘preferred sex’.

References