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Comparison of the penetration ability of human spermatozoa into bovine cervical mucus and zona-free hamster eggs

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In vitro bovine cervical mucus (BCM) penetration tests, sperm penetration assays (SPA) using zona-free hamster eggs, and routine semen analyses were performed on a total of 136 freshly collected semen samples from men who were seen at an infertility clinic. The correlations between bovine cervical mucus penetration and other semen parameters were the percent motile spermatozoa ($r = 0.48$), progressive motility grade ($r = 0.44$), sperm count ($X 10(6)/ml$) ($r = 0.47$), the percent normal morphology ($r = 0.32$) and the percent eggs penetrated ($r = 0.46$) (P less than 0.0001 for each correlation coefficient). When known fertile ($n = 32$) and infertile ($n = 18$) groups were tested, positive mucus penetration was associated 75% correctly and positive egg penetration was associated 90% correctly to clinical status. The mucus test had no false-negative results and the SPA had no false-positive results in these groups. It appears, then, that the mucus test and sperm penetration assay, although contributing different elements of data to an infertility evaluation, are both useful adjuncts to a semen analysis.

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