Does the position of the inner cell mass during biopsy affects implantation?

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STUDY QUESTION
The most common trophectoderm biopsy technique requires assisted hatching (AH) on day 3, but this process makes the inner cell mass (ICM) can be inside, outside or in the herniation in the moment of biopsy. Therefore, the position of the inner cell mass could affect implantation and early fetal development.

SUMMARY ANSWER
The position of the ICM at the time of the biopsy does not affect embryo implantation, although there is a tendency to decrease implantation if it is in the herniation position.

WHAT IS KNOWN ALREADY
Trophectoderm biopsy allows more accurate genetic diagnosis without apparent embryo damage. The AH previous to the biopsy itself is performed on day 3 because it promotes embryo hatching and is easier to remove the cells. However, the ICM may have gone along with trophectoderm cells through the hole hatching or stay in the herniation. In our knowledge there is any publication relating the position of the ICM with the implantation of euploid embryos.

STUDY DESIGN
Prospective study. We include the known clinical results of 44 euploid embryos transferred coming from 39 women that underwent CCS treatments from September to December 2014.

MATERIALS AND METHODS
At least one euploid embryo was transferred to 39 patients. AH was performed on day 3 using laser pulses (Saturn Active, Research Instruments). On day 5 of development, conventional trophoectoderm biopsy was done. The position of the ICM in the moment of biopsy was recorded. Clinical outcomes were evaluated.

MAIN RESULTS AND THE ROLE OF CHANCE
There was no statistically significant difference neither positive pregnancy test nor implantation rate into the three groups. However, we can observe a tendency to decrease the clinical results when the ICM is in the herniation position.

LIMITATIONS, REASON FOR CAUTION
Study currently under development to increase the number of cases and test the study question.