Letters to the Editor

Sertoli cell only syndrome

Dear Sir,

Sertoli cell only syndrome was first described by Del Castillo et al. (1947). According to the original description it has been used when no spermatogenic cells have been seen in a testicular biopsy specimen. It is therefore unfortunate that the name of this syndrome has been misused in Human Reproduction in connection with cases where Sertoli cell only has been a diagnostic failure by a pathologist (Devroey et al., 1995; Silber et al., 1995). If spermatogenic cells, spermatogonia, spermatocytes, spermatids or spermatozoa are found in the testis, although in minimal numbers, the state is not Sertoli cell only, but hypospermatogenesis or spermatogenic arrest (maturation arrest). The aetiology of low numbers of tubules with spermatogenesis can be genetic, infection, toxic agent, radiation, or something else. In these cases it is possible to use intracytoplasmic sperm injection (ICSI) with spermatozoa or spermatids obtained from testicular aspiration or biopsy knowing that in genetic cases there is a risk of mediating the defect to male offspring. In cases of true Sertoli cell only syndrome, ICSI is not possible, because there is a total lack of spermatogenic cells.

References


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Sertoli cell only syndrome

Dear Sir,

The above statement represents simply a semantic error. The diagnosis of ‘Sertoli cell only’ is made when all one sees in a single biopsy are histologically empty (except for Sertoli cells), seminiferous tubules and no other pathological findings. This has been the dogma since the condition was first described by Del Castillo et al. in 1947. These cases classified as Sertoli cell only are not oligospermic, and are truly azoospermic without obstruction. The fascinating modern observation is that an intensive search of many biopsy specimens from such patients will reveal a very occasional spermatozoon or spermatid, and these are sufficient for successful intracytoplasmic sperm injection (ICSI). Thus, although there are many cases of non-obstructive azoospermia that have been classified as ‘Sertoli cell only’, truly 100% Sertoli cell only is very very rare indeed! That is why the editorial was entitled ‘Sertoli cell only revisited’ (Silber et al., 1995).

The complaining critic seems oblivious to the immense clinical benefit of the discovery that in most cases of non-obstructive azoospermia, whether caused by Sertoli cell only or by maturation arrest, despite absolute azoospermia in the ejaculate, a few spermatozoa can nonetheless be found in the testis!

We have repeatedly cautioned, based on our work with Y-chromosome mapping, that the offspring of such children are likely also to have ‘Sertoli cell only’ (Reijo et al., 1995).

References


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How many embryos to transfer in patients undergoing IVF?

Thank you for providing us with the opportunity to comment on the article by Dr D.E. Walters, (Opinion, this issue).

The question of how many embryos to transfer in patients undergoing in-vitro fertilization (IVF) and embryo transfer is well documented in the literature. Most workers agree that the number of transferred embryos should not exceed three to five. However, we encountered a small group of patients who had failed to achieve pregnancy, despite the transfer of up to four or five embryos during previous attempts. The concept of transferring more than the ‘traditional’ number of embryos originated when a patient requested transfer of all seven fertilized oocytes, despite the risk of multiple pregnancy. This patient had experienced six previous failed attempts and her only desire was a successful outcome. Fortunately, nine months later, she gave birth to a healthy neonate.

In his paper, Dr Walters relies on the recorded data at Bourn Hall Clinic, Cambridgeshire, UK, in order to demonstrate the increase in multiple births after the transfer of three embryos. However, he ignored the fact that these data were related to
embryo replacement in conventional IVF/embryo transfer, rather than in patients with repeated failures. The statistical critique given by Dr. Walters was mistakenly based on the "small size" of our study. The determination of "small" or "large" is subjective and depends on the definition chosen. In clinical studies, an investigation comprising a group of 72 patients (as in our study) would not be considered "small".

The issue of which statistical method should be used for analysis is still unresolved. Nevertheless, we do not intend discussing this point, which seems to be less relevant to our paper. Our data clearly show that the transfer of more than five embryos is most useful in patients with chronic failures. Since the publication of our paper, our data have continued to accumulate, and the results confirm the published material.

