The usefulness of a piezo-micromanipulator in ICSI in humans

Dear Sir,

I read with great interest the article on a new technique in intracytoplasmic sperm injection (ICSI) on a method of piercing the oolemma (Yanagida et al., 1999). However, after studying the two pictures in this article carefully, I could observe two different holding pipettes. From our long experience with ICSI, and of producing pipettes ourselves, I conclude from these pictures that the bulging or deformation while inserting the injecting needle in the oocytes is due to the narrow diameter of the holding pipette. If you compare it with the holding pipette in the other picture, it is much wider and gives enough support to the oocytes to avoid this phenomenon. In our experience, using a wider diameter holding pipette can dramatically reduce the degeneration rate of the oocytes after ICSI.

Finally, use of the piezo manipulator may be valuable and I have no objection to it, however, the two pictures in this article cannot be compared.

References


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Dear Sir,

We thank Dr Al-Hasani for his interest in our article (Yanagida et al., 1999) regarding the new technique of ICSI. Two elements were contained in the deformation of oocytes shown in Figure 3B in our article (Yanagida et al., 1999). The deformation of the left half of the oocyte was due to a holding pipette and the deformation of the right half was due to the injection needle. We began conventional ICSI in mammals (hamster, rabbit, etc.) in 1988 and in humans in 1994, and we make needles and pipettes ourselves (Yanagida et al., 1991a,b; Hoshi et al., 1995). From our own experience, the deformity of the left half becomes smaller if a holding pipette with a bigger outer tip diameter is used; on this point, we are in agreement with Dr Al-Hasani. If the point of the needle is sharp, the influence of the size of holding pipette on the survival rate of injected oocytes is minimal. If the point is not sharp, the survival rate falls.

The deformation of the right side of the oocyte in the figure is a difference between piezo–ICSI and conventional ICSI. The deformation caused by piezo–ICSI is much less than that caused by conventional ICSI (Figure 4D in our article, Yanagida et al., 1999). Finally, the improved survival rate of injected oocytes is due to the fact that the extended oolemma agglutinates more securely after extraction of the needle, and the internal pressure of the ooplasm is lower, due to less deformation.

References


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