

Establishment of goat laparoscopic oocytes pick-up technology ⁽¹⁾

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Abstract

The aims of this study were to establish the technique of laparoscopic oocytes pick-up and compare the techniques with the traditional surgical oocytes collection methods of goat. Twenty goats were used in this study (10 Hengchun line of Taiwan Black Goat and 10 Nubian goat), followed by conducting in vitro maturation, insemination, and maturation rate to observe cleavage rate, blastocyst rate and total cell number of blastocysts, after oocyte collection. The results showed no significant differences observed in maturation rate with the nuclear development arrested in the MII stage ($74.88 \pm 2.00\%$ vs. $81.144 \pm 7.00\%$), after the culture for maturation. After insemination, the fertilized zygotes were continuously developed in the in vitro culture system, and cleavage were observed 48 hours after insemination. The two different oocyte collection methods (surgical vs. laparoscopic method), showed no difference in the cleavage rate ($73.93 \pm 1.90\%$ vs. $68.30 \pm 3.99\%$) and the blastocyst rate on the 7th day after fertilization ($42.87 \pm 1.26\%$ vs. $42.65 \pm 3.83\%$); however the surgical method had a higher total cell number of blastocysts (76.41 ± 1.29 vs. 69.00 ± 8.91). In this study, a laparoscopic oocyte pick-up technology was established with success. The blastocyst development capacity of the collected oocytes after in vitro culture was similar to that of surgical collect group. The laparoscopic oocyte pick-up technology can indeed be used for goat oocytes collection.

Key words: Goat, Laparoscopic oocytes pickup, Blastocyst rate.

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