In conclusion, we firmly stand by our recommendation that in cases of repeated failure, transferring more than the traditional four or five embryos should be performed. After all, it should be remembered that the achievement of pregnancy, even multiple, is the main desire of our patients and our goal as clinicians.

References


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Does high voltage electricity have an effect on the sex distribution of offspring?

For thousands of years the male/female ratio has been almost equal but every now and then this ratio is altered for one reason or another. The ratio of boys to girls can be decreased by any influence which impairs the viability of the spermatozoa bearing Y chromosomes (Robertson and Sheard, 1973). The possibility that the anti-malarial substance, mepacrine, might have such an effect has been suggested, by implicating factors which give some advantage to X-bearing spermatozoa in penetrating the ovum. Y-bearing spermatozoa are only slightly smaller than those carrying the X chromosome. The movement of spermatozoa is regulated by calcium and cyclic AMP (Berne, 1990). James (1971) noticed an increase in the male birth rate when fertilization occurred early in the cycle and sooner after ovulation. Similarly, Alperovitch and Fiengold (1981) observed an increased male to female sex ratio in the offspring of patients with multiple sclerosis.

Some viral diseases are associated with an alteration of the sex ratio. An increased female to male sex ratio was observed after an epidemic of infective hepatitis (Robertson and Sheard, 1973). In mothers with antibodies to the hepatitis B virus in their serum, there was an excess of female offspring, i.e. the opposite result to that observed in the presence of the antigen (Robertson and Sheard, 1973; Mazur and Watson, 1974; Hesser et al., 1975; Cazal et al., 1976) when there is an excess of male offspring in comparison with the general population. An ingenious explanation proposed is that there is cross-reactivity between the Australia antigen and the human male-determined tissue antigen (Drew et al., 1978). If the mother is a hepatitis B carrier, that is taken as evidence of a weak immune response to the virus and hence of tolerance towards male tissue in the uterus. Conversely, an efficient immune reaction to the virus, indicated by circulating antibody, is liable to be accompanied by a rejection response directed against Y-bearing spermatozoa and male fetal tissue.

While working in a teaching hospital in Baghdad between 1988 and 1989 and studying the risk of haematological malignancy in people living and working in the vicinity of high voltage electricity in Baghdad, I noticed an interesting point concerning the sex ratio in the offspring of men working and living in the vicinity. A random survey was carried out of 18 married men working in the high voltage power station in Baghdad. The mean age of the men studied was 45 years and the mean age at marriage was 26 years. The mean duration of working and living in the vicinity of that station was 10 years.

The families studied had no history of abortion, stillbirth or intrauterine death. The total number of children born to those men was 62, of which 54 were girls (87%) and eight were boys (13%). The male to female ratio in the general population was assumed to be 1, i.e. 50% males and 50% females. When comparing the sample in question with the general population using the $\chi^2$ statistical test, the difference was highly significant ($P = 0.0001$).

It is difficult to explain this phenomenon. Similarly, the increased risk of malignancy, especially leukaemia and lymphoma, in people exposed to high voltage electricity (Feychting and Ahlbom, 1993, 1994) is hard to explain. A similar increased male to female ratio has also been observed in patients with non-Hodgkin’s lymphoma.

It is possible that a similar oncogenic agent may be responsible for the sex ratio changes and malignancy in both cases. However, in the case of non-Hodgkin’s lymphoma, a viral aetiology has been suggested as a possible explanation (Olsson and Brandt, 1982). An alternative explanation for the former case is that high voltage electricity may have an inhibitory effect on spermatozoa by interfering with the calcium and cyclic AMP responsible for sperm movement, with this effect occurring to a greater degree in Y-carrying spermatozoa than in X-carrying spermatozoa.

By publishing this isolated observation, I hope that larger surveys may be carried out elsewhere to provide verification and exclude the possibility of this being a chance observation.

References